



**GREEN
CLIMATE
FUND**

Meeting of the Board
16 – 19 March 2021
Virtual meeting
Provisional agenda item 14

GCF/B.28/02/Add.09

23 February 2021

Consideration of funding proposals - Addendum IX

Funding proposal package for FP162

Summary

This addendum contains the following seven parts:

- a) A funding proposal titled "The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW)";
- b) No-objection letter issued by the national designated authority(ies) or focal point(s);
- c) Environmental and social report(s) disclosure;
- d) Secretariat's assessment;
- e) Independent Technical Advisory Panel's assessment;
- f) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
- g) Gender documentation.

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Funding Proposal

Project/Programme title:

**The Africa Integrated Climate Risk Management Programme:
Building the resilience of smallholder farmers to climate change
impacts in 7 Sahelian Countries of the Great Green Wall (GGW)**

Country(ies):

Multi-Country; LDCs-Africa: Burkina Faso, Chad, Mali, Mauritania, Niger,
Senegal, The Gambia

Accredited Entity:

International Fund for Agricultural Development (IFAD)

Date of first submission:

Date of current submission

23 February 2021

Version number

[V.3]



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Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the [GCF Information Disclosure Policy](#), project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

"FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]"

A. PROJECT/PROGRAMME SUMMARY			
A.1. Project or programme	ProgrammeProgrammeProgramme Programme	A.2. Public or private sector	PublicPublicPublicPublic
A.3. Request for Proposals (RFP)	If the funding proposal is being submitted in response to a specific GCF <u>Request for Proposals</u> , indicate which RFP it is targeted for. Please note that there is a separate template for the Simplified Approval Process and REDD+. Not applicable Not applicable Not applicable Not applicable		
A.4. Result area(s)	Check the applicable <u>GCF result area(s)</u> that the <u>overall</u> proposed project/programme targets. For each checked result area(s), indicate the estimated percentage of <u>GCF budget</u> devoted to it. The total of the percentages when summed should be 100%.		
	<p><u>Mitigation</u>: Reduced emissions from:</p> <p><input checked="" type="checkbox"/> Energy access and power generation: <input type="checkbox"/> Low-emission transport: <input type="checkbox"/> Buildings, cities, industries and appliances: <input checked="" type="checkbox"/> Forestry and land use:</p> <p><u>Adaptation</u>: Increased resilience of:</p> <p><input checked="" type="checkbox"/> Most vulnerable people, communities and regions: <input checked="" type="checkbox"/> Health and well-being, and food and water security: <input type="checkbox"/> Infrastructure and built environment: <input checked="" type="checkbox"/> Ecosystem and ecosystem services:</p>	<p><u>GCF contribution</u>: - 21 446 499</p> <p>MtCO₂e</p> <p>4 %</p> <p>18%</p> <p>52 %</p> <p>6 %</p> <p>20 %</p>	
A.5. Expected mitigation impact	21 446 499MtCO ₂ e	A.6. Expected adaptation impact	817,922 direct 5,332,754 indirect beneficiaries
		20 years	Indicate % of population 6,19 % (Total Population estimated to 99,287, 386 for the 7 countries World Bank source 2020) % Pop impacted only by adaptation interventions = 4,58 % of the total population
A.7. Total financing (GCF + co-finance)	143,327million USD Co-financing only : 60,477 million USD	A.9. Project size	Medium (up to 250 million USD)
A.8. Total GCF funding requested	82, 849.900 million USD For multi-country proposals, please fill out annex 17.		
A.10. Financial instrument(s) requested for the GCF funding	Mark all that apply and provide total amounts. The sum of all total amounts should be consistent with A.8.		
	<input checked="" type="checkbox"/> Grant <u>Enter number</u>	<input type="checkbox"/> Equity <u>Enter number</u>	
	<input type="checkbox"/> Loan <u>Enter number</u>	<input type="checkbox"/> Results-based payment <u>Enter number</u>	
	<input type="checkbox"/> Guarantee <u>Enter number</u>		
A.11. Implementation period	6 years	A.12. Total lifespan	20 years
A.13. Expected date of AE internal approval	This is the date that the Accredited Entity obtained/will obtain its own approval to implement the project/ programme, if available. 4/15/2021	A.14. ESS category	Refer to the AE's safeguard policy and <u>GCF ESS Standards</u> to assess your FP category. B
A.15. Has this FP been submitted as a CN before?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.16. Has Readiness or PPF support been used to prepare this FP?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
A.17. Is this FP included in the entity work programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.18. Is this FP included in the country programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

A.19. Complementarity and coherence	<i>Does the project/programme complement other climate finance funding (e.g. GEF, AF, CIF, etc.)? If yes, please elaborate in section B.1.</i> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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A.20. Executing Entity information

Presentation of the International Fund for Agricultural Development (Accredited Entity and Executing Entity): IFAD's mandate is to ensure that smallholder producers become reliable business partners in the context of climate change. IFAD has almost 40 years of experience in providing loans and grants to support governments in their efforts to de-risk agriculture, particularly risks related to climate. In the selected countries, IFAD's portfolio of instruments is directed towards multiplying the impacts of public funds by reducing agricultural risks (climate, diseases, price, policy and political) and transaction costs for private investments in rural agriculture. IFAD's long-term support for addressing climate risk through its Programme of Loans and Grants (PoLG) is generating impacts and has produced partial outcomes, especially in the Sahel and most of the participating LDCs. An increasing amount of IFAD's interventions are focused on climate-related loans and/or grants. As part of an overall strategy to build resilience among rural people, IFAD building on lessons learnt from the Adaptation for Smallholders Adaptation Programme (ASAP), the world's largest adaptation fund for smallholder agriculture, to develop a proposal for ASAP+. Under IFAD 11, which promotes business as an assembler of development finance to maximize impact, the institution has set a target of ensuring that 25 percent of its investments during the IFAD 11 (2019-2021) period are climate-focused using the MDB methodology, and environment and climate will be mainstreamed into 100 percent of investments and country strategies (COSOPs). To better inform these targets, IFAD must advance beyond its current risk mitigation strategies, which promote the adoption of techniques and behaviours that reduce climate impacts on production and profitability, and smallholder farmers' coping strategies towards more comprehensive climate risk management approaches to improving resilience to climate shocks. This can be done by leveraging additional climate financing in forms of grants with partners such as the GCF, especially for LDCs, particularly those in fragile situations in Africa that suffer the most from the impacts of climate change. In line with its climate and resilience agenda, IFAD has been invited to host the Initiative on Sustainability, Stability and Security in Africa (3S Initiative) by the United Nations Convention to Combat Desertification (UNCCD) and the 3S Secretariat, which promotes sustainable land management and the creation of rural economic opportunities to combat migration in Africa. IFAD is becoming the lead agency for the Great Green Wall (GGW), a GCF umbrella programme that aims to restore 100 million hectares of currently degraded land; sequester 250 million tons of carbon and create 10 million green jobs by creating an 8,000-kilometre green barrier stretching across the entire width of the continent. The GGW will serve as a framework for planning and programming investment in climate resilience in the Sahel region; the Africa Integrated Climate Risk Management Programme is the first proposal to be submitted to the GCF from IFAD under this framework. IFAD (AE) will implement solely the activities related to the overall program coordination, supervision and reporting to the GCF through the Regional Coordination Unit (RCU). IFAD will recruit the RCU staff (IFAD staff) in charge of this program coordination.

Presentation of Agriculture Finance and Rural Finance Department of AfDB through the ADRIFI Programme (Executing Entity): The African Development Bank Group (Bank Group) is the premier pan-African development institution promoting economic growth and social progress across the continent. It is composed of three institutions, namely 1) the African Development Bank (AfDB), which was established in 1964; 2) the African Development Fund (ADF), established in 1972, and 3) the Nigeria Trust Fund (NTF), created in 1976. Currently, there are 81 members – 54 independent African countries (regional members) and 27 non-African countries (non-regional members) – in the Bank Group. The Bank Group focuses on five development priorities within the framework of its Ten-Year Strategy (2013–2022) aimed at promoting inclusive and green growth. Usually referred to as the “High 5s”, the development priorities are: i) Light Up and Power Africa; (ii) Feed Africa; (iii) Industrialize Africa; (iv) Integrate Africa, and (v) Improve the Quality of Life for the People of Africa. This programme is intended to support the realization of the “Feed Africa” and the “Improve the Quality of Life for the People of Africa” development priorities. The Bank Group has supported several transformative activities and investments in these priority areas. These include the provision of financing for rural infrastructure (such as roads, irrigation, electricity, storage facilities and access to markets) to improve agricultural productivity and competitiveness. The Bank Group has also supported several initiatives to strengthen agriculture and food security to improve the livelihoods of the rural populations in Regional Member Countries (RMCs) in Disaster risk management. Because agricultural production in rural communities largely depends on rain-fed irrigation, they are critically vulnerable to extreme weather conditions and uncertainties in future climate change. The Africa Disaster Risk Financing (ADRFi) Programme of the AfDB seeks to strengthen the resilience of rural households to climate-related shocks by enhancing the capacity of the government to respond effectively to drought. In this programme, the EE is the Agriculture Finance and Rural Finance Department of AfDB through the ADRIFI Programme will act as an EE and be responsible of the overall coordination and technical assistance for the component on climate risk transfer in all seven countries in coordination with the Africa Risk Capacity (Output 3.2. of Component 3). It will also coordinate with countries on the implementation of activities under Output 1.1. of Component 1 on risk preparedness.

Presentation of ARC Agency (Executing Entity): The African Risk Capacity (ARC) is a specialized agency of the African Union established in 2012 to help African governments improve their capacities to better plan, prepare and respond to extreme weather events and natural disasters. Collaboration and innovative finance for risk pooling and risk transfer is at the heart of the ARC solution. The ARC enables countries, through a pan-African response system, to strengthen their disaster risk management systems and access rapid and predictable financing when disaster strikes to protect the food security and livelihoods of their vulnerable populations. The ARC is comprised of the ARC Agency, which hosts the secretariat and conducts ARC's advisory and capacity building activities, and the ARC Insurance Company Limited (ARC Ltd), a financial affiliate that delivers risk transfer services. Together, they offer a comprehensive solution to enable early and

targeted responses to natural disasters in Africa. By merging the traditional approaches of disaster relief and quantification with the concepts of risk pooling and risk transfer, ARC provides a disaster response system that meets the needs of those affected in a timelier and more efficient way and provides an important step forward in creating a sustainable African-led strategy for managing extreme climate risks. To date, ARC has provided 41 sovereign insurance policies offering a cumulative insurance coverage of approximately US\$600 million to protect 58 million people. The ARC has engaged and provided capacity-building in disaster contingency planning, early warning risk modelling and risk transfer to over 10,000 government officials and civil society and private sector representatives over a six-year period. Under its new Strategic Framework 2020-2024, the ARC will continue to drive to deliver its mandate to scale up operations, innovate through research and development and enhance the disaster risk management landscape in Africa. In this programme, the ARC agency will be the executing entity. As EE, ARC agency will be responsible for the implementation of activities of Output 1.1.7 and activities under Output 1.1 (component 1) and all activities under Output 3.2 (component 3).

Presentation of the World Food Programme (Executing Entity) :

The mandate of the World Food Programme (WFP) is to fight hunger worldwide by supporting national, local and regional food security and nutrition plans and programmes. WFP has built strong relationships with international organizations, non-governmental organizations, civil society and the private sector to enable people, communities and countries to meet their own food needs. With respect to climate change, WFP plays a role both in helping governments and communities prepare and respond to shocks, as well as in reducing vulnerability and building lasting resilience. Approximately 40 percent of WFP's operations are activities designed to reduce the risk of disaster, build resilience and help people adapt to climate change. In the last decade alone, 47 percent of its operations included a response to climate-related disasters amounting to a total cost of US\$23 billion. WFP is the first and leading UN agency to develop innovative micro insurance solutions, which, when integrated with complementary measures to strengthen access to natural and financial capital, provide vulnerable populations with an effective safety net against climate shocks and stresses. Over the last decade, WFP has been working with its partners to test and scale up innovative ways of providing micro insurance products, particularly index-based insurance, to help communities become more resilient and food secure. WFP will be one of the Executing Entities of this programme to which it will bring its expertise in climate risk financing and insurance to support partners in their efforts to strengthen climate resilience and achieve food security. As EE, WFP will be responsible for the implementation of Output 3.1 (component 3).

Presentation of the selected countries (National Executing Entities):

- (a) The Republic of Burkina Faso, acting through its Ministry of Economy and Finance and its Ministry of Agriculture, Hydro-Agricultural Development and Mechanization;
- (b) The Republic of Chad, acting through its Ministry of Finance and Budget and its Ministry of Production, Irrigation and Agricultural Equipment;
- (c) The Republic of Mali, acting through its Ministry of Economy and Finance and its Ministry of Agriculture;
- (d) The Republic of Mauritania, acting through its Ministry of Finance and its Ministry of Agriculture;
- (e) The Republic of Niger, acting through its Ministry of Finance and its Ministry of Agriculture and Livestock;
- (f) The Republic of Senegal, acting through its Ministry of Economy, Planning and International Cooperation and its Ministry of Agriculture and Rural Equipment; and
- (g) The Republic of the Gambia, acting through its Ministry of Finance and Economic Affairs and its Ministry of Agriculture,

together, the “**National Executing Entities**”. The Accredited Entity will enter into the relevant Subsidiary Agreements with each Host Country, represented by its respective Ministry of Economy and Finance. Each Host Country, in its role as Executing Entity, acting through its respective sectorial ministries as described above, shall be responsible for the implementation of Activities 1.1.1 and 1.1.2 under Output 1.1, all Activities under Output 2.1 and all Activities under Output 2.2 of the Programme in the respective Host Country. At the level of each Host Country, the respective Ministries of Economy and Finance, together with the respective Ministries of Agriculture (or its relevant sectorial ministry as described above), will enter into legal agreements (*Conventions de Partenariat*) with their respective national meteorological agencies: (i) Met Mauritanie, Office National de Météorologie in Mauritania; (ii) l'Agence Nationale de l'Aviation Civile et de la Météorologie (ANACIM) in Senegal ; (iii) Mali Météo; (iv) l'Agence Nationale de la Météorologie in Burkina Faso; (v) The Gambia Met Office; (vi) the Direction de la Météorologie Nationale du Niger in Niger, and (vii) l'Agence Nationale de la Météorologie in Chad . Under such agreement, the respective meteorological agencies will act according to the instructions of the relevant Executing Entities to implement Activities 1.1.1. and 1.1.2 under Output 1.1, which are to procure, install and maintain the climate information infrastructures. A designated account bank account will be created in each country to receive these resources. IFAD will provide technical support to the recipient countries for the implementation of each of these Activities. Each National Executing Entity (with participation of both the respective Ministries of Economy and Finance and relevant sectorial ministries described above) will also enter in agreements with the respective PMUs (as defined below) of baseline investments to implement Activities 1.1.1 and 1.1.2 under Output 1.1, all Activities under Output 2.1 and all Activities under Output 2.2.

A.21. Executive summary (max. 750 words, approximately 1.5 pages)

1. Over 500 million smallholder farms produce more than 80 percent of the world's food. These farms and the 750 million extremely poor people working in agriculture (mostly as smallholder family farmers) are vulnerable to the effects of climate change¹. Agriculture is one of most vulnerable and highly exposed sectors to extreme weather events and other climate change impacts. It contributes to about 24 percent of GHG emissions². While smallholder farming plays a crucial role in food systems, employment and income for youth, food security, nutrition and poverty reduction, it has always been a risky business for many. The COVID-19 pandemic has made smallholder agriculture riskier than ever, particularly in the Sahel.
2. In the Sahel region, the agricultural sector plays a fundamental role in the economy (40 percent of regional GDP) and employs approximately two-thirds of the workforce in most countries³. Predominantly subsistence-based and highly reliant on rainwater, the sector is highly vulnerable to climate change and variability. One of the hottest regions of the world, the Sahel is already feeling the impacts of one of the main anthropogenic drivers of climate change: global warming. Temperatures across the region and across the Green Great Wall (GGW)⁴ have increased nearly 1°C since 1970, at a rate twice the global average⁵, and are projected to be 1.5 times higher than the rest of the world⁶. Rising temperatures have negative impacts on yields, as some key staple crops in the region (e.g. groundnuts) and livestock are sensitive to high temperatures. Temperature increases higher than 2°C are projected to decrease millet and sorghum yields by 15-25 percent by 2080, for example⁷. The rise in evapotranspiration rates reduces soil moisture and surface water supplies, affecting irrigation systems, fisheries and human and animal health. In addition to the impacts of changes of temperature in bodies of water (rivers, lakes and oceans), coastal countries (Mauritania, Senegal and The Gambia) also face the threat of sea level rise and ocean acidification.
3. While there are many uncertainties in the projections on future precipitation levels in the Sahel, partly due to the lack of robust climate data (current and historical), the general consensus is that most parts of the region will experience decreases in annual rainfall and greater variability. Farmers have already noted delays in the onset of the raining season, which is becoming shorter and punctuated by dry spells. There is also clear evidence that the frequency of extreme weather events will increase. Rainfall levels have yet to return to the levels prior to the prolonged droughts (caused by natural and anthropogenic climate drivers) that devastated the region in the 1980s and the region, especially Central Sahel, is currently facing its fourth major drought-related emergency in less than ten years. Recurrent droughts have led to successive food crises, pushing millions into poverty and even severe food insecurity, while successive floods have led to major losses of crops, livestock and infrastructure. According to IPCC, due to the frequent occurrence of climate-related extremes, decreases in yields of 10-25 percent may be widespread by 2050. FAO estimates 20-80 percent of the inter-annual variability of crop yields is associated to weather phenomena and 5 to 10 percent of national agricultural production losses are associated with climate variability. In addition, agriculture suffers 26 percent of all damages and losses during climate-related disasters⁸. Rising temperatures (which also increase the risk of wildfires, disease and pests), the alternation between drought and heavy rains or floods, and the loss of vegetation cover due to deforestation all erode the already nutrient-poor soils in much of the region further and inhibit soil infiltration and thus, the replenishment of aquifers.
4. Changes in land use is another primary anthropogenic driver of climate change in region. The Sahel has been classified as one of the most degraded regions in the world due to unsustainable farming practices (slash-and-burn agriculture, deforestation, overgrazing of pastureland) and illegal logging, among other factors. Increased competition for land and water, exacerbated by rapid population growth and massive migration flows and combined with a generalized lack of access to electricity in rural areas also puts even more pressure on woodland areas and forest resources. There is, therefore, an urgent need for actions that support and enable farmers to transition away from practices that further degrade resources and contribute to climate change to ones that are more sustainable, climate resilient and that help mitigate the impacts of climate change. The eleven countries in the GGW have collectively restored approximately 3.6 million ha of land within the GGW intervention zones⁹. Yet, to reach their Nationally Determined Contributions (NDCs) targets by 2030, nearly 20 million ha still need to be restored and sustainably managed through the use of effective climate adaptation and mitigation techniques combined with innovative and blended financial instruments such as climate insurance.
5. More than half of the population in these Sahelian countries (or 163 million people) depend mainly on fossil fuels for power generation, of which 83 percent live in rural areas. For instance, Niger and Burkina Faso depend by on fossil fuels to generate more than 80 percent of their electricity according to data from the International Energy Agency. This not only affects fragile ecosystems

¹ FAO and IFAD, 2019, United Nations Decade of Family Farming 2019-2028. The future of family farming in the context of the 2030 Agenda, Rome. Available from <http://www.fao.org/3/ca4778en/ca4778en.pdf>

² FAO, 2018, FAO's Work on Climate Change. United Nations Climate Change Conference. Available from <http://www.fao.org/3/CA2607EN/ca2607en.pdf>

³ USAID, 2017, Climate Change Risk Profile: West Africa Sahel. Available from <https://bit.ly/3g0hWM3>

⁴ The Great Green Wall is an African-led movement with an epic ambition to grow an 8,000-kilometre long and a 15-kilometre wide natural wonder of the world along the Sahel in eleven founding countries (Burkina Faso, Chad, Eritrea, Djibouti, Ethiopia, Mali, Mauritania, Niger, Nigeria, Senegal and Sudan). The Initiative has evolved into a comprehensive integrated ecosystem management approach that aims to restore 100 million ha of currently degraded land, sequester 250 million tons of CO₂ and create 10 million green jobs. By doing so, it will contribute to the implementation the Rio Conventions and the Sustainable Development Goals by 2030 across the entire width of the African continent.

⁵ Alec Crawford, 2015, Climate change and state fragility in the Sahel, Policy Brief no. 205 (June), FRIDE. Available from <https://www.iisd.org/system/files/publications/climate-change-and-state-fragility-in-the-Sahel-fride.pdf>

⁶ USAID, 2017.

⁷ USAID, 2017.

⁸ FAO, 2017, The impact of disasters on agriculture: Addressing the information gap. Available from <http://www.fao.org/3/a-i7279e.pdf>

⁹ UNCCD, 2020, The Great Green Wall Implementation Status and Way Ahead to 2030. Available from https://catalogue.unccd.int/1551_GGW_Report_ENG_Final_040920.pdf

(forests and farmland) negatively, but also limits the energy available to power water supply systems for irrigation, food processing and packaging, watering livestock, drinking water, laundry, bathing and other essential uses. The burden of gathering water and fuel for cooking falls mainly on women, as social and cultural norms dictate the specific activities that women and men can perform. These norms often restrict women's economic opportunities and raise the challenges they face in relation to caring for their health, education and generating income. Although the region is particularly endowed with high solar irradiance, the total installed solar PV capacity in the countries targeted by the proposed programme was only around 70 MW at the end of 2017, which is far below the national plans and NDC targets, which aim to have a solar energy capacity of 1,192 MW in place by 2030.

6. Climate change interacts with non-climatic drivers and stressors (political conflict, social, economic and more recently, pandemics) to exacerbate the vulnerability of agricultural systems and affect forestry and land use, particularly in semi-arid areas. This feeds the vicious cycle of poverty and vulnerability, food insecurity, migration and conflict in the region (political and the ones emerging between refugees, nomadic pastoralists and farmers), particularly in the COVID-19 and post-COVID-19 contexts. Growing evidence suggests that investing in anticipatory and early response actions at the government and community level significantly reduces the need for humanitarian assistance when a crisis hits. However, weather forecasts are often not available and even when they are, people have not been able to use them effectively to prepare and leverage resources to take action prior to a climate-related shock or disaster. Currently, the Sahel region has the lowest hydro-meteorological infrastructure capacity of all the global regions: its observation network density (number of stations per 10,000 km²) is as low as 1 on average. This limits the delivery of robust climate information and early warning services needed for policymaking, investment programming and resilience planning at national and local levels.
7. To address the challenges, risks and vulnerability that climate change poses to smallholder farming in a more comprehensive and integrated way, IFAD, in partnership with the African Development Bank and the World Food Programme, propose the "Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW)".
8. As the first proposal developed in the framework of the future GCF umbrella programme, the GGW, the objective of this programme is to build, strengthen and scale up the resilience and adaptive capacity of smallholder farmers and rural communities of seven Sahelian Least Developed Countries (LDCs) (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and The Gambia) to climate change using an integrated climate risk management approach. This approach combines climate risk preparedness with climate risk reduction and climate risk transfer. In relation to preparedness, the programme will address the need to strengthen the hydromet network and develop climate information and early warning systems that provide robust climate data to governments, smallholder farmers and other relevant stakeholders to enable them to make more informed decisions and adopt effective preventative and adaptive measures to reduce the risks and impacts of climate change and extreme weather events. This means adopting a forecast-based approach (FbA) to pre-plan early actions (adaptation/mitigation) in agriculture, forestry and land use – including renewable energy access and power generation at rural, community and government levels – based on credible forecasts, and fund and implement them before a climate shock strikes.
9. The said climate risk preparedness actions will be combined with climate risk reduction measures aimed at enabling farmers to adopt best climate adaptation and mitigation practices. Data from the strengthened climate information and early warning systems (CIEWS)¹⁰ will inform farmers' choices on the most effective and sustainable agricultural and resource management practices in their area's climate conditions. This will strengthen their resilience and reduce the deployment of unsustainable practices. The CIEWS systems will also provide essential information for the development of the agricultural insurance schemes, which are a cost-efficient and more effective way of offering a faster response to disaster and losses of crops and livestock and shielding smallholder farmers from climate events by transferring and distributing climate risk among stakeholders in the agricultural insurance market. Although the agricultural insurance industry is still in an incipient phase in some countries, experiences in the region have demonstrated that combining climate risk transfer (micro and macro insurance) with climate preparedness and climate risk reduction practices is much more effective.
10. The proposed programme will further contribute to reducing greenhouse gas emissions from energy use within agricultural value chains through the adoption of renewable energy technologies (RETs) for water mobilization and to power processing and packaging, among other activities in the value chains. RETs enable farmers to reduce deforestation, desertification and smoke from the use of fuelwood, while improving health, education and other off-farm activities after daylight. Combined with sustainable forest management and land use, the programme will support the efforts of the countries of the Sahel region to transition towards low-emission and climate-resilient development pathways in agriculture, as expressed in their Nationally Determined Contributions (NDCs), in order to meet the following targets of unconditional emission reductions by 2030: Burkina Faso, 7,808.3 GgCO₂e; Chad, 23,449.07 GgCO₂e; Mali, 33,628,772 KT-eq. CO₂; Mauritania, GgCO₂e, and Niger and Senegal, 3.5 percent and 5 percent below business as usual levels, respectively. The Gambia pledged to a conditional reduction of 1750,4 GgCO₂e.
11. IFAD will play a catalytic role through its investment (grants) at the country and regional level to increase climate resilience in seven countries in the GGW. The programme will contribute to a paradigm shift toward climate resilient and low-emission agriculture through the mobilisation at scale of climate finance to build the agricultural insurance industry while strengthening existing adaptation measures and risk preparedness services and products. The regional programme is organized into three main mutually reinforcing components:

¹⁰ Early warning systems are integrated systems that involve hazard monitoring, forecasting and prediction; disaster risk assessment; communication and preparedness activities and processes that enable individuals, communities, governments, businesses and others to take timely action to reduce disaster risks before climate events occur.

12. **Component 1. Climate risk preparedness:** This component will support the expansion and upgrade of existing early warning systems and hydromet observation networks and capacity-building to enhance data collection, interpretation, understanding and dissemination of climate data. The data will inform forecast-based action programmes, namely those for the development of the micro and macro insurance industry (climate models and agricultural insurance products/services), but also the selection of the most appropriate adaptation practices/technologies and mitigation measures (forestry and land use, access to renewable energy) to respond to climate variability (cropping calendar, best timing for marketing and processing; choice of the most suitable agricultural practices, climate resilient varieties and technologies); and decision-making, planning and investments of the private sector, government (local and national) and local rural communities and smallholder farmers.
13. **Component 2. Climate risk reduction (adaptation and mitigation):** This component aims to strengthen climate change adaptation capacity and boost climate resilient and low emission investments in smallholder agriculture value chains and food systems through a better adoption and implementation of climate adaptation and mitigation best practices in forestry, land use and renewable energy access and solutions and the diversification of livelihoods. This will be achieved by building on countries' risk preparedness capacity (component 1) using forecast-based early action (FbA) and climate risk transfers (component 3) that provide forecast-based financing, which will in turn support the adoption and implementation of the best adaptation and mitigation measures per country and targeted areas.
14. **Component 3. Climate risk transfer (micro and sovereign risk transfer mechanism):** This component will support countries and smallholder farmers in addressing multi-hazards (droughts, heatwaves, floods, diseases, locusts and other pests) to agriculture and livestock value chains. Under this component, residual risks of climate change on smallholder farmers will be transferred to national and international insurance markets with timely compensation for weather-related shocks and multi-hazards so as to prevent farmers from resorting to negative coping strategies (selling of animals and assets, migration, competition over resources and conflicts) in the event of climate disasters. Enhanced hydro-meteorological information and standard operating procedures linking hydromet information to early adaptation response (cropping calendars planning, choice of adaptation and mitigation measures) will support public, private sector (insurers and reinsurers, microfinance institutions, banks) and businesses investment decisions on climate risk transfer services and products for enhanced country climate risks profiles. Reliable and robust climate information will ultimately support agricultural policy and planning, investment programming and resilience planning at national and local levels.
15. The main targeted products are key staple crops (millet, maize, sorghum and groundnuts), livestock (dairy and beef, sheep, goats and chicken) and non-timber forest products (NTFPs, forestry). The programme will directly benefit 817,922 households and indirectly over 5,332,754 beneficiaries (see table 6 for disaggregated numbers) of which 50 percent will be women and 45 percent, men. It will focus particularly on women and youth, as they are the most vulnerable people to climate change. It will build on: i) the extensive experience of the IFAD Adaptation for Smallholder Agriculture Programme (ASAP); ii) AfDB's Africa Disaster Risks Financing Programme (ADRFi), which promotes disaster risk financing on the continent and assisting countries to access both capacity-building and disaster risk transfer solutions as part of their long-term resilience building efforts; iii) WFP and Oxfam America's R4 Rural Resilience Initiative (R4), which enables the poorest farmers to access weather index insurance, and iv) other partners' experience, such as Princeton Climate Analytics, CILSS (AGRHYMET), African Centre of Meteorological Applications for Development (ACMAD) and Climate Outlook Forum, in co-developing climate information services for programme development, climate risk assessments, early warning systems on hazards and training and capacity-building to improve national climate resilience. The programme complements the IFAD regional G5+1 Sahel programme and will build on IFAD baseline investments and other initiatives, such as the Global Facility for Disaster Reduction and Recovery (GFDRR) and similar multilateral and bilateral sources, in the seven countries to strengthen the resilience of rural communities and agricultural production systems in the targeted areas.
16. The National Designated Authorities (NDA) of the seven selected countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, and The Gambia) have issued a no-objection letter and the programme has been included in their respective GCF Country Work Programmes. The total programme is expected to result in the reduction or avoidance of approximately 21 446 499tCO₂e over the life of the programme in the seven selected countries (10.4 percent of the GGW emission reduction target) and these countries' Intended Nationally Determined Contributions (INDCs). By restoring approximately 340,000 hectares of land and forest, this programme will contribute to the achievement of the objectives of the Great Green Wall (GGW). The GGW initiative promotes an integrated approach to improving climate resilience in the 11 Great Green Wall countries by restoring 100 million ha of degraded land, sequestering the equivalent of 250 million tons of CO₂ and the creation of 10 million green jobs by 2030.

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate context (max. 1000 words, approximately 2 pages)

17. Stretching from the Atlantic Ocean to the Horn of Africa, the Sahel region is one of the world's largest semi-arid and arid areas. It is wedged between the Sudanian Savana to the south and the Sahara Desert to the north, which is expanding southward into the Sahel at a rate of 1–10 km per year¹¹, depending on the country. One of the poorest and most environmentally degraded regions in the world, it is considered one of the most vulnerable to climate change, as the already harsh living and growing conditions will be worsened by climate change, namely the rise in temperature, rainfall variability and extreme weather events.
18. The Sahel is disproportionately affected by the impacts of climate change variability (characterized by inter-annual and longer-term changes in rainfall patterns, extreme temperatures, recurring droughts, floods including riverine floods, dust storms, and heatwaves among others) because of its dependence on the agricultural sector. Reliance on rain-fed farming and pastoralism for income and subsistence mean that livelihoods and food security are strongly affected by climate variability and change. According to WFP, during the lean season (June to August), more than 21 million people across West Africa will struggle to feed themselves as a result of recurrent food crises and conflict in the region. To this, one must add another 20 million people due to the socioeconomic impacts of the COVID-19 pandemic, doubling the number of food insecure to 43 million.¹²
19. With a population that is expected to double by 2040¹³, the countries of the Sahel region are committed to achieving the goals of the Paris Climate Agreement, as expressed in their INDCs (conditional and unconditional), by strengthening the mitigation and adaptation capacity of the agricultural sector.

Table 1: Countries INDCs in the agricultural sector, land use and forestry and energy by 2030

Sectors	Emissions per sector from the INDCs	Burkina (GgCO ₂ e)	Chad (GgCO ₂ e)	Mali (KT-eq. CO ₂)	Mauritania (GgCO ₂ e)	Niger	Senegal	The Gambia (GgCO ₂ e)
Agriculture/ livestock	Unconditional:	7,236.3	38,215.70	-	-	-	0.19%	-
	Conditional:	10,560	30,398.83	29%	-20,431.5	-	0.63%	707.0
Land use and forestry	Unconditional:	-	-17,387.48	-	-	-	-	-
	Conditional:	-	-24,342.48	21%	-	-	-	-
Energy	Unconditional:	572.0	2,165.00	-	-	-	6%	-
	Conditional:	3,130.00	1,840.25	31%	-12,711.1	-	31%	629.6
Waste	Unconditional:	-	455.85	-	-	-	13%	-
	Conditional:	76.30	402.85	-	-386.1	-	31%	413.7
Subtotal unconditional		7,808.3 (6.6%)	23,449.07 (18.2%)	-33,628,772	12%88% below business as usual level by 2030	3.5%88% below business as usual level by 2030	5%88% below business as usual level by 2030	-
Subtotal conditional		13,766.30 (11.6%)	8,229.45 (71%)	-84,937,087	88% below business as usual level by 2030	34.6%88% below business as usual level by 2030	21%88% below business as usual level by 2030	-

Source: UNFCCC, 2020.

20. The targeted Sahelian countries and regions have a long history of confronting serious crises. Key human-influenced drivers of climate change include rising temperatures caused by global GHG emissions and changes in land use, namely deforestation (clearing land for agriculture, extended periods of shifting cultivation, mono-cropping, over exploitation of the already vulnerable land and forestscapes and cutting trees for firewood and as an alternative source of income) and overgrazing of pastureland. These combine to contribute to alterations in rainfall patterns and increase the frequency of

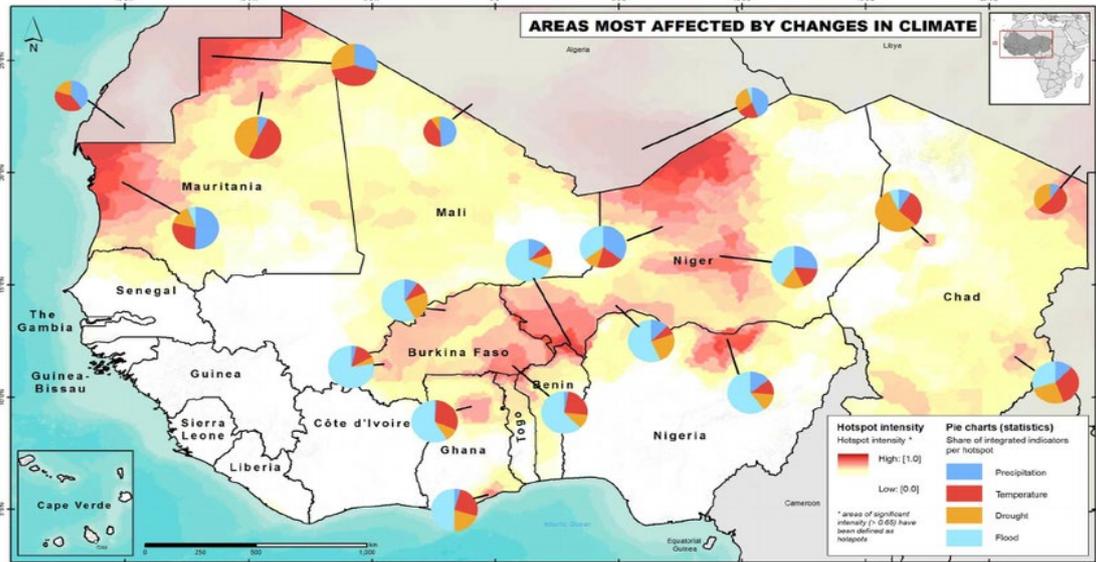
¹¹ USAID, 2017.

¹² UN News, Food insecurity in West Africa could leave 43 million at risk as coronavirus hits, 5 May 2020. Available from <https://bit.ly/3ftJ29A>.

¹³ World Population Prospects 2019. Available from https://population.un.org/wpp/Publications/Files/WPP2019_DataBooklet.pdf

extreme weather events (floods including riverine floods, wind and dust storms, prolonged dry spells or droughts), resulting in loss of assets (infrastructure, productive land livestock, etc), crop losses, lower productivity levels and even famine and desertification. They also raise the risk of locust invasions, water- and vector-borne disease, water scarcity in some areas, as well as conflict and migration. All these climatic and non-climatic factors contribute to growing food insecurity and poverty in the region.

Figure 1: Areas in the Sahel affected the most by climate change



Source: Hagenlocher, Michael; Lang, Stefan, and Hölbling, Daniel. 2012. Identifying and evaluating hotspots of climate-related indicators in the Sahel making use of object-based regionalization techniques.

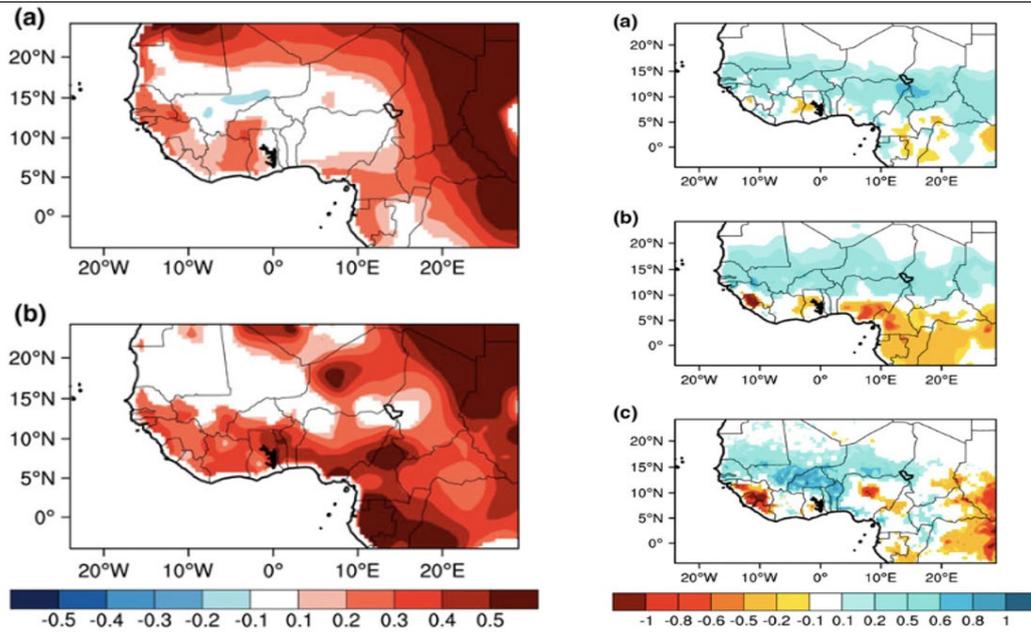
21. Rising temperatures: As greenhouse gas emissions warm the Earth's surface around the world, the impacts of this human-influenced driver of climate change are already clearly visible in the Sahel. Temperatures across the Sahel have increased nearly 1°C since 1970, at a rate twice the global average¹⁴. In West Africa and the Sahel, 2018 was the seventh warmest year on record. Historical data shows a rate of increase in temperature of 2.27°C (1950-2018) and 3.88°C (1990-2018) per century¹⁵. The most intense increase (0.023°C/year) is in the Inner Delta-Middle Niger sub-basin. This rate translates into a change in the average temperature of 0.85°C between 1970 and 2006 or, using the trend since 1901 as a basis, an increase of 1.91°C. However, in some countries, such as Senegal, it has increased only 0.2-0.5°C per decade¹⁶. Indeed, a closer analysis of data on temperature reveals variations in different parts of the Sahel: some parts of the northern Sahel (namely southern Mauritania, Mali, Niger and northern Burkina Faso), for instance, show little warming over this period. The overall warming has been accompanied by an increase in hot extremes, making the region a hotspot for climate change.

Figure 2. Linear trends in temperature (°C per decade) (left) and in precipitation (mm/day per decade) (right) during the rainy season (May – September) in West Africa from 1980-2010 based on multi-model CORDEX simulations.

¹⁴ Crawford, 2015.

¹⁵ ECA, 2019, Socioeconomic Profile of West Africa, p. 17. Available from <https://bit.ly/361rXRn>

¹⁶ Mouhamadou Bamba Sylla and others, 2016, "Climate Change over West Africa: Recent Trends and Future Projections", in Joseph A. Yaro and Jan Hesselberg (eds.), Adaptation to Climate Change and Variability in Rural West Africa (pp.25-40). Available from https://www.researchgate.net/publication/301338612_Climate_Change_over_West_Africa_Recent_Trends_and_Future_Projections



Source: Sylla and others, 2016.

22. Temperature increases for the region are projected to be 1.5 times higher than the rest of the world¹⁷. The IPCC expects temperatures in the region to increase nearly 1°C over the next 20 years, 2.1°C by 2065 and 4.0°C by the end of the century¹⁸. Disaggregated spatially, the greatest warming estimates (~4°C) are likely to occur over land and in the western Sahel in particular, while the southern coastal areas should experience a temperature increase of 3°C. Warming trends, therefore, are expected to be highest for the Senegal, Gambia, western Niger and Upper Volta River basins. While COVID-19 has helped cut global CO₂ emissions in a short period of time, model-based predictions of future greenhouse gas-induced climate change for the continent clearly suggest that this warming will continue and, in most scenarios, accelerate. Although it is not entirely clear how the rising temperatures will influence rainfall, it is clear that they will increase evapotranspiration rates, thus affecting vulnerable ecosystems.
23. **Precipitation levels:** Seasonal rainfall variability in the Sahel can be explained as the response to anomalies in the atmospheric circulation that are planetary or regional in scale and that are mostly driven from afar - by changes in the oceans' surface temperature, as the direct effect of increasing anthropogenic gas emissions or by a combination of both¹⁹. Sahel rainfall is dynamically linked to the global Hadley cell and to regional monsoon circulation. From July to September, precipitation in the Sahel shifts northward and is correlated with both Pacific El Niño/La Niña sea surface temperature (SST) anomalies and the Atlantic dipole²⁰. The maps in figure 3 below show ENSO impacts on rainfall in the Sahel and compares the averages of three-month rainfall periods during El Niño and La Niña seasons with those of neutral seasons.

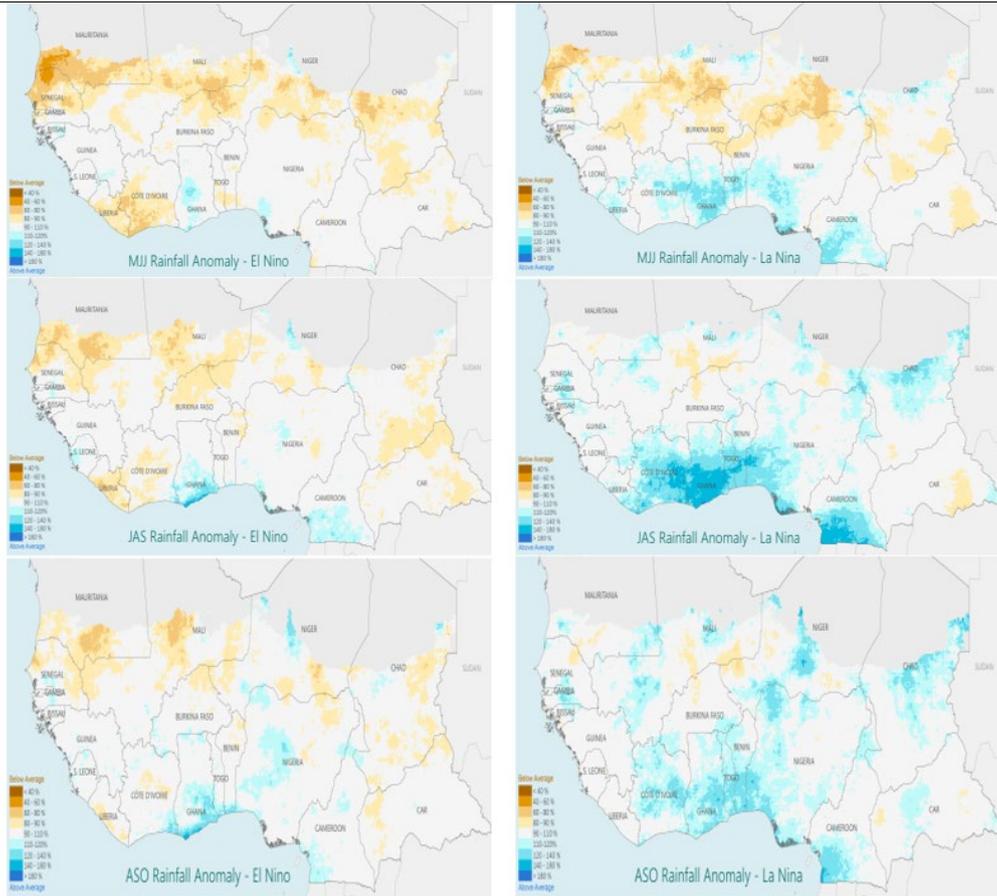
Figure 3: El Niño/Niña impact on rainfall.

¹⁷ USAID, 2017.

¹⁸ Crawford, 2015.

¹⁹ Michela Biasutti, 2019, "Rainfall trends in the African Sahel: Characteristics, processes, and causes", Wiley Interdisciplinary Reviews Climate Change. Jul-Aug; 10(4): e591. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6617823/>

²⁰ Bette L. Otto-Bliesner, 1999, "El Niño/La Niña and Sahel precipitation during the Middle Holocene", Geophysical Research letters, , vol. 26, issue 1, January. Available from <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/1998GL900236>

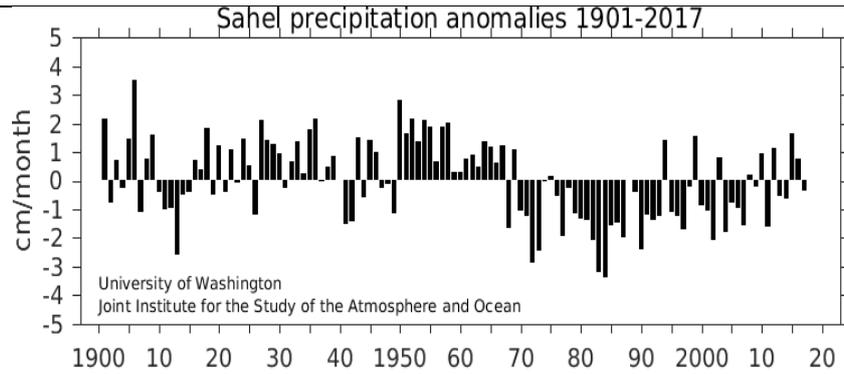


Note: All calculations have been done on three-month periods: MJJ = May to July (start of season); ASO = August to October (second part of the season); JAS = July to September - main rainfall months (core of the season). A negative (positive) anomaly for the El Niño (or La Niña) mean that the parameters take on lower average values in El Niño (or La Niña) affected seasons than in neutral seasons.

24. **Precipitation trends in the past:** Data from the first half of the 20th century shows a predominance of anomalously wet years and decades, followed by a decline in seasonal rainfall totals during the second half, with overall low rainfall decades punctuated by devastating short-term droughts such as those of 1972 and 1983–1984 (see figure 4 below). Prolonged drought conditions from the mid-1960s to the mid-1980s, which reached a peak in 1972 and 1984 with a 30 percent decrease in rainfall, caught the attention of the world, as they caused widespread famine, wiped out livestock and crops and devastated already fragile ecosystems. Initially attributed to human mismanagement of land resources (deforestation, overgrazing and continuous cropping), studies now strongly indicate that changes in ocean temperatures (cold phase of the Atlantic Multidecadal Oscillation climate cycle, as well as the effects of Pacific Decadal Oscillation) and air pollution from human activity played a significant role in the drying of the Sahel²¹.

Figure 4: Sahel precipitation anomalies 1901-2017.

²¹ USAID, 2017.



June through October averages over 20°-10°N, 20°W-10°E. 1900-2017 climatology
Deutscher Wetterdienst Global Precipitation Climatology Centre data

Source: Joint Institute for the Study of the Atmosphere and Ocean, University of Washington.

25. Since the 1980s, rainfall has not returned to pre-1960s levels and drought has become recurrent. Countries are still recovering from the food crises caused by severe droughts in 2005, 2008, 2010, 2011-2012 and the one currently devastating the central Sahel region²². Crop productivity decreased by 10-25 percent over the last decades in Burkina Faso, Chad, Mali and Niger after major droughts, and staple crop yields by up to 50 percent in Burkina Faso, Chad and Niger. This led the prices of staple crops to increase by up to 50 percent compared to the same period in the previous year²³. According to Masih and others, despite the difficulties in predicting drought, the available evidence from the past clearly shows that the African continent is likely to face extreme and widespread drought in future²⁴.
26. Recurrent droughts together with unsustainable farming practices (slash and burn agriculture, deforestation, overgrazing, etc.) and inefficient water use are all contributing to further land degradation and desertification. The dunes of the Sahara are advancing southwards at varying rates – 6 km/year in Mauritania and 7 km/year in Mali – for instance²⁵. Farmers are often forced to migrate in search of arable land and water, thus increasing competition for natural resources.
27. Drought is not the only precipitation-related climate hazard that the region faces. Countries in the Sahel are also experiencing heavy rainfall and major floods with greater frequency. For instance, Burkina Faso was struck by severe floods in 2007, 2009, 2010, 2012, 2015 and 2016 during the wet season. The July-August 2016 floods affected 27,000 people, literally washed away livestock and crops, destroyed roads and dikes, flooded lowlands and polluted surface water²⁶. Another example is the 2010 flood in Chad which affected 150,000 people in 19 out of 20 of the country's regions²⁷. There is also significant risk of flooding for The Gambia (both river and coastal) and Senegal. Floods cause not only immediately visible damage to crops, livestock and infrastructure, but also less visible harm: they drain nutrients from already nutrient-poor soil in the region and reduce aquifer recharge rates, especially when alternated with periods of drought. Floods cause millions of dollars in damages: according to UNISDR data from 2015, the annual average loss due to floods for Burkina Faso is US\$16.6 million²⁸.
28. An analysis of historical observations for the average precipitation for the month of August over the 1990-2000 period in the Sahel suggests the presence of at least three climate hotspots in the Sahel, of which two are in the West Sahel: one along the most western part of the region (Senegal and Mauritania) and the second between Mali and Niger. These climate hotspots experienced a decline in rainfall of up to 100% during the 10 most severe droughts of the 20th century²⁹. The report included observations of erratic rainfall, the shift of isohyets to the south (see figure 5), increased occurrences of dry spells and severe multi-year droughts, such as the droughts in 1972-1990 and the more recent droughts in the last 10 years.

Figure 5: Sahel climate hotspots

²² Alex Bastien and others, 2018, Rapport d'Étude no. 6, Prospective Sahel, Observatoire Défense et Climat et DGRIS. Available from https://www.iris-france.org/wp-content/uploads/2018/11/RE6_Prospective-Sahel_V1.pdf

²³ Agrhymet, 2017.

²⁴ Ilyas Masih and others, 2014, "A review of droughts in the African continent: a geospatial and long-term perspective", Hydrology and Earth System Sciences Discussions, vol. 11, no. 3 (February). Available from https://www.researchgate.net/publication/263003668_A_review_of_droughts_in_the_African_continent_a_geospatial_and_long-term_perspective

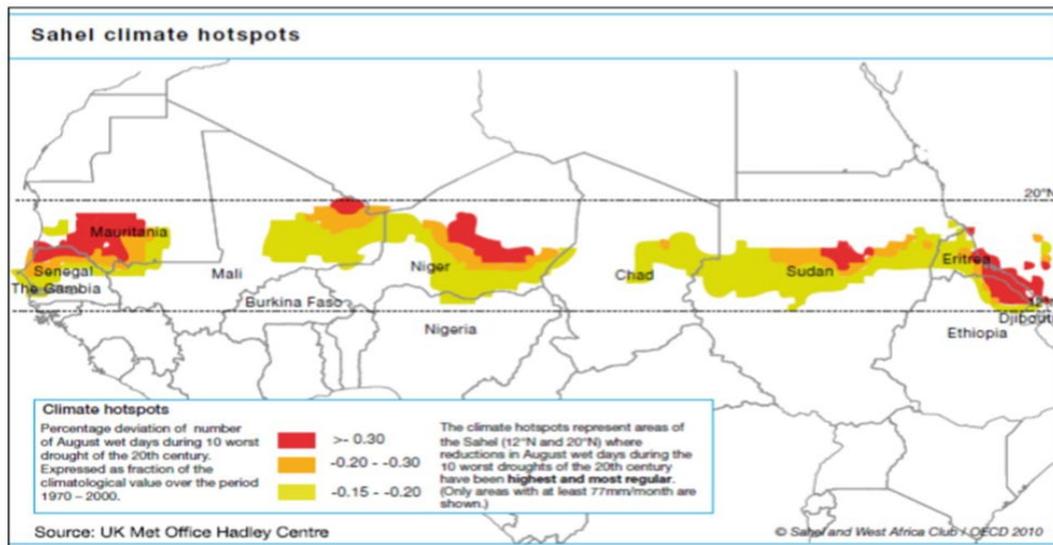
²⁵ Bastien, 2018.

²⁶ USAID, 2017, Climate Risks in Food For Peace Geographies: Burkina Faso, p. 11. Available from <https://www.climatelinks.org/resources/climate-risks-food-peace-geographies-burkina-faso>

²⁷ Bastien, 2018.

²⁸ UNISDR, Global Assessment Report on Disaster Risk Reduction, Country Risk Profile – Burkina Faso, 2015. Available from <https://www.preventionweb.net/english/hyogo/gar/2015/en/home/data.php?iso=BFA>

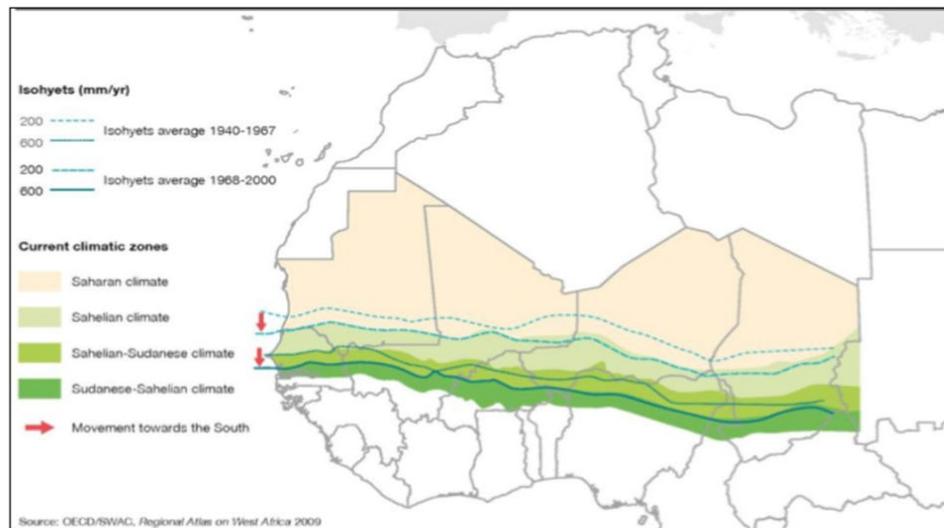
²⁹ West Sahel countries report to the UNFCCC, 2015.



Source: P. Heinrigs (2010) *Security Implications of Climate Change in the Sahel Region: Policy considerations*.

OECD Sahel and West Africa Club Secretariat. Available at <https://www.oecd.org/swac/publications/47234320.pdf>

Figure 6: Shift of climate zones to the south.



Source: OECD/SWAC (2014) *An Atlas of the Sahara-Sahel: Geography, Economics and Security*. West African Studies. OECD Publishing.

Available at https://read.oecd-ilibrary.org/agriculture-and-food/an-atlas-of-the-sahara-sahel_9789264222359-en#page36

29. Despite a partial recovery in rainfall levels since the 1980s, there is evidence of changes in the characteristics of the seasonal cycle of rainfall³⁰. There has been an increased number of days of rain with wetting concentrated in the late rainy season, but also more intense and intermittent, higher inter-annual variability, and a delayed onset and an early retreat of the monsoon season,³¹ leading to earlier dry seasons and shorter rainy seasons. Sylla and others (2016) confirm this trend: 'in a "business as usual" world, most countries in West Africa will have to cope with shorter rainy seasons, generalized torrid, arid and semi-arid conditions, longer dry spells and more intense extreme precipitations'. These changes and the variability have devastating effects on agriculture and livelihoods, as smallholder, subsistence farmers struggle to adapt their crop calendars and practices in a context marked by unpredictability and more adverse growing conditions..
30. Precipitation projections for the Sahel in the CMIP3 (SRES A2 and A1B emission scenarios) and CMIP5 (RCP4.5 and RCP8.5 scenarios) archives show inter-model variation in both the amplitude and direction of change that is partially attributed

³⁰ Biasutti, 2019.

³¹ Mouhamadou Bamba Sylla and others, 2016.

to the inability of GCMs to resolve convective rainfall. However, many CMIP5 models indicate a wetter core rainfall season with a small delay to rainy season by the end of the 21st century.³²

Projections from regional climate models downscale global climate model projections and can provide more refined regional information especially for extremes. They indicate a similar overall range of projected change. The CORDEX RCM projections show that although most of West Africa will see little change in precipitation, a significant decrease of 5-40 percent will prevail in the West Sahel over the 21st century and extends eastwards to Senegal, southern Mauritania and Mali as the forcing increases from RCP4.5 to RCP8.5 and the time period shifts from 2036–2065 to 2071–2100³³ and northern Guinea (Sylla and others, 2016a). Perhaps more importantly, models project a slight lengthening of the maximum dry spell length into the rainy season by mid-century, and a significant lengthening by the end of the 21st century across much of the region (figure 7), thus partly confirming the trend identified above. This is expected to be accompanied by an increase in intensity of the most extreme precipitation events across the region, with increases of 5-10 percent by mid-century and more than 40 percent by the end of the century in many countries (figure 8). The shortening of the wet season is also expected to be more pronounced across the region.

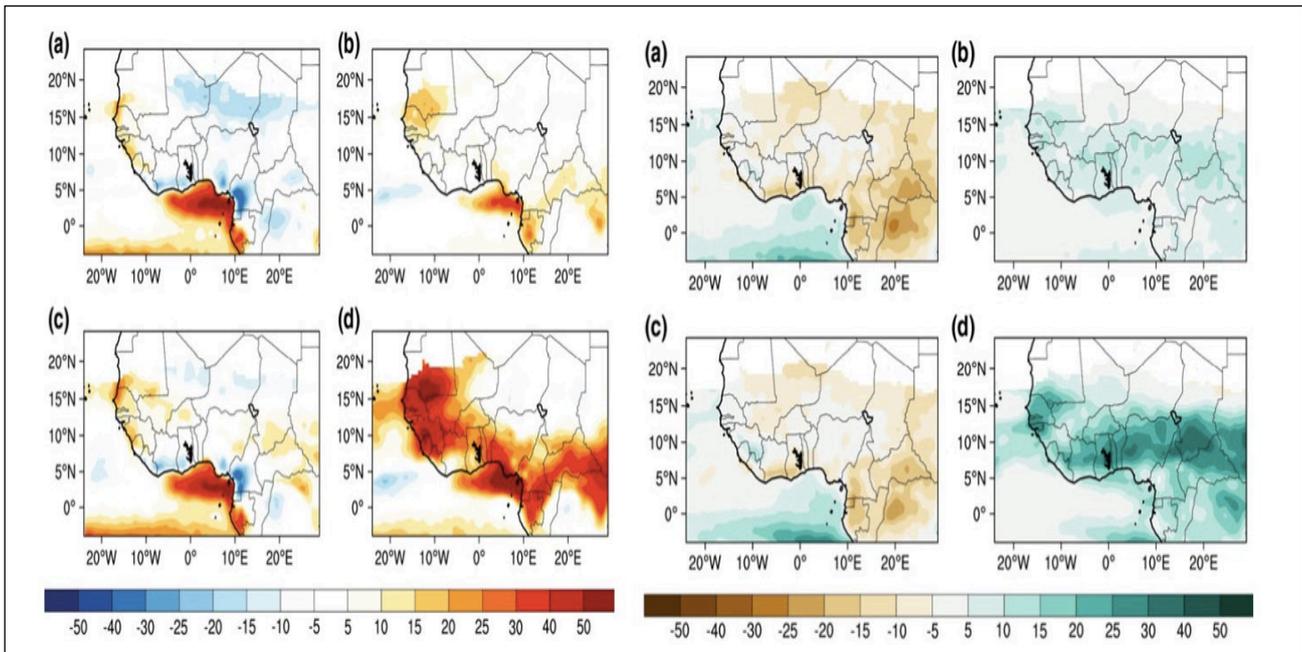


Figure 7 (left). Changes in seasonal (May–September) mean maximum dry spell length (DSL) based on multimodel ensemble of CORDEX simulations for: a) RCP4.5 (2036/2065); b) RCP8.5 (2036/2065); c) RCP4.5 (2071/2100), and d) RCP8.5 (2071/2100).

Source: Sylla and others, 2016.

Figure 8 (right). Changes in seasonal (May–September) mean intensity of precipitation events above the 95th Percentile (95Ptot) based on multimodal ensemble of CORDEX simulations for: a) RCP4.5 (2036/2065); b) RCP8.5 (2036/2065); c) RCP4.5 (2071/2100), and d) RCP8.5 (2071/2100).

Source: Sylla and others, 2016.

31. In the Sahel region, precipitation projections face greater uncertainties than temperature. Overall, the main picture that emerges is consistent with the most recent publications on the impacts of climate change in the Sahel region. Three main areas are to be distinguished: The western part of the Sahel (The Gambia, Senegal and western Mali) could face significant decrease in the depth of precipitation in the rain season ranging from -10 to 20 percent on average – particularly for the northern part of Senegal. The second zone starts from eastern Mali, Burkina Faso, Niger and Chad. On average, in this zone, climate change could lead to a potential increase in mean precipitation in both dry and rain seasons. However, this increase mean precipitation in the central Sahel is projected to be accompanied by: i) a significant increase in the number of days with extreme wet precipitation above 99th percentile of the historical distribution of daily precipitation and ii) more frequent days of dry spells during the rain seasons. This is particularly the case of Chad, which is projected to benefit from an increase in mean precipitation in the rain season of up to 20 percent compared to historical precipitation within the same season, but

³² IPCC, 2014, “Africa”, in Barros, Vicente R. and others (eds.), Climate Change 2014: Impacts, Adaptation and Vulnerability. Part B: Regional Aspects, Cambridge University Press, 1199-1266.

³³ Mouhamadou Bamba Sylla and others, 2016.

with an increase by almost 1 day in unprecedented extreme wet precipitation event and up to 4 days in the duration of dry spells also in the rain season.

Impacts of Climate Change and Variability

32. **Social and economic impacts:** Climate vulnerability is the result of the complex interplay between the short and longer-term trends of climate change (e.g. rising temperatures, drought, erratic rainfall and heatwaves) and the socioeconomic and political factors that enable or hinder effective adaptation. The West African Sahel is a region with a rapidly growing population and high levels of poverty, food insecurity, gender inequality, illiteracy, conflict and political instability. Of the West Africa Sahel countries participating in this project, three (Burkina Faso, Chad and Niger) rank in the bottom five countries of the global Human Development Index (HDI), two (Mali and The Gambia) in the bottom 10 percent and two (Mauritania and Senegal) in the bottom 20 percent. Within Africa, four of the West Sahelian countries (Chad, Mali, Mauritania and Niger) are in bottom 10 (of 52) African countries in the Africa Gender Equality Index (AGEI), with only Burkina Faso and Nigeria ranking in the top 50 percent. The nutrition situation is very critical, with about 3.4 million children under the age of five expected to be affected by acute malnutrition. Poor households are particularly vulnerable given their dependence on natural resources for their livelihood (food security, nutrition, income and fuel for cooking). The resilience of the poor has been significantly compromised by both recurrent food crises and conflict, especially on communities hosting refugees. Within this, women and youth are disproportionately affected, indicating a large-scale problem given that the region is also one of the most youthful of the world, with 64.5 percent of young people aged 25 and under³⁴. Population growth and migration (political and climate refugees) increase pressure and demand on already limited resources in the region. Moreover, new challenges to food security are emerging as a result of strong urbanization trends with high demographics in the region. The instability of the West Sahel is reflected in the fragile state index ranking of its countries.
33. **Agriculture:** The agricultural sector across the seven Sahelian countries is characterized by important structural issues such as lack of technology and capacity³⁵ and more importantly, a heavy dependence on rainwater, which is limited to a short wet season in many countries, making it extremely vulnerable to climate variability and change. This is no minor detail for these countries, as agriculture is a major sector in their economies. It contributes 40 percent to the combined regional GDP, employs roughly 70 percent of the labour force (except Mauritania, where it only employs 52 percent) and for the vast majority of the population, it is the main source of food and income. Rising temperatures, shorter rainy periods and more frequent climate events (floods and droughts) are expected to significantly reduce crop yields and productivity levels and increase the risk of disease, pests and damage from heavy rainfall and drought. Temperature increases higher than 2°C are projected to decrease millet and sorghum yields by 15-25 percent by 2080³⁶. Crop models project similar decreases in groundnut yields (5-25 percent), as the crop is sensitive to both rainfall variability and high temperatures; this will have crippling effects on farmers in Burkina Faso, Mali, Niger, Senegal and The Gambia, where it is a key staple.³⁷ In Mali and The Gambia, rice production are also at risk, as they will be negatively affected by the depletion of surface water. UNEP studies predict that by 2100, Chad and Niger could lose their entire rain-fed agricultural production and cereal harvests are projected to decrease by 30 percent³⁸. While more current estimates of changes in yield across West Africa vary, there is general agreement that yields could fall by 41 percent if temperatures increase by more than 1.5°C (Aghrymet, 2018). Smallholder families, which account for the majority of farmers in the region, are already struggling to cope with the impacts of climate variability on the growing season, the cropping calendar and harvests, as they lack access to climate data, information on more sustainable practices and resources in general. Furthermore, damage from climate events to road and infrastructure cause disruptions in access to markets, farming inputs and other essential services. As these countries have seen in the recurrent food crises in the past ten years, these negative impacts on crops increase food prices, which, in turn, fuels food insecurity and immigration.
34. Multi hazard analyses conducted on each of the seven countries for the RCP4.5 and RCP8.5 scenarios produce heterogeneous results for the different locations in the Sahel. These variations are associated with multi hazard events (heat waves, extreme rain events and dry spells) which affect crop productivity levels. Analyses were carried out for areas under irrigation around the river basin (Senegal River, Gambia River, Lake Chad, Niger River and Volta River) and without irrigation and under increases of 0.1 to 0.5°C in the regions per country. The projected impacts on crop yield productivity, summarized in the appendix attached, indicate decreases of 5 percent for irrigated areas and 10 percent for rain-fed fields, even when the most suitable crops are grown. A recent study by EXFAM published in 2017 found that one in six trees in the region has died since the 1950s and a fifth of all species has disappeared locally because of rising temperatures and lower rainfall linked to climate change. At some sites in the Sahel, the study found that average temperatures rose by 0.8 degrees Celsius and rainfall decreased by 48 percent. Trees have shifted southward towards wetter areas. A specific Annex 24 showing the results of the analysis on hazards and their impacts on yield productivity is attached.

³⁴ WCARO, UNFPA, 2015, Transforming and Uplifting Lives: One Region One Mission. Available from <https://wcaro.unfpa.org/sites/default/files/pub-pdf/UNFPA%20Youth%20Booklet-EN-LR2.pdf>

³⁵ A full 65 percent of land in the Sahel is tilled, ploughed and weeded manually, resulting in low farm yields. See: World Bank, 2019, The Market Opportunity for Productive Use Leveraging Solar Energy (PULSE) in Sub-Saharan Africa, IFC. Available from <https://www.lightingglobal.org/wp-content/uploads/2019/09/PULSE-Report.pdf>

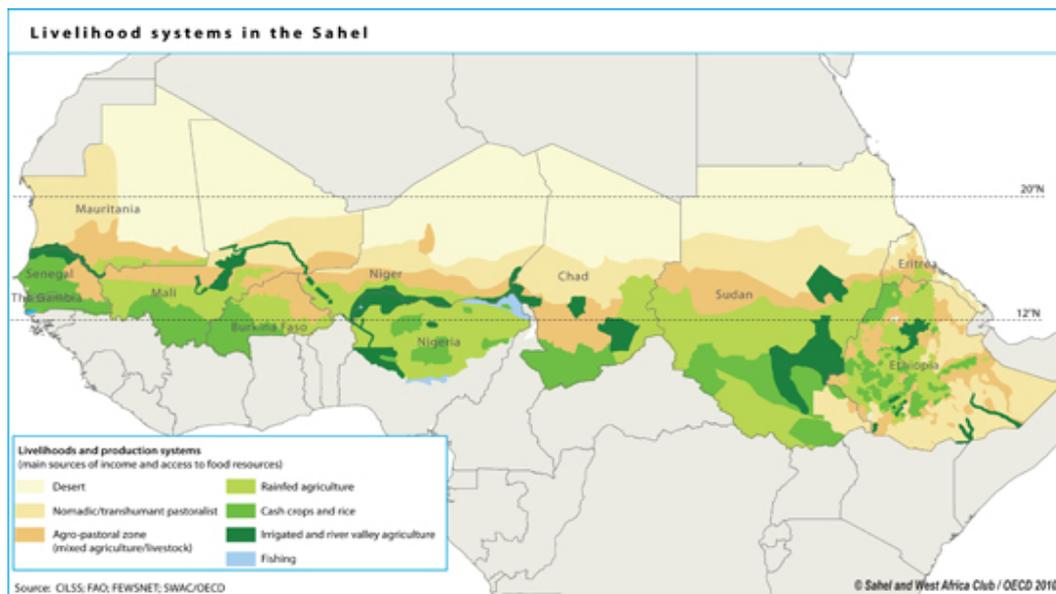
³⁶ USAID, 20107, West Africa Sahel.

³⁷ USAID, 2017, Climate Change Risk Profile – Senegal. Available from <https://bit.ly/2HwNWpKSenegal>

³⁸ USAID, 2017, West Africa Sahel.

35. **Livestock production:** The Sahel is one of the continent's most prominent livestock rearing regions, and climate change threatens sector productivity and traditional herd-migration routes through environmental constraints, including water scarcity and extreme weather events. Goat, camel, sheep and cattle herding is an integral part of Sahelian livelihoods (e.g., for employment, meat and milk production, a source of credit, savings and dowry payments). Livestock herding contributes up to 10-15 percent of GDP in Burkina Faso, Chad, Mali, and Niger, and an even larger share in Mauritania, where 50 percent of the population is pastoralist. Climate change threatens livestock production by affecting forage and fodder production, water availability and livestock productivity (e.g. decreased milk production, fertility, fitness, longevity and reduced calving rates). Historically, pastoralists maximized productivity by migrating herds south during the dry season (October to June) and north during the wet season, thereby exploiting grazing and water imbalances. However, erratic rainfall and ongoing drought have forced pastoralists to alter traditional migratory corridors in search of new seasonal watering holes and rangelands, leading to conflicts. While farmers and pastoralists historically worked together effectively (with pastoralists benefiting from grazing of crop residue and farmers benefitting from manure droppings), growing competition and conflict is now an issue of concern between the Sahel's farming and pastoralist communities as land degradation and competition over water and land resources (grazing versus crop cultivation) increases. In some countries, migration is also contributing significantly to competition: Malian refugees have three times more livestock than locals, increasing the likelihood of competition over land and water resources³⁹. Climate change acts as a threat multiplier, as it amplifies pre-existing vulnerabilities such as food insecurity and political instability.

Figure 9: Livelihood systems in the Sahel



36. **Fisheries:** An important source of livelihood and protein in the region, fisheries are already under stress from overfishing and habitat degradation. Climate change will add to this stress, as the rise in temperatures, rainfall variability and the frequency of severe weather events threaten river and coastal ecosystems. There is also a risk of rivers being affected by lower water levels, which negatively impacts fish migration habits and their access to preferred spawning grounds. Furthermore, decreased water quality and dissolved oxygen content will lower reproduction rates and health. Fishing communities in coastal areas will also be affected by climate change impacts, such as ocean acidification and sea level rise (SLR). As The Gambia is primarily low-lying, it will be strongly affected by SLR, which is projected to inundate 8 percent of the country's land, including 61 percent of mangroves, 33 percent of swamps and 20 percent of its rice growing areas⁴⁰. It will also have major impacts in Senegal, as a large portion of its population and industries have been established in coastal areas, not to mention the importance of fisheries to the country: the sector employs 17 percent of the workforce and accounts for 2.5 percent of GDP. Along the coast, saltwater intrusion into coastal aquifers and arable land is already a problem. Ocean acidification will result in significant loss of income and livelihoods: 50 percent decline in related employment by 2050 in Senegal⁴¹. Extreme climate events generate serious risks for fisherfolk, such as loss of life and equipment during storms. Increased access to robust climate data helps save lives and assets in these events.
37. **Land degradation:** The Sahel is one of the most severely affected regions by land degradation and desertification in the world, which are due to both natural and anthropogenic drivers of climate change. Severe, prolonged drought, along with erosion from heavy rainfall and strong winds, agricultural expansion and deforestation are increasingly contributing to the deterioration of soil quality and vegetation cover. Removing trees can upset the balance of nutrients in the region's nutrient-limited soil and takes away the roots that help bind the soil together, leaving it exposed to wind or water erosion. Similarly,

³⁹ USAID, 2017, West Africa Sahel.

⁴⁰ Malanding S. Jaiteh and Baboucarr Sarr, 2011, Climate Change and Development in the Gambia: Challenges to Ecosystem Goods and Services. Available from http://www.columbia.edu/~msj42/pdfs/ClimateChangeDevelopmentGambia_small.pdf

⁴¹ USAID, 2017, Senegal.

overgrazing of livestock can strip **rangelands** of vegetation and nutrients. These practices alter the soil's moisture content, which affects the microbes that are fundamental for sequestering CO² and making nutrients available to plants. When soil moisture to a point where microbial activity effectively stops, it affects the soil's ability to sustain plant life, thus lowering crop productivity and possibly resulting in desertification. It also means that the vegetation is taking up less CO² from the atmosphere through photosynthesis. Overall, dry soils are more likely to be net emitters of CO². In sum, changes in land use (one of the main anthropogenic climate drivers) that remove land cover contribute significantly to loss of soil nutrients, moisture and microfauna, thus reducing productivity, increasing CO² emissions and, if taken to the extreme, desertification. In addition, climate-related factors such as drought, erratic rainfall, strong sand winds and temperature increases combined with human activities such as slash-and-burn farming, forest fires, deforestation, mining concessions within selected watersheds and other unsustainable land use practices will not only contribute to further deterioration of soil quality, but also to the severe degradation of entire ecosystems, adversely impacting their ecological functions, compromising their integrity and leading to a loss in biodiversity. The main human factors are pressure from population growth, agricultural intensification and to some extent migration. Interventions proposed in the programme, namely land restoration using locally-proven techniques such as Zaï, ARN, agroforestry and CSA, will help reverse this trend by protecting and restoring soils, thereby increasing agricultural and forestry productivity per unit of land, diversifying farmers' sources of income and slowing land degradation.

38. **Water resources and river basins:** In the Sahel, several studies found a decrease in surface and groundwater flows in the 1970s, resulting from the decreases in rainfall, and an increase in flow in the 1990s. The impact of climate change on surface water resources in the **Gambia Basin** has shown a break in 1994 and an upward trend in the flow in the basin, unlike in the 1970s and 1980s, where discharges in the basin declined significantly⁴². In addition, prolonged conditions of rainfall and hydrometric deficits since the 1970s have been highlighted over the whole of The Gambia watershed. A long trend increase in temperature will considerably affect the hydrological cycle, thus changing rainfall pattern and the magnitude and timing of runoff⁴³. Loss of vegetation cover is leading to widespread soil erosion and sediment transfer in the Gambia River. Regarding the **Senegal River** basin, findings from 36 rain gauge stations and three hydrometric stations reveal two main shifts on annual rainfall in 1969 and 1994⁴⁴. The first shift (1969) marks the starting point of the drought. After the second shift (1994), there is an increase of annual rainfall, compared to the previous period (1969–1994), which indicated a partial rainfall recovery. It was, however, not significant at a basin level. Overall, these findings demonstrate that annual rainfall has recovered to a certain extent in the Senegal River basin, which is leading to the improvement of surface water availability. A study on the impact of climate change on the climate and the hydrology of the Senegal River Basin has shown that climate change is likely to impact considerably the basin's climate (with substantial changes of precipitation and temperature) and also the availability of water resources (with a greater decrease in soil moisture, actual evapotranspiration and runoff) in the future⁴⁵. This research is based on one regional climate simulation in the present-day climate and two scenarios (RCP4.5 and RCP8.5) simulations in the future. By the end of the 21st century (2071-2100) under RCP4.5 and 8.5, river discharge, runoff, actual evapotranspiration and soil moisture is projected to decrease, even though there are some localized increases in some parts of the basin (particularly in Guinean highlands) with the uncorrected simulations. This decrease is mainly related to the decline of precipitation. The most extremes changes of soil moisture and runoff are likely to occur in the northern basin, which is the driest and hottest part. Additionally, the available water resources exhibit substantial decrease (from -100 percent to -25 percent) in the majority of the basin for all data, except the Guinean highlands where an increase (50 percent) is found under RCP4.5 in the uncorrected data. Additionally, runoff is highly variable when compared to rainfall, soil moisture and evapotranspiration, particularly in the drier northern basin. The small runoff coefficients of the basin have shown that a lower portion of the rainfall becomes runoff and also the sensitiveness to precipitation fluctuations.

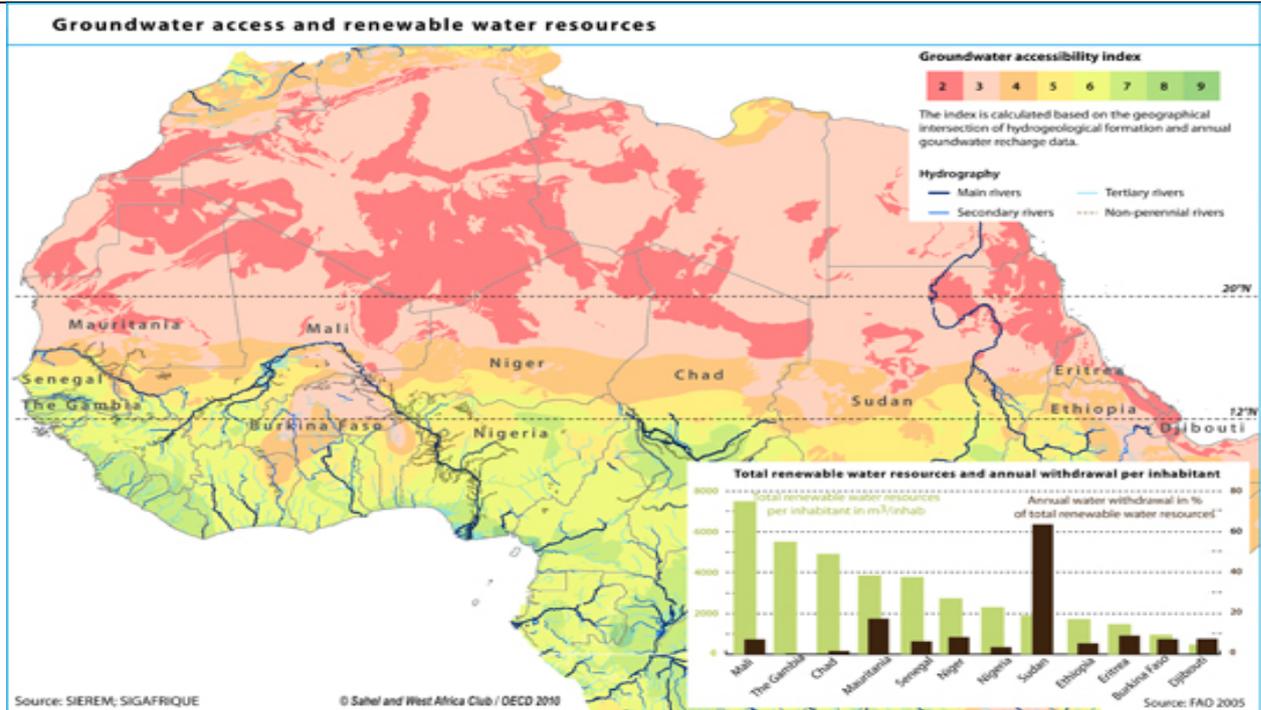
Figure 10: Groundwater and renewable water resources

⁴² Faye, C. 2019. Positive effects of climate change on water resources enhancement in Africa: Case of Gambia River Basin (Senegal). Hydrology - The Science of Water, Muhammad Salik Javaid, IntechOpen

⁴³ Azari, M.; Moradi, H.R.; Saghafian, B.; Faramarzi, M. 2016. Climate change impacts on streamflow and sediment yield in the North of Iran. Hydrol. Sci. J., 61, 123–133.

⁴⁶ USAID, 2017, West Africa Sahel.

⁴⁶ USAID, 2017, West Africa Sahel.



39. The region's water supply is unevenly distributed, poorly accessible due to undeveloped supply systems and crosses national boundaries, creating significant management challenges. For example, more than 40 percent of water supply in Mali and Chad and 90 percent in Mauritania and Niger come from outside each country's boundaries. Surface water is limited and often seasonal, making groundwater a primary source of water for many people in the region. Decreases in rainfall, increases in temperature and the frequency of droughts – which could be exacerbated in certain parts of the region due to climate change, as seen earlier – reduce surface and groundwater availability and accessibility. Rising temperatures raises the risk of increased evaporation of surface waters and reduced water levels. Areas including Burkina Faso, Mauritania, and Niger that have low, but sufficient, water resources per capita are expected to experience physical water scarcity by 2025. Increasing demand from a growing population and planned irrigation schemes along the Niger and Senegal Rivers have led to 25-60 percent reductions in flows over the last 30 years, causing increasingly severe low water levels with frequent pauses in water flows, depleted reservoirs, and reduced water supplies for cities. Lake Chad has shrunk by 95 percent since the 1960s, with estimates attributing 50 percent of the decrease to increased water use (e.g., from population growth and unsustainable irrigation projects) and 50 percent to changing rainfall and increasing temperatures⁴⁶. Groundwater levels in The Gambia have been declining over the last decade, causing shallow wells that farmers used to irrigate crops to dry up⁴⁷.
40. Where water is available, sustainable irrigation can make a critical difference. It reduces dependence on the weather, makes multiple harvests possible during the year and may reduce under-employment and land pressure. The demand for access to modern energy is significant, especially in rural areas, and solar pumps for irrigation could increase agricultural productivity of key food crops and livestock. Solar water pumping (SWP) is poised to grow tremendously over the next decade due to declining costs, high reliability and increased commercial availability in rural areas of less developed countries. Shifting from diesel to solar water pumping will help the selected countries save 31 percent on investment annually. SWP systems are reliable and have become much more affordable due to decreases in costs of PV modules⁴⁸: system costs have dropped by 80 percent since 2009 and many systems installed 20 or more years ago are still operational. In the **Niger River** basin, water remains the most critical constraint on agricultural production. Irrigated land is more productive and profitable than rain-fed land, particularly in Dosso, Tahoua Maradi and Zinder (targeted areas). Nevertheless, only 0.2 percent of agricultural land is under some form of water management. Of Niger's 270,000 hectares of irrigable land, 140,000 ha are concentrated in the Niger River valley. The rest of the country's irrigation potential comes primarily from the Komadougou River (part of the Lake Chad basin), several small seasonal rivers, dry riverbeds with easily accessible groundwater (dallols), the small oasis basins of Manga and Air and in some areas, groundwater that is accessible with a pump. It therefore appears that Niger's irrigation potential is under-exploited: less than 100,000 ha, or about 37 percent of estimated potential, are under irrigation. In addition to water harvesting, several types of irrigation techniques are being implemented and constitute ways to better adapt to climate change and climate variability. Nearly all hydro-agricultural developments (aménagements hydro-agricoles in French,

⁴⁶ USAID, 2017, West Africa Sahel.

⁴⁷ The Gambia, UNEP, 2016, FP011: Large-scale Ecosystem-based Adaptation in the Gambia River Basin: developing a climate resilient, natural resource-based economy. Available from <https://bit.ly/3q2hCwC>

⁴⁸ Future of solar photovoltaic, IRENA, 2019

or AHA) and medium-to-large irrigation systems are located in the Niger River Valley where rice is the main crop. However, in some areas, high value vegetable crops are grown in the dry season, as land use has evolved over the past years.

41. Climate impacts on water resources in the Niger River basin are varied. There has been a drop in groundwater levels and an increase in the coefficient of runoff for small ponds; quantitative and qualitative reductions in water resources; increasingly low water levels in rivers (early drying up of water points such as ponds, wells, etc.); pockets of drought (water deficit) during the rainy season, decreases in the length of the season (the number of days of rain) of agricultural production and rural exodus. The reduction in the number of rainy days together with the increase in rainfall intensity results in floods in most cases (RdM, 2011). Despite these hydrologic relationships, there currently appears to be little risk of water stress for users along the Niger River until the major diversion structure at Markala. Irrigation along the river does not consume a great deal of water (the two largest schemes are 1,350 ha just below Selingue Dam and 3,500 at Banguineda, just downstream from Bamako), and extractions for domestic and industrial use are small compared to overall river flows.
42. The **Lake Chad Basin** is currently one of the most unstable areas in the world. The water level is largely the result of the inflow from the Chari River from the south and seasonally the Komodugu-Yobe River from the northwest. Rainfall also reaches the lake from smaller tributaries and groundwater discharge. Inflow fluctuates with the shifting patterns of rainfall associated with the West African Monsoon, making it very susceptible to drought with years of little rain. This has a direct relationship with the water supply. Since 1963, Lake Chad has contracted by over 90 percent, from an estimated 25,000 km² down to 1,350 km², due to unsustainable water use (misuse and overuse), a decline in rainfall for much of the period and the increased demand for water associated with population growth. Between 1983 and 1994, the volumes of water used for irrigation were four times larger than during the previous 25 years. The population in the region increased from 13 million in 1960 to more than 35 million in 2007 and is expected to continue to grow by another 75 percent by 2025. The reduction in the size of the lake has severely threatened the resources and livelihoods of the population. The drying-up of the northern half of the Lake caused people to migrate to the remaining southern shores, intensifying pressure on resources for agriculture, fishing and livestock breeding in the rest of the lake area and related conflicts. It also fostered migration to Europe. As the receding waters exposed new islands, land ownership issues created tensions between Cameroon, Chad, Niger and Nigeria. The lack of capacity of existing political institutions to resolve these competing claims increases the likelihood of violent conflicts over resources. Disputes focusing on land and on fish catches and on access to and use of water are occurring regularly. Numerous conflicts have broken out among pastoralists and farmers, and between different ethnic groups in Niger, because of the loss of the lake and its resources.⁴⁹
43. **Water quality.** Precipitation and associated river discharge are major drivers of water pollution, as they cause excess nutrients and sediment to be transported and deposited in the main rivers in the Sahel. Changing climate conditions will affect water and wastewater treatment and disposal in several ways. Elevated stream temperatures, combined with lower flows may require wastewater facilities to increase treatment to meet stream water quality standards. When drought frequencies increase, water quality in rivers may suffer because of reduced dilution of pollutant concentration, with potential health impacts. More intense precipitation and floods, together with urbanization and associated increasing impermeable surfaces, on the other hand, may amplify the likelihood of contaminated overland flow or combined sewer overflows, contributing to declines in water quality in those areas. If floods become more frequent, human health may be impacted by sewage contamination during flood events.
44. **Navigation constraints.** Navigation on the Senegal, Gambia and Niger Rivers and Lake Chad will become increasingly vulnerable to more varied precipitation patterns and unsustainable use of water. The impacts from extreme weather events, higher temperatures, heat waves, precipitation changes, low flows and other climatic conditions are affecting the reliability and capacity of navigation in the Middle and Lower Niger. Drought often lowers vessel drafts on navigable sections. Continued low water flows have reduced the duration of the navigation period and these rivers carry a heavy sediment load, making navigation difficult, especially during low flow periods. In the inland delta, the drought that dried these channels has not allowed the annual "rinsing" of the seasonal barriers created by deposits of windblown sand and dunes. Climate change has also increase salinity.
45. The agricultural sector across Sahelian countries also face risks that are not related to climate and that affect productivity: (i) fluctuations in the agricultural market for both inputs and outputs; and (ii) limited disaster management policies in support of agriculture. When climate and non-climate related risks combine, they result in lower yields and productivity, loss of productive assets by 20 percent in the event of severe drought, loss of income, increased costs and changes in market access. These can affect a farmer's ability to repay financial obligations and lead to a loan default. These financial shocks, combined with an inability to easily access external financing over time limits farmers' abilities to expand, diversify and modernize their agriculture activities, and therefore increase their climate resilience and business opportunities. When natural disasters occur, governments tend to alleviate the effects of crop failures or other disasters by providing post-disaster direct compensation as a relief measure, which does not address the underlying problem and may even exacerbate it (e.g. increase dependency). The weakness or absence of the agricultural insurance industry to absorb and redistribute this burden constrains farmer's resilience to climate risks.

Non climatic stressors and impact on livelihood vulnerability of smallholder farming

⁴⁹ Ministry of Foreign Affairs of The Netherlands, 2018, Climate Change Profile: West African Sahel.

46. In the Sahel region, smallholder farmers are confronted with climatic but also non-climatic stressors (e.g. socio-political and economic factors). Climatic and non-climatic stressors vary and interact across three spatial scales (household, community and district levels) to influence rural livelihood vulnerability of smallholder farming households (IPCC⁵⁰ 2014; Nyantakyi-Frimpong and Bezner-Kerr 2015⁵¹; Quinn et al. 2011). Non-climatic stressors such as land use change, wildfire, unsustainable agriculture, migration, political instability, population growth, over fertilization, and lack of education exacerbate the vulnerability of farming households. These stressors can operate either independently or in association with one another (IPCC, 2007). These stressors can degrade ecosystems (water, land, forest), which smallholder farmers depend on for their current and future livelihoods, and thus reduce their adaptive capacity. Other key non-climatic stressors identified at household and community levels include a lack of money, limited access to market, poor village infrastructure, high cost of farm inputs, and lack of storage facilities. Lack of money is attributed to lack of employment and off-farm livelihood opportunities and reflects the low profitability of farming, which is partially due to limited access to markets (Antwi-Agyei et al. 2013, 2014⁵²; Dasgupta and Baschieri 2010). Combined with the impact of climate change, non-climatic stressors exacerbate the vulnerability to climate change of the poorest farmers and pastoralists. Efforts to build the resilience to climate change and variability at local level in the Sahel must give attention to the nexus of both climatic and non-climatic stressors.

Baseline situation

47. Today, disease outbreaks, such as the COVID-19 pandemic or the previous Ebola crisis not only pose threats to the population's health, but also cause major disruptions in entire value chains, making smallholder agriculture riskier than ever. Without adequate safeguards, preparedness, mitigation measures and mechanisms to transfer risks (weather, pest, disease or the market) to another party, who absorbs a share of the risk in return for a fee, climate crises may lead to recurrent food crises, drive millions more vulnerable rural communities into poverty and delay the achievement of SDGs further, especially in the countries in the Sahel. This is extremely important, as climate change predictions indicate that disease outbreaks are likely to become more common in years to come. Hence, the need for improved preparedness and innovative integrated approaches that include mechanisms to transfer risks in markets.

Four main factors define the baseline of the programme proposed:

48. **1 - An increasing number of climate-related hazards and disasters, especially droughts, intense rains and floods and heatwaves in countries with very limited resilience and adaptive capacities:** According to the ND-GAIN vulnerability index, the countries in the proposal rank among the world's least resilient countries to climate change and in the first quartile in terms of resilience, with limited adaptive capacities (see table 2). Furthermore, these countries experience high demographic growth, which implies significant increases in demand for food, as well as fragile socioeconomic conditions. The increasing impact of climate-related multi-hazards (dry spells or drought, disease, locusts and other pests, floods, heatwaves, etc.) are affecting a larger range of sectors, as their impacts on agriculture spread into the broader economy. This affects not only livelihoods and food security, but also energy production, water resources and gross domestic product (GDP), particularly when the loss of production forces governments to redirect resources of the national budget to food imports or to measures to address humanitarian crises, losses and damages caused by climate shocks. This can make populations more vulnerable to other hazards and socio-political changes. In the affected countries, where agriculture is a key sector (more than 43 percent of GDP in 2018), these impacts can reduce national GDP by up to four percent per year.

Table 2: Vulnerability and adaptation scores for each country

Countries	Adaptive Capacity Scoring	Vulnerability Ranking Scoring
Burkina	0,687	0,572
Chad	0,850	0,651
Mali	0,731	0,609
Mauritania	0,727	0,567
Niger	0,769	0,670
Senegal	0,595	0,535
The Gambia	0,645	0,539

Source: ND-GAIN index ranking, 2020.

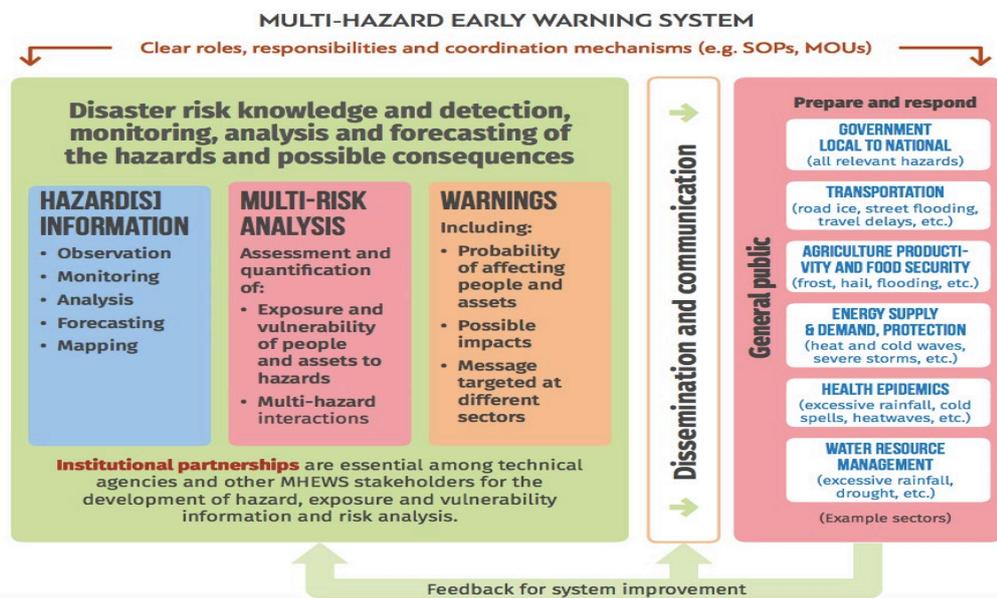
⁵⁰ IPCC (2014) Climate change 2014: impacts, adaptation and vulnerability: contribution of working group II to the IPCC fifth assessment report. University Press Cambridge, Cambridge

⁵¹ Nyantakyi-Frimpong H, Bezner-Kerr R (2015) The relative importance of climate change in the context of multiple stressors in semi-arid Ghana. Glob Environ Change

⁵² Antwi-Agyei P, Stringer LC, Dougill AJ (2014) Livelihoods adaptation to climate variability: insights from farming households in Ghana. Reg Environ Change

49. **2 - The lack of reliable data, knowledge and capacity in countries on climate change is a major barrier to climate preparedness and risk management:** There are large gaps in the technical capacity and infrastructure for collecting, processing and disseminating data on climate hazards and climate change, and its impact on agriculture in the participating countries. In the Sahel, the hydromet infrastructure capacity is the lowest of all the global regions, with observation network density (number of stations per 10,000 km²) as low as 0.4 in Niger, 0.5 in Mali and 1.6 in Senegal⁵³. Thus, monitoring networks for collecting climate and impact data and monitoring, reporting and verification (MRV) standards are limited, as is the capacity to characterize risks as climate changes. This hinders countries' ability to effectively identify adaptation needs and set priorities. Major investment in climate-related infrastructure from both public and the private sector sources are also necessary to support the development of modern financial services such as agricultural and climate risk insurance (micro and macro insurance). By strengthening national disaster prevention systems that offer robust climate information and early warning services based on integrated approaches, governments will be better equipped to monitor and comprehend changes in climate and thus, plan and intervene accordingly; foresee and warn population of extreme weather events to help reduce losses and damages and enable faster response; make more informed decisions on climate risk management and planning, investments, policy and incentives to shift the country, especially the agriculture sector, towards greater climate resilience. Ensuring farmers' access to climate data is fundamental for building their resilience and capacity to adapt to climate change, as it provides the key information they need for making decisions on investments, adjusting their planning to variations in climate and prepare for the event of climate hazards. This programme will respond to this gap by strengthening the network of hydromet services to enable them to provide robust climate information on hazards, risks, impacts and early action options for improved government and farmer-level decision-making. It will also provide the necessary capacity-building for risk modelling, contingency planning and risk transfer solutions at the government level and the interpretation, use and dissemination of this information by relevant government bodies and employees, extension agents, farmers organizations and the farmers themselves (see component 1 below for details). Multi-hazard early warning system are key for helping countries to prepare for climate-related events and thus, switch from the more costly and less effective post-disaster responses to pre-disaster resilience.

Figure 11. Schematic of a multi-hazard early warning system



Source: Multi-hazard Early Warning Systems: A Checklist, World Meteorological Organization, 2018.

50. **3 - Slow response and declining effectiveness of planning and response to both mitigate and adapt to climate events:** Even though drought is a known phenomenon in the region, it can take up to 12 months for the first assistance to arrive in the hands of affected beneficiaries (even after humanitarian appeals have been made). National strategies to respond to such climate risks in these countries are few, especially for pre-emptive action to reduce risk, including the financing mechanisms for their implementation. This fuels the vicious cycle of poverty and vulnerability, as the negative impacts are allowed to accumulate, often beyond the time frame of the climate hazard. The COVID-19 pandemic has brought to light the difficulties that countries experience in managing disasters.
51. While some progress has been made on addressing climate risks through fragmented and narrow interventions, many challenges remain in terms of building the resilience of smallholder farmers in an integrated manner. Greater integration is needed to take into account the range of factors that influence resilience, but also the types of interventions that need to be

⁵³ GCF, 2018, Technical Expert Meeting on Climate Information, Early Warning Systems and Disaster Risk Reduction Report, Geneva (16 May). Available from <https://www.greenclimate.fund/sites/default/files/event/technical-expert-meeting-full-report-annexes.pdf>

integrated (figure 12), including ones related to pandemics. These interventions include the prioritization of risk management by local, national and regional stakeholders.

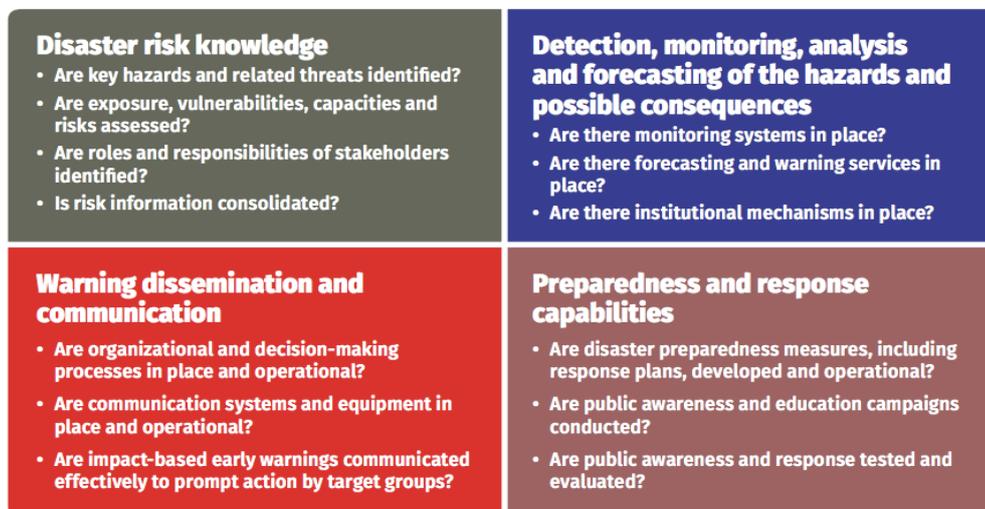
Figure 12: The four priorities for action at the local, national, regional and global levels of the Sendai Framework for Disaster Risk Reduction 2015–2030.



Source: Multi-hazard Early Warning Systems: A Checklist, World Meteorological Organization, 2018.

52. Currently, the cost of responding to these climate risks is largely borne by the international community in form of humanitarian aid. Comparatively less effort is devoted to planning ahead of time to reduce vulnerability to extreme weather events, despite the benefits in terms of outcomes and cost. A cost–benefit analysis of the African Risk Capacity estimates late response losses at US\$1,294 per household, and early response losses at US\$49 per household⁵⁴. The seven selected countries have already identified the building of safety net systems and measures to reduce the risks of natural disasters and extreme events as part of their national social development priorities⁵⁵ and only one country has institutionalized sovereign risk transfer into its national budget. However, they need support to build their national climate resilience programmes up to adequate levels, particularly in a post COVID-19 era. Hence, the urgent need to put into place a comprehensive disaster risk management system like the one presented below:

Figure 13: Four elements of end-to-end, people-centred early warning systems



Source Multi-hazard Early Warning Systems: A Checklist, World Meteorological Organization, 2018.

⁵⁴ Daniel Clarke and Ruth Vargas Hill, 2013, Cost-Benefit Analysis of the African Risk Capacity Facility, IFPRI Discussion Paper 01292 (September). Available from <https://ssrn.com/abstract=2343159>

⁵⁵ WFP, 2018.

53. Without reliable data and tools to protect against climate-related production risks, smallholder farmers will not seize opportunities to become more productive: they tend to focus on more resilient, but less profitable production activities and do not invest in higher quality inputs and technology. This situation is exacerbated by financial service providers who are reluctant to offer financial products and services to smallholder farmers, by input suppliers who limit their outreach and by external shocks that threaten the sustainability of well-meant donor and government interventions.
54. So far in the Sahel region along the GGW, few investments have been made on risk-pooling or transfer solutions (insurance) using forecast-based financing to help build dedicated contingency funds and transformational planning and programming at the government and local level. This is mainly due to the lack of understanding of risk-pooling or transfer solutions and their potential for building climate resilience and supporting the scaling up of safety net systems in a reliable, timely manner, which would reduce countries' reliance on emergency appeals.
55. As a form of risk transfer, agricultural insurance is not yet well developed in the selected countries, except some nascent initiatives in a few countries of the GGW (Senegal, Burkina Faso and Mali), even though it is an effective tool to enable vulnerable communities to transfer the impact of shocks of extreme weather events and thus improve their resilience. This programme aims to strengthen the capacity of countries and smallholder farmers to address, protect themselves and share the risks of multi-hazards (droughts, heatwaves, floods, diseases, locusts and other pests) in agriculture and livestock value chains through the development of agricultural micro and macro insurance. Various initiatives have been undertaken with the support of development partners. For instance, with the support of the World Bank Global Index Insurance Facility (GIIF), the Government of Senegal has established the Senegalese National Agricultural Insurance Company (CNAAS), which is now driving the insurance market's development in the region. The Government of Senegal subsidizes insurance premiums (at 50 percent), grants tax relief or exemptions on agricultural insurance products offered by CNAAS and reduced interest rates on loans. Two projects - PADAER1 and PAFA-E – supported by IFAD in collaboration with WFP R4 and CNAAS have incorporated and institutionalized micro insurance in the country. The R4 model is built around the combination of risk reduction measures, risk transfer with index insurance, risk reserves (which uses Oxfam's village saving and loans model) and prudent risk taking. Farmers receive support for surplus production storage in the WFP Village Cereal Banks and use their stocks as collateral to receive credit from local microfinance institutions (MFIs).
56. In Burkina Faso and Mali, index insurance was introduced in 2011. The insurance market in Burkina Faso grows every year and the government has initiated a programme with the public insurance company, SONAR. Currently, two other insurance companies also provide index insurance: Allianz and Yelen. WFP is supporting the government's initiative and working with Inclusive Guarantee (a micro insurance broker that introduced index insurance in 2011) and Yelen, which is using the index customized to the ARC Policy. In 2020, WFP plans to insure 2,500 households. The Platform for Agricultural Risk Management (PARM) is also active in Burkina Faso. In addition, the INSURED (Insurance for Rural Resilience and Economic Development) programme, financed by Sida and implemented by IFAD through PARM, plans on financing a national insurance assessment in cooperation with WFP, which will help prepare the ground. As for Mali, there are already a few stakeholders operating in the country (Inclusive Guarantee, FARM/SOCODEVI, OKO and Pula Advisors); all offer different types of indices (weather or area yield) and all work with Allianz. The Government of Mali is considering offering institutional support to agricultural insurance development, with the support of the IFAD project, INCLUSIF. WFP and FARM/SOCODEVI will partner with the INCLUSIF project to support expansion of agricultural insurance to smallholder farmers. In the other countries, there is no or very limited experience in this domain. Some stakeholders (governments or UN agencies) are considering supporting the establishment of a dedicated insurance company or a public scheme.
57. In the other countries, World Bank, through its Global Index Insurance Facility (GIIF), IFAD, USAID, GiZ and other development partners have been supporting the development of feasibility studies to set up agricultural insurance. Most of the countries have included it as part of their adaptation strategies and are working toward developing an agricultural insurance industry to modernize the agriculture sector. For this, incentives and more climate information systems and infrastructures, adapted insurance products and lower premiums for smallholder farmers are required. At the continental level, ARC provides a comprehensive and integrated solution that transfers climate risk (droughts and floods) from governments and the vulnerable rural households they protect to ARC. ARC is planning to insure more than 30 African countries in the upcoming years and adapting its models to support countries' response and management systems for outbreak diseases like COVID-19, Lassa Fever, Ebola and Meningitis in 2020.

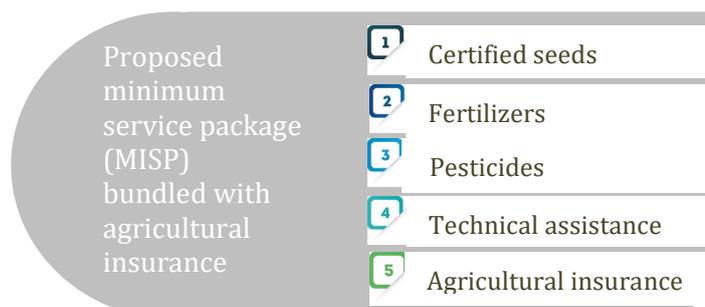
Table 3: Experiences of index insurance schemes in the selected countries

Countries	Index insurance products available in the market	Insurers already distributing products	Pilots or feasibility studies already conducted	Regulation	Market size	Projects supporting index insurance /key financial & technical stakeholders	Key possible products
Burkina Faso	Yes, Inclusive Guarantee (maize, cotton, multiple cereals), Yelen (entire country covered, with unique premium)	Allianz, Yelen (micro insurer)	Yes, since 2011	Yes, CIMA	around 40 000 farmers insured	i. Assurance Récolte Sahel (Inclusive Guarantee), ii. Yelen, iii. Project of Ministry of Agriculture with Mamda, iv. WFP	Cotton, multiple cereals, maize, sesame, groundnut, millet, sorghum, pastoral index

Chad	No	No	No	Yes, CIMA	0	No	agricultural and pastoral index
Mali	Yes, OKO (mobile insurance), Pula (area yield), Socodevi (weather index)	Allianz, Sunu	Yes, since 2011	Yes, CIMA	around 20,000 farmers insured (mostly through Pula)	i. Assurance Récolte Sahel (Inclusive Guarantee), ii. FARM, iii. INCLUSIF (IFAD)	cotton, multi cereals, maize, sesame, groundnut, millet, sorghum, rice, onion pastoral index
Mauritania	No	No	No	No	0	No	pastoral index
Niger	No	No	Yes, IRI on non-crop specific index, for UNDP. Never implemented. WFP has also conducted a pre-feasibility study	Yes, CIMA	0	No	agricultural and pastoral index
Senegal	Yes, all through CNAAS (insurer). Rainfall indices (based on rain gauge, for maize, millet, groundnut and rice), satellite (for cotton, and all cereals), areas yield.	CNAAS	Yes, since 2008	Yes, CIMA	more than 100,000 farmers insured	i. R4 (WFP), ii. GIIF, iii. West African Development Bank, iv. EU (OSIRIS), v. Naatal Mbay (USAID). All stakeholders are coordinated under CDPAI (Comité pour le Développement et la Promotion de l'Assurance Indicielle)	Multiple cereals, cotton, groundnut, millet, rice, maize, sorghum, livestock and pastoralists.
The Gambia	No	No	Yes, WFP has conducted a feasibility study	No	0	No	Groundnut, millet, maize, multi cereals

58. According to World Bank⁵⁶ and IFAD's⁵⁷ recent evaluations of indexed insurance, impacts are greater when it is combined with the provision of agricultural inputs and other risk reduction or productivity improvement measures than when provided alone. Over the last few years, IFAD has been implementing within its project in Senegal (PAFA-E and PADAER 1) an integrated risk management approach, which links insurance to access to inputs, markets and improved farming practices. This approach combines climate risk preparedness with climate risk measures (adaptation) and climate risk transfer (micro insurance). At the project level, this is materialised in the form of a service package in which insurance products are bundled with risk reduction measures, inputs and technical assistance, as can be seen below:

Figure 14: Proposed Minimum Service Package (MISP)



⁵⁶ World Bank, 2017, Review of Pilot Projects on Index-Based Insurance in Africa: Insights and Lessons Learned.

⁵⁷ IFAD, PARM Final Report, 2014-2019.

59. As a result of this integrated climate risk management approach, crops production has increased by an average of four percent, in comparison to existing business-as-usual practices and fragmented approaches. In Senegal, the national insurance company now issues around 100,000 contracts for various types of crops and for livestock at the national level. It introduced index insurance products in 2012 for maize and groundnut.

Table 4: Crops yields under business-as-usual (BAU) approach and bundled micro insurance package

Crops	Crop yields (normal rainy season)	
	BAU approach	Bundle package
Millet	827 kg/ha	3700kg /ha
Maize	1369 kg/ha	4500 kg/ ha
Sorghum	880 kg/ha	4000kg/ha
Groundnuts	946 kg/ha	4300kg/ha
Livestock	Meat: 48-50 kg Milk : 2,230 l/day	Meat: 75 kg Milk : 5-8 l/day

Source: IFAD PADAER 1 - PAFA, IFAD 2017; FAO, 2018.

60. Micro insurance product development will support designing products tailored to smallholder farmers' needs and country contexts, but not only for protection from drought. Product development will involve cross-referencing data on yields and weather to identify correlations between weather patterns, soil moisture temperature and yields data, and the pricing of insurance products in cooperation with reinsurers. Crop selection will be made during the inception phase based on existing products, needs and regions covered, IFAD programmes and the capacity to aggregate farmers. Products aimed at supporting livestock herd building based on the successful livestock insurance programme in Kenya (KLIP) will also be promoted. In addition, IFAD investment supports also farmer's better access to rural finance.
61. Capacity-building and awareness-raising will be required to better integrate insurance as part of the inputs for smallholder farming, especially in areas prone to climate risks. This entails designing capacity-building programmes targeting government authorities, regulatory and supervisory bodies; the insurance industry, primarily the national commercial providers to improve their capacity to develop and distribute products for smallholder farmers, including women farmers, and to broaden their range of products and enter this market with sustainable distribution schemes. These efforts will also be supported by the Insurance for Work approach, which opens markets while building trust and resilience and giving time to show farmers the benefits of insurance.
62. Natural disasters and extreme weather events place significant pressure on countries' public finances, with major short and long-term fiscal implications, as governments are forced to divert resources away from their planned budgeted activities towards emergency response. The increase in the frequency and intensity of droughts and floods is bound to increase the costs of the losses borne by governments and affected communities, while more donor resources will be required to support ex-post relief activities.⁵⁸ Table 4 depicts drought frequency and average response costs across the seven countries, as well as the major costs associated with these events. Since its creation in 2014, ARC and its four risk pools, ARC Ltd., has paid out over US\$ 58 million to countries affected by drought in support to country efforts. The funds were disbursed ahead of the UN appeal and used to deliver quick and much need relief to affected communities. The concerned countries and the year in which pay-out was triggered are presented in the table below.

Table 5: Drought frequency and response by country

Country	Period	Number of severe droughts	Frequency of droughts (1 in x years)	Cost of response (average) US\$ million	Contribution per country (M = million, k = thousand)	ARC pay-out	Year of pay-out
Burkina Faso	2000-2017	4.0	4.0	20.0	2016/17: 1.39 M 2017/18: 1.18 M 2018/19: 1.19 M 2019/20: 683k (replica)		
Chad	1983-2017	10.0	3.4	20.0	2019/20: 200k (AfDB)		
Gambia (The)	2000-2017	6.0	3.0	10.0	2015/16: 569k 2016/17: 591k 2017/18: 597k 2018/19: 394k 2019: 200k (AfDB), 400k (replica)		

⁵⁸ Centre for Research on the Epidemiology of Diseases (CREDE), 2015, The Human Cost of Natural Disasters – A Global Perspective.

Mali	1983-2017	14.0	4.0	20.0	2015/16: 2.2 M 2016/17: 2.36 M 2017/18: 2.4 M 2019/20: 2.1 M, 1.87 M (replica)		
Mauritania	2001-2019	6	3	18.8	2014/15: 1.4 M 2015/16: 1.76 M 2016/17: 1.74 M 2017/18: 1.48 M 2019/20: 1.5 M (replica)	US \$6.3 US \$2.4	2015 2018
Niger	1983-2017	7.0	5.0	40.0	2014/15: 3 M 2015/16: 2.9 M 2016/17: 2.19 M 2019/20: 167k	US \$3.5	2015
Senegal	2001-2019	5	3	17	2014/15: 3.6 M 2015/16: 3.59 M 2016/17: 3 M 2017/18: 3 M 2018/19: 3.2 M 2019/20: 2.6 M (replica)	US\$16.5 US\$12.5 (govt) US\$10.6 (Replica)	2015 2019

Source: Country risk profiles, ARC, 2020.

63. Note that in 2015, the Governments of Senegal, Mauritania and Niger paid a combined premium of US\$8 million and received within two years US\$26.3 million in pay-out from ARC Ltd. Because of the COVID-19 impact, the Government of Germany has provided a grant of 19 million euros to 15 countries to support their premiums payments to ARC for the 2020-2021 agricultural campaign.
64. **The capacity of smallholder farmers in the Sahel to adapt to climate change and variability is extremely low.** Most smallholder farmers in the region engage in unsustainable practices that are not only highly vulnerable to climate change and variability, but also contribute to it. Current coping strategies and agricultural practices (rain-fed agriculture, deforestation, overgrazing of livestock, logging and hunting) in the context of climatic stress are clearly inadequate and exacerbate food insecurity, malnutrition and conflicts over resources. Climate variability and change put heavy burdens on farmers and local communities that exceed their capacities to adapt to climate change; as a result, some rely on illegal practices to improve their household income. The paradigm shift that this programme seeks to promote is to move from a "business as usual" scenario with isolated climate resilient interventions to a more comprehensive and integrated approach to climate risk management. This approach combines the improvements to climate risk management through strengthened climate information and early warning systems mentioned above with strategies to support the adoption of the best adaptation and mitigation technologies by farmers and the diversification of their livelihoods to boost their resilience building on IFAD's experiences and partners over the last past years. Although climate projections related to water levels and rainfall are marked by uncertainty, it is clear that water resource management in the Sahel must be improved to ensure the survival of the population from climate change. Therefore, the project will provide support for several climate smart water management techniques, including the construction of water harvesting structure along transhumant corridors and water points, and the adoption of Zaï and half-moon techniques. To address the issue of land degradation, the project will take measures to steer farmers away from unsustainable practices that contribute to GHG emissions and thus, to climate change, toward ones that restore the environment, enhance productivity, diversify incomes and ensure the sustainable management of resources. Building on the success of initiatives implemented in the region by IFAD and partners and in the Great Green Wall in particular, this will include the adoption of techniques that restore and enhance the biological management of pastureland, the implementation of sustainable forest management systems, the introduction of agroforestry, assisted natural generation of trees (ANR) techniques, climate smart agriculture techniques and other land restoration methods, strengthen capacity building and awareness raising of key institutions on integrated climate risk management. Restoring forests is particularly important, as trees provide protection from heavy rain, sun, wind and erosion; increase water filtration, which helps replenish groundwater and feed the microfauna in the soil which, together with the increase in soil moisture, helps raise productivity levels. Forests also sequester carbon, play an important role in regulating water cycles and temperature and the recuperation of water sources. Biodiverse agroforestry systems have the added benefit of enabling farmers to diversify production, as they allow them to grow short-cycle plants (vegetables, cereals, cassava, medicinal plants, etc.) with trees that produce fruit and/or wood for timber and fuel in the same area, and even incorporate animal raising into the system. The project also proposes to build infrastructure to halt sand and saltwater intrusion. It will also contribute to climate mitigation through the promotion of alternative energy technologies such as solar minigrids to power agroforestry-livestock value chains. Other measures to strengthen and diversify farmers' livelihoods include sustainable poultry farms, earth dams, vegetable gardens, off-farm activities, capacity-building in financial literacy and marketing and business administration, warehouse/processing facilities and vet points. All infrastructure-related works will incorporate measures and techniques to make them more climate proof.

Rationale of the Programme

65. This programme aims to complement ongoing or future IFAD and AfDB interventions in the region, especially the new IFAD regional G5+1 Sahel programme on resilience building. IFAD and its partners, AfDB and WFP, have a long experience in

building climate resilience in smallholder agriculture in the region. IFAD has been investing in the Sahel region for 40 years and is currently supporting 15 investment projects on adaptation, forestry, land use and access to energy for agroforestry and livestock value chains in the region. Most of these investments focus on improving soil; land restoration; water and vegetation management in order to protect and ensure greater productivity from available soil and water resources; improved transhumant livestock systems through the establishment of water points and corridors; small-scale irrigation and other water management techniques, potable water supply, microfinance, rural roads and crop diversification, small-scale irrigation; natural regeneration of native grasses; support for production, including livestock, and the development of micro insurance schemes, among others. In Senegal and Niger, IFAD is also pioneering a crop insurance pilot initiative for smallholder producers who are faced with growing climate unpredictability. These IFAD direct investments are complemented by GEF based on the extensive experience of the IFAD ASAP, the largest global source of financing dedicated to supporting poor smallholder farmers' adaptation to climate change.

66. While IFAD and partners have intensified their investment with new projects approved in 2019 or in the process of being approved to address food insecurity, nutrition, job creation for youth and women and resilience building, the impacts of climate change still exceed the region's capacities to respond to predicted damages. Thus, more environment and climate finance is needed to help these countries adapt to the impacts of climate change.
67. As stated in their Nationally Determined Contributions (NDCs) and national development plans, the seven selected countries intend to reduce and maintain relatively low emission levels (close to the world average of 21466 499 MtCO₂e) by 2035 or neutral by 2050 by reducing her carbon footprint and by following green growth pathways in all economic sectors. Agriculture, energy forestry and other land use (AFOLU) and the waste sector are the main target sectors for mitigation and adaptation measures. IFAD's new investments in IFAD 11 and 12, combined with additional flows of international climate finance in these countries channelled through this programme, will have transformational effects on their economies by addressing the need for adaptation and resilience building in climate prone areas. Using the EXACT tool, the programme has the potential to cut around 21 446 499 M tCO₂eq/lifetime compared to the baseline scenario and will contribute to the GW target of reducing 250 MtCO₂ by 2030 and to the countries' NDCs targets.
68. Building on these experiences, adaptation gaps and leveraging partner's experiences, IFAD seeks to upgrade, strengthen, scale up and replicate current climate risk management practices by introducing an integrated approach that combines climate risk preparedness, adaptation and risk transfer in a one package of services. This programme will build on the AfDB's Africa Disaster Risks Financing Programme (ADRiFi), which was developed to play a key role in promoting disaster risk financing on the continent and assisting countries to access both capacity-building and disaster risk transfer solutions as part of their long-term resilience building efforts and WFP's R4⁵⁹ Rural Resilience Initiative (R4). At the institutional level, IFAD has over ten years of experience with agricultural insurance, rural finance and its INSURED technical assistance programme – financed by Sida and managed by PARM, can be leveraged to share knowledge and provide technical inputs. The related IFAD-WFP Weather Risk Management Facility (WRMF) partnership has already contributed by assessing the performance of various remote sensing methodologies for index insurance in Senegal, with the financial support from AfDB, and supporting the initial integration between R4 and PADAER in Senegal.

Programme targeted areas and beneficiaries:

69. The target areas of the GCF programme in the seven selected countries were identified and defined during the IFAD baseline investments design process. The main selection criteria were: i) the level poverty and remoteness; ii) food insecurity and nutrition; iii) climate vulnerability and unsustainable management of natural resources; iv) rural gender disparities and youth unemployment; v) absence or lack of rural infrastructure including energy access; vi) opportunities for job creation both for youth and women, and vi) possibility to create synergies with other donor-supported programs (IFAD main baseline investments, ARC contingency plans target areas, WFP and AfDB target areas). These targeted regions have a range of ecosystems and agricultural zones, such as savannahs and semi-arid regions. Agriculture accounts for over 51 percent of employment and is the main source of livelihood. Various tradable commodities are produced in the targeted regions such as maize, soybean, dairy, livestock, rice, tree crops (cashew) and horticulture, with fish farming in certain regions, including the Lake Chad and Niger River basins. The programme's target intervention regions are summarized in Table 6 and will build synergies with the new IFAD G5 Sahel + Senegal regional programme. Maps are compiled in the Appendix Map.
70. Target groups are: (i) small producers engaged in staple crops (millet, maize, sorghum and groundnuts), livestock (dairy and beef, sheep and goats, chicken) and non-timber forest products (forestry) value chains characterized by subsistence production and the reduced size of agricultural land and livestock capital; (ii) rural smallholder farmers that are extremely vulnerable people to climate change and climate variability; (iii) rural marginalized communities including persons living with disabilities, the elderly, widows and widowers and displaced people, and iv) young people (educated or not), women heads of households, which are all characterized by a pronounced weakness or lack of production capital (agricultural and livestock) and a lack of economic opportunities and jobs. Beneficiaries and target groups are complementary to Annex 23 Climate

⁵⁹ R4 is a WFP approach designed to improve natural resource management through asset creation or improved agricultural practices (risk reduction), microinsurance (risk transfer), increased investment, livelihoods diversification and microcredit (prudent risk taking) and savings (risk reserves).

eligibility criteria. The modality of selection of beneficiaries will be done through IFAD targeting strategy as described under Programme targeted areas and beneficiaries and the Table 6 as well as the Stakeholder engagement plan See annex 7

Table 6. Targeted intervention regions and beneficiaries (direct and indirect) for each country

Country	IFAD baseline Investment- (see feasibility appendix)	Intervention regions and areas		Direct beneficiaries		Indirect Beneficiaries (direct ben. x 6 per household)	
		IFAD baseline investments	Regional G5+1 Sahel Programme	IFAD baseline investment	Additional Regional G5+1 Sahel Programme	IFAD baseline investment	Additional IFAD Regional G5+1 Sahel Programme
Burkina Faso	PAFA	Boucle du Mohoun, Haut Bassin, Cascades	Central Nord Region: Touri, Bouromand Yalgo, Sahel Region : Dori, Seytenga, and Bani, Nord Region: Oula, Leba, Basi and Goursi	70000	15000	420000	90000
The Gambia	ROOTS	(i) Central River Region (CRR); (ii) North Bank Region (NBR); (iii) Lower River Region (LRR); (iv) West Coast Region (WCR), and (v) Upper River Region (URR).		40000	0	240000	0
Chad	Re-PEr	Guera, Baguirmo, Mongo, Ati, Adjer Lamis	Kanem: Kanem nord, Lake: Mamdi, Wayi; Hadjer Lamis: Haraz-Al-Bia	146000	18500	876000	110000
Mauritania	PROGRES	Brakna, KAedi, Kiffa, Hod El gharbi	Wilaya Hodh Echargui Wilaya Hodh Elgharbi Diffa Region: N'Guigmi	30000	17500	185000	108500
Mali	MERIT	Kayes, Segou, Koulikoro, Sikasso	Kayes Mopti Tombouctou Gao Menaka	42000	40000	420000	260000
Niger	PRECIS	Dosso, Tahoua, Maradi et Zinder		209 722	20000	1 468 054	140000
Senegal	Agri-Jeunes	Louga, Thiès, Diourbel, Fatick, Kaolack, Kaffrine, Sédhiou et Ziguinchor	Matam Region: Matam, Kanel, Ranerou Tambacounda Region:	150000	19200	900000	115200

			Bakel, Goudiri Saint Louis Region: Podor				
Sub Total				687 722	130200	4509054	823700
Total (direct & indirect beneficiaries)				817,922		5,332,754	
Total beneficiaries				6,150,676			

71. The development of alternative financing windows supportive of low carbon and climate resilient development projects with IFIs are being supported by these IFAD baseline investments. IFAD will build the synergies and complementarities. At the midterm review (MTR), the targeting performance will be evaluated and adjusted accordingly in each of the selected region per country.
72. This GCF grant will provide additional climate financing to complement IFAD country baseline investments identified in table 7. The GCF-funded program will complement, build synergies with and strengthen the climate resilience of IFAD baseline development investments. No formal agreement is needed as IFAD is the AE and the GCF programme is linked to IFAD baseline investments.

Table 7: IFAD baseline Investments, synergies and complementarities with the proposed GCF programme

	Project name	Components	Interventions areas for both IFAD investments and the GCF programme	Synergies and complementarities with the proposed programme
IFAD baseline investments (Country)	PAFA (Burkina Faso) Starting date: 2020 Completion date: 2026	Component A: Improvement of agricultural productivity and production Component B: Support to marketing and adding value to agricultural products Component C: Coordination, Monitoring and Evaluation, Knowledge Management	Boucle du Nouhoum, Haut basin, cascades	The development objective of PAPFA is to improve food security and the incomes of smallholder farmers involved in the production and adding value to rice, horticultural products and the sesame and cowpea value chains. This development objective complements the proposed programme, which essentially aims to promote an integrated climate risk management approach by combining systematically in all agricultural value chain programmes climate risk preparedness, climate risk reduction and climate risk transfer.
	ROOTS (The Gambia) Starting date: 2020 Completion date: 2026	Component 1: Agricultural productivity and adaptation to climate change Component 2: Access to markets Component 3: Project management, institutional development and citizen engagement.	Central River Region (CRR); (ii) North Bank Region (NBR); (iii) Lower River Region (LRR); (iv) West Coast Region (WCR); and (v) Upper River Region (URR).	The project's development objective is to increase agricultural productivity and access to markets for enhanced food security and nutrition and resilience of family farms and farmers organizations. This development objective complements the proposed project which essentially aims to promote an integrated climate risk management approach by combining systematically in all agricultural value chain programmes climate risk preparedness, climate risk reduction and climate risk transfer. ROOTS has GEF co-financing
	REPER (Chad) Starting date: 2019 Completion date: 2025	Component 1: Productive investments in resilient agro-pastoral farms Component 2: Strengthening human capital and professionalization of producers organizations Component 3: Coordination, management and Monitoring and Evaluation	Guera, Baguirmo, Mongo, Ati, Adjer Lamis Guéra, Batha, Hadjer Lamis, Chari Baguirmi et Salamat	The development objective of REPER is the improvement of performance and resilience of the targeted agro-pastoral farms. This development objective complements the proposed project, which essentially aims to promote an integrated climate risk management approach by combining systematically in all agricultural value chain programmes climate risk preparedness, climate risk reduction and climate risk transfer.

	<p>PROGRES (Mauritania)</p> <p>Starting date: approved but has not yet started</p> <p>Completion date: 2026</p>	<p>Component 1: Sustainable management of water and soil</p> <p>Component 2: Equipment for the support of local development, and</p> <p>Component 3: management and monitoring-evaluation.</p>	<p>Brakna, KAedi, Klffa, Hod El gharbi</p> <p>Brakna, Gorgol, Guidimaka and Assaba, Hodh El Gharbi, Hodh</p>	<p>PROGRES aims at empowering the rural poor to guarantee their sustainable access to natural resources and community facilities.</p> <p>This development objective complements the proposed project, which essentially aims to promote an integrated climate risk management approach by combining systematically in all agricultural value chain programmes climate risk preparedness, climate risk reduction and climate risk transfer.</p>
	<p>MERIT (Mali)</p> <p>Starting date: approved but has not yet started</p> <p>Completion date: 2026</p>	<p>Component 1: Promotion of the biodigester nexus</p> <p>Component 2: Resilience of production systems and integrated terroir management</p>	<p>Kayes, Segou, Koulikoro, Sikasso</p>	<p>The development objective is the sustainable improvement of access to renewable energy sources and soil productivity.</p> <p>This development objective complements the proposed project, which essentially aims to promote an integrated climate risk management approach by combining systematically in all agricultural value chain programmes climate risk preparedness, climate risk reduction and climate risk transfer. MERIT has GEF co-financing</p>
	<p>PRECIS (Niger)</p> <p>Starting date: 2020</p> <p>Completion date: 2026</p>	<p>Component 1: Sustainable agricultural development and strengthening the resilience of rural households</p> <p>Component 2: Promotion of youth entrepreneurship and access to markets</p> <p>Component 3: Coordination, citizen engagement, monitoring and evaluation, capitalization and knowledge management</p> <p>Component 4: Coordination, management and monitoring and evaluation</p>	<p>Dosso, Tahoua, Maradi and Zinder</p>	<p>Its development objective is to increase the incomes of rural households, improve their livelihoods and ensure the socioeconomic integration of young people (men and women) in promising rural professions.</p> <p>This development objective complements the proposed project, which essentially aims to promote an integrated climate risk management approach by combining systematically in all agricultural value chain programmes climate risk preparedness, climate risk reduction and climate risk transfer. PRECIS has GEF co-financing.</p>
	<p>AGRIJEUNES (Senegal)</p> <p>Starting date: 2020</p> <p>Completion date: 2026</p>	<p>Component 1: Development of profitable economic activities</p> <p>Component 2: Capacity building and facilitation for inclusion</p>	<p>Louga, Thiès, Diourbel, Fatick, Kaolack, Kaffrine, Sédhiou and Ziguinchor</p>	<p>The objective of Agri-jeunes is to promote the social and professional inclusion of young people on family farms and in profitable activities that generate income and decent and sustainable jobs in the agro-sylvo-pastoral and fisheries value chains.</p> <p>This development objective complements the proposed project, which essentially aims to promote an integrated climate risk management approach by combining systematically in all agricultural value chain programmes climate risk preparedness, climate risk reduction and climate risk transfer.</p>
<p>IFAD G 5 Sahel</p>	<p>Emergency and Rural Development in Sahel: a Joint RBA-G5 Sahel+1 Response to the 3C Challenges</p> <p>Senegal, Burkina Faso, Chad, Niger, Mali and Mauritania</p>	<p>Component 1. Increase agro-sylvo-pastoral production and productivity through climate-smart agriculture practices</p> <p>Component 2. Regional economic integration</p>	<p>Cross-border areas where conflicts, crisis and heavy environmental challenges exist. Lake Chad (Niger, Chad), Liptako-Gourma (Niger, Burkina Faso, Mali) and the Senegal River Valley (Mali, Senegal, Mauritania).</p>	<p>The overall programme goal is to strengthen in a sustainable way the resilience of the most vulnerable rural people in the Sahel region in order to mitigate the impacts of the COVID-19 crisis, conflicts and climate change. The development objective is to improve rural producers' economic opportunities and livelihoods, with a focus on the most vulnerable groups (women and youth, landless, transhumant pastoralists), through the adoption of sustainable production practices and social cohesion approaches.</p>

	Starting date: to be approved IFAD December Board			
<p>73. This programme will also explore, build synergies and complementarities with other initiatives supported by the World Bank GFDRR, WMO Africa Hydromet Programme, Programme for Integrated Development and Adaptation to Climate Change in the Niger Basin (PIDACC/NBPIDAAC – AfDB) through formal coordination in the agricultural/climate sector working group. Through these working groups, the programme will ensure proper coordination at country and regional level.</p> <p>Table 8: Other relevant initiatives for synergies and complementarities</p>				
World Bank GFDRR	<p>Disaster risk framework for Senegal</p> <p><u>Modernizing Hydromet Services</u> by offering capacity-building opportunities and enhance regional knowledge to improve early warning systems for climate related disasters based on accurate hydrological and meteorological information and services (Senegal, Niger, Mali, Gambia, Chad).</p> <p>Strengthening Resilient Recovery focuses on reducing vulnerability and building back better by conducting qualitative and quantitative <u>post-disaster risks assessments</u>.</p>	National	National support for EWS through addition studies that have led to the creation of national insurance companies and more countries are included to received TA	
WMO Africa Hydromet Programme - Strengthening Climate Resilience in Sub-Saharan Africa: Mali Country Project	<p>Component 1: Capacity-building and institutional development</p> <p>Component 2: Improvement of hydromet and early warning infrastructure</p> <p>Component 3: Enhancement of service delivery and warnings to communities</p> <p>Component 4: Project management</p>	National / Mali – To be scaled up	<p>The project’s development objective is to strengthen the adaptive capacity and climate resilience of vulnerable communities and the economy of Mali. This will be achieved by developing the capacity of national hydro-meteorological and warning services, which will, in turn, support adaptation planning for public and private sector users.</p> <p>There is potential for synergies between the Africa Hydromet Programme and the proposed programme, which essentially aims to promote an integrated climate risk management approach by combining systematically in all agricultural value chain programmes climate risk preparedness, climate risk reduction and climate risk transfer.</p>	
Programme for Integrated Development and Adaptation to Climate Change in the Niger Basin (PIDACC/NBPIDAAC – AfDB)	<p>C 1: Development of ecosystems and natural resources resilience</p> <p>C 2: Development of population resilience</p> <p>C 3: PIDACC Coordination, monitoring-evaluation and communication</p>	West Africa (Benin, Burkina Faso, Côte d’Ivoire, Guinea, Mali, Niger and Nigeria), Central Africa (Cameroon and Chad)	<p>The goal is to contribute to improving the resilience of populations and ecosystems in the basin through the sustainable management of natural resources by: reducing the silting process in the Niger River; enhancing the adaptability of populations to climate change; and improving natural resource management and integrated ecosystem management, the protection of biodiversity and the restoration of soil fertility.</p>	
<p>74. As per its Social Environmental and Climate Safeguards, IFAD will ensure that its baseline investments are not supporting the use of GMO crop varieties, non-organic pesticides or fertilizers outside the domestic standards. Additionally, the programme will ensure that the MISP insurance will not support the elements in the list of exclusions (GMOs, non-organic pesticide or fertilizer outside the domestic standards, activities in sensitive areas such as wetlands, protected areas, etc.).</p> <p>75. A climate eligibility criteria and screening check list for the selection of all sub projects/activities in unknown locations to be supported by the programme is presented in Annex 23. The main objectives are to:</p> <ul style="list-style-type: none"> • Provide eligibility assessment of the country sub projects from climate perspective, 				

- Gather available baseline data in the 7 selected countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) for detailed due diligence,
- Identify to the extent possible any deal breaking issues at an early stage of the program in each country and targeted regions
- Guide and inform the on-site due diligence process for all predefined sub projects related under each output

76. A list is used as part of the eligibility and screening stages of the investment process (sub-project selection) that do not fulfil the criteria adequately will not move to the next stages of the investment process as defined in the Funding Proposal. It includes several other eligibility checks such as program targeted areas and beneficiaries, in addition to climate eligibility; screening against investment, guidelines and exclusion list; environmental and social management safeguards. The climate eligibility criteria and screening check list contains also exclusion list which describes all activities the programme will not invest in. These are i) building dams above 15 m high; ii) constructing feeder roads which exceed 10km per location; iii) developing above 25ha per location; iv) developing cultural heritage sites; v) developing in protected areas and forests; vi) engaging child labour; vii) engaging in Category A activities.

B.2. Theory of change (max. 1000 words, approximately 2 pages plus diagram)

77. In the selected Sahelian countries of the GW, various fragmented initiatives are being implemented to build the resilience of smallholder farmers and rural communities to climate change. However, these are single and independent climate risk preparedness, climate risk adaption or climate risk transfers schemes. The key barriers to strengthening smallholder farmers' resilience to potential risk elevation due to climate change in the seven countries are a combination of technical, financial, policy and regulatory obstacles which prevent public sector, private sector and rural communities' participation in integrated climate risk management. The detailed summary is presented in the table below:

Table 9: Summary of key barriers and root causes that must be addressed by the programme and alternatives with GCF funding

Key barriers	Baseline	Alternative with GCF funding
Inadequate climate risk information services and limited knowledge and understanding of climate change impacts hinder capacity to better plan and develop integrated adaptive approach and solutions	<ul style="list-style-type: none"> • Poor spatial distribution of hydromet equipment in each country and in the targeted area, with no or very few automatic weather stations. • Existing network of hydromet stations is sparse and deteriorating, • Climate data, information, interpretation and knowledge are often inaccurate. • Because of limited data, there is a lack of awareness and understanding of the various forms of climate risks and their consequences for decision-making, including in relation to investments to support adaptation/mitigation solutions and the development of the agricultural industry • Limited knowledge sharing and transfer within and between communities and countries • Weak monitoring, reporting, verification 	<ul style="list-style-type: none"> • Expand and upgrade existing early warning systems and hydromet observation networks to enhance data collection, interpretation and understanding to better inform and improve micro and macro insurance infrastructure development, climate models, products and adaptation measures, policy and programmes, including the NDCs. • Increase access to agro-climatic information services (i.e. capacity-building for meteorological services, forecasting, the use of ARC's Africa RiskView (ARV) etc.) to inform adaptation and risk transfer measures. • Raise awareness on the adoption of best adaptation and mitigation measures in agriculture, forestry, land use, energy access and generation and livestock raising, as well as risk transfer in the form of micro and macro insurance using reliable climate data and information. • Multi-hazard early warning systems enhanced by strengthening the capacity of the meteorological services to provide impact-based forecasting (i.e. enhancing climate equipment available in the countries and providing training to climate experts and meteorologists on impact-based forecasting methodologies). • Strengthen understanding of climate risks to better inform decision-making, prepare for and manage climate shocks through the elaboration of contingency

		<p>plans that will lay out interventions and measures needed to adequately respond to climate shocks.</p> <ul style="list-style-type: none"> • Improve monitoring, reporting and verification (MRV) standards.
<p>Weak policy, institutional coordination mechanisms and capacity on integrated climate risk management and planning</p>	<ul style="list-style-type: none"> • Weak capacity of farmers, local and national governments and private sector to foster integrated climate risks management and planning • Insufficient skills and capacity of farmers to anticipate, address and deal with climate impacts • Limited ability of local and national governments to issue critical warnings, guide farmers on the best adaptation/mitigation measures • Limited capacity of farmers and farmers groups to seize opportunities created by risk transfers • Limited capacity of met agencies to manage climate information, maintain the climate monitoring infrastructure network and provide useful information to farmers 	<ul style="list-style-type: none"> • Strengthen capacity at country- and district levels to undertake climate risk assessments and elaborate climate risk profiles (i.e. climate risk modelling for the different countries and districts) and planning. • Improve the technical, organizational and marketing capacities of communities supported through diversified livelihood options by promoting income generating activities. This contributes to building farms and household resilience to climate change and sustainable food production systems at the same time, while increasing the national protein intake. • Strengthen agricultural extension services, including forestry and livestock raising, to provide close assistance to smallholder farmers in dealing with climate variability. • Reinforce the organizational and technical capacities of communities and farmers to implement adaptation and mitigation measures to foster the resilience of rice, millet, maize and sorghum production and post-harvest (selection and access to specific climate-adapted varieties).
	<ul style="list-style-type: none"> • Limited enabling policy, institutional, regulatory and fiscal framework and weak coordination mechanisms on integrated climate risk management • Lack of an adequate regulatory and fiscal framework on integrated climate risk management • Lack of coordination and inconsistencies affect the follow-up and capitalization of index-based agricultural insurance interventions • Lack of an enabling policy environment conducive to the development of agricultural insurance and adapted financial products • Limited awareness among policymakers, development practitioners and private sector agents about the risks posed by climate change and how these relate to development priorities • Limited coordination with ministries of finance for fiscal planning 	<ul style="list-style-type: none"> • Support countries in reviewing and developing contingency plans and fiscal and regulatory frameworks to support integrated climate risk management • Provide support to countries so they can sustain premium payments to ARC with resources from their own national budget • Support countries governance related to climate risk management and the use of insurance pay-outs to reach end users, while fostering alignment/linkages with micro insurance and coordination • Strengthen countries' responsiveness capacity to climate hazard (providing contingency funding for high frequency/low severity events for which risk transfer may not be suitable) • Develop comprehensive risk layering approach to climate risk financing, as well as tools and instruments to support policymakers in implementing integrated climate risks management.

		<ul style="list-style-type: none"> • Offer capacity-building programmes designed for government officials, regulatory bodies, the insurance industry, distribution channels and smallholder farmers on adequate coordination, follow-up and capitalization of index-based agricultural insurance interventions • Develop tools, instruments and strategies to enable communities, insurance companies and the public sector and private sector actors to respond to climate change and variability • Support high-level policy dialogue to close the financing gap on risk preparedness, adaptation and mitigation, risk transfers • Support cross-sector coordination mechanisms with all stakeholders (public, private, local communities and organizations) on integrated climate risks management • Build countries' responsiveness to climate shocks.
<p>Limited awareness and low adoption of PV mini-grids in agriculture, unsustainable agroforestry and land use practices (charcoal and timber production, traditional farming practices, slash and burn, overgrazing...)</p>	<ul style="list-style-type: none"> • Slash and burn agriculture and mono-cropping • Clearing forests for agriculture and charcoal • Planting at times of the year when rain is no longer certain to fall - Inadequate post-harvest storage techniques • Overgrazing on degraded land • Limited access to renewable energy to power agricultural value chains 	<ul style="list-style-type: none"> • Establish Agro-Pastoral/Farmer Field Schools (AP/FFS). • Promote CSA ha, dune stabilization techniques; restoration of degraded land and sustainable forest management • Promote sustainable forest management techniques for ha of forests • Support the integration of Assisted Natural Regeneration of trees (ANR) into rain-fed production systems • Support the installation of mini grid
<p>Limited adoption of best adaptation measures to address climate risks in an integrated manner with risk transfer</p>	<ul style="list-style-type: none"> • Risk transfer is not viable, because appropriate adaptation measures are not adopted, nor associated with risks measures • No adoption of CSA, sustainable climate resilient agriculture, use of climate-adapted varieties, zai and half-moon techniques, climate resilient infrastructures, adapted agricultural productions techniques • Various projects exist, but they are fragmented and treat climate risk preparedness, climate risk adaption or climate risk transfers schemes as though they were independent from one another 	<ul style="list-style-type: none"> • Promote CSA and Zai techniques • Support the scale up of half-moon techniques • Promote climate resilient agriculture • Promote climate resilient varieties • Promote climate proofing of rural infrastructures (road and warehouses) • Pilot and scale up adaptation measures that integrate risk transfer mechanisms • Promote public and private partnerships to diversify business as a mean to adapt to climate change • Increase access to micro level index insurance combined with agricultural inputs and other risk reduction and adaptation measures
<p>Limited access to agricultural insurance as private insurers are reluctant to develop this market; farmers and countries are reluctant to pay premiums; and high interest rates with</p>	<ul style="list-style-type: none"> • High cost of insurance premiums due to perception of smallholder farming as high risk, plus absence or limited adapted insurance products available in the market 	<ul style="list-style-type: none"> • Improve access to micro level index insurance combined with agricultural inputs, adaptation measures (Insurance for Work approach) or agricultural

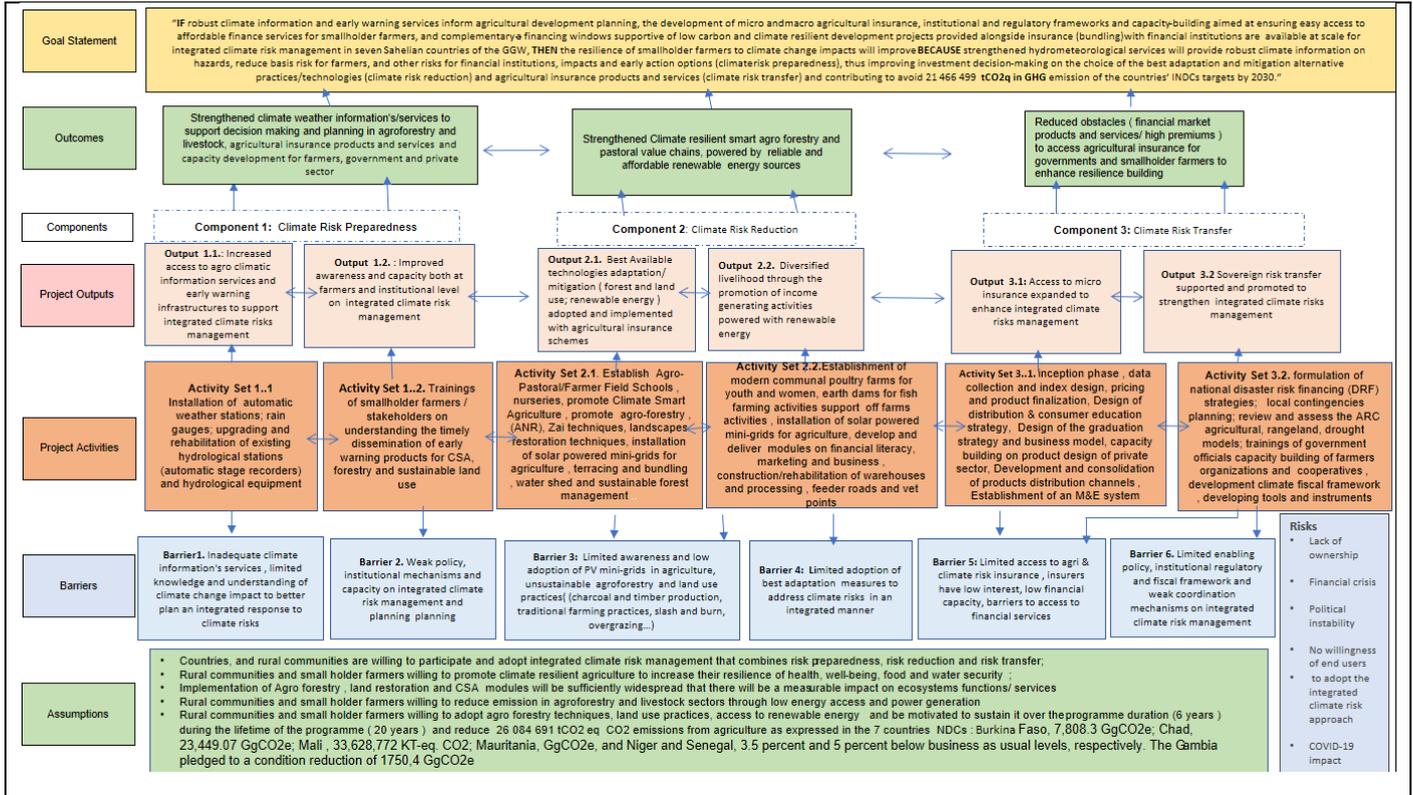
<p>financial institutions, which limit investments</p>	<p>and not interlinked with macro insurance schemes or other adaptation measures</p> <ul style="list-style-type: none"> • Low level of involvement and/or commitment among insurers and ministries of agriculture to the development of weather or parametric insurance in countries. • Overall limited distribution and delivery modalities infrastructure for insurance to reach scale and sustainability • Farmers and countries not motivated to pay premiums. Low awareness and financial capacity • Limited access to credit in general and to financial products tailored to smallholder farmers' needs in particular, such as insurance policies bundled with options from the other input packages (seeds, fertilizers or pesticides). • Limited availability, access to and use of agro-climate information services • Limited productive investments in low emission and climate resilient agriculture, forest management and energy for agriculture. 	<p>financial products tailored to each of the selected countries' context.</p> <ul style="list-style-type: none"> • Support to cover the insurance costs through a digressive approach in which the percentage of insurance premiums assumed by the project decreases gradually over a four-year period (the project will cover 90 percent of the premium in the first year; 70 percent in the second; 50 percent in the third, and 0 percent in the fourth and final year). • Technical support to reinforce and build distribution infrastructure, including use of digital tools (mobile platforms). •
<p>Limited enabling policy, institutional regulatory and fiscal framework and weak coordination mechanisms on integrated climate risk management</p>	<ul style="list-style-type: none"> • Weak national policy to better integrate sovereign risk and climate risks into policy and national budget • Lack of an enabling policy environment conducive to the development of sovereign agricultural insurance and adapted financial products 	<ul style="list-style-type: none"> • Support the payment of premiums for sovereign risk transfer (macro insurance) in the recipient countries to help each government cushion the country from the impacts of climate hazards. • Elaborate disaster risk financing strategies supported by building comprehensive national disaster risk financing (DRF) strategies and an understanding of the whole array of financing instruments available for disaster response, with an emphasis on sovereign risk insurance. • Improved fiscal, institutional and legal framework to support agricultural insurance and access to financial products.

78. **Programme objectives against baseline:** The baseline scenario above identifies several key technical, financial, policy and regulatory obstacles that lead to fragmented and ineffective climate interventions in the Sahel. To address these obstacles, this programme's ultimate outcome is: increased resilience and enhanced livelihoods and food security of smallholder farmers and rural communities through integrated climate risk management of natural resources (water, forest soil, ecosystems). The outcome contributes to the overall programme impact, which is: improved climate resilience and increased adaptive capacity of 817,922 smallholder farmers and 6,150,676 beneficiaries in seven Sahelian countries of the GGW.

79. **Programme Goal Statement:** "IF robust climate information and early warning services inform agricultural development planning, the development of micro and macro agricultural insurance, institutional and regulatory frameworks and capacity-building aimed at ensuring easy access to affordable finance services for smallholder farmers, and complementary alternative financing windows supportive of low carbon and climate resilient development projects provided alongside insurance (bundling) with financial institutions are available at scale for integrated climate risk management in seven Sahelian countries of the GGW, THEN the resilience of smallholder farmers to climate change impacts will improve BECAUSE strengthened hydrometeorological services will provide robust climate information on hazards, reduce basis risk for farmers, and other risks for financial institutions, impacts and early action options (climate risk preparedness), thus improving investment decision-making on the choice of the best adaptation and mitigation alternative practices/technologies (climate risk reduction) and agricultural insurance products and services (climate risk transfer) and contributing to avoid 21 466 499

80. **tCO₂q in GHG** emission of the countries' INDCs targets by 2030." The proposed programme supports a more sustainable development pathway towards climate resilience for vulnerable smallholder farmers and rural communities, as described in each country's long-term vision for climate resilient and low emission agriculture. This can be achieved through strategic investments in integrated climate risk management and modernizing the way climate risks are addressed. The programme will strengthen smallholder farmers' resilience to climate change through the promotion of a climate risk management continuum that links risks preparedness, risks reduction with concrete adaptation and/or mitigation measures (forestry and land use, renewable energy access) and risk transfer schemes. The programme's integrated approach is organized around three mutually connected components:
81. **Component 1. Climate Risk Preparedness:** Supports training, capacity-building, expanding and upgrading existing early warning systems (EWS) and hydromet observation networks to enhance data collection, interpretation and understanding. Climate information services are critical for the creation of relevant, science-based information to inform decision-making, EWS and create new business opportunities. It will support the establishment of impact-based multi-hazard EWSs, which are key for de-risking agricultural investments, creating synergy for early action and increasing the resilience of vulnerable communities, livelihoods, assets and operations. Through this component, quantitative and qualitative climate information will be generated to inform and improve adaptation practices and mitigation measures on forestry, land use and energy access, as well as insurance products and forecast-based action/financing (FBA/FBF), which are leading examples of innovative disaster risk financing mechanisms. This will foster the development of the micro and sovereign insurance industry (climate models and products/services) promoted under Component 3. Additionally, these climate information will help guide farmers on the selection and adoption the most appropriate adaptation and mitigation practices/technologies (Component 2) to respond to climate variability (cropping calendars; timing for marketing and processing; choice of the most suitable agroforestry practices and technologies, as well as energy access). This component also aims to strengthen the capacity of rural communities to understand climate risks in order to better manage climate shocks and of meteorological services to provide impact-based forecasting (improving climate equipment available in the countries and training climate and meteorology experts in the countries on impact-based forecasting methodologies for agriculture and the insurance industry and on the maintenance of equipment and infrastructures).
82. **Component 2. Climate Risk Reduction (adaptation/mitigation):** Promotes the adoption of the best, alternative adaptation and mitigation practices/technologies by smallholder farmers, supported by reliable climate information (Component 1) and combined with insurance schemes (Component 3), as opposed to conventional agriculture, forestry and livestock production. More concretely, it will support micro- and small-sized climate-resilient agroforestry and pastoralism schemes and Agro-Pastoral/Farmer Field Schools (AP/FFS) backed with insurance and ~~alternative~~ complementary financing windows supportive of low carbon and climate resilient development interventions under IFAD baseline investments . The goal is to: (i) restore degraded land using vulnerability-informed land use, tree shading and agroforestry techniques; integrate Assisted Natural Regeneration of trees (ANR) into rain-fed production systems and promote crop rotation and association techniques, and enable farmers to adopt Zaï and half-moon rain water harvesting techniques for soil and water conservation; ii) foster sustainable water management and use through climate-smart irrigation systems (bore holes, irrigation schemes or drip technologies) powered by renewable energy sources to help cope with the consequences of drought and extreme heat events; iii) construct/rehabilitate climate resilient infrastructures, such as warehouses and processing facilities and climate resilient roads, and iv) integrate capacity-building on climate resilient crop and pasture management techniques into AP/FFS curricula for smallholder farmers.
83. **Component 3. Climate Risk Transfer:** (micro and sovereign risk transfer mechanism) Aims to overcome barriers related to residual risks of climate change on smallholder farmers through the use of risk transfer instruments (micro and macro insurance) and the development of national and international insurance markets offering timely compensation to farmers by reducing basis risk for payouts for weather-related shocks (dry spells or drought) to prevent them from resorting to negative coping strategies (selling animals and assets, migration, competition over resources and conflicts) in the event of climate disasters. Enhanced hydro-meteorological information and awareness (Component 1) combined with the best adaptation and mitigation solutions for forestry, land use and energy access to power agroforestry and livestock value chains (Component 2) will help remove obstacles to accessing climate risk transfer financial products and services (micro and macro insurance) and coordinated action from the public and private sector (insurance and re-insurance, microfinance institutions, banks) and local businesses (farmers organizations, MSMEs and cooperatives). When combined with risk assessment and preparedness tools and the right adaptation options, risk transfer schemes have the potential to improve countries' climate risk profiles and their ability to handle the devastating impacts of climate disasters and economic losses, and generally contribute to sustainable development. Risk transfer mechanisms alone, without appropriate climate preparedness and risk reduction mechanisms for smallholder farmers, come at a high premium and thus, are limited in scale and reach. Economic models have shown that interest rates on credit and other financial services are lower when risks are low, and insurance policies have been incorporated. While each of these risk mechanisms can be justified individually, there is a need for their integration.

The detailed Theory of Change is presented below.

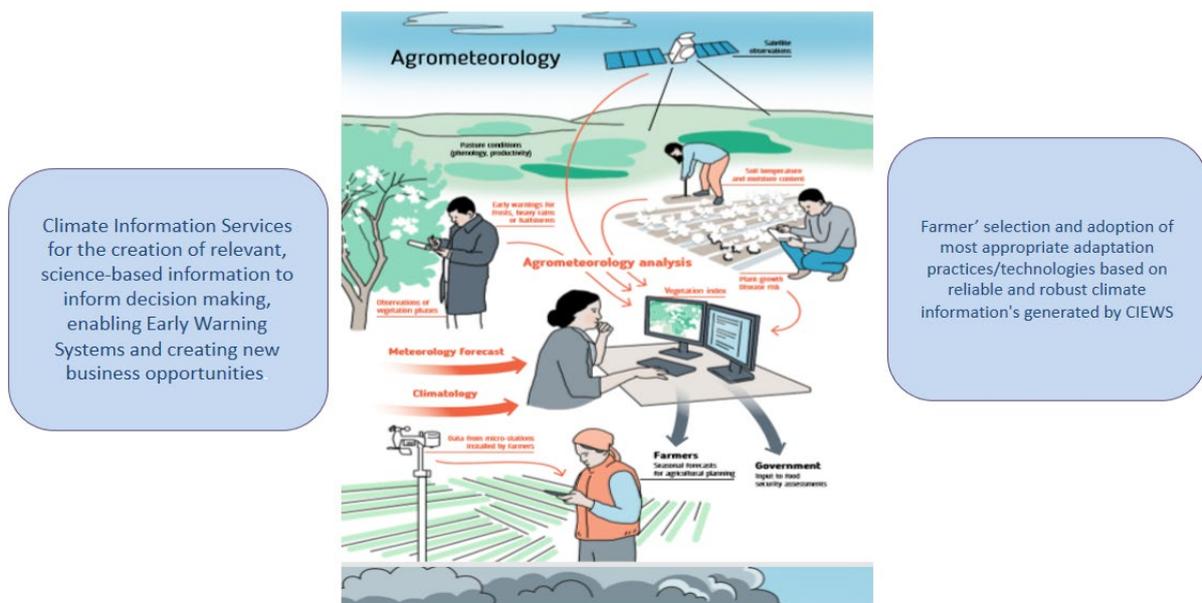


B.3. Project/programme description (max. 2000 words, approximately 4 pages)

84. **The programme's main overall objective** is to increase resilience and enhance the livelihoods and food and water security of smallholder farmers and rural communities through integrated climate risk management of natural resources (water, soil, ecosystems) in seven countries of the Green Great Wall (GGW). It also seeks to enable these countries to adopt low emission, climate resilient pathways for agricultural development by promoting, upgrading and scaling up risk management measures in agriculture while delivering various adaptation and mitigation co-benefits, including the avoidance of 21 466 499 tCO2q GHG emissions. To achieve the expected outcome, the programme is divided into three mutually reinforcing and interlinked components that contribute to the following three outcomes:
- Outcome 1: Strengthened climate weather information services to support decision-making and planning in relation to agroforestry, livestock raising, agricultural insurance products and services and capacity development for farmers, government and the private sector
 - Outcome 2: Strengthened climate resilient agroforestry and pastoral value chains, powered by reliable and affordable renewable energy sources
 - Outcome 3: Reduced obstacles (financial market products and services/high premiums) to access to agricultural insurance for governments and smallholder farmers to enhance resilience building.
85. Effectively implemented, this programme will contribute to a potential total emissions abatement of 21 466 499 MtCO2eq against the countries' NDC targets. This mitigation potential represents 10.4 percent of the GGW emission reduction target (250 MtCO2).
86. The adoption of the regional approach is primarily driven by the similarity in circumstances and challenges in the seven Sahelian countries, which can facilitate sharing of lessons and good practices and mutual learning through South-South and triangular cooperation. Strong knowledge management established across the programme will allow for enhanced experience sharing, enabling improved adaptive management beyond what would be observed in the case of a single country project. The regional approach will trigger or strengthen cooperation and synergies between the seven countries of the GGW on integrated climate risk management.
87. **Justification of the programme's intervention areas:** The programme will target regions in the seven countries of the Sahel in the GGW, selected on the basis of criteria related to poverty levels, quality and scale of infrastructure, vulnerability to climate change, food insecurity and nutrition, gender inequality, youth unemployment, agricultural local based economies, remoteness, needs, presence of relevant and complementary programmes such as the IFAD new baseline investment, the G5+1 Sahel programme, AfDB's ADRIFI and ARC targeted areas. These targeted regions have a range of ecosystems and agricultural zones, such as the savannah and semi-arid regions. They all offer opportunities in several tradable commodities produced there, such as maize, soybean, dairy, livestock, rice, tree crops (cashew) and horticulture, not to mention fish farming in other regions, including the Lake Chad and Niger River basins. This programme will be implemented on a country-

by-country basis with the support the Executing Entities (IFAD, WFP, AfDB, and ARC) and will contribute to the achievement of their INDCs. Maps are compiled in the Appendix entitled Maps.

88. **How the components are linked:** Farmers, governments and the private sector engaging in climate risk preparedness (Component 1) will be able to better understand climate risks and tailored agro-climatic information services, including advisories on how to further transfer disaster risk (Component 3) and increase productivity and capacity to cope with climate change and variability (Component 2). By increasing their understanding and ability to prepare and manage risk, farmers will also be able to access unlocked weather index insurance and receive compensation in case of drought or dry spells from public and private insurance companies (Component 3) coupled with rural finance schemes. To ensure that increased productivity translates into increased food security and incomes, farmers will also benefit from increased access to markets (Component 2) thanks to techniques and infrastructure that help reduce post-harvest losses and raise the quality of their products to marketable levels. Climate proofing storage facilities and roads will also help guarantee year-long market access. This will all enable smallholder farmers to invest further in climate-resilient practices, technologies and inputs along the selected agricultural value chains.
89. **Component 1 (Climate Risk Preparedness):** The main outcome of this component is strengthened climate weather information's/services to support decision making and planning in agro-forestry, livestock, agricultural insurance products and services and capacity development for farmers, government and private sector. It will enhance ongoing agricultural micro and macro insurance programs from both the private sector and the Africa Risk Capacity in particular. Effective and reliable hydromet services help ensure that people can safely evacuate before a disaster hits, government agencies can effectively plan for climate adaptation, farmers can better plan for how to grow their crops, and businesses can make use of timely, accurate data in their decision-making. With useful weather, water, and climate information services, pilots and meteorologists can also plan and make more informed decisions, and water and weather-dependent agro-industries like fishing, forestry, land use, livestock and agriculture can be more efficient. Improved climate information will guide the choice of the best integrated adaptation/mitigation options in agriculture. This would include cropping calendar planning; the integration of climate risk management into local and national planning and capacity development of Met agencies, farmers, government decision makers and private sector. Under this component, the intervention strategy will focus on expanding and upgrading existing early warning systems and hydro met observation networks, the development set of tools and instruments combined with developing the capacity, awareness raising of national and district governments, extension services and other stakeholders to characterize and map risk, and design and implement concrete integrated solutions (best adaptation options and mitigation measures (forestry, land use, energy access) with the corresponding agricultural insurance products) to reduce risk and impacts, including through improved disaster response. It comprises: Output 1.1: Increased access to agro-climatic information services to support integrated climate risks management and Output 1.2. Awareness raising and capacity building on integrated climate risks management.



Output 1.1: Increased access to agro-climatic information services and early warning infrastructure to support integrated climate risks management (Executing entities: The 7 selected countries, , ARC, Agriculture Finance and Rural Finance Department of AfDB through the ADRIFI Program). This output includes an expanded, upgraded and denser spatial distribution of hydromet equipment and early warning infrastructure network to allow for the development of an early warning system based on the latest in-situ data, satellite products and climate/hydrological/crop models. Improved climate data collection will be used to foster reliable weather index insurance systems. The programme will thus support the installation of automatic weather stations and rain gauges; the upgrading and rehabilitation of existing hydrological stations (automatic stage recorders) and their specialized hydrological equipment (acoustic doppler current profiler, bathymetric instruments,

etc.). The programme will support the procurement of the latest technologies and innovations for data collection, communication, transmission, forecasting and decision support systems. It will upgrade data collection and communication equipment and devices, radars, data storage and management systems, computers and software for remote sensing, customized tools for GIS modelling and forecasting. The output will therefore be reliable quantitative and qualitative data and well-interpreted information to inform farmers' decisions on the best agricultural, forestry and livestock practices to adapt to climate change. Such information will also support the development of parametric insurance products and model updates and encourage private insurers to unlock their products in areas where data for decision and investment were absent. In addition to this, more comprehensive climate risk profiles will be generated to support the agriculture, forestry, land use and livestock sectors. This climate information will be used to raise awareness and design capacity-building and institutional development programmes. Through agreements, durable assets (weather stations and rain gauges), will be retroceded to the Met agencies. Other agreements will be signed at PMU level in each country with farmers organizations, cooperatives / farmers groups to implement sub projects listed under the eligibility criteria annex 23.

90. **Activities** include (for activities disaggregated by country, see the appendix "Activities breakdown per country"):

- **1.1.1:** A preliminary study and mapping of locations of the small hydraulic infrastructure across the 7 countries and detailed designs and ESS studies
- **1.1.2:** Installation of 560 automatic weather stations and 700 rain gauges; upgrade/rehabilitate existing 210 hydrological stations across the 7 countries
- **1.1.3:** Trainings of 350 meteorological experts in country on impact-based forecasting methodologies, data collection and interpretation
- **1.1.4:** Design and develop a nationally tailored version of the system, using in-situ data and local knowledge/priorities
- **1.1.5:** Develop communication systems and dissemination methods to translate early warning information into guidance and warnings for government agencies, emergency services, aid agencies, agricultural NGOs and extension services
- **1.1.6:** Coordination and knowledge sharing with ACMAD and other regional institutions (e.g. AGRHYMET, Climate Outlook Forum) on best practices, complementarities and consistencies with regional products and warnings

91. **Output 1.2. Improved awareness raising, capacity building and institutional development on integrated climate risks management (Agriculture Finance and Rural Finance Department of AfDB through the ADRIFI Programme, IFAD).** This output will involve training smallholder farmers on the timely use of early warning products (including agro-climatic information) to improve their understanding of climate variability; developing and interpreting climate maps and charts, as well as trigger systems for decision-making based on climatic events and thresholds. It will also foster the adoption of proven climate-relevant practices at the district level and provide training to extension agents on early warning systems for droughts, floods or extreme precipitation (e.g. cropping calendars; see Feasibility Study for the seven countries). This output, implemented by the Agriculture Finance and Rural Finance Department of AfDB through ADRIFI Programme, will also strengthen the organizational and technical capacities of communities and farmers on integrated climate risk management, and develop capacity-building programmes for government authorities to support decision-making and contingency planning, and for regulatory bodies, the insurance industry, distribution channels entities and smallholder farmers. It will support the establishment of coordination mechanisms and the capitalization of index-based agricultural insurance interventions. In each participating countries, the programme will support the generation and dissemination of information and best practices and technologies, adequate insurance schemes and improve access to timely, meaningful and trustworthy climate information and knowledge.

Activities include (for activities disaggregated by country, see the appendix "Activities breakdown per country"):

- **1.2.1:** Training of 50,000 smallholder farmers on the timely dissemination of early warning products (including agro-climatic information)
- **1.2.2:** Raising awareness among 1,500,000 smallholder farmers/ pastoralists on the best climate adaptation/mitigation practices/technologies; weather index insurance, gender and youth climate nexus.
- **1.2.3:** Training of 700 extension agents on integrated climate risk
- **1.2.4:** Conduct gender and youth impact analyses and training of 100,000 women and 100,000 youth
- **1.2.5:** Training on financial literacy and integrated climate risk management trainings for 2000 cooperatives, SMEs or farmers organizations.
- **1.2.6:** Support the integration of integrated climate risks into 35 local development plans across the 7 countries.
- **1.2.7:** Support of 3 digital services/ solutions per country to deliver key information's on production, weather, finance and markets, community disease and food safety surveillance; payments of premiums via mobile money.
- **1.2.8:** Trainings of 1400 local government officials; 20,000 farmers; local financial institutions on climate information and use
- **1.2.9:** Preparation of a knowledge management strategy.
- **1.2.10:** Creation of solution-oriented platforms containing KM information
- **1.2.11:** Organize high-level and technical events.
- **1.2.12:** Produce one publication per country per year and 1 brief per country per year
- **1.2.13:** Videos and radio programs and catalogues during the project lifecycle.
- **1.2.14:** Develop an SSTC plan.
- **1.2.15:** Organize South South and triangular cooperation with at least six exchange visits.

92. **Component 2 (Climate risk reduction):** The main outcome is strengthened climate resilient agroforestry and pastoral value chains powered by reliable and affordable renewable energy sources. Reliable climate information generated through Component 1 will be used to guide decisions on the best adaptation/mitigation techniques, including forestry and land use practices and technologies, and energy sources for agricultural use per country developed and implemented in this component. Combining these adaptation options with access to insurance schemes developed under Component 3 will boost farmers' resilience to shocks and climate variability. Under this component, the programme will focus on the selection and implementation of adaptation measures under Output 2.1, while Output 2.2 supports the shift towards climate resilient production and post-harvest systems combined with livelihood diversification in the targeted areas, which involves the adoption of on-farm practices and technologies to improve resilience and opportunities.
93. **Output 2.1: Best Available technologies adaptation/ mitigation (forest and land use; renewable energy) adopted and implemented with agricultural insurance schemes (executing entities:** The Republic of Niger, Burkina Faso, Chad, Mali, Mauritania, Senegal and The Gambia). This output focuses on promoting the use of adaptation and mitigation techniques and technologies on agro-pastoralism to address the water deficit brought on by rising temperatures, the evaporation of water from the soil and reduced soil fertility, evapotranspiration from crops and plantations, reduced rainfall and extended dry seasons. It also addresses flooding, surface runoffs, dune stabilization and land restoration and techniques that inhibit the proliferation of pests during and after production (post-harvest phases). A range of approaches will be evaluated for their appropriateness to the local context in each country and implemented accordingly. The programme will promote a combination of adaptation and mitigation activities with insurance schemes and ensure that the implementation of adaptation and mitigation activities (output 2.1) are fully aligned with the activities under output 3.1. Through agreements, durable assets (Agro-Pastoral/Farmer Field Schools (AP/FFS), nurseries; water points) will be retroceded to communities while mini-grids will be under the ministries of energy.
94. **Activities** include (for activities disaggregated by country, see the appendix "Activities breakdown per country"):
- 2.1.1: Establish 500 Agro-Pastoral/Farmer Field Schools (AP/FFS)
 - 2.1.2: Set up 1,000 nurseries to grow select climate-adapted varieties (e.g. heat, submergence, drought and salinity tolerant, pest resistant)
 - 2.1.3: Promote CSA on 200,000 ha, dune stabilization techniques; restoration of degraded land and sustainable forest management
 - 2.1.4: Undertake mechanical/biological management to restore 100,000 ha of pastureland across the 7 countries
 - 2.1.5: Promote sustainable forest management techniques for 40,000 ha of forests
 - 2.1.6: Promote the integration of agroforestry into farming systems on 26,000 ha of selected watersheds
 - 2.1.7: Support the Integration of Assisted Natural Regeneration of trees (ANR) into 70,000 ha of rain fed production systems, crop rotation and association, per ecosystems
 - 2.1.8: Promote Zaï and half-moon techniques on 60,000 ha
 - 2.1.9: Construction and rehabilitation of 175 water points (reservoirs, ponds, wells, boreholes) for farming and 100,000 km of transhumance pathways
 - 2.1.10: Construction of rainwater harvesting infrastructure across 7 transhumance corridors
 - 2.1.11: Installation of 392 mini-grids to power agricultural –livestock value chains and improve access to energy to households
 - 2.1.12: Trainings of 50,000 farmers on sustainable agriculture, community maintenance of infrastructures and watershed management by installation of 196 mini-grids to power agricultural –livestock value chains and improve access to energy to households
95. **Output 2.2. Diversified livelihood through the promotion of income generating activities powered with renewable energy (executing entities:** The Republic of Niger, Burkina Faso, Chad, Mali, Mauritania, Senegal and The Gambia) (Funded only by IFAD baseline investments and IFAD G5+1 Sahel regional programme). This output promotes the diversification of livelihoods through income-generating activities (off-farm and other income-generating activities) along value chains as a way to strengthen the resilience of farms and household to climate change, while contributing to sustainable food production systems and increased national protein intake. This output will be mainly supported by new IFAD investments under the G5 +1 Sahel programme and baseline investment in The Gambia. Beneficiaries of this input will benefit from the insurance products and all services linked to the market-based agricultural insurance development at these levels (e.g. insurance feasibility, products and schemes design/roll out, credit products for specific inputs, asset transfer and training sessions).
96. **Activities** include (for activities disaggregated by country, see the appendix "Activities breakdown per country" - COSTAB):
- 2.2.1: Establishment of 200 modern communal poultry farms for youth and women
 - 2.2.2: Construction of 200 earth dams for fish farming activities
 - 2.2.3: Establishment of 100 integrated vegetable gardens based on community models on at least 4-5 ha (solar pumps, compost systems, daycare facility for women, agroforestry and rotation of crops; transport systems)
 - 2.2.4: Support to 2,500 off-farm activities (mechanical workshops for equipment maintenance; solar system maintenance; stores and bakeries; digital finance and money transfers)
 - 2.2.5: Climate-proof 700 feeder roads and farm tracks to ensure year-round and all-weather usability (culverts, sand stabilization, side-drains to reduce erosion, etc.) and connection to markets

- **2.2.6:** Develop and deliver training modules on financial literacy, marketing and business management for 2,500 farmers' organizations, 1,500 MSMEs and 2,000 cooperatives
- **2.2.7:** Construct/rehabilitate 200 warehouses and processing facilities that withstand climate change
- **2.2.8:** Construct or rehabilitate 100 vet points
- **2.2.9:** Support the deployment of 100 micro grid to power agricultural value chains
- **2.2.10:** Provide support to districts for the development of feeder road maintenance plans and to farmers for road maintenance

97. Component 3. (Climate Risk transfer): Promotes climate risk transfer mechanisms at both the micro and macro levels to address the residual risk of climate hazards. The main outcome under Component 3 is reduced obstacles (ill-adapted financial market products and services/high premiums) to governments and smallholder farmers' access to agricultural insurance to enhance their resilience building. To achieve this, the programme will build on climate information generated through the climate networks and early warning systems expanded and upgraded under Component 1 to support the agricultural insurance industry. In addition, the programme will support government involvement in the programme by developing local champions and working partnerships with the necessary distribution channels to ensure that the programme reaches scale and is sustainable; by assessing technical feasibility of covering identified climate risks through index insurance; and putting into place infrastructure, a fiscal, policy and regulatory framework, if needed, and a governance structure. This component comprises two outputs. Output 3.1 aims at supporting countries to establish, strengthen and consolidate agricultural micro-insurance policies, institutions, products and services to better respond to national and local climate risks and shocks. The proposed strategy and incentive for providing smallholder farmers support to cover the insurance costs will use a digressive approach in which the percentage of the insurance premiums assumed by the project decreases gradually over a four-year period: depending on the country/target group context and the existing familiarity and trust with insurance, the project could cover 90 percent of the premium in the first year, 70 percent in the second, 50 percent in the third, and 0 percent in the fourth and final year. This digressive approach is an exit strategy that aims to empower smallholder farmers to assume the responsibility for the insurance and manage the risks to which they are exposed. Farmers will be enrolled in the micro insurance by using risk reduction measures, as is done in the R4 model. Risks transfer activities will be combined with risk preparedness and risk reduction measures and adaptation activities. The micro insurance component will become one of the layers of protection to help farmers withstand climate shocks. Output 3.2 supports the sovereign risk transfer mechanism (macro-insurance) by strengthening ARC's efforts. It will focus specifically on fiscal and regulatory capacity-building in relation to countries' premiums payments and the governance of the use of pay-outs to reach end users. Under this output, ARV tools and models will be strengthened and support will be provided for local development and national contingency plans. While the programme will support Tier 1 payment with the micro insurance and ADRiFi, Tier 2 payments to countries with macro insurance and links; the programme will also facilitate under IFAD baselines investments on rural finance the blending with loan products to ensure the sustainability.

98. Output 3.1. Access to micro insurance expanded to enhance integrated climate risks management (executing entity: WFP) : This output focuses on the development of micro insurance schemes tailored to each country context. According to the Index Insurance Forum, index-based insurance can cover risks experienced at various levels. Micro-level index insurance covers individuals and has been implemented in countries like Senegal. Micro-insurance has a direct impact on farmers in terms of coverage, but also provides the incentive to reduce risk exposure and helps them increase investment (i.e. reduces the risk of moral hazard which is classic to insurance). Distribution and sustainability are challenging though. Micro level index-based insurance covers farmers through "aggregators" or distribution channels such as banks, microfinance institutions, agribusinesses, agrodealers, mobile networks operators, national export companies (see the feasibility study for each country), or even farmers cooperatives or organizations. If distribution and sustainability are made easier, the direct impact on farmers is very significant. Based on an inception assessment in each of the seven countries, that will be conducted at the very start of the programme's implementation, the most efficient delivery strategies will be implemented, including the use of digital tools (like mobile money platforms). Premiums payments will occur in a specific timeframe frequently related to the start of season and are made through cash, mobile payments or other solutions. The premium payment is proportional to the cost and likelihood of the risk involved. Smallholder farmers can insure either their crops or livestock against a number of hazards, the most common being droughts, but they can also be excessive rainfall, storms and pest infestation. The index-based micro-insurance payouts are determined by trigger points on an index, not by actual incurred losses. This helps to reduce basis risk and also makes farmers more willing to buy insurance. These triggers are usually either set based on a frequency of payouts or based on agro-climatic considerations. Rainfall indexes for instance are based on rainfall data from weather stations, satellite rainfall measurements or other sources. Based on this data, a threshold is determined which, when exceeded, immediately triggers pay-out. Thus, losses are not assessed on a case-by-case basis, which substantially cuts down on administrative costs; these cost savings are ultimately reflected in lower premiums for the target group. Macro-level index insurance (see component 3.2) covers contingent liabilities that governments might face in the event of a disaster or a weather-related event and has been promoted by ARC, which provides coverage for governments for the risks of climate disasters. Two groups of countries have been identified: the first group (Burkina Faso, Mali and Senegal) is composed of countries with existing stakeholders and an experience in climate risk insurance that can be scaled up. The second group (Chad, Mauritania, Niger and The Gambia) have very limited to no experience and stakeholders in this domain. They will need to first create the conditions for introducing a pilot scheme (after one year) and then, expanding the portfolio. Capacity-building in this component will focus on insurance companies, distribution channels, end users and government officials (supervisors and ministries of agriculture, in particular).

99. Under this output, and based on results in the 10 R4 countries, including Senegal, the proposed strategy and incentives for providing smallholder farmers support to cover the cost of insurance will use a digressive approach in which the percentage of the insurance premiums assumed by the programme decreases gradually over a four-year period, depending on the country and target group context: for example, the programme could cover 90 percent of the premium in the first year, 70 percent in the second, 50 percent in the third, and 0 percent in the fourth and final year. This digressive approach forms part of an exit strategy that aims to empower smallholder farmers to assume the responsibility for their insurance and manage the risks to which they are exposed. This means that the premium will be paid to the insurers from 2 sources: i. WFP will transfer payment to the insurer upon reception of the list of insured farmers, and amount of conditional transfer; ii. farmers will pay an increasing cash contribution, year after year, as they sign up for the policy document. Nevertheless, an assessment will be carried out in the inception phase to adjust these percentages to the graduation conditions in each country. Thus, farmers will progressively increase their cash contribution to purchase the input package, which will include the insurance product. This scheme also seeks to foster a more coordinated response and expand maximum risk coverage to the entire country. During implementation, programme support for insurance schemes will enable the governments to use their country's resources to extend risk coverage to the rest of the country.
100. Support for micro insurance product development will be provided by reducing basis risks for farmers. This will be done by better tailoring the design of information services and products covering the risk of drought, flood, heatwaves, locusts, pest and diseases affecting both livestock and crops to smallholder farmers' needs and country contexts. This will involve cross-referencing of data on yields and weather to identify correlations between weather patterns, soil moisture temperature and yields and determine the pricing of insurance products in cooperation with reinsurers. Crop selection will be made during the inception phase, based on existing products, needs and regions covered, as well as the potential for building synergies with IFAD, WFP and government programmes and the capacity to aggregate farmers. A special focus will also be placed on pastoral activities. Capacity-building and consumer education and protection measures will also be provided to encourage the adoption of insurance as part of the inputs in smallholder farming, especially in areas that are particularly prone to climate risks. This includes capacity-building programmes targeting government, regulatory and supervisory authorities and the insurance industry to improve capacity to develop products, including ones for women, broaden the range of products available and implement large scale sustainable distribution channels. The capacity building activity will include an advocacy aspect to ensure maximum political support, creation or access to subsidies system or even tax relief, so that the premium structure is optimized. Financial capacity of farmers will be supported by the Insurance for Work approach of the R4 model, where the premium will partly be paid by the programme if farmers implement adaptation and risk reduction measures. WFP will conduct a simple gross margin analysis during the feasibility study phase, to assess the affordability of the product and graduation capacity of farmers over time (increase in cash contribution). Under output 3.1, GCF funds from the AE will be disbursed to WFP. A part of the funds is devoted to the payment of the premium for the beneficiaries by the programme to the insurer, through WFP. For example, in Senegal, WFP will pay the beneficiaries' premiums to CNAAS, the insurer, to ensure that beneficiaries are insured against risk. At the end of the season, and after the different pay-outs have been calculated (per phase and the sum for the entire season), the insurer will directly pay beneficiaries the compensation to which they are entitled (note that these payments will not be GCF proceeds but insurance pay-outs from the insurer). The fund will be disbursed by the insurer directly to beneficiaries through distribution channels (financial institutions, farmer associations/cooperatives, etc.) under the supervision of WFP and its partners.
101. Regarding payment of premiums and pay-outs, the use of mobile channels will be used to facilitate the collection of insurance premiums through payment reminders or payment via mobile devices or pay-outs. With self-payments of premiums through mobile money accounts or prepaid airtime balances, mobile network operators and insurance companies have the potential to create huge cost efficiencies in the distribution of micro insurance. Depending on the level of the market's development and the country, mobile operators and insurance companies might explore either airtime or mobile money to facilitate access to a larger client base and align with a payment mechanism with which consumers are already familiar. The transfer system will rely on a database of farmers who, as registered recipients of the micro insurance, will have a better chance of gaining access to formal or regulated financial services.
102. **Activities** will include (activities disaggregated by country- see annex Activities breakdown per country):
- 3.1.1:** Inception phase, which will give a good understanding of the context (types of risks, existing products and delivery channels, key value chains and crops...).
- This entails conducting an inception assessment in each country to obtain a clear understanding of the context and demand at the moment of project start (types of risks, existing insurance products and delivery channels, key value chains, crops or livestock, etc.), confirm that the selected regions and crops are conducive for implementation and scale of index insurance, identify capacity-building needs and select partners on the basis of WFP's procurement rules (public agencies and ministries, insurance companies, delivery channels). This sub-activity will mainly be conducted through interviews and review of documentation. Field assessments to meet with communities and stakeholders will also be essential.
- 3.1.2:** Data collection and index design, pricing and product finalization.

This activity will focus on collecting data, design index, set pricing⁶⁰ and finalize the product based on the type of index selected (for the mix of products). WFP will work with service providers, insurance and reinsurance companies to develop the best product possible. In order to ensure the optimum pricing, WFP will be involved at every step of the product pricing and the negotiation for the different levels of commissions (for the insurer, the distribution channel and possibly a broker). According to the guidance, based on market practices, WFP developed for assessing premium structure, acceptable market practices values are: 5 to 12 % for insurance companies, 3 to 8% for delivery channels, 5% to 10% to third party depending on the role. In addition, WFP will provide support to insurers looking for reinsurance capacities and pricing capacities, and ensure the best available rates are provided. As market practice, though, once a reinsurer has been selected, it is agreed to renew the deal, provided the quotation remains acceptable, during 3 years

3.1.3: Design of distribution and consumer education strategy, including design of the integration approach.

WFP, with the service provider, will design this strategy and the consumer education tools. The selection of distribution channels (or aggregators) will depend on the following criteria: i. experience and interest in distributing a micro-insurance product, and even more a climate risk insurance product, during and beyond the project; ii. capacity to set up, with the insurer, a sustainable model; iii. capacity to gather participants, collect the data and premium, report it and settle the claims. It has to be mentioned that the contractual link will be only between the insurer and the delivery channel / aggregator through the collective policy, which will include a distribution commission

3.1.4: Development and consolidation of product distribution channels during the first sales season. WFP will work with the service provider and insurance company on this sub-activity.

3.1.5: Design the graduation strategy and business model. WFP will work mainly with the insurance company, but also other stakeholders to develop this strategy.

3.1.6: Capacity-building on product design for private insurers and governments and on handing over to insurance sector

3.1.7: Technical support at institutional level to create a dedicated insurance company, a public scheme or a coinsurance pool.

WFP will provide support to governments and supervisors, based on the needs assessment conducted under activity 3.1.1: and potential requests made by governments, on the development of regulation and policy, including potential technical support on developing an institutional approach on index insurance. This will be done by providing technical support which could include (based on national needs) support for the creation of a dedicated insurance company, or a domestic public insurance scheme whose role is to provide index insurance products to farmers, or even a coinsurance pool to increase local retention. WFP will be in charge of this sub-activity with potential support from a service provider. WFP will not make any financial investment in any insurance company but only provide technical support. In this activity, WFP will also advocate for setting up, or benefitting from public subsidies, or tax reduction or relief, in order to optimize the investment in premium, but also render the product more affordable to end users

3.1.8: Establish an M&E system using WFP framework under R4.

It will include key performance indicators to help countries and insurance companies monitor portfolio growth, loss ratio, promptness in claims settlement, index design efficiency ratio, consumer education investment ratio, satisfaction and performance of the scheme and provide recommendations to improve the process. Every year, an outcome assessment will also be conducted to have a clear picture of performance for this outcome. WFP will leverage the existing R4 M&E framework to implement this activity

3.1.9: Support the implementation of digressive premium payments for smallholders.

103. An initial overview of what each activity will entail in each of the countries is presented below. The inception assessment planned in each country will provide a detailed description of the context at the time of project start and will further detail and contextualize each activity in each country (Table 11)

Activities	Burkina Faso	Chad	Mali	Mauritania	Niger	Senegal	The Gambia
3.1.1. Inception phase, which will give a good understanding of the context (types of risks, existing products and delivery channels, key value chains and crops...)	<p>As indicated, this phase will give a good understanding of the development stage of the market and players at project start and will allow for a clear definition of the objectives and partners for the implementation phases. It will also define the types of products to be designed, the integration approach with other programmes and components, as well as capacity-building needs.</p> <p>Two groups of countries: 1st group (Senegal, Mali and Burkina Faso) already has an experience with microinsurance and stakeholders and thus, this activity will assess the gaps, strengths and weaknesses of existing stakeholders, products and delivery channels. The 2nd group (Mauritania, Chad, Niger and The Gambia) has no or very little experience with microinsurance. Thus, the inception assessment will focus on designing the capacity-building strategy to create the conditions required to introduce insurance, as well as the most conducive pieces to successfully integrate insurance with the other components.</p> <p>For instance, before developing a new product, WFP will assess existing schemes and their performance. If products are reliable, focus will be put on strengthening the scheme and expanding its coverage, rather than developing a new one.</p>						

⁶⁰ Pricing will be established with reinsurers or other partners such as Pula Advisor and Blue Marble. As this is about the business partnership with the insurance company, WFP could support this process, but there will be no formal procurement of the reinsurer, as the contract is only between them and the insurance company. Thus, at this stage, no specific reinsurer will be selected. If Pula Advisor were to be selected, ARC Ltd could possibly be providing reinsurance services.

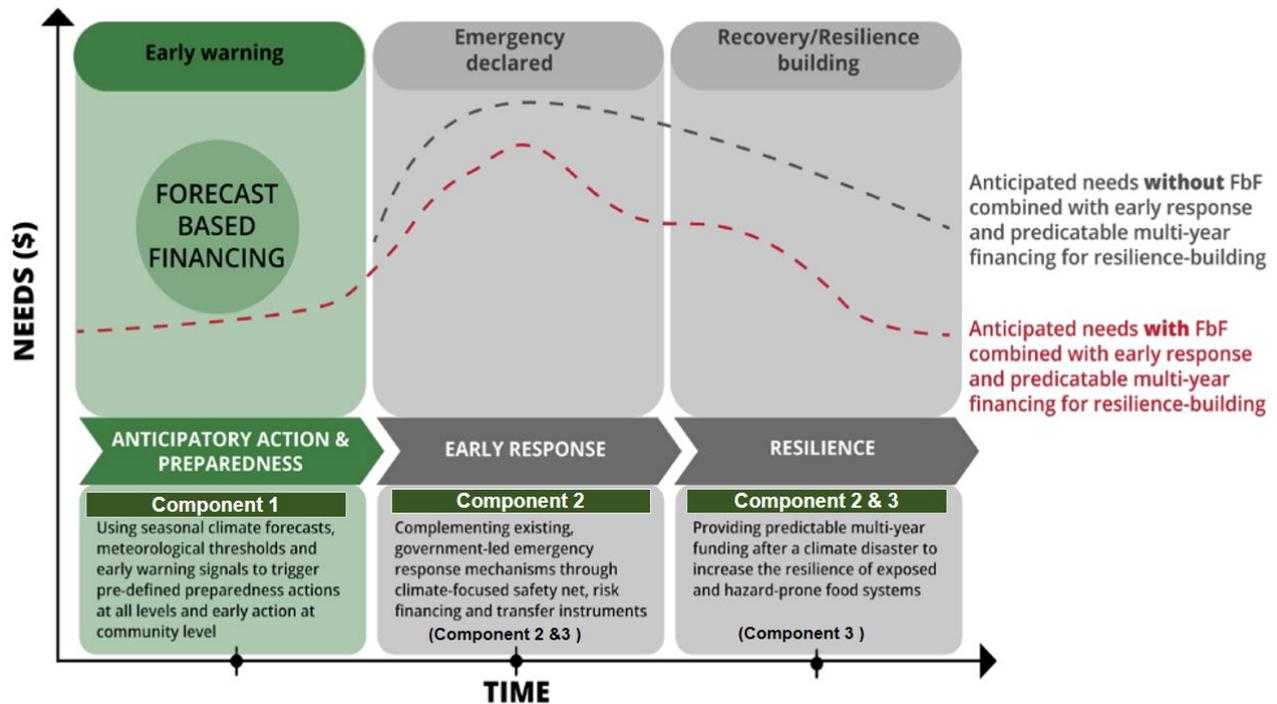
<p>3.1.2. Data collection and index design, pricing and product finalization</p>	<p>Existing products use satellite data (rainfall estimates and evapotranspiration) as well as area yields for multi cereal crops and cotton. Not all regions are covered. One product uses the ARC WRSI. WFP is currently working with Yelen (as insurance company) and Inclusive Guarantee. It is likely that the project will explore pastoral or area yields index (with Pula).</p>	<p>No products are currently available on the market. Based on the findings from the inception assessment, we will select the partner for product design between IRI, Inclusive Guarantee, Blue Marble and Pula Advisors.</p>	<p>Some products are already available on the market (satellite and yield based) provided by 4 providers (Inclusive Guarantee, Socodevi, OKO and Pula). No livestock product is yet available. The project will likely build on the existing offer. One insurance company, so far, is involved but the government is considering setting up a dedicated one.</p>	<p>Mauritania is involved in two processes with ARC (agricultural and pastoral indices), in which WFP is participating. But there are no other microinsurance products available. It will be necessary to use the data collected under the ARC customization process for the microinsurance index design. Based on the strategy identified (pastoral vs. agricultural), the partner will be selected. WFP will work with the regulator to ensure the best conditions are met to introduce the product</p>	<p>A feasibility study and dry run pilot has already been conducted by IRI in a couple of locations. One option may be to continue the process unless livestock is being prioritized. In this case, Pula or Blue Marble would be the preferred partner.</p>	<p>Under R4, and with other partners, a lot of data has already been collected for agricultural-based indices, but not for livestock. The project will support this process and the expansion of other products (in particular hybrid with weather and area yield indices). The project will work with the index design team, CNAAS and Inclusive Guarantee, IRI and Pula.</p>	<p>A feasibility study and dry run pilot has already been conducted by IRI in a couple of locations. One option may be to continue the process unless another kind of index is being prioritized. In this case, Blue Marble would be the preferred partner. WFP will work with the regulator to ensure the best conditions are met to introduce the product</p>
<p>3.1.3. Design of distribution and consumer education strategy, including design of the integration approach</p>	<p>Although schemes exist, selling figures in Burkina remain quite low. The project will explore new avenues, including mobile distribution.</p>	<p>We will work with the above selected partner to support us with distribution and consumer education strategy design. This work will be conducted during the 1st year and the product introduced during 2nd year.</p>	<p>Several delivery systems are already in place (cooperatives, MFIs and mobile money platforms). The project will build on their experience.</p>	<p>This aspect will be designed based on the findings of the inception assessment. This work will be conducted during the 1st year and the product introduced during 2nd year.</p>	<p>We will work with the above selected partner to support us on the distribution and consumer education strategy design. This work will be conducted during the 1st year and the product introduced during 2nd year</p>	<p>A lot of existing systems already exist, but not for livestock and there is still room to strengthen distribution and consumer education and protection.</p>	<p>We will work with the above selected partner to support us on the distribution and consumer education strategy design. This work will be conducted during the 1st year and the product introduced during 2nd year</p>
<p>3.1.4. Development and consolidation of product distribution channels during the first sales season</p>	<p>Continuing the 1st year of work, the project will develop a scaling up strategy, including innovative consumer education system.</p>	<p>After the 1st pilot year (year 2) and once conditions are met, a scaling up and expansion strategy will be designed, based on the lessons learnt from the 1st season.</p>	<p>Despite the number of stakeholders, no one has yet reached large numbers. Lessons learnt from year 1 will be used to design the scaling up strategy.</p>	<p>After the 1st pilot year (year 2) and once conditions are met, a scaling up and expansion strategy will be designed, based on the lessons learnt from the 1st season.</p>	<p>After the 1st pilot year (year 2), and once conditions are met, a scaling up and expansion strategy will be designed, based on the lessons learnt from the 1st season.</p>	<p>The project will work on scaling up and streamlining climate risk insurance, in particular in more difficult areas (like pastoral ones).</p>	<p>After the 1st pilot year (year 2), and once conditions are met, a scaling up and expansion strategy will be designed, based on the lessons learnt from the 1st season.</p>
<p>3.1.5. Design of the graduation strategy and business model</p>	<p>We will work with local partners and IFAD projects on the graduation strategy.</p>	<p>This will be designed based on the lessons learnt.</p>	<p>The economic situation in Mali will require a specific graduation design.</p>	<p>This will be designed based on the lessons learnt.</p>	<p>This will be designed based on the lessons learnt.</p>	<p>This will be done using the experience of R4 in Senegal.</p>	<p>This will be designed based on the lessons learnt.</p>
<p>3.1.6. Capacity-building on product design for private insurers and governments but also on handing over to insurance sector</p>	<p>The government has launched the public scheme with premium subsidies. The project will focus on linking up with this scheme, and with ARC</p>	<p>Based on the interested insurance companies to distribute such product, WFP will work on a capacity-building plan to make sure that by the end of the project,</p>	<p>As there is currently only one insurance company involved in all the schemes (Allianz), it will be essential to work with them and possibly support the expansion of</p>	<p>Based on the interested insurance companies to distribute such product, WFP will work on a capacity-building plan to make sure that by the end of the project,</p>	<p>Based on the interested insurance companies to distribute such product, WFP will work on a capacity-building plan to make sure that by the end of the project,</p>	<p>WFP is working with CNAAS to strengthen their systems, based on the needs. Currently, a project of digital platform is being implemented. WFP has also set up, with</p>	<p>Based on the interested insurance companies to distribute such product, WFP will work on a capacity-building plan to make sure that by the end of the project,</p>

	(through Yelen products). Inclusive Guarantee should be instrumental in the capacity strengthening process.	partners will have the capacity to handle the whole process. A tender will be conducted to select the insurance company.	the number of stakeholders, depending on the government's strategy.	partners will have the capacity to handle the whole process. A tender will be conducted to select the insurance company.	partners will have the capacity to handle the whole process. A tender will be conducted to select the insurance company.	CNAAS, a working group (CDPAI) to coordinate with all financial and technical stakeholders, and the index design team to build skills of local stakeholders.	partners will have the capacity to handle the whole process. A tender will be conducted to select the insurance company. If possible, we will involve CNAAS in the process.
3.1.7. Technical support at institutional level to create a dedicated insurance company, a public scheme or a coinsurance pool.	The project will work with the public scheme, led by Sonar. It will also try to connect with the ARC (and ARC Replica) process.	As we know, there is currently no index insurance programme in Chad. It will be essential to agree with the government on the best approach. Setting up an insurance company will not be the recommended option. It would be safer to start with one existing insurer. WFP will advocate for a subsidy or tax relief system.	The government is currently considering setting up a dedicated strategy (a working group has been constituted). WFP could technically support the process, although the recommendation would rather be a coinsurance pool (lighter and cheaper). WFP will also advocate for tax reduction or relief as it is currently heavy in the premium structure	As we know, there is currently no index insurance programme in Mauritania. It will be essential to agree with the government on the best approach. Setting up an insurance company will not be the recommended option. It would be safer to start with one existing insurer. WFP will advocate for a subsidy or tax relief system	As we know, the government, with a UN partner, may be interested in setting up a dedicated company. WFP could either support the process or work with committed insurance companies. WFP will advocate for a subsidy or tax relief system.	As CNAAS is already operating, the project will focus on the scaling up and ensuring the sustainability of CNAAS business model.	As we know, there is currently no index insurance programme in the Gambia. It will be essential to agree with the government on the best approach. Setting up an insurance company will not be the recommended option. It would be safer to start with 1 insurer WFP will advocate for a subsidy or tax relief system..
3.1.8. Establish an M&E system using WFP framework under R4.	Based on the R4 M&E system already put in place in all the R4 countries, WFP will contribute to the global M&E framework of the project, but also work with insurance companies to ensure they are implementing a comprehensive M&E system, including microinsurance KPIs.						
3.1.9. Digressive premiums payment for smallholders.	Despite the existing market, a large share is untapped. Smart subsidies will be used to help open and broaden the market and reach new segment.	Without any existing product available yet, smart subsidies will be used to raise awareness and create the market.	As the market remains mainly untapped, the graduation strategy will need to consider the economic situation	Without any existing product available yet, smart subsidies will be used to raise awareness and create the market.	Without any existing product available yet, smart subsidies will be used to raise awareness and create the market.	Based on the R4 experience and model, the graduation strategy will be adapted to the fast-moving context.	Without any existing product available yet, smart subsidies will be used to raise awareness and create the market.

104. Each country PMU will coordinate with WFP to implement these proposed activities. WFP will act as an implementing partner and an annual work plan will be developed jointly and aligned with the role and responsibilities WFP in this programme. WFP and the PMU will report regularly to IFAD on implementation status and performance. This programme will build on and scale up successful experiences in the region including integrated climate risk management, which combines climate smart agriculture and micro insurance, and WFP's R4 initiative. The GCF is already supporting the R4 initiative in four regions in Senegal for the most vulnerable groups of farmers. This programme will target more productive smallholder farmers and create a graduation pathway built on a well-integrated risk management strategy, as well as on consumer education and protection activities. Other similar initiatives are being undertaken in the region in Nigeria (under VCDP IFAD funded project) and Ghana (AFFORD, a recently approved project). These projects are being implemented for a duration of six years. In countries where ARC replica is present, synergies will be built.

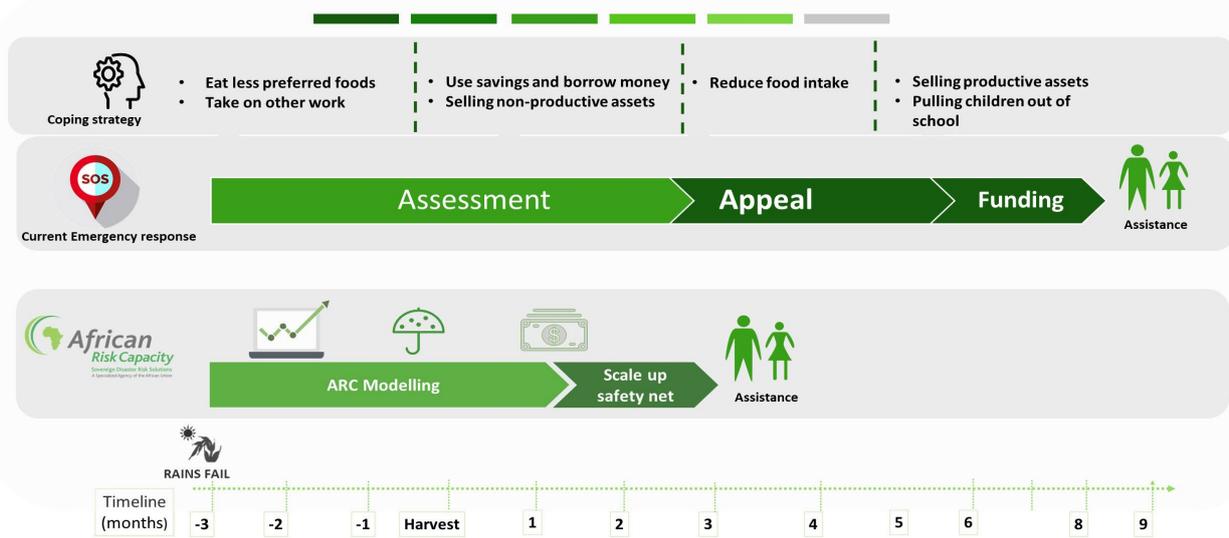
105. **Output 3.2. Sovereign risk transfer supported and promoted to strengthen integrated climate risks management (executing entity: ARC).** In addition to building the micro insurance industry at country level, this output will aim to support governments in cushioning themselves from the impacts of climate hazards. Experience has shown that when disasters strike, governments are mostly unprepared and resolve to call for humanitarian assistance. Through this component, governments will be sensitized and supported on the importance of taking ex-ante measures to disaster risk financing. This output will provide support to countries in accessing a regional risk pool and provide coverage for their most vulnerable populations in case of an extreme weather event. As timely assistance to affected populations is critical in the event of climate disasters, sovereign risk transfer can guarantee a prompt availability of resources, which is vital for rapid assistance to the most vulnerable. This output will build on the AfDB baseline investment through its "Africa Disaster Risk Financing (ADRFi)" programme, which aims to foster a paradigm shift towards disaster risk financing in African countries by supporting their

participation in the pan-African regional risk pool offered by the ARC. Sustaining pool participation has been challenging mostly due fiscal constraints and the absence of a systematic approach to disaster risk financing. It is in this context that the ADRiFi programme enters to “prime the pump” by providing subsidies for the payment of premiums in the countries, whilst working with them on putting in place disaster risk financing strategies that will identify options for mobilizing disaster risk financing, including for the payment of premiums in a sustainable manner. GCF funding will be instrumental in supporting the elaboration of the disaster risk financing strategies and financing in the countries, particularly at the local level; provides wider policy, fiscal advisory, capacity-building and governance of premiums and pay-outs in countries with limited fiscal space in a post COVID-19 context. As shown above, the approach complements existing emergency response mechanisms and resilience building during post-disaster recovery. ADRiFi will work closely with micro insurance companies, and local financial institutions (banks, microfinance institutions) to better link macro insurance, micro insurance and loan products.



106. **Activities** include (activities disaggregated by country- see annex Activities breakdown per country):

- 3.2.1. 7 countries and 4 local contingencies planning for the 7 countries; review and assess the ARC agricultural, rangeland, drought models.
- 3.2.2: Trainings for additional 420 government officials on the use of ARC view and other sector ministries.
- 3.2.3: Review and assess the ARC agricultural, rangeland, drought model.
- 3.2.4: Build the capacity of 1,000 farmers organizations and cooperatives to identify triggering thresholds and assess the best insurance options
- 3.2.5: Develop tools and financing instrument to identify, quantify existing disaster risks estimating the financing needs depending on the severity and frequency of the risks
- 3.2.6: Develop 7 national integrated climate risks frameworks using a comprehensive layering approach
- 3.2.7: Technical support to 7 countries on sustaining premium payments to ARC from their own national budget through ecotax reallocation, climate budget tagging (CBT) or national climate/ contingency funds
- 3.2.8: Develop 7 climate fiscal frameworks
- 3.2.9: Strengthen institutional and coordination mechanisms for an effective use of the payouts to ensure they reach the end users, using citizen engagement (shadow reports from the civil society), and alignment/ linkages with the micro insurance
- 3.2.10: Organize events and workshops with micro and macro insurance industry and financial institutions
- 3.2.11: Support ARC in developing an approach to scaling up coverage in the Sahel region and the entire continent
- 3.2.12: Support research to develop new tools and instruments
- 3.2.13: Organize 4 high level events on this integrated approach
- 3.2.14: Provide countries support for ARC premium payments and technical assistance (by ADRIFI- AfDB and countries)
- 3.2.15. Technical Assistance by ARC. Under this activity ARC will provide direct support to governments and implementing all activities listed above



107. GCF resources will be used for capacity-building on the institutional, regulatory and legal framework for effective integrated climate risks management and institutionalization of country premiums payments into national budget. Through ADRIFI, AfDB will support the first year's country premiums payments to ARC. ARC will provide technical assistance (in kind contribution) to countries to effectively implement this output.

108. The programme's approaches, actions, modes of organization and implementation will apply a general principle of subsidiarity in decision-making processes, which should be as close as possible to the action taken at different levels: (i) in terms of geography, the programme will target primarily the most "local" geographical scale as possible (village, commune, province) and their link to the regional and national scales; (ii) institutional; (iii) programme management: delegate implementation to direct users when possible; and (iv) knowledge management, by strengthening local capacities and knowledge sharing, and cross-sectoral transfers.

At the regional level

109. IFAD will act as EE for its regional coordination role. A **regional coordination unit (RCU)** will be established at the regional level under IFAD at its G5+Sahel headquarters in Nouakchott. Through the RCU, IFAD will implement all coordination activities as an EE. A Regional Steering Committee (RSC) will be established to provide general guidance for implementation. The RSC will also be responsible for validating Annual Work Programmes (AWPs). After validation, the AE which is the chair of the committee will give the final approval and non-objection to the AWP. WFP, AfDB and ARC will co-chair this committee, which will meet once a year. This committee will bring together the various stakeholders involved in implementation (technical services, private sector, insurance companies, representatives of regional organizations of producers, women and youth, organizations working in protected areas, implementing partners, traditional authorities, etc.). The RCU will be in charge of the development of learning materials and knowledge products, the organization of exchange visits between the seven countries for farmers and ministerial technical teams to share experiences (South-South and Triangular Cooperation) and support the establishment of a knowledge platform specific to each country, as well as a regional platform for the scaling up of this initiative in the entire region and in other countries of the GGW. The regional approach will emphasize the needs of Sahelian countries to face a changing climate, build their resilience to climate using innovative approaches and regional initiatives and strengthen their own national evaluation systems and capacities on integrated climate risks management. This platform will provide opportunities for exchange visits (farmers, private sector, and ministries), development and sharing of case studies on insurance, trainings and business opportunities between the seven countries. The RCU will be composed of a lead regional coordinator with a background in insurance/climate risks (P4 Level); a climate insurance specialist (P3), a financial management and accounting specialist (P3) and KM and M&E (P2) level. They will be in charge of day-to-day programme management and coordinating with country teams and participating agencies, and will report to IFAD. To build capacity for consolidating information and GCF report preparation, a dedicated software will be acquired and used. Both ARC and WFP will act as service providers to countries and will provide technical advisory support on macro insurance and micro insurance, respectively. ARC will be responsible for the implementation of activities under Component 1 and Component 3 (Output 3.2) in coordination with AfDB, while WFP will be responsible for output 3.1 (Component 3), which involves supporting countries for the development of micro insurance using the R4 approach and adapting it to each country context. With new and more innovative approaches (e.g. parametric insurance) to forecast and determine if and when a payment has to be made, regardless of the actual damage, ARC and WFP will support countries in better programming and investment decision-making. This is a faster and more agile approach, which stimulates investments in climate resilience (given that the payment is made even in the absence of measurable impact) and allows for a faster response in the case of disasters. While supporting the implementation of the programme, the RCU will be also building the capacity of the G5 Sahel

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

110. The RCU will be in charge of the development of learning materials and knowledge products, the organization of exchange visits between the seven countries for farmers and ministerial technical teams to share experiences (South-South and Triangular Cooperation) and support the establishment of a knowledge platform specific to each country, as well as a regional platform for the scaling up of this initiative in the entire region and in other countries of the GGW. The regional approach will emphasize the needs of Sahelian countries to face a changing climate, build their resilience to climate using innovative approaches and regional initiatives and strengthen their own national evaluation systems and capacities on integrated climate risks management. This platform will provide opportunities for exchange visits (farmers, private sector, and ministries), development and sharing of case studies on insurance, trainings and business opportunities between the seven countries. The RCU will be composed of a lead regional coordinator with a background in insurance/climate risks (P4 Level); a climate insurance specialist (P3), a financial management and accounting specialist (P3) and KM and M&E (P2) level. They will be in charge of day-to-day programme management and coordinating with country teams and participating agencies, and will report to IFAD. To build capacity for consolidating information and GCF report preparation, a dedicated software will be acquired and used. Both ARC and WFP will act as service providers to countries and will provide technical advisory support on macro insurance and micro insurance, respectively. ARC will be responsible for the implementation of activities under Component 1 and Component 3 (Output 3.2) in coordination with AfDB, while WFP will be responsible for output 3.1 (Component 3), which involves supporting countries for the development of micro insurance using the R4 approach and adapting it to each country context. With new and more innovative approaches (e.g. parametric insurance) to forecast and determine if and when a payment has to be made, regardless of the actual damage, ARC and WFP will support countries in better programming and investment decision-making. This is a faster and more agile approach, which stimulates investments in climate resilience (given that the payment is made even in the absence of measurable impact) and allows for a faster response in the case of disasters. While supporting the implementation of the programme, the RCU will be also building the capacity of the G5 Sahel Secretariat to continue this coordination work and maintaining the knowledge platform after the programme ends.

111. In terms of knowledge management, a regional KM Officer will be responsible for the programme's capacity development, knowledge management and communication activities. Based on the needs and activities planned, a KM plan will be finalized, which takes into account the specificities of each country with the support of a service provider. This officer will be responsible for coordinating the publications, brochures and training activities, among others. For external and internal communication, the programme will consider the diversity of communication objectives according to the stakeholders to be reached (e.g., beneficiaries, implementing partners, policy makers) and use the most appropriate communication channels for exchange, sharing and learning purposes (e.g., radio, brochures, studies, articles, newsletter, television and social media). A programme website will be designed and operationalized and will pay particular attention to the communication of crosscutting themes promoted by the programme, such as social inclusion, gender mainstreaming, youth inclusion and adaptation to climate change.

At the national level

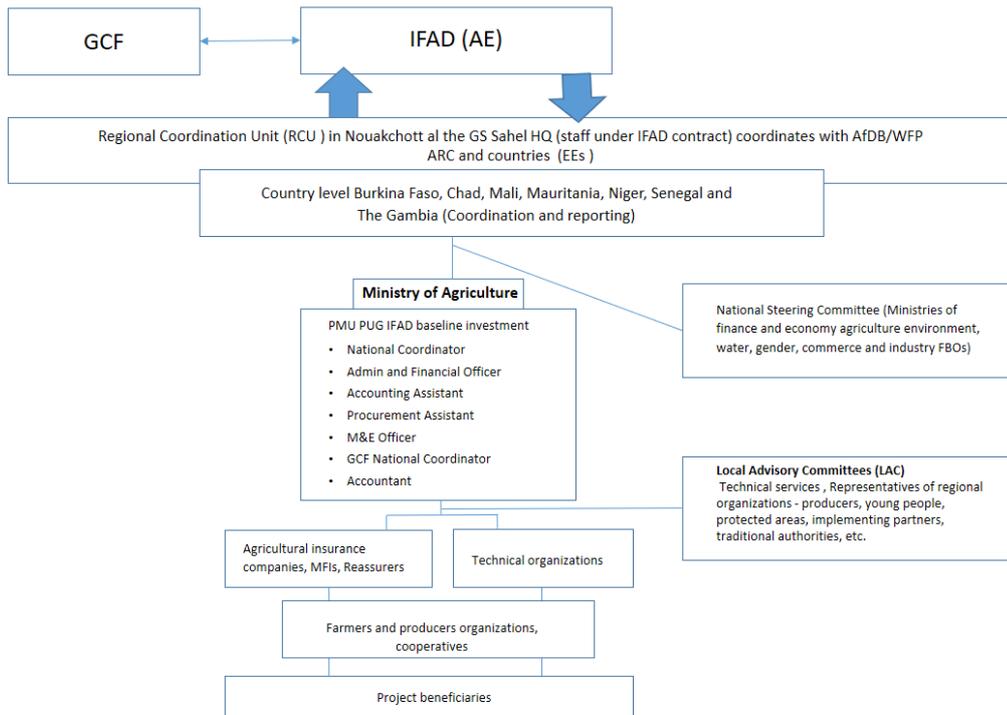
112. Each country component will be supervised by the Programme Management Unit (PMU) of the related baseline investment and a national steering committee (NSC), which will be composed of various stakeholders. The NSC will include the ministries of strategic interest, within which focal points will be designated, as well as producer organizations, insurance committees and banks, among others. The NSC will define the orientations for the operational steering of the regional programme, ensuring its alignment with sectoral strategies and priorities. It will integrate the programme's action in complementarity and synergy with development partners in the agricultural sector to optimize its interventions and maximize its impact on the beneficiaries. In addition to approving work programmes and activity reports, the NSC will monitor implementation and any recommendations it may make during its monitoring missions in the field.

113. Each IFAD PMU will be staffed with a national officer, recruited competitively, with an insurance background, in compliance with IFAD's procurement procedures and in accordance with the GCF Gender Policy; women candidates will be encouraged. This officer will have the support of an additional accountant assistant.

114. **The Programme Management Unit:** In each country, the proposed programme will be managed by the Ministry of Agriculture through the financially and administratively autonomous national PMU of the IFAD baseline investment. The PMU will be responsible and accountable to the government and IFAD for the efficient use of project resources in compliance with the funding proposal. The Ministry of Agriculture will work closely with the Ministry of Environment and the Ministry of Finance of each country. Concertation and consultations mechanisms at the national level will be carried out by each sub-project Steering Committee. Given the geographical and thematic scope of the different components, there will be direct complementarity with the Ministries of Forests, Gender and other relevant ministries involved in the IFAD main baseline investments. The Ministry of Environment will contribute to the overall oversight of the programme and ensure that the ESMF and safeguards are implemented and monitored according to GCF standards, while the Ministry of Forests will support the PMUs in the implementation of the best adaptation and mitigation practices. With regards to gender, the Ministry of Gender and/or Social Protection will be involved to oversee the implementation of the Gender Action Plan. Other relevant government departments in the national

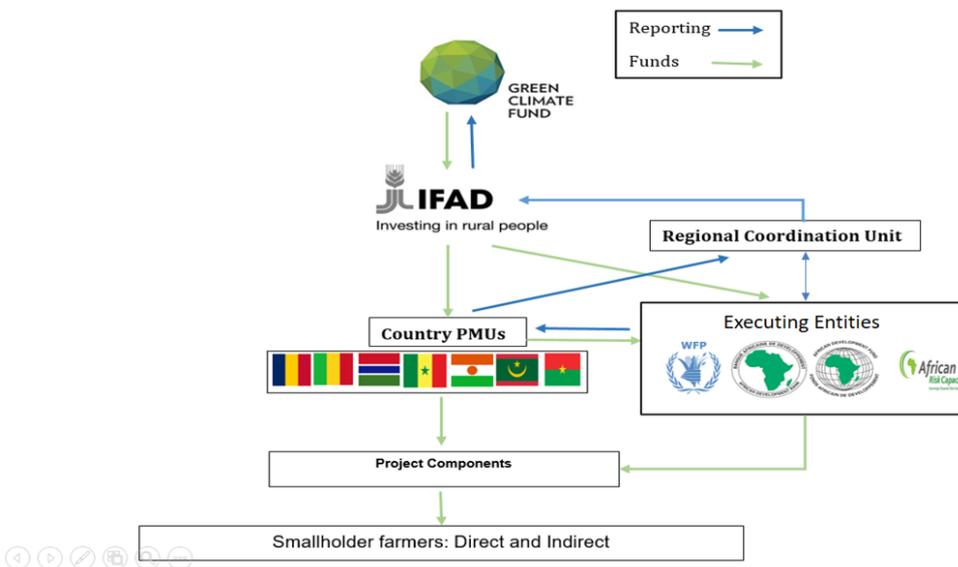
steering committees will provide their technical guidance, coordination and oversight of the programme in each country. A joint inter-ministerial decision will establish the Steering Committee and specify its composition, mandate and functioning. The nomination of members to the steering committee will be done in compliance with the GCF Gender Policy. IFAD PMUs are or will be facilitated by the presence of the IFAD Country Office, which will be able to provide or call upon expertise in institutional development, if necessary.

115. The programme promotes partnerships between key stakeholders and countries that will contribute to its general objectives while adhering to the following principles: (i) identification of a clear and specific role for each stakeholder involved; (ii) knowledge and respect of the specificities of each stakeholder; (iii) the identification of common interests; and (iv) the mobilization of resources. The programme is designed to strengthen the networks of local stakeholders and country decision-makers on integrated climate risk management.
116. The PMU will be in charge of the administrative and financial procedures as well as of the monitoring and evaluation (M&E) of the programme. The PMU will: (i) define annual work plans and budgets (AWPB) and partnership contracts, (ii) ensure the coherence of programme activities, and (iii) be IFAD's contact point for the programme. The PMU will be responsible for producing the financial reporting required by GCF and IFAD, which will be consolidated at the level of the regional coordination unit. Regarding partnerships, the PMU must in particular: (i) ensure that the strategies, methods of intervention and approaches undertaken by implementing partners are defined in accordance with the overall programme framework and the components for which they will be responsible; (ii) review their AWPBs on the basis of the budget framework; (iii) manage current expenditures in accordance with the payment schedule and; (iv) negotiate and prepare letter of agreements/contracts for their respective components.
117. Quarterly coordination meetings of implementing partners will be organized by the PMU to monitor the progress of activities and share lessons learnt from one region to another. With regards to the implementation of field activities, the programme will rely on the implementation partners identified in each country. The programme's institutional arrangements in each country are presented in the figure below.
118. Local Advisory Committees (LACs): The collaborative effort of both public and private local institutions is key for the programme's success. It will provide opportunities for communities to communicate amongst themselves and with local governments, and be responsible for assisting the implementation and M&E of the interventions. At the local level, working closely with the PMU for administrative support, the LACs, as community-based implementation units, will play a key role in community awareness, education and sensitization on the objectives and expected outcomes of the programmes. They will work with local authorities and communities in developing, regularly monitoring and evaluating the site-specific, on the ground watershed activities, particularly on irrigation and the implementation of the ESMP.
119. Beneficiaries: The communities and their groups (producers, fishermen, breeders, women's groups, agricultural groups, resource management groups and youth groups, etc) are the final beneficiaries of the programme. Community groups will work closely with local authorities, the PMUs, local advisory committees, local microfinance institutions, representatives of the insurance companies, WFP field teams and local NGOs. They will: (i) identify site-specific activities (interventions); (ii) assess environmental and social impacts; (iii) submit to the LAC proposals of activities to be funded; (iv) sensitize and involve their local communities in capacity-building activities; (v) monitor and evaluate pilot and activities using locally adapted M&E systems; (vi) establish or train existing management committees directly responsible for programme monitoring and evaluation; and (vii) identify and articulate priority issues and solutions in their locality, as they affect the selected river basin's sustainable management.



Financial Management (Flow of Funds) and summary of roles and responsibilities

120. The diagram below presents the flow of funds and reporting requirements for the integrated climate risks management programme at the regional and national levels. Separate agreements will be signed between the IFAD and its partners with the recipient's countries (Ministry of Economy and Finance) and the PMUs (Ministry of Agriculture). Since this a public programme, all agreements (grants) will be signed between the IFAD and the governments of the seven countries represented by their ministries of economy and finance but only for the respective outputs that the government are responsible for implementing.



121. In the agreement signed with the individual countries; roles and responsibilities of the main partners, such as AfDB, ARC and WFP will be clearly described. A description of AE and EEs and the type of agreements and procurement modalities are presented in the table 11 below.

Table 12: Description of AE and EEs, agreement and procurement modalities

Executing entities	Description, agreement and procurement modalities
IFAD is in charge of the regional activities defined under programme management and coordination	<p>As the Accredited Entity (AE), IFAD will administrate the transfer of GCF resources to the seven participating countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and The Gambia), provide oversight and implementation support and ensure quality through an established Regional Coordination Unit (RCU) hosted at the G5 Sahel Secretariat in Nouakchott. The RCU will be staffed with international experts who will perform the regional coordination activities on behalf of IFAD (EE). GCF grant proceeds will be passed by IFAD to the selected countries under a single agreement. For this purpose, IFAD has robust fiduciary and technical oversight and quality assurance systems, which will be closely supporting the recipient governments' ministries of agriculture in programme implementation. IFAD will provide bi-annually financial reports and report annually to the GCF on the overall implementation of the programme, based on quarterly reports from all countries sent by their PMUs and channelled to IFAD through the RCU. Every year, an annual work plan and budget (AWBP) will be developed and shall include AfDB and IFAD co-financing and IFAD baseline investment. This AWPB will be validated by the Steering Committee chaired at regional level by representatives of the countries' ministry of finance; IFAD will participate in the RSC as an observer. To channel GCF resources, IFAD and the selected countries will enter into a grant agreement, which will also govern the use of the grant proceeds. The Ministries of Economy and Finance representing the selected countries (executing entities) will manage the grant.</p> <p>At country level, the Ministry of Agriculture through the PMUs of the baseline investment will represent the governments (EEs) and will be in charge of implementation of the programme. Countries (EE) will sign contracts for services and goods with private and other services providers. The selected countries (EEs) will also sign agreements with the national meteorological agencies: [Met Mauritanie, Office National de Météorologie; l'Agence Nationale de l'Aviation Civile et de la Météorologie (ANACIM) in Senegal ; Mali Météo; l'Agence Nationale de la Météorologie in Burkina Faso; The Gambia Met Office; the Direction de la Météorologie Nationale du Niger in Niger, and l'Agence Nationale de la Météorologie in Chad] on the procurement and management of climate infrastructures. In each country, the IFAD country office will provide its no-objection (final decision with recipient government) to all activities over a certain threshold or type of activity, as to be specified in IFAD's Letter to the grant recipient, which establishes the grant arrangements. IFAD will also facilitate the hiring of experts to support the implementation of the activities at country and regional level through its country offices and the RCU.</p>
Governments of Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and The Gambia	<p>The Republic of Niger, Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and The Gambia, represented by their respective Ministry of Economy and Finance, are Executing Entities (EE) and will be the recipient of the GCF financing.</p> <p>The respective governments (EEs) will enter in agreement with their respective national meteorological agencies: Met Mauritanie, Office National de Météorologie in Mauritania; l'Agence Nationale de l'Aviation Civile et de la Météorologie (ANACIM) in Senegal ; Mali Météo; l'Agence Nationale de la Météorologie in Burkina Faso; The Gambia Met Office; the Direction de la Météorologie Nationale du Niger in Niger, and l'Agence Nationale de la Météorologie in Chad] . Under such agreement, the respective Met agencies will act according to the instruction of the EEs to implement activities (1.1.1. and 1.1.2) under output 1.1, which are to procure, install and maintain the climate information infrastructures. A designated account bank account will be created in each country to receive these resources. IFAD will provide technical support to the recipient countries for the implementation of each of the activities.</p> <p>At the country level, the Ministries of Agriculture and PMUs of baseline investments will represent the government (EEs) and be in charge of implementation of the programme at the country level. Countries (EE) will sign contracts for services and goods with private and other services providers</p>
AfDB	<p>AfDB will act as an EE and be responsible of the overall coordination and technical assistance for the component on climate risk transfer in all seven countries in coordination with the Africa Risk Capacity (Output 3.2. of Component 3). It will also coordinate with countries on the implementation of activities under Output 1.1. of Component 1 on risk preparedness.</p> <p>IFAD will sign a subsidiary agreement with AfDB and will transfer funds directly to AfDB. Under such an agreement, AfDB will procure goods and services to support the implementation of activities at the country level.</p>
ARC	<p>ARC will act as a EE and be responsible for the implementation of activities of Activity 1.1.6 - Coordination and knowledge sharing with ACMAD and other regional institutions (e.g. AGRHYMET, Climate Outlook Forum) on best practices, complementarities and consistencies with regional products and warnings; activities under Output 1.1 (of Component 1) and all activities under Output 3.2 of Component 3 in coordination with AfDB.</p> <p>IFAD will sign a subsidiary agreement with ARC and will transfer funds directly to ARC. The set of activities were clearly defined and based on the comparative advantage of each EE in coordination with IFAD and the ministry of economy and finance of the recipient country. ARC will procure goods and services to support the implementation of the selected activities under Output 3.2. at the country level.</p>
WFP	<p>WFP will be responsible for the implementation of Output 3.1 (Component 3) and act as EE by providing support to countries on micro insurance using the R4 integrated climate risk management approach and adapting it to each context.</p> <p>IFAD will sign a subsidiary agreement with WFP and will transfer funds directly to WFP under that agreement. Under the subsidiary agreement signed with IFAD, WFP will procure goods and services to support the implementation of the selected activities under Output 3.1. at the country level.</p> <p>WFP's partners:</p> <p>The main criteria that will be assessed to select the insurers will be : i. experience and willingness to distribute microinsurance activities, and in particular climate and agricultural or pastoral risk insurance, ii. capacity and</p>

willingness to develop a long-term sustainable insurance strategy, iii. capacity to distribute and scale up the insurance scheme, iv. capacity to use digital or mobile solutions, v. costs of the services. To ensure financial viability, a light business case with financial projections will be developed with the selected insurer. The insurance company will be selected either through a competitive process following WFP's procurement rules, or, if only one company can provide the service, through a waiver.

WFP is already working with multiple types of insurers (national, multinational, or coinsurance pool), as well as reinsurers (Hannover re, Axa Re, Swiss Re, Scor, Acr Ltd) or reinsurance brokers (Willis Towers Watson). But also with distribution channels / aggregators (MFIs such as Vision Fund, or OTIV Tana, NGOs such as World Vision, cooperatives and VSLAs in Senegal and even a mobile operator such as MTN in Zambia). WFP will leverage its existing network to find and select the best partners for this project, following WFP's procurement rules.

WFP has Long-Term Agreements (LTA) with Pula, Blue Marble, Inclusive Guarantee and IRI who will provide technical assistance and capacity building depending on the needs. Pula has a great experience in working with governments (Zambia, Kenya, Malawi) in articulating the area yield (or hybrid index or livestock) insurance scheme with public systems. They already have set up consortium (in Zambia) for introducing a hybrid scheme with the subsidized input package. Also, their partnership with ARC Ltd could be useful to connect with component 3.2 and to access reinsurance. Blue Marble has access to a pool of reinsurers, and have developed a robust digital platform for distribution and management. They have a strong capacity to work with direct insurance companies and empower them. IRI has been working a lot with WFP and other stakeholders on capacity building on index design, data collection and seasonal monitoring, building platforms to have a robust process, and ensure local stakeholders can own the process asap. Inclusive Guarantee is, to day, the most active stakeholder in West Africa, with local broker insurance companies, in most of the target countries. They have thus a stronger institutional presence which allows us to interact with governments, insurers, delivery channels and farmers.

It is not impossible, also, that WFP uses other IFAD LTA partners for some countries, depending on capacities and availability of partners.

For specific requests, WFP may need to hire a consultant (for example for supporting the creation of a dedicated insurance company, or support the taxation and subsidies issue, or even the setup of a coinsurance pool). These needs will be defined during the inception assessment under activity 3.1.1.

122. Each partner will sign a MoU with the IFAD baseline PMU under the coordination of the regional unit. The MoU will define the roles and responsibilities of the different actors and the reporting requirements, which will be in line with GCF standards and the agreement signed with the individual countries.

123. Each country will manage its grant portion through its IFAD baseline PMUs and report via the PMUs. The PMU will prepare financial and technical reports for the Regional Coordination Unit, which will ensure quality review and clearance before sending to IFAD for submission to the GCF. IFAD, AfDB, ARC and WFP will provide technical assistance to countries for the implementation of the GCF grant proceeds.

124. **COVID-19 implications and considerations for stakeholder engagement:** The 7 selected countries have set various measures to mitigate the spread of COVID-19 including restrictions on non-essential movement, requirements for social distancing, and prohibitions on social gathering. Other measures have also been recommended by health organizations to limit the spread within countries. These measures impact the ability to undertake stakeholder engagement activities in the manner originally envisaged under the programme. This SEP present a list of action at project level to mitigate the COVID impact and ensure business continuity during the programme implementation. These include: Trainings on safe labor practices, and transports, access to more protective equipment such as masks and gloves, restrictions on workers on producer's field, use of drones and other digital extension tools for labour and input saving practices, shared mechanization, digital marketing platforms and logistics, sanitary and phyto-sanitary controls amongst other . With regard to mobility and stakeholder engagement, IFAD has developed a design guidelines which recommend virtual consultations wherever the risk of COVID contamination is high. For areas where, the risk is high the remote design is prioritized

Agreements and Funds flow for the GCF grant proceeds and the co-financing

125. Since this GCF program is a public programme, all agreements (grant) will be signed between the IFAD and the governments of the 7 countries, AfDB, ARC and WFP. These agreements will mentioned only the activities/ outputs the EEs are in responsible for.

126. At national level, the recipients will be the respective government through their Ministries in charge of Finance and Economic Planning. The ministries of finance will be the recipients of the grants and will designate the national entities such the Ministries of agriculture and the Met agencies as the agencies for the implementation of the relevant project activities.

127. At regional level the recipient of the funds will be IFAD for regionally coordinated implemented activities. Separate protocol agreements will be signed between the IFAD and the EEs (WFP, ARC agency and Agriculture Finance and Rural Finance Department of AfDB through the ADRIFI Programme)

128. Financing from IFAD together with co-financing resources to the host countries will be channelled under separate legal agreements which will be signed with the Ministries in charge of Finance and Economic Planning on behalf of the corresponding host countries. The Grant Agreements will require the host countries to confirm the provision of their respective financial contributions for the Project. The Ministries in charge of Finance and Economic Planning will designate the Ministries of Agriculture and Met national agency as the agencies for the implementation of the relevant project activities.

Details on the Specific Agreements by Fund/ Outputs.

129. **GCF-Funded Activities (all outputs):** IFAD will enter into a Funded Activity Agreement with the GCF in line with the Accreditation Master Agreement. Separate Grant Agreements will be entered into by IFAD with the EEs (WFP, ARC agency and Agriculture Finance and Rural Finance Department of AfDB through the ADRIFI Programme) and the Governments of each host country based on the signed FAA. Contracts agreements for goods and services will be signed by the EEs with services and good providers for the implementation of the activities.

130. **IFAD Funded Activities (output 2.2.):** IFAD will sign a Financing Agreement with the host countries through the ministries of economy and finance for implementation of the IFAD co- financed activities. Each country will manage IFAD funds through the Ministry of Agriculture and via the IFAD baseline PMUs. Contracts agreements for goods and services will be signed by the PMUs with services providers for the implementation of the activities

131. **AFDB -ADRIFI Funded Activities (Output 3.2):** The African Development Bank will sign a Protocol agreement with the selected countries represented by the ministries of economy and finance for activities funded with proceeds from the AfDB ADRIFI. Contracts agreements for goods and services will be signed by the PMUs of ADRIFI projects with services providers for the implementation of the activities.

132. **ARC Funded Activities (Output 3.2.):** ARC will sign a Protocol agreement with the selected countries represented by the ministries of interior for technical assistance from ARC. The co-financing of ARC is in kind and estimated

Table 13 : **Roles and responsibilities of the AE and EEs**

	Role and responsibility of IFAD (AE)	Role and responsibilities of AfDB	Role and responsibilities of ARC	Role and responsibilities of WFP	Role and responsibilities of the private sector	Role and responsibilities of the government/ government entities	Role and responsibilities of the farmers
Component 1: Climate Risk Preparedness							
Output 1.1. Increased access to agro-climatic information services and early warning infrastructure to support integrated climate risks management	IFAD is in charge of the overall coordination of this output and will ensure that the PMU and AfDB are reporting on the activities implemented by ARC and the PMUs to GCF	AfDB with the PMUs are in charge of the coordination and implementation and reporting to IFAD AfDB will perform the following activities: 1.1.3. Provide training for 350 meteorological experts in the country on impact-based forecasting methodologies, data collection and interpretation 1.1.4. Design and develop a nationally	ARC will be in charge of supporting countries on activities under: 1.1.6. Coordination and knowledge sharing with ACMAD and other regional institutions (e.g. AGRHYMET, Climate Outlook Forum) on best practices, complementarities and consistencies with regional products and warnings. ARC will sign contract agreements for services at activity level	None	Private actors will be hired by PMUs to provide services and goods for proper implementation of the programme	The government (EE), represented by the Met agencies, will implement activities under: 1.1.1. A preliminary study, mapping of locations of the small hydraulic infrastructure in the seven countries and detailed designs and ESS studies 1.1.2. Installation of 560 automatic weather stations and 700 rain gauges;	Work closely with EEs, PMUs

		tailored version of the system, using in-situ data and local knowledge/priorities 1.1.5. Develop communication systems and dissemination methods to translate early warning information into guidance and warnings for government agencies, emergency services, aid agencies, agricultural NGOs, extension services.				upgrading/rehabilitation of existing 210 hydrological stations in the seven countries Met agencies will sign contract agreements for good work and services at activity level	
Output 1.2: Improved awareness raising, capacity building and institutional development on integrated climate risks management	As AE and EE through the RCU, IFAD is in charge of the overall coordination of this output and will ensure that the PMU and AfDB are implementing and reporting the activities as planned to GCF	AfDB will be in charge of the implementation of all activities 1.2.1 to 1.2.9 (Output 1.2)	None except coordination and coherence	None except coordination and coherence	Private actors will be hired by PMUs to provide services and goods for proper implementation of the programme	EEs (countries) will ensure cross-sectoral coordination, timely delivery of all activities implemented by AfDB under are output 1.2., and that capacity is built and local plans updated and implemented	Sustain the capacity gained and use of climate information generated
Component 2: Climate Reduction Measures (adaptation/ mitigation)							
Output 2.1. Best Available technologies adaptation/mitigation (forest and land use; renewable energy) adopted and implemented with agricultural insurance schemes	National Executing entities ensure that the PMU are implementing and reporting the activities as planned under component 2 to IFAD which will report GCF. IFAD through its country offices and support PMUs will provide technical support for the implementation of	National Executing Entities will implement activities report to IFAD	None except coordination and coherence	WFP will coordinate with IFAD to ensure that the proposed minimum service package of best adaptation activities is bundled with agricultural insurance and support the implementation through the R4	Private actors could be hired by PMUs to provide services and goods for proper implementation of the programme	EEs (countries), represented by their ministry of agriculture and PMUs, are in charge of the implementation of all activities under Output 2.1. and report to IFAD and the regional coordination unit. PMU in each country will sign contract agreements with all services providers extension services for good work and services at activity level	Farmers will support the implementation as recipients of the services and goods

<p>Output 2.2.</p> <p>Diversified livelihood through the promotion of income generating activities powered with renewable energy</p>	<p>activities financed through IFAD baseline investment earmarked in FP and other adaptation and mitigation activities</p>	<p>None except coordination and coherence</p>	<p>None except coordination and coherence</p>	<p>None</p>	<p>Private actors could be hired by PMUs to provide services and goods for proper implementation of the PROGRAM ME</p>	<p>PMUs representing the EE (countries) are in charge of the implementation and report to IFAD and the regional coordination unit</p> <p>PMU in each country will sign contract agreements with services providers extension services for good work and services at activity level</p>	<p>Farmers will support the implementation as recipient of the services and goods</p>
<p>Component 3 : Climate Risk Transfer</p>							
<p>Output 3.1.</p> <p>Access to micro insurance expanded to enhance integrated climate risks management</p>	<p>As AE, IFAD is in charge of the overall coordination of this output and will ensure that the PMU and WFP are implementing and reporting the activities as planned to GCF</p>	<p>None except coordination and coherence</p>	<p>None except coordination and coherence</p>	<p>Implementation and reporting on all activities under output 3.1. to the PMUs and PMUs to IFAD using its R4 under the agreement signed with each country. WFP will manage the REPLICA, where possible</p>	<p>Private actors could be hired by PMUs to provide services and goods for proper implementation of the programme</p> <p>WFP will use its long-term agreements for the region with several providers (Inclusive Guarantee, Pula Advisors, IRI, Blue Marble) to procure goods and services</p>	<p>PMUs receive TA from WFP on R4 and report to IFAD on the implementation as per the agreement signed with each country</p> <p>Full involvement of ministries of finance</p> <p>Contract agreement will be signed between the PMU and WFP and WFP will use its long-term agreements for the region with several providers to provide goods and services</p>	<p>Farmers are recipients and sign contracts with insurance companies and participate in the R4 approach.</p>
<p>Output 3.2.</p> <p>Sovereign risk transfer supported and promoted to strengthen integrated climate risks management</p>	<p>As AE, IFAD is in charge of the overall coordination of this output and will ensure that the PMU and ARC/AfDB are implementing and reporting the activities as planned to GCF</p>	<p>AfDB will coordinate with ARC and ensure coherence with ADRIFI on the implementation and complementary between micro and macro insurance</p>	<p>ARC will be in charge of the implementation of Output 3.2., in coordination with AfDB, including a technical working group on ARV , capacity-building and adjustment</p> <p>ARC will sign contact agreements for good work and services at activity level</p>	<p>None except coordination and synergies to ensure linkages between the micro and macro insurance</p>	<p>Private actors could be hired by PMUs to provide services and goods for proper implementation of the programme</p> <p>ARC will sign contact agreements for good work and</p>	<p>PMUs are supported by ARC and report to IFAD on the implementation as per the agreement signed with each country</p>	<p>Farmers receive the payouts and implement according to the contingency plans.</p>

					services at activity level		
Programme management and coordination							
Coordination	As AE and EE, IFAD is in charge of the efficient management of the programme, dissemination of results, and ensuring that the PMU and ARC/AfDB are implementing and reporting the activities as planned to GCF. This will be done through the RCU	AfDB will be in charge of reporting to the RCU, which reports to IFAD on the implementation results and dissemination. IFAD will report to GCF	ARC will be in charge of reporting to the RCU, which reports to IFAD on the implementation results and dissemination. IFAD will report to GCF	WFP will be in charge of reporting to the RCU, which reports to IFAD on the implementation results and dissemination. IFAD will report to GCF	Private actors hired by PMUs will report to the PMUs, which report to the RCU. RCU then reports to IFAD, and IFAD to GCF	PMU in each country will report to the RCU, which reports to IFAD	During supervision mission, farmer's reports to PMUs/ IFAD country teams on the implementation status, results achieved and needs. The PMUs will report to the RCU and IFAD. IFAD will report to GCF

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

133. Rapid and uncertain changes in temperature and rainfall patterns in the Sahel are already increasing the vulnerability of agricultural systems, especially food production (AGRA, 2017; Masipa, 2017). This trend is expected to intensify in the future according to climate change projections for the selected countries, which will cause a significant decline in the agricultural, forestry and livestock production and thus of important staple food crops, NTFPs and meat/wood productions in such regions (AGRA, 2017; Gbegbelegbe, 2017). This could lead to greater food insecurity and crisis.
134. The seven selected countries are low-income members of the GGW, among the world's poorest countries and are severely impacted by climate change due to their dependence on climate-sensitive sectors, particularly rain-fed agriculture. Despite strong efforts to put in place the necessary policies and strategies for climate adaptation, without the support of the GCF to complement ongoing efforts to address the gaps, these countries cannot meet their targets to help vulnerable communities, particularly smallholder farmers, adapt to climate impacts. In a COVID context, where most of these countries have limited fiscal space to borrow funds and the private sector has been hit and cannot mobilize more resources in form of equity or guarantees, the GCF grant is critical to enabling countries to address the impact of climate change and natural hazards on the most vulnerable smallholder farmers and communities in the Sahel.
135. In the last 50 years, hydrological, climatological and meteorological disasters left million people dead and more than 24 people million food insecure in the Sahel region (ReliefWeb, 2019). The majority of disasters in the Sahel are hydro-meteorological in nature, with droughts still affecting the largest number of people on the continent and floods occurring frequently along the major river systems and in many urban areas. To foster long-term transformational planning and programming, climate information services are critical for the creation of relevant, science-based information to inform decision-making, early warning systems (EWS) and new business opportunities. Such infrastructure and services will support Impact-Based Multi-Hazard EWS, which is of utmost importance to the de-risking of investments in agriculture, creating important synergies and increasing the resilience of operations. Finally, CIEWS, countries and communities will inform investments and financial decisions; a major focus will be placed on forecast-based action/financing (FBA/FBF), adaptation and disaster risk finance. For the targeted countries, hydro meteorological infrastructure capacity is the lowest of all the global regions, with observation network density (defined as the number of stations per 10,000 km sq.) as low as 0.4 in Niger, 0.5 in Mali and 1.6 in Senegal. The World Bank estimates that US\$1.5 to US\$2 billion is required to modernize CIEWS infrastructure in sub-Saharan Africa and US\$400 to US\$500 million is needed annually for operations and maintenance (Rogers & Tsirkunov, 2013).
136. In view of the high levels of current and emerging disaster risks in the Sahel, investments and budgetary allocations to direct DRR investments have increased in an effort to reduce natural hazard-related risks and help countries become more resilient to disasters. Nevertheless, these programmes remain fragmented and need to be integrated, upgraded and scaled up to support effective transformational planning and programming (robust climate science to inform the development of NAPs, NDCs, national strategic plans and country programming); boost climate innovation (new investment mechanisms, capacity-building and policy and regulatory frameworks that mobilize private sector investments at scale in transformational CIEWS and forecast-based financing); and expand and replicate knowledge

(knowledge brokering on climate investments through institutional collaboration; prioritize monitoring and evaluation to identify impacts, lessons learnt and best practices that can inform future programming).

137. Forecast-based action programmes and financing using CIEWS to boost a weak or inexistent agricultural insurance industry and support the adoption, timing and planning of early actions are urgently needed. Moreover, market research by WFP and ARC shows that agricultural insurance markets in the seven selected countries suffer from several problems, primarily the lack of competition among companies and of risk analysis capacity in this sector, as well as very high exposure to risk – all of which limit the economic feasibility of insurance in the absence of subsidies. By promoting the implementation of this integrated climate risk management business model, GCF grants will contribute to unlocking the agricultural insurance market by: (i) attracting more insurance companies to a more de-risked sector and (ii) progressively helping to lower the risks to which smallholder farmers are exposed. Overall, by targeting the level of risk through adaptation and greater competition in the market, the project will influence the factors that determine the amount of insurance premiums. In addition, unleashing the potential of the insurance market is a government responsibility and governments of low-income countries need support to do so. The programme's interventions aim to assist the insurance market in reaching a tipping point in the number of customers - over 817,922 of the most vulnerable smallholder farmers to climate change – as direct clients, organized in cooperatives or farmers' organizations to share risks. Furthermore, reducing risk and increasing competition will lead to a drastic drop in insurance premiums, which could generate a larger demand for agricultural insurance products. With more cost-effective products being launched, the market could develop to the point where demand continues to grow, transforming the subsidy-dependent market into a viable one able to provide a more stable offer of climate risk insurance options to smallholder farmers. This will help the services reach smallholder farmers, including women, in the most vulnerable areas to climate change who depend on rain-fed agriculture for their livelihood and well-being. Due to countries' macroeconomic challenges, adaptation efforts remain constrained, leaving the most vulnerable rural communities with inadequate climate risks management options. Without the GCF grants to support the incremental cost of adaptation and mitigation, it is questionable whether such vulnerable communities will engage in comprehensive integrated climate risks management.
138. Under IFAD 11 2019-2021, IFAD has committed 100 percent of its projects to addressing mainstream climate concerns and that "at least 25 percent of IFAD's investments is specifically climate focused". The principle guiding the identified action areas are: actionality, integration, innovation and impact at scale. This target of 25 percent could be increased to 40 or 100 percent, depending on the nature of the projects and portfolio, and if highly concessional funds from the GCF are mobilized. The targeted countries' fiscal space is very narrow and their Debt Sustainability Frameworks limit their borrowing capacity (see appendix "Debt sustainability"). Therefore, GCF grants are needed – a need that only continues to grow due to the impact of the COVID-19 pandemic on these fragile economies.
139. The GCF grant is requested to cover part of incremental cost of building the resilience of the IFAD portfolio in these seven African LDCs to complement IFAD's climate actions and the efforts of AfDB and ARC efforts to design a strong and bold Integrated Climate Risk Management Approach (I-CLIMA) that could be used to tackle climate change across the region. IFAD requests both grants to strengthen interventions on climate risk preparedness and reduction and grants for the climate risk transfer component. The amount of US\$82 million from the GCF will allow each country to receive its allocation to promote integrated climate risk management, while the remaining amount will be used to facilitate coordination, South-South and triangular cooperation and capacity-building for smallholder farmers, governments' decision-makers and institutions involved in this programme. These countries and the private sector have been badly hit by COVID-19 and are under severe debt stress due to the economic downturn.

B.6. Exit strategy and sustainability (max. 500 words, approximately 1 page)

140. The programme has been designed to guarantee the sustainability of activities beyond the duration of the project. It essentially aims to promote an integrated climate risk management approach and forecast-based financing using CIEWS as part of a response mechanism for climate risk management. Its forecast-based early action (FbA) approach seeks to enable farmers, communities and governments to pre-plan early actions based on credible forecasts, which are funded and implemented before a climate shock hits. Early response interventions are much more effective than post-disaster emergency aid. The programme will minimise and prevent the impacts of imminent climate threats by providing information and support to at-risk rural communities in the Sahel region. It combines climate risk preparedness for agricultural value chains with a range of forecasts, indicators and decision-making mechanisms, from automated triggers to forecast informed decision-making on climate risk reduction (selection and adoption of the best adaptation measures), and climate risk transfer using forecast-based micro and macro insurance financing.
141. Based on this approach, the programme will support the upscaling, upgrading and modernization of CIEWS and improve hydromet services, which will enhance productivity and contribute to shared growth across a range of sectors such as agriculture, livestock, local planning, and health services. Hydromet reliable information also strengthens the enabling environment for private and public investment in development. CIEWS generate a variety of outcomes, ranging from creating new business opportunities to reducing costs for existing businesses.
142. Through FbA supported by CIEWS, the programme will further the development of a nascent agricultural insurance market will complement and build ongoing investments already in place that focus more on climate risk preparedness

and climate risk reduction. It will support countries efforts to de-risk investments and access innovative financing options and key partnerships to leverage and scale up investments in agriculture. The goal is to develop this farm insurance market to the point where it is able to run on its own, without outside support.

143. Additionally, the programme will also support the transfer of capacity to national governmental and non-governmental actors to guarantee that they are able to fully assume the activities at programme end. The programme will address the weaknesses and take advantage of the strengths of the current systems, where they exist. Key intervention areas will be:
144. **Strengthening the capacities of farmers, decision-makers and government institutions on integrated climate risk management:** Consultations were held in the field with youth, women, producers, economic interest groups, cooperatives, MSMEs and FOs to identify their needs and capacity gaps. During the proposed activities under output, a list of the current and future needs was compiled and capacity development interventions proposed. With strengthened capacities, farmers, FOs, MSMEs, cooperatives, decision-makers and institutions will make more effective decisions for improved long-term results in terms of reducing climate risks. This will encourage more farmers to sign up.
145. **Learning and knowledge management:** Technical assistance on all programme components will be provided to help smallholder farmers acquire a more informed view on agricultural insurance and adopt it as a tool for managing climate risks. Partnerships with the World Bank-GIIF, IFAD's Platform for Agricultural Risk Management, WRMF (its Weather Risk Management Facility) and the Knowledge Management Department of the West and Central Africa division and the Environment and Climate Department shall help capitalize the programme's experiences and share them in the framework of South-South cooperation to strengthen market operators' ability to reach the tipping point. The RCU will be in charge of overseeing the knowledge and learning exchange activities. The KM and M&E specialist will supervise the KM work and quality at regional level, exchanges between countries through the SSTC and liaising with IFAD baseline investment KM and GCF country project coordinator. The programme will work closely with national and regional universities and regional research centres (ACMAD, Agrhymet and WASCAL, to name a few) and key water basin management authorities (OMVS, OMVG, Niger Basin authority, Lake Chad Management Authority), all stakeholders who have a key role in integrated climate risk management. Through a cooperation agreement, the programme will partner with universities to support 35 postgraduate students on their research on Integrated climate risk management. The support for research will inform university research work, curricula and programmes in the future. This, together with the strengthening of cooperation and ties between key actors in this area, will help fill the gap in national expertise in this field in the participating countries and build in-country capacity capable of undertaking future action on climate risk management, preparedness, adaptation, mitigation and transfer.
146. **Building national insurance enterprises' capacities and strengthening the agricultural insurance market:** The programme will build the capacities of existing national institutions – including CNAAS (Senegal) and other public support schemes (such as the ones in Burkina Faso or Mali) – as well as insurance and reinsurance companies that are already active or interested in working with index-based insurance, including private insurance companies and reinsurance companies such as AXA, Allianz, Sonar or Yelen, microfinance institutions, digital platforms and banks amongst others. The programme aims to contribute to the sustainable construction of a mature national agricultural insurance market that is capable of responding to the high demand and offering insurance products tailored to smallholder farmers' needs and tested for adequacy and efficiency. With regard to micro insurance, a digressive approach to subsidizing insurance premiums for smallholder farmers will be used to ensure they are able to assume the payments of premiums once the programme has ended. Promising results are being reported from the Senegal experience where farmers organised in farmer organizations and cooperatives continue to pay after the project was completed. Incentive mechanisms will be used to promote the development of the industry in countries where more work needs to be done (Chad, Mali, Mauritania, Niger and The Gambia) and higher adoption rate by farmers are required (Senegal and Burkina Faso). The project will work with the West African Network of Smallholder Farmers (ROPPA) and IFAD-PARM to deepen the partnership with insurance service providers. Through a cooperation agreement with national universities, 20 postgraduate students will be provided the opportunity to undertake their research on agricultural insurance and FBF. The outcome of the research work will inform the development of agricultural industry.
147. **Modernization and upgrading CIEWS:** The selected countries still lack the capacity to develop a full climate information system, which is key for decision-making in economic sectors – namely agriculture, fisheries and forestry – that are highly vulnerable to climate variability and change and natural disasters. With this programme, hydromet services will be strengthened. Selected national meteorological services will be in charge of the procurement, acquisition, deployment, installation, testing, maintenance and reparation of hydro meteorological infrastructures and associated electronic equipment of the station. In addition, the technical team of these departments will use visual or appropriate testing tools to diagnose malfunctioning equipment, assist in maintaining accountability of all parts of the system and in the requisitioning of supplies and spare parts, process and pack systems components for storage

and/or deployment. Also, the team will maintain records of maintenance and compile data for reports. With a well-functioning agrometeorological network and systems, the improved climate information generated and processed by capacitated hydro met services will inform crop calendars, timing for marketing and processing, decision-making, choices of the most suitable agricultural techniques and inputs, all of which contribute to building the resilience of crops and livestock in each country.

148. **Capacity-building of selected meteorological agencies, technicians and agents:** will contribute to a denser, more modern and better functioning CIEWS with the capacity to support strategic planning and programming in the agricultural sector. The programme will establish knowledge brokering both at national and regional on climate investments through institutional collaboration; prioritize monitoring, evaluation and learning to ensure that impact assessments, lessons learnt and best practices inform future programming and planning. Furthermore, 10 post-graduate students will conduct their research on CIEWS for agricultural planning and development.
149. **The value chain and rural entrepreneurship approach:** Strong demand from FOs, cooperatives and producers will encourage the agricultural insurance market to build the infrastructure it needs and ensure the continuity of activities once the programme has ended. As in most Sahelian countries, most of the agricultural work is managed by women, while men focus on tasks such as clearing and preparing land, marketing, etc. Indeed, women's contribution to agriculture is substantial: they represent the majority of the agricultural labour force (80 percent) and are responsible for 93 per cent of household food crop production. The programme will comply with IFAD social and gender policies in the GCF designed programme to address social and gender equality issues in agriculture. This project will be therefore be inclusive of men, women and youth. Five post graduate research students will conduct their studies on the impact of this approach on value chain and rural entrepreneurship development.
150. **Co-investment and partnerships:** Through this programme, countries will foster more demand and investment in CIEWS to support innovative financing options and key partnerships to leverage and scale up investments. By supporting the development of CIEWS with GCF resources, countries will develop financing models for public-private-partnerships and FBF, including potential development of payment services for relevant hydro meteorological information from the private sector and insurance companies.
151. By encouraging commercial insurance companies to enter the agricultural insurance market, the programme shall create the conditions necessary to ensure the sustainability of supply and demand in the long term. The proposed actions include fostering a public-private dialogue, establishing a social floor and institutionalizing payments to ARC. Complementarities will be created through the African Development Bank ADReFi and ARC. National strategies for financing climate risks will also be defined and will build synergies with existing projects funded by the GCF and other development partners working in the same areas. The annual payment of macro insurance premiums at programme end and the establishment of mechanisms to guarantee payments are made regularly are key for the continuity of macro insurance initiatives. The search for additional short and long-term funding and the reallocation of the resources from funds with low performance levels in the area of adaptation (GEF and others) to the payment of insurance premiums groups may be used in the event that budgetary problems arise. The programme will work closely with the steering committees to better mainstream this instrument into regional planning and budgets.
152. Before this programme ends, IFAD will be using lessons learnt to inform other countries in the region on the impact of the programme through it regional grants so they can start working on similar programmes on their own or with the support of IFAD or other development partners. IFAD is also interested in scaling up this initiative at the continental level through a flagship programme.

B. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)	Total amount	Currency
	82,849.900	million USD (\$)

GCF financial instrument		Amount	Tenor	Grace period	Pricing
(i)	Senior loans	Enter amount	Enter years	Enter years	Enter %
(ii)	Subordinated loans	Enter amount	Enter years	Enter years	Enter %
(iii)	Equity	Enter amount	Enter years		Enter % equity return
(iv)	Guarantees	Enter amount			
(v)	Reimbursable grants	Enter amount			
(vi)	Grants	82,849.900			
(vii)	Results-based payments	Enter amount			

(b) Co-financing information	Total amount	Currency
	60,477	Options

Name of institution	Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority
IFAD	Grant	30,315	Million USD	Enter years Enter years	Enter%	Options
AfDB	Grant	22,923	Million USD	Enter years Enter years	Enter%	Options
ARC	In kind	7,239	Million USD	Enter years Enter years	Enter%	Options
Gov (Taxes exemption)	Options	Enter amount	Million USD	Enter years Enter years	Enter%	Options

(c) Total financing (c) = (a)+(b)	Amount	Currency
	143,4	Million USD

(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)

The GCF Programme will be complementary to the overall IFAD, AfDB, ARC baseline investments in the selected countries. Current contributions from IFAD in form of grants amount to US\$30,315 million, from AfDB (US\$22,923 million), ARC (US\$7.239 million). However, IFAD PMUs' contributions provided in the form of human resources, office structures and technical input will be counted as co-financing. This co-financing enhance the financial sustainability of the overall sustainability of the programme beyond the timeframe of the execution of GCF funds.

C.2. Financing by component

Please provide an estimate of the total cost per component and output as outlined in section B.3. above and disaggregate by source of financing. More than one co-financing institution can fund a single component or output. Provide the summarised cost estimates in the table below and the detailed budget plan as annex 4. See Annex

Component	Output	Indicative cost Options	GCF financing, USD		Co-financing (USD)		
			Amount Options	Financial Instrument	Amount million USD (\$)	Financial Instrument	Name of Institutions
Component 1: Climate Risk Preparedness	1.1. Increased access to agro-climatic information services and early warning infrastructure to support integrated climate	11 620 550	11 620 550	Grants	-	-	-

	risks management						
	1.2. Improved Awareness-raising, capacity-building and institutional development on integrated climate risks management.	7 661 300	7 661 300	Grants	-	-	-
Component 2. Climate Risk Reduction (Adaptation /mitigation)	2.1. Best available technologies, adaptation/mitigation practices ((forest and land use; renewable energy) adopted and implemented with agricultural insurance schemes	23 153 000	23 153 000	Grants	-	-	-
	2.2. Diversified livelihood through the promotion of income-generating activities powered with renewable energy	28,063,670	0	Grants	30 000 315	Grants	IFAD
Component 3.2: Climate Risk Transfer	3.1. Access to micro insurance expanded to enhance integrated climate risks management 3.2. 3.3.	30 100 255	30 100 255	Grants	-	-	-
	3.1. Sovereign risk transfer mechanism (macro-insurance) supported and promoted to strengthen integrated climate risks management 3.2. 3.3.	37 909 950	7 747 950	Grants	7 239 22 000 923	Grants	ARC AfDB ADRIFI
Programme Coordination	Programme management	6 914 659	2 412 000	Grants	4 502 659	Grants	IFAD
Indicative total cost (USD)		143, 327	82, 849.900		60, 477		

This table should match the one presented in the term sheet and be consistent with information presented in other annexes including the detailed budget plan and implementation timetable. e of a multi-country/region programme, specify indicative requested GCF funding amount for each country in annex 17, if available.

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities? Yes No

C.3.2. Does GCF funding finance technology development/transfer? Yes No

If the project/programme is expected to support capacity building and technology development/transfer, please provide a brief description of these activities and quantify the total requested GCF funding amount for these activities, to the extent possible.

153. The programme will promote under Component 1: Increased access to agro-climatic information services and early warning infrastructure to support integrated climate risks management through the installation of automatic weather stations and rain gauges; by upgrading and rehabilitating existing hydrological stations (automatic stage recorders) and their specialized hydrological equipment (acoustic doppler current profiler, bathymetric instruments, etc.). Additional technologies and practices are: construction of 500 Agro-Pastoral/Farmer Field Schools (AP/FFS) and 1,000 nurseries to grow select climate-adapted varieties; promotion the adoption of CSA on 200,000 ha, with integrated service packages (certified seeds and fertilizers, training bundled with agricultural insurance) on at least 100,000 ha distributed over the seven countries; dune stabilization techniques; the restoration of degraded land and mechanical/biological management of ravines on 100,000 ha in the seven countries; implement sustainable forest management (SFM) practices in 40,000 ha of forests; promote the integration of agroforestry techniques into farming systems on 26,000 ha of selected watersheds; support the integration of Assisted Natural Regeneration of trees (ANR) techniques into 70,000 ha of rain-fed production systems, crop rotation and association practices; the adoption of Zai half-moon techniques on 60000 ha of land; and the adaptation or rehabilitation of 120 water points.

154. As part of this IFAD co-financing investment, the programme will also promote the construction of 200 modern communal poultry farms for youth and women; 200 earth dams for fish farming activities; 100 integrated vegetable garden based on a community model on at least 4 to 5 ha of land; 2500 off-farm activities (such as mechanical workshops for equipment maintenance; solar system maintenance; stores and bakeries; digital finance and money transfers); climate-proofing of 700 feeder roads and farm tracks to ensure year-round and all-weather usability (culverts, sand stabilization, side-drains to reduce erosion, etc.) and connection to markets; develop and deliver modules on financial literacy, marketing and business management for 2,500 farmers organizations, 1500 MSME and, 2000 cooperatives; the construction/rehabilitation of 200 warehouses and processing facilities capable of withstanding climate change; the construction and rehabilitation of 100 vet points; support districts with the development of Feeder Roads Maintenance Plans and to farmer organizations on formation of roan maintenance, distribution of maintenance tools and the development of Farm Tracks Maintenance Plans.

C. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

This section refers to the performance of the project/programme against the investment criteria as set out in the GCF's Initial Investment Framework.

D.1. Impact potential (max. 500 words, approximately 1 page)

155. The programme's overall development objective is to increase resilience and enhance the livelihood and food and water security of smallholder farmers and rural communities through integrated climate risk management of natural resources (water, soil, ecosystems) in seven countries of the Green Great Wall (GGW). The expected impact is the improved climate resilience of livelihoods, water and food security for 817,922 smallholder farmers and 5.33 million beneficiaries in the seven participating African LDCs. The programme expects to contribute to a climate resilient and food secure Sahel. More specifically, the programme will contribute to the following:

156. Reduced emissions through increased low-emission energy access and power generation. The Africa Integrated Climate Risk Management Programme will increase the access to renewable energy for at least three to five agricultural value chains. An innovative rural electrification model using hybridized solar micro and mini-grids, off-grid solutions and standalone systems will be installed to power the targeted agricultural value chains.

157. Reduced emissions from unsustainable land use, deforestation and forest degradation through the adoption of sustainable forest management and conservation practices and techniques to increase forests' carbon stocks. The programme will contribute to the avoidance of 21 466 499 tCO₂e through land restoration, sustainable forest management and sustainable climate resilient agriculture practices and increasing agricultural value chains' access to renewable energy sources.

158. Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions in the seven LDC Sahelian countries; 817,922 direct and 5.33 million indirect beneficiaries will benefit from integrated climate risk management

measures to build their resilience to climate shocks and improve the resilience of their livelihoods and water and food security. This will be done by strengthening the CIEWS so they will provide reliable and robust information on the adoption of the most appropriate adaptation measures and insurance products.

159. Increased resilience of health, well-being and food and water security: With the objectives set by the programme, it is expected to contribute to reducing the participating countries' poverty rates from an estimated 55 percent (2016) to 40 percent by 2024.
160. Increased resilience of infrastructure and the built environment to climate change: The programme will support the access of 4.5 million people to 700 km of climate-proofed roads and community infrastructures. Various infrastructure improvements are planned under this programme, mainly to water, energy, rural roads, agricultural and market infrastructure.
161. Improved resilience of ecosystems and ecosystem services: The programme intends to restore more than 70,000 ha of degraded forests and pastoral land and promote CSA on 200,000 ha of land. Ecosystem-based approaches and CSA measures to be implemented will increase resilience and improve the livelihoods of vulnerable people in rural areas.
162. Strengthened institutional and regulatory systems for climate-responsive planning and development: With CIEWS and increased use of climate information, the programme will contribute to transformational planning and programming for adaptation and agricultural insurance development. It will support the drafting of seven climate fiscal frameworks, national disaster risk financing (DRF) strategies, 14 local contingency plans and other functional institutional and coordination mechanisms. The FBF approach will help scale up investments through national budget and the private sector involvement.
163. The programme's potential impact will be catalyzed beyond its lifecycle through investments in knowledge management during the programme's duration.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

164. The paradigm shift lies in the programme's comprehensive approach to building resilience to climate change by integrating strategies focused on climate adaptation, risk preparedness, risk reduction, risk management and risk transfer. The theory of change presented in section C.2 illustrates how each of the three outputs of the proposed programme contribute to its overall long-term objective and how the resulting impacts can be sustained, replicated and scaled up to contribute to climate-resilient adaptation in Africa. The integration of the specific elements described in the exit strategy into the programme's design and implementation will create the conditions necessary to sustain impacts beyond project end and build potential for the scaling up of activities to achieve approximately three times the initial impact.
165. The pathway to paradigm shift is through the design and implementation of a transformational approach, based on the delivery of the following:
- **Transformational planning and programming:** to support a modern and denser network of CIEW infrastructures, enhanced capacity-building of selected meteorological agencies, technicians and agents and the use of reliable and robust information for forecast-based financing (insurance industry development) and programming (adaptation and mitigation programmes), the programme contributes to the development of more effective NAPs, NDCs, national strategic plans and country programming. This programme thus contributes to more coherence, complementarity, efficiency and effectiveness in strategic planning and decisions made by public and private sector players and beneficiaries in rural farming households.
 - **Catalyzing climate innovation:** By using innovations in climate sciences to underpin sub-projects and establish strategic partnerships, the programme will introduce new investment mechanisms and support the establishment of policy and regulatory frameworks to enhance the mobilization of private sector investments at scale in transformational CIEWS and the agricultural insurance industry. The programme will strengthen national and regional hydro meteorological service capacity to support the adoption of the appropriate adaptation practices and technologies and the establishment of index insurance and impact-based multi-hazard early warning services (DRR, livelihoods, agriculture, water). It will also enhance the provision of quality data for climate action (data generation, infrastructure, analytics, governance and sharing protocols).
 - **Expanding and replicating knowledge:** This programme has been conceived as a potential flagship programme which can be replicated in the entire region. Through KM and knowledge brokering on climate investments, strategic institutional collaboration will be established. The programme will also support RCU monitoring, evaluation and learning to ensure impact evaluation, lessons and best practices inform future programming.
 - **Scaling up investments:** With FBF as part of a response mechanism for climate risk management, together with innovative financing insurance products and services from insurance companies and micro finance institutions, strategic partnerships between actors from micro insurance, macro insurance and met agencies, the programme will leverage and scale up investments in climate resilient agriculture. Ultimately, the programme will support countries in develop financing models through Public-Private-Engagement platforms built to identify and assess key barriers to technology diffusion; determine the appropriate policy mix for leveraging climate capital; select financing options to create an enabling policy environment for the implementation of the selected policy mix.

166. In collaboration with ARC, AfDB and WFP, partners will support throughout the programme lifecycle country governance systems that facilitate the integration of the integrated climate risk management model into national budget systems, finance bills and investment frameworks. ARC and partners' (IFAD, AfDB) engagement with countries will lead to the active involvement of the parliaments and ministries of finance of the participating countries in mainstreaming the model into national budgets and investments.

167. An important element of the paradigm shift is the potential to build an environment that enables the private sector's capacity and role to thrive and provide agricultural insurance products to different types of smallholder farmers in the countries. This project will support the development of index-based insurance in the seven countries by increasing insurance companies' capacity to design and offer products better suited to smallholder farmers' needs and financial possibilities. The programme's investments in increasing awareness will also help farmers better understand agricultural insurance, the differences between products and their potential benefits.

168. Pathways for future replication and scale-up include the following:

- Access to index-based micro insurance and macro insurance can be replicated in the whole of Africa through this programme.
- Risk transfer products can be further developed in the seven countries to include products other than climate-driven risk transfers, such as livestock mortality insurance and other risk transfer mechanisms adapted to the different stages of the agricultural value chains.

169. The scaling up will be done through national strategies for financing climate risks. These strategies will build synergies with existing projects funded by GCF and other development partners in the same areas. Special attention will be paid to ensuring that countries continue to assume the annual payments of macro insurance premiums at programme end by establishing mechanisms to guarantee payments are made regularly, searching for additional short and long-term funding, and reallocating resources from funds with low performance levels in the area of adaptation (GEF and others) to the payment of insurance premiums groups, in the event that budgetary problems arise. The programme will work closely with the ministries of finance, parliament to better mainstream this instrument into government planning and budgeting.

D.3. Sustainable development (max. 500 words, approximately 1 page)

170. **Environmental co-benefits:** Improved access and utilization of hydromet information and EWS through improved CIEWS will reduce climate-related disaster risks by increasing community preparedness for response and recovery, which is consistent with Sustainable Development Goal (SDG) target 13.1 and 13.3 on strengthening institutional capacity on climate change mitigation and adaptation. Planned activities focused on restoration and reforestation will generate clear, strategic environmental benefits on large areas of land: sustainable forest management (SFM) practices implemented in 40,000 ha of forests; agroforestry techniques integrated into farming systems on 26,000 ha of selected watersheds; Assisted Natural Regeneration of trees (ANR) techniques adopted in rain-fed production systems on 70,000 ha of land; Zai half-moon techniques on 60,000 ha of land, and other areas of farmland. Consistent with SDG 13 on climate change, SDG 15 on sustainable forests and INDC priorities on agriculture and forestry, these activities will not only bring improvements in terms of the adoption and use of more sustainable, climate resilient farming techniques, but also in water management. Access to micro insurance will further provide safety nets for rural people in times of economic distress, helping them offset losses in income caused by weather shocks. Furthermore, in various agricultural production and processing interventions, fossil fuels are the main source of electricity. Promoting access to renewable energy (mini grids) to power agricultural value chains and irrigate crops beyond the three-month rainy season will contribute to climate resilient and low emission agriculture. This is consistent with the SDG 7.

171. Interventions on water river basin backed by well-informed information will contribute to managing surface and groundwater watershed including fisheries, cropping, and gardening. Protection and wise use of river basin resources will also offer water supply and quality benefits that are often essential to maintaining a basic standard of living in both urban and rural areas. This is consistent with SDG Goal 15 on the protection, restoration and promotion of the sustainable use of terrestrial ecosystems, reversing land degradation and halting biodiversity loss, as well as the SDG 6 on water. Through these activities, the programme will contribute to reducing 21 466 499 tCO₂e (10 percent of the GGW's emission reduction target) and will contribute to the countries' NDCs, thus contributing to SDG 13. The development of local contingency plans will provide sustainable funding for conservation actions by prioritizing funding proposals that involve local people in negotiated resource use and co-management of resources.

172. **Economic co-benefits:** The programme's economic analysis is based on the expectation that the six-year implementation period will have impacts over a span of 20 years. CIEWS, weather information systems and other water, land and energy infrastructures will last 30 to 40 years and operations and maintenance (O&M) costs are assumed to be around one percent of programme investments and covered by government and meteorological agencies' budget after the programme has ended. The cost-benefit analysis shows that with a 10 percent discount rate, the discounted net present value of the project is valued at about US\$90 million. The economic internal rate of return is 24 percent, which exceeds the discount rate of 10 percent. Though the internal rate of return is 24 percent for the base case, there are other benefits not captured in this analysis. The

means that benefits estimated in this analysis are low. Three sensitivity test cases were examined: (i) total cost increased by 20 percent; (ii) total benefits decreased by 20 percent; (iii) total cost increased by 20 percent and total benefits simultaneously decreased by 20%. In all cases, the project remains economically feasible and EIRR remains above the minimum threshold. The programme is considered viable, which implies that it would be even with higher discount rates. It will generate jobs and opportunities, especially for women and youth, who are to be 50 percent and 40 percent of the programme's 817,922 direct beneficiaries and 5,332,754 beneficiaries. With increased resilience, access to climate information and services for forecast-based financing and programmes, access to insurance schemes, productivity will increase, generating improvements to food security and surpluses that can be marketed to generate income. Integrated landscape management will promote the multi-functionality of landscapes and provide a mechanism that enables local stakeholders to reduce conflicts among different types of specialized resource users whose differ in their dependencies on a range of ecosystem services (e.g., herders, farmers, or fishers). This work will address conflict over natural resources, which may be climate induced. Improved water infrastructure will help to de-escalate tensions, promote stability and increase resilience to hydrological shocks that might otherwise trigger conflict. Targeted areas will include transhumance corridors and rangelands. This is consistent with SDG17 on partnership.

173. The programme will contribute to improvements to women's health due to reduced smoke from the use of fuelwood for cooking, as well as increase time for the pursuit of educational and other off-farm activities after daylight hours. Sustainable management of pest and diseases can be achieved with the use of renewable energy sources and by adopting sustainable, best adaptation and mitigation practices and technologies. The programme will address health risks posed by the use of biomass to their immediate users including burns and direct inhalation of toxic PM 2.5 particles by replacing slash and burn practices with CSA. It will generate positive impacts through decentralized electrification, improved income and livelihoods for smallholder farmers and rural communities. With regards to climate smart agriculture, agroforestry, the programme will contribute to improving ecosystem services (recreational, cultural services, natural, spiritual, medicinal, etc.). This contributes to the SDG 3 on health.

174. **Gender considerations:** Women smallholder farmers' resilience and adaptive capacity to climate change is strengthened. The programme has set targets to ensure that 50 percent of beneficiaries are women and 45 are youth, which will contribute to SGD 5 (gender equality). Specific actions will be developed to strengthen the technical and managerial capacities of women by providing them with appropriate tools for identifying and managing climate risks along agricultural value chains. Specific training will be developed on access to assets, financial education, climate resilient agricultural production and processing and CIEWS. As stated in the Gender Action Plan, gender-disaggregated data will be assessed against the appropriate indicator to measure enhanced access for women to assets, inputs and financial products, including insurance. The programme intends to close the gender gap, as women represent 70 percent or more of the workforce in the agricultural sector in the participating countries, but do not have access to productive assets, finance and knowledge. Women will be included into the National Steering Committees to enable them to influence the main strategic decisions. Sharing information to strengthen integrated climate risk management and FBF along production chains and transhumance routes will also help build resilience.

D.4. Needs of recipient (max. 500 words, approximately 1 page)

175. Countries under this programme are highly vulnerable to drought and flooding. Climate change projections show that their exposure and vulnerability to climate hazards will increase in the future. In this section, we summarize the vulnerability of each of the seven countries of the GGW and the GCF future GGW umbrella programme to demonstrate that the integrated approach to climate change adaptation presented in this programme will be beneficial to the countries and population.

176. The Gambia is one of the most vulnerable countries in the world to climate change: according to the Notre Dame Global Adaptation Index (ND-GAIN), it ranks 163rd out of 180 countries (or the 16th most vulnerable in the world). Regarding the country's vulnerability to climate change in the area of food security, measured in terms of food production, food demand, nutrition and rural population, it places 177th out of 186 ranked countries. The indicators explaining this ranking include projected changes in cereal yields, population growth, food import dependency, rural population, agriculture capacity and child malnutrition (IFAD, 2015b). In Burkina Faso, multi-model projections from Coupled Model Intercomparison Project Phase 5 (CMIP5) predict a rise in cumulative precipitation for the 2020-2040 period. The rainy season will be more marked, with rains coming later, in September and October, and accumulation rising more than 20 percent. However, periods of drought will last longer. Severe precipitation events will be more frequent. In parallel, temperatures will rise around 1°C. These changes will exacerbate erosion and raise the risks of flooding and damage to infrastructure. Later and heavier rainfall could threaten standing harvests. Rising temperatures coupled with higher humidity and longer periods of drought will increase the risks to crop health, particularly for market garden crops and affect water requirements, especially in the off season (IFAD, 2016).

177. The summary of the current and future climate vulnerability of Chad shows that the sectors forming the basis of its economy are all subject to climate hazards. The adverse effects of climate extreme phenomena are a major handicap to the country's development. The fragility of its ecosystems makes it very vulnerable to these phenomena and its difficult socioeconomic context hinders its ability to adapt (RdC, 2010). The main extreme weather events in Chad are droughts, floods, sand or dust storms, extreme temperatures, high winds and other equally important phenomena such as locust attacks and bushfires. The

IPCC's Third Assessment Report states that the impacts of climate change to which Chad will be exposed are the loss of life and other major impacts that will affect investment and the economy (RdC, 2010).

178. Mali is highly vulnerable to climate change and variability. Droughts, storms, strong winds and increased temperature variability are the climate risks of greatest concern. The Malian government and international and national institutions and organizations began addressing climate-related challenges in the 1960s and have since conducted several vulnerability assessments, enhanced climate observations and modelling and developed and implemented adaptation plans and capacity-building efforts. However, significant adaptation needs remain to be addressed, including the necessity for additional and more accessible research on climate change impacts and vulnerabilities at local community levels, with a focus on food security, water resources and coastal resources. Additional funding for the implementation of adaptation plans and strategies is also needed (USAID, 2012).
179. Straddling the Sahara and the Sahel, Mauritania is a vast country of 1,030,700 km² that is in the advanced phases of a desertification process affecting nearly 75 percent of its territory. Its ecological profile is, therefore, one of extreme vulnerability to climate hazards. This vulnerability is notably caused by episodes of endemic droughts that have been raging since the early 1970s and a marked alternation between a short rainy season and a long dry season (from eight to ten months). The decrease in rainfall has resulted in several adverse ecological, economic, social and even cultural consequences. The drastic reduction of vegetation fuels the desertification process and has led to a heavy reduction in livestock and agricultural production. It has also triggered a process of pauperization in rural communities. Formerly nomadic communities either settled in the areas they considered most favourable (wetlands) or took part in a massive rural exodus to the main urban centres (Nouakchott and Nouadhibou, the country's administrative and economic capitals, respectively). The non-mobile and urban environment has also experienced growing problems related to various forms of pollution. The quality of drinking water and lack of sanitation have become a major public health concern. Also, air quality in major cities is being degraded by growing quantities of vehicle exhaust fumes, which are all the more polluting as most vehicles are very old and run on poor-quality fuel (IRM, 2004).
180. Available evidence on Niger shows that between 1950 to 1990, the isohyets that delimit the agro-climatic zones shifted 100 to 200 kilometres southward, following a prolonged period of below average rainfall between 1970 and 1990. Recent analyses of long-term rainfall patterns showed that this trend had reversed, with average rainfall on the rise again since the 1990s. This suggests that the rainfall isohyets of 350–400 millimetres, which delimit the zones where crop production is viable, are shifting north again. Thus, the area suitable for crop production may have grown since the 1990s (Global Security, 2017). While total rainfall in the country since the 1990s has increased, the 21st century has seen the return of a series of droughts and severe food insecurity, especially in 2005, 2010 and 2012. Researchers also have noted changes in seasonal patterns (late arrival and early cessation of rains) and intense rain events. There is no strong consensus on future rainfall in the Sahel, but scientists have recently predicted a somewhat wetter Sahel, with more variable precipitation on all time scales, from intra-seasonal to multi-decadal, and projected increases in daily rainfall intensity rather than frequency (Global Security, 2017).
181. Senegal is vulnerable to several natural hazards, particularly coastal erosion, droughts, floods and locust invasions. Flooding affects about 200,000 people a year and has an annual impact of USD 89 million. Large-scale flooding in 2009 alone, largely in the Dakar region, caused about USD 104 million in damages and losses. Flood risk is exacerbated by rapid urbanization, insufficient drainage and poor sewage infrastructure, which has resulted in people settling in low-lying areas and a reduction in soil infiltration potential. Droughts generally impact the arid and semi-arid Sahelian regions (northern Senegal) every three to four years. Since 1980, droughts have affected more than 3 million people (GFDRR, 2017). Climate change is exacerbating hazard risk in Senegal. Rising sea levels and increasingly intense storms are the primary causes of coastal erosion and floods. About 74 percent of the coastal area's housing stock is vulnerable to erosion. Sea levels are projected to rise up to one meter by 2100, potentially putting more than 100,000 people settled in low-lying areas at greater risk for flooding (GFDRR, 2017).
182. For many years, isolated adaptation intervention in these countries that are not linked to integrated risk preparation, risk reduction and transfer of residual risk are only effective until the next disaster hits, which also raises the cost of transferring risks. The overall effect of integrated capacity-building for climate change planning and responses in smallholder agriculture for government, communities and smallholder farmers, together with adaptation investments that reduce climate impacts and greater capacity to transfer reduced climate risks will increase the resilience of smallholder farmers and economies in the 7 African countries in a sustainable way.
183. As shown above, all the countries that will participate in this programme are highly vulnerable to extreme events and climate risks. Accelerating and expanding adaptation initiatives is fundamental, as is strengthening the ability to transfer part of the risks through insurance products. This programme will provide support to the countries based on a broad, integrated approach to climate change adaptation and risk management.

D.5. Country ownership (max. 500 words, approximately 1 page)

184. The seven participating countries are parties to the United Nations Framework Convention on Climate Change (UNFCCC) and have signed and ratified the Kyoto Protocol. By ratifying the UNFCCC, these countries have committed to implementing measures to adapt to climate change and reporting on their NDCs. This programme will contribute to the implementation of objectives of the three Rio conventions ratified by all countries, including the UNFCCC, as well as the Paris Climate Agreement, the SDGs and the Sendai Framework for Disaster Risk Reduction.
185. This programme is fully aligned with the countries' national development plans and their national commitments on climate mitigation and adaptation included in their NAPAs, National Climate Change Policies and Strategies, NDCs, National Communications (NCs), SDGs and National Strategies for Disaster Risk Reduction. The programme interventions on CIEWS, enhanced capacity-building of selected Met agencies, technicians and agents and use of reliable and robust information will support forecast based financing (insurance industry development) and programming (adaptation and mitigation programmes), the development of NAPs, NDCs, national strategic plans and country programming. The programme will support coherence and complementarity, efficiency and effectiveness in strategic planning and decisions made by agents from the public and private sector and smallholder farmers.
186. The programme is also consistent with the countries' Intended Nationally Determined Contributions (INDC), which are reference documents for actions in the field of climate resilience⁶¹. NDCs describe each country's adaptation and investment priorities, analyse knowledge on best practices for climate-smart agriculture and/or co-benefits adaptation and mitigation measures. The implementation of climate-resilient measures in the seven proposed countries in the programme contributes to their NDCs (see table 13 below).

Table 14: Participating countries' NDCs

Burkina Faso	Burkina Faso – 28/9/15 An unconditional pledge to reduce emissions by 6.6% below business-as-usual levels by 2030, with a further 11.6% reduction conditional upon international support. Includes interim pledges for 2020 and 2025. In the section on adaptation, actions proposed would reduce emissions by a further 36.95%, taking the total reductions up to a potential 55.15% below business-as-usual levels. Burkina Faso's INDC.
Chad	Chad – 28/9/15 Unconditional pledge to reduce emissions by 18.2% by 2030, compared to a business-as-usual scenario, or a 71% reduction by 2030, which is conditional upon international support. Includes section on adaptation, including areas of priority in the country.
The Gambia	Gambia – 28/9/15 A 44% emissions cut by 2025, compared to business-as-usual projections, and a 45% cut by 2030. The targets exclude land use and forestry. Two of 12 sectoral mitigation schemes, with associated emissions reduction targets, are unconditional. The rest are conditional upon international financial support and technology transfer. Includes section on adaptation.
Mali	Mali – 29/9/15 Commits to reducing emissions by 29% for agriculture, 31% for energy and 21% for forests and land use, each by 2030, and in comparison to a business-as-usual scenario. This is an average reduction of 27%. This is conditional upon international support, although around 40% of this can be met unconditionally. Includes a section on adaptation, though only for the period 2015-2020.
Mauritania	Mauritania – 23/9/2015 A 22.3% reduction in emissions below business-as-usual levels by 2030. 88% of this pledge is conditional upon international support and 12% is unconditional. This will avoid 33.56 million tons of carbon dioxide. Contains information on adaptation.
Niger	Niger – 29/9/2015 An unconditional 3.5% reduction in emissions by 2030, compared to a business-as-usual scenario, or a 34.6% reduction by 2030 on the condition of receiving international support. Contains section on adaptation.
Senegal	Senegal – 26/9/2015 An unconditional reduction in emissions of 5% by 2030, compared to business-as-usual levels, with

⁶¹Guinea-Bissau: [https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Guinea%20Bissau%20First/GUINEA-BISSAU_INDC_Version%20to%20the%20UNFCCC%20\(eng\).pdf](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Guinea%20Bissau%20First/GUINEA-BISSAU_INDC_Version%20to%20the%20UNFCCC%20(eng).pdf)

STP:

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Sao%20Tome%20and%20Principe%20First/STP_INDC%20_Ingles_30.09.pdf

interim targets of 3% by 2020 and 5% by 2025. Accompanied by a conditional target, subject to international financial support, of 7% by 2020, 15% by 2025 and 21% by 2030, compared to business-as-usual levels. Contains section on adaptation, as well as information on potential obstacles.

Source: <http://www4.unfccc.int/submissions/INDC/Published%20Documents>.

187. Addressing climate change risks in the seven selected countries adequately requires action at both the local and national level. This is why during the design process, all stakeholders, including civil society organizations, were consulted during field missions carried out during the IFAD new design phase in 2019 and gaps in IFAD investments have been identified and aligned with National Action Plans. Following the consultations held with all GCF National Focal Points and government authorities in 2019 during the design phase of IFAD's new investment programme, this regional programme was endorsed by all GCF focal points from participating countries. Recent evaluations show growing capacities for countries to implement this integrated climate risk management programme. The implementation of this programme will help countries reduce their CO² emissions and consequently their NDCs.

D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

188. GCF financing will overcome the existing barriers to promoting integrated climate risk management and access to financial and non-financial products services of the agricultural insurance industry. Linking risk preparedness, risk reduction and risk transfer will lead to transformational planning and programming. Additionally, new innovations in climate sciences and new investments will support the establishment of policy and regulatory frameworks to enhance the mobilization of private sector investment at scale in transformational CIEWS and the agricultural Insurance industry. Through knowledge management and strategic institutional collaboration, the programme will be established as a knowledge broker to be scale up and replicated. Finally, the programme will support countries on the development of financing models through Public-Private-Engagement platforms built to help define and assess key barriers to technology diffusion, determine appropriate policy mix for optimizing the use of climate capital, select the best financing options to create an enabling policy environment to implement the said policy mix.

189. Additionally, climate risk preparedness and climate risk reduction measures are being implemented with good results. In countries like Senegal, for instance, micro insurance has been performing quite well over the past years with the support of IFAD projects. However, policies are still expensive and the limited offer of insurance products does not stimulate high adherence levels. In relation to macro insurance programmes, all countries are ARC members and working towards integrating sovereign disaster risk into their national budgets. Early results from these programmes are highly encouraging, although strong oversight and technical assistance (TA) are necessary. This new approach to combining climate risk preparedness, climate risk adaptation and mitigation and climate risk transfer is considered innovative and transformational in the Sahel region and in context of climate change. Given the historic market demand for innovative approaches to build the resilience of smallholders farmers, IFAD, AFDB, ARC and the selected countries believe that the total proposed GCF grant (US\$82 million) will unlock the market and improve both the demand and supply of such products. This will stimulate the market and encourage bilateral lending organizations to adopt competitive rates, thus reducing the risk of crowding out the market. All participating countries intend to blend their IFAD baseline investments with GCF funds to support rural transformation through the adoption and scaling up of the implementation of climate resilient agriculture. Through this programme, countries are expected to develop a regulatory framework that is conducive to sustaining this programme beyond its lifecycle.

190.

181. Regarding the microinsurance component, the premium structure and level of concessionality will depend on the index structure and levels of commissions and taxes. On average we will expect a net premium to reinsurer representing 70 to 75% of the premium and commissions representing 25 to 30% of the premium. WFP will be involved at every step of the product pricing and the negotiation for the different levels of commissions, to ensure that the pricing is fair and remains affordable to the beneficiaries

D. LOGICAL FRAMEWORK		
<p><i>This section refers to the project/programme's logical framework in accordance with the GCF's <u>Performance Measurement Frameworks</u> under the <u>Results Management Framework</u> to which the project/programme contributes as a whole, including in respect of any co-financing.</i></p>		
E.1. Paradigm shift objectives		
<p><i>Please select the appropriated expected result. For cross-cutting proposals, tick both.</i></p> <p><input checked="" type="checkbox"/> Shift to low-emission sustainable development pathways</p> <p><input checked="" type="checkbox"/> Increased climate resilient sustainable development</p>		
E.2. Core indicator targets		
<p><i>Provide specific numerical values for the GCF core indicators to be achieved by the project/programme. Methodologies for the calculations should be provided. This should be consistent with the information provided in section A.</i></p>		
E.2.1. Expected tonnes of carbon dioxide equivalent (t CO ₂ eq) to be reduced or avoided (mitigation and cross-cutting only)	Annual	1,072,324.95 million t CO ₂ eq
	Lifetime	21 446 499 million t CO ₂ eq
E.2.2. Estimated cost per t CO ₂ eq, defined as total investment cost / expected lifetime emission reductions (mitigation and cross-cutting only)	(a) Total project financing	<u>143,327 million</u> Choose an item.
	(b) Requested GCF amount	<u>82,85 million</u> Choose an item.
	(c) Expected lifetime emission reductions	21,446 <u>million</u> t CO ₂ eq
	(d) Estimated cost per t CO₂eq (d = a / c)	<u>6.83</u> USD / t CO ₂ eq
	(e) Estimated GCF cost per t CO₂eq removed (e = b / c)	<u>3.86</u> USD/ t CO ₂ eq
E.2.3. Expected volume of finance to be leveraged by the proposed project/programme as a result of the Fund's financing, disaggregated by public and private sources (mitigation and cross-cutting only)	(f) Total finance leveraged	<u>60,477 million</u> USDUSD
	(g) Public source co-financed	<u>60,477</u> USDUSD
	(h) Private source finance leveraged	_____ Choose an item.
	(i) Total Leverage ratio (i = f / b)	<u>0.73</u>
	(j) Public source co-financing ratio (j = g / b)	<u>0.73</u>
	(k) Private source leverage ratio (k = h / b)	_____
E.2.4. Expected total number of direct and indirect beneficiaries, (disaggregated by sex)	Direct	817, 922direct beneficiaries of which (50% women; 45% men, 5% undefined)
	Indirect	5,332,754 (50 % women, 45% men, 5% undefined)
	<p><i>For a multi-country proposal, indicate the aggregate amount here and provide the data per country in annex 17.</i></p> <p>817, 922people of which 408,961 women, 306,806 men and 40 896 undefined 5,332,754 people of which 2,666,377 women , 2,399,739 men and 266 637 undefined</p>	
E.2.5. Number of beneficiaries relative to total population (disaggregated by sex)	Direct	0,82% (Expressed as %) of country(ies) of which 0,41% women and 0,32% men
	Indirect	5,37% (Expressed as %) of country(ies) of which 2.68 women and 2.14 % men
	<p><i>For a multi-country proposal, leave blank and provide the data per country in annex 17.</i></p>	

E.3. Fund-level impacts						
Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	Covered as part of the beneficiary survey conducted by independent 3rd party or National statistic bureau	0	408,961 of which 204 481 females 204 480 males	817,922 Of which 408 961 females 408 961 males	Countries and smallholder farmers are willing to participate and adopt integrated climate risk management which include climate risk preparedness, climate risk reduction
A2.0 Increased resilience of health and well-being, and food and water security	A2.2 Number of food secure households (in areas/periods at risk of climate change impacts)	national and regional statistics, interviews with local communities Quantitative Surveys: Food Consumption Score (FCS) ⁶² disaggregated by sex of household head ECOWAS/CILSS, Agrhymet, ReliefWeb Reports	163, 584: Households (average of 20% food insecure households)	81, 792 households (half of food insecure household compared to the baseline)	40 896 households Half of food insecure household at mid term review)	Rural communities and smallholder farmers willing to promote climate resilient agriculture to promote their resilience of health and well-being and food and water security Definition of food insecure households: Households that lack regular access to enough safe and nutritious food for normal growth and development of the member of the households and an active and healthy life. This may be due to unavailability of food and/or lack of resources to obtain food
A4.0 Improved resilience of ecosystems and ecosystem services	A4.1 Coverage/scale of ecosystems protected and strengthened in response to climate variability and change	Progress reports, farms reports, qualitative surveys, national and regional statistics, interviews with local communities	0 ha	At least 30,000 ha of land and degraded forests managed CSA on 100,000 ha	70,000 ha of land and degraded forests and pastoral land managed	Implementation of agroforestry, land restoration and CSA modules will be sufficiently widespread that there will be a measurable impact on ecosystems functions/services

⁶² The household Food Consumption Score (FCS) is used as a proxy for household food security and is the core indicator for consumption recommended by WFP. It is a measure of dietary diversity, food frequency and the relative nutritional importance of the food consumed. FCS is calculated using a weighted frequency of consumption of different food groups consumed by a household during the 7 days before the survey

					CSA on 200,000 ha	
<i>M1.0 Reduced emissions through increased low-emission energy access and power generation</i>	<i>M1.1 Tonnes of carbon dioxide equivalent (t CO2eq) reduced or avoided - gender-sensitive energy access power generation</i>	Report by an independent carbon verifier	Tonnes CO2 eq: 0	Tonnes CO2 eq: 168 087 tCO2eq reduced from solar energy or avoided as a result of Fund funded project	Tonnes CO2 eq: 336 174 reduced from solar energy or avoided as a result of Fund funded project	These targets are estimated based on the CDM methodology AMS-I.A v17 . Average yearly emissions abatement are estimated ex-ante at 56,029 tCO2eq (assumption is made that 40%% of the mini-grids would have been commissioned at mid-term) Solar systems annual performance loss 1% Total emission reductions from solar systems over 20 years is of 1,040,127 tCO2eq
<i>M4.0 Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocks</i>	<i>M4.1 Tonnes of carbon dioxide equivalent (t CO2 eq) reduced or avoided (including increased removals) - forest and land use</i>	Progress reports, monitoring of carbon stock against baseline and using Excat Independent surveys	0	Tonnes CO2 eq: 5 321 005 reduced or avoided as a result of Fund funded project	Tonnes CO2 eq: 6 780 879 reduced or avoided as a result of Fund funded project	Net change in CO2 emissions is calculated using the ExAct carbon balance estimation tool for a lifetime of 20 years is 20 406 372 t CO2 eq. Midterm target is for 3 years while final target if for 6years

E.4. Fund-level outcomes

Select the appropriate outcome(s) to be reported for the project/programme. Select key expected outcomes and corresponding indicators from GCF RMF and PMFs as appropriate. Note that more than one indicator may be selected per expected outcome. Add rows as needed.

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term)	Final	
	Number of technologies and innovative solutions transferred or licensed to promote low-emission development as a result of the programme.	Completion and installation reports	0	5 technologies (1 Automatic Weather station, 1 half-moon , 1 mini-grid , 1 climate proofing feeder road (culvert); 1 dune stabilization technology)	10 technologies (1 Automatic Weather station, 1 half-moon , 1 mini-grid , 1 climate proofing feeder road (culvert); 1 dune stabilization technology, 1 side drain technology, 1 Zai, 1 biological pasture management, 1 ARN, digital transfer of insurance)	Rural communities and % of population willing to adopt and implement the improved technologies

<p>A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development</p>	<p><i>A5.1 Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation</i></p>	<p>Annual plans, Project periodic reports, Finance bill , parliament report</p>	<p>0</p>	<p>3 climate fiscal frameworks developed implemented , monitored through the domestic budget allocation system per year</p> <p>2 national disaster risk financing (DRF) strategies</p> <p>7 local contingencies planning produced , implemented and monitored budget allocated</p> <p>Functional institutional and coordination mechanisms with the number meetings and decisions made</p>	<p>7 climate fiscal framework and -national DRF strategies developed implemented, monitored through the domestic budget allocation per year</p> <p>14 local contingency plans produced , implemented and monitored budget allocated</p> <p>Functional institutional and coordination mechanisms with the number meetings and decisions made</p>	<p>No crisis emerges that could impede expeditious analysis and discussions of institutional and regulatory systems</p>
<p>A7.0 Strengthened adaptive capacity and reduced exposure to climate risks</p>	<p><i>A7.2 Number of males and females reached by [or total geographic coverage of] climate-related early warning systems and other risk reduction measures established/strengthened</i></p>	<p>Quantitative Surveys:national and regional statistics, reports interviews with local communities</p>	<p>0</p>	<p>408,961 people</p> <p>Of which</p> <p>204 481 females</p> <p>204 480 males</p>	<p>817,922 people</p> <p>817,922</p> <p>Of which</p> <p>408 961 females</p> <p>408 961 males</p>	<p>Countries, met agencies and communities are willing to strengthen their capacity with better access to climate information and services for decision-making and forecast-based financing</p>
<p>A6.0 Increased generation and use of climate information in decision-making</p>	<p><i>A6.1 Use of climate information products/services in decision-making in climate sensitive sectors</i></p>	<p>Quantitative Surveys:national and regional statistics, National Met Agencies reports interviews with local communities on crop productivity</p>	<p>Millet: 800 Kg/ha</p> <p>Maize : 1200kg/ha</p> <p>Groundnuts: 900kg/ha</p>	<p>Millet: 1800 kg/ha</p> <p>Maize: 2400kg/ha</p> <p>Groundnuts: 1800 kg/ha</p>	<p>Millet: 3600 kg/ha</p> <p>Maize: 4800 kg/ha</p> <p>Groundnut: 4200 kg/ha</p>	<p>Communities are interested and willing to use climate information products/service and improve agricultural production</p>
<p>M6.0 Increased number of small, medium and large low-emission power suppliers</p>	<p><i>M6.3 MWs of low-emission energy capacity installed, generated and/or rehabilitated as a result of GCF support</i></p>	<p>Programme reports, national and regional statistics,</p>	<p>0</p>	<p>19.6 MW</p>	<p>49.2 MW</p>	<p>Rural communities and smallholder framers are</p>

		Energy Agencies reports, interviews with local communities				willing to use renewable energy to power agroforestry and livestock value chains
M9.0 Improved management of land or forest areas contributing to emissions reductions	<i>M9.1 Hectares of land or forests under improved and effective management that contributes to CO2 emission reductions</i>	Satellite monitoring, field inspection, agroforestry silvopastoral and reforested land	0ha	30,000 ha	70,000 ha	Plantations are not affected by extremes weather like drought or heatwaves

E.5. Project/programme performance indicators

The performance indicators for progress reporting during implementation should seek to measure pre-existing conditions, progress and results at the most relevant level for ease of GCF monitoring and AE reporting. Add rows as needed.

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
Land Restoration and sustainable Management	Land area under sustainable landscape management practice.	Based on inputs from M&E reporting. Periodic surveying by independent 3rd party to sample treatment areas to verify	0	150,000 ha	300,000 ha	The entire area of degraded land watershed is considered treated when the multi-year development plan is complete
Strengthening resilience through Institutions and Information	Met agencies information generated being effectively used by project stakeholders	Functionality and effectiveness tracked as part of the stakeholder/beneficiary survey and project reporting.	0	408,961	817,922	The functionality and effectiveness of these information centers is expected to be tracked as part of the stakeholder/beneficiary survey using a scorecard approach to assess the quality of services
Sustainable forest management	Land users adopting sustainable forest and land use management practices as a result of the project, disaggregated by gender	Based on information collected as part of stakeholder/beneficiary survey and project reporting	0	408,961 land users of which 50 % are women	817,922 land users of which 50 % are women	The target value reflects a household adoption rate of 40 percent. Female-headed households (approx. 15% of all households) are targeted at a

						higher rate of 50 percent.
Adoption of climate resilient adaptation measures	Households adopting adaptation measures (FFS, Zai, CSA, Forest management, ARN, Zai) supported by the programme, disaggregated by gender of head of household	Based on information collected as part of stakeholder / beneficiary survey and project reporting.	0	408,961 households of which 15 % are female headed households	817,922 households of which 50 % are female headed households	The target value reflects a household adoption rate of 40 percent. Female-headed households (approx. 15% of all households) are targeted at a higher rate of 50 percent.
Adoption of climate resilient diversification activities	People participating in income-generating activities supported by the project disaggregated by gender	Based on information collected as part of stakeholder / beneficiary survey and project reporting	0	408,961 households of which 15 % are female headed households	817,922 households of which 50 % are female headed households	
Strengthening resilience through insurance product and services	Number of microinsurance products offered by insurers as part of the programme which are accessed and used as risk transfer by direct targeted smallholder farmers	Functionality and effectiveness tracked as part of the stakeholder /beneficiary survey and project reporting.	0	1 instrument drought index instrument offered by 1 national insurance company	1 drought index, 1, Index-based flood insurance, 1 index based livestock insurance offered by at least 2 insurance companies	The functionality and effectiveness of the insurance products/services is expected to be tracked as part of the stakeholder/beneficiary survey using a scorecard approach to assess the quality of services
	Number of households covered with risk transfer instruments promoted by the program (disaggregated by macro and microinsurance)	Functionality and effectiveness tracked as part of the stakeholder /beneficiary survey and project reporting	0	150,000 households covered by macro insurance 122,000 households covered by micro-insurance	175,000 households covered by macro insurance 150,000 households covered by micro-insurance	The functionality and effectiveness of the insurance products/services is expected to be tracked as part of the stakeholder/beneficiary survey using a scorecard approach to assess the quality of services
Strengthening resilience through insurance product and services	Number of Insurers and regulators trained through institutionalized programs	Functionality and effectiveness tracked as part of the stakeholder /beneficiary survey and project reporting.	0	100	250	The functionality and effectiveness of the insurance products/services is expected to be tracked as part of the stakeholder/beneficiary survey using a scorecard approach to assess the

						quality of services
Increased household income as a result of integrated climate risk management	<i>Share of households with Increased income</i>	Quantitative Surveys:national and regional statistics, Household surveys	0	40%	70%	Rural communities and smallholder farmers are willing to participate in this program, improve their production and incomes
Increased adoption of clean energy for productive use and agricultural processing	<i>Number of households and smallholder farmers using energy generated by solar mini-grids for productive use activities</i>	Surveys and independent audit reports	0	10,000	30,000	Smallholder farmers are willing to create value using solar technology

E.6. Activities

All project activities should be listed here with a description and sub-activities. Significant deliverables should be reflected in the implementation timetable. Add rows as needed.

Activity	Description	Sub-activities	Deliverables
1.1.1. Conduct a preliminary study and map locations of the small hydraulic infrastructure across the 7 countries and detailed designs and ESS studies	This report will allow each participating country to determine the exact location for the installation of infrastructure in the selected areas	<ul style="list-style-type: none"> - Preparation of the ToRs - Hired consultants - Field surveys - Write up of the report 	<p>1 A preliminary study, mapping of locations of the small hydraulic infrastructure across and ESS studies for each country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)</p> <p>-</p>
1.1.2. Install 560 automatic weather stations and 700 rain gauges; upgrade/rehabilitate existing 210 hydrological stations across the 7 countries	This activity consists of improving CIEWS coverage and density by procuring and installing new automatic weather stations, rain gauges and rehabilitating hydrological stations across the 7 countries	<ul style="list-style-type: none"> - Technical proposal and tender preparation and bid - Procurement and installation 	Installation of 80 automatic weather stations; 100 rain gauges; upgrading/ rehabilitation of existing 30hydrological stations across in each country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.1.3. Training for 350 meteorological experts in country on impact-based forecasting methodologies, data collection and interpretation	The programme will organize in each country training programmes for meteorological experts in country on impact-based forecasting methodologies, data collection and interpretation. The number of people to be trained per country is disaggregated in the COSTAB annex	<ul style="list-style-type: none"> - Develop training materials to be used by trainers - Hold training activities for 350 meteorological experts in 7 countries on impact-based forecasting methodologies, data collection and interpretation 	<ul style="list-style-type: none"> - Training materials developed - 50 meteorological/experts in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.1.4. Design and develop a nationally tailored version of the system, using in-situ data and local knowledge/priorities	In each country, a nationally tailored version of the CIEWS system is developed and built on in-situ data and local knowledge/priorities	<ul style="list-style-type: none"> - ToRs developed - Expert hired to support the development of a nationally tailored version of the CIEWS system - The nationally tailored version of the system, using in-situ data and local knowledge/priorities, developed 	<ul style="list-style-type: none"> - one nationally tailored version of the CIEWS system per country(Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
		-	-
1.1.5. Develop communication systems and dissemination methods to translate early warning information into guidance and warnings for government agencies, emergency services, aid	Communication systems and dissemination methods to translate early warning information from the CIEWS are developed to better inform the planning and programming in the agro forestry and livestock sector	<ul style="list-style-type: none"> - ToRs developed - Consultant hired for the formulation of the communication systems and dissemination methods - Final quality review and presentation of the report 	<ul style="list-style-type: none"> - One communication system and dissemination methods to translate early warning information into guidance and warnings for government agencies, emergency services, aid agencies, agricultural NGOs and extension services

agencies, agricultural NGOs and extension services.			developed in each country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.1.6. Support coordination and knowledge sharing with ACMAD and other regional institutions (e.g. AGRHYMET, Climate Outlook Forum) on best practices, complementarities and consistencies with regional products and warnings.	The programme will facilitate at the regional level through the RCU, knowledge sharing and management with regional bodies such as ACMAD and other regional institutions (e.g. AGRHYMET, Climate Outlook Forum) on best practices, complementarities and consistencies with regional products and warnings. KM per country will be collected and disseminated	<ul style="list-style-type: none"> - Country KM reports and progress reports are compiled and analysed at regional level by KM expert - KM are shared with the established networks set up by the programme - The programme will leverage external knowledge and be shared with the country projects teams 	<ul style="list-style-type: none"> - 2 publications - 12 briefs, 2 videos and radio programmes and catalogues produced, shared per country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.2.1. Offer training to 50,000 smallholder farmers on the timely use of early warning products (including agro-climatic information).	The programme will organise in each country training for smallholder farmers on the timely use of early warning products (including agro-climatic information).	<ul style="list-style-type: none"> - Prepare training materials to be used by trainers - Offer training to 350 meteorological/experts in 7 countries on impact-based forecasting methodologies, data collection and interpretation 	<ul style="list-style-type: none"> - Training materials prepared - 6 000 smallholder farmers trained from each country (Mali, Gambia, Mauritania) and 8000 from each of the countries (Burkina Chad, Niger Senegal)
1.2.2. Raise awareness among 1,500,000 smallholder farmers/pastoralists on the best climate adaptation/mitigation practices/technologies and weather index insurance	The programme will organise awareness raising activities in each country and train 1,500,000 smallholder farmers on the best climate adaptation/mitigation practices/technologies and weather index insurance	<ul style="list-style-type: none"> - Communications messages - Awareness raising messages prepared - Training offered 	<ul style="list-style-type: none"> - Communication messages and training materials prepared - 200, 000 smallholder farmers aware of the best climate adaptation/mitigation practices/technologies and weather index insurance in each of the countries (Burkina, Mali, Gambia , Mauritania, Senegal) and 250,000smallholder farmers from Chad and , Niger
1.2.3. Train 700 extension agents on integrated climate risk.	The programme will organize in each country training for extension agents on integrated climate risk	<ul style="list-style-type: none"> - Training materials prepared - Training for 700 extension agents on integrated climate risk across the 7 countries (100 per country) 	100 extension agents trained on integrated climate risk in each country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.2.4. Conduct gender and youth impact analyses	The programme will support the formulation and realization of gender and youth impact analyses and training for 100,000 women and 100,000 youth.	<ul style="list-style-type: none"> - ToRs for the study prepared for each country - Training materials prepared - Training for 100,000 women and 100,000 youth 	<ul style="list-style-type: none"> - 1 Gender and youth impact analyses report produced - 100,000 women and 100,000 youth trained per country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.2.5. Provide training on financial literacy and integrated climate risk management for 2000 cooperatives, SMEs or farmers organizations.	The programme will organize in each country the training on financial literacy and integrated climate risk management for 2000 cooperatives, SMEs or farmers organizations.	<ul style="list-style-type: none"> - Training materials prepared - Training for 2000 cooperatives, SMEs or farmers organizations 	<ul style="list-style-type: none"> - 285 cooperatives, SMEs or farmers organizations trained on financial literacy and integrated climate risk management in each country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.2.6. Support the integration of integrated climate risks into 35 local development plans across the 7 countries.	The programme will support the integration and mainstreaming of integrated climate risks into 35 local development plans across the 7countries.	<ul style="list-style-type: none"> - ToRs prepared for the studies - Consultants hired - The mainstreaming exercise launched 	<ul style="list-style-type: none"> - 5 local development plans which includes integrated climate risk management in each country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.2.7. Support 3 digital services/solutions per country to deliver key information on production, weather, finance and	The programme will support the use of the mobile channel to deliver key climate, finance and market information and support premium	<ul style="list-style-type: none"> - Technical specifications prepared - Contract the services providers/ consultants 	<ul style="list-style-type: none"> - 3 digital services/solutions per country to deliver key information on production, weather, finance and markets, community disease and food safety surveillance and

markets, community disease and food safety surveillance; payments of premiums via mobile money.	collection or pay-outs via mobile devices.	- Digital finance solutions finalised	payments of premiums via mobile devices(Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) -
1.2.8. Train 1400 local government officials, 20,000 farmers and local financial institutions on climate information and use	The programme will organize in each country training on climate information and use for 1400 local government officials; 20,000 farmers and local financial institutions	- Training materials prepared - Hold training sessions for 1400 local government officials; 20,000 farmers; local financial institutions on climate information and use	- 200 local government officials; 2858 farmers; local financial institutions trained on climate information and use per country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1. 2.9. Prepare knowledge products (Knowledge management strategy, one publication per country per year and 1brief per country per year, one publication per country per year and 1brief per country per year)	The programme will support the development of knowledge strategy which will guide all knowledge products to be produced in each country per year – 1 publication, 1 brief,)	- ToRs prepared for the studies - Consultants hired - Carry out research the report and publication & briefs	- One knowledge management produced - One brief developed /year / country - One publication produced/ year per country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.2.10. Creation of solution-oriented platforms containing KM information.	The programme will support the establishment of country knowledge platforms and a regional knowledge platform	- ToRs prepared for the studies - Consultants hired - KM platforms developed	- Country knowledge platform established in each country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) - One Regional knowledge platform functional for all countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
1.2.11. Organize high-level and technical events.	The programme will facilitate 4 high level technical meetings	- ToRs - Contract of services and venues - Organize the event	- 4 high level technical meetings organized across the 7 countries
1.2.12.Produce 7 publications and 7 briefs every year/	The programme will produce publications to promote knowledge sharing and lessons learnt.	- ToRs prepared for the studies - Consultants hired	- 1 publication and 1 brief every year for each country.
1.2.13 Videos and Radio programmes and catalogues during the project lifecycle.	The programme will utilize communication channels to raise awareness on IGREENFIN.	- ToRs prepared for the studies - Consultants hired	- Awareness raising through communication and media channels in each country.
1.2.14. Develop an SSTC plan.	The programme will support the design of a SSTC plan	- ToRs prepared for the report - Consultants hired - SSTC plan developed	- One SSTC plan is finalised covering the 7 countries
1.2.15. Organize South-South and triangular cooperation with at least six exchange visits.	The programme will support the exchanges and visits between countries	- ToRs prepared - Travels - Field visits organized	- 6 exchanges visits organized between the 7 countries
2.1.1. Establish 500 Agro-Pastoral/Farmer Field Schools (AP/FFS).	The programme will support the construction of 500 Agro-Pastoral/Farmer Field Schools (AP/FFS) across the 7 countries	- Technical specification and design of the Agro-Pastoral/Farmer Field Schools (AP/FFS) - Contract service providers - Construction of 500 Agro-Pastoral/Farmer Field Schools (AP/FFS) in the 7 countries	- 72 Agro-Pastoral/Farmer Field Schools (AP/FFS) constructed and functional in each of the following countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal) and 68 AP/FFS for The Gambia)
2.1.2. Set up 1,000 nurseries to grow select climate-adapted varieties (e.g. heat, submergence,	The programme will support the set-up of 1000 nurseries to grow select adapted varieties (e.g. heat, submergence, drought and salinity	- Technical specification and design of the nurseries - Contract service providers	- 145 nurseries to grow selected climate-adapted varieties established in each of the countries (Burkina Faso, Chad, Mali,

drought and salinity tolerant, pest resistant)	tolerant, pest resistant) that can be used during the agricultural campaign	- Construction of 1000 nurseries in coordination with farmers	Mauritania, Niger, Senegal) and 130 nurseries for the Gambia
2.1.3. Promote CSA on 200,000 ha, dune stabilization techniques; restoration of degraded land and sustainable forest management	The programme will promote climate smart agriculture on 200,000 ha of land, combined with practices to stabilize dunes, restore degraded land and for sustainable forest management across the 7 countries.	- Selection of sites for CSA, land restoration and sustainable forest management in the 7 countries - Acquisition of equipment - Organization of farmers - Implantation of CSA and other production techniques	- CSA and SFM promoted for use on 29,000 ha of land in each of the countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal) and 26,000 ha for the Gambia
2.1.4. Undertake mechanical/biological management to restore 100,000 ha of pastureland across the 7 countries	The programme will support mechanical/biological management to restore 100,000 ha of pastureland across the 7 countries	- Selection of sites for mechanical/biological management to restore pastures on 100,000 ha of land in the 7 countries - Acquisition of equipment's - Organization of farmers - Undertaking mechanical/biological management of pasture restoration of 100,000 ha across the 7 countries	- 15,000 ha across of pasture restored in each of the countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal) and 10,000 ha for the Gambia -
2.1.5. Promote sustainable forest management techniques for 40,000 ha of forests	The programme will support the adoption of the latest sustainable forest management techniques for 40,000 ha of forests	- Selection of sites for sustainable forest management techniques (40,000 ha of forests) - Acquisition of equipment - Organization of farmers - Implementation of sustainable forest management techniques for 40,000 ha of forests	- 5,600 ha of forests under SFM for each country (Faso, Chad, Mali, Mauritania, Niger,) and 6000 ha of forests under SFM in Senegal and Burkina
2.1.6. Promote the integration of agroforestry into farming systems on 26,000 ha of selected watersheds.	The programme will support the integration of agroforestry into farming systems on 26,000 ha of selected watersheds.	- Selection of sites for the integration of agroforestry techniques (26,000 ha) - Acquisition of equipment - Organization of farmers - Integration of agroforestry techniques into farming systems on 26,000 ha of selected watersheds.	- Agroforestry incorporated on 4000 ha of selected watersheds in Burkina and Chad 3600ha of selected watersheds in (, Gambia, Mali, Mauritania, Niger, Senegal)
2.1.7. Support the integration of Assisted Natural Regeneration of trees (ANR) into 70,000 ha of rain-fed production systems	The programme will support the integration of Assisted Natural Regeneration of trees (ANR) into 70,000 ha of rain-fed production systems, across the 7 countries	- Identification of sites for the integration of Assisted Natural Regeneration of trees (ANR) into 70,000 ha of rain-fed production systems, - Acquisition of equipment - Organization of farmers - Integration of ANR on 70,000 ha of rain-fed production systems	- ANR integrated into 10, 000 ha of rain-fed production systems in each of the Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and the Gambia
2.1.8 . Promote Zai and half-moon techniques on 60,000 ha	The programme will support the promotion of Zai and half-moon techniques on 60,000 ha across the 7 countries	- Identification of sites - Acquisition of equipment's - Organization of farmers - Implementation of Zai and half-moon techniques on 60,000 ha	- 9,000 ha under Zai and half-moon techniques in each of the country (Burkina , and Niger) and 8500 ha under Zai and half-moon technique in each of the following countries (Mauritania,Mali, Senegal, Chad and the Gambia)
2.1.9. Construction and rehabilitation of 175 water points (reservoirs, ponds, wells, boreholes) for farming and 100,000 km of transhumance pathways	The programme will support the construction and rehabilitation of 175 water points (reservoirs, ponds, wells, boreholes) for farming and 100,000 km of transhumance pathways	- Identification of sites - Preparation of standard tender document for procurements - Call for tender	- 25 water points constructed / rehabilitated (reservoirs, ponds, wells, boreholes) for farming and to cover 14 285 km of transhumance pathways constructed in each of the country (Burkina Faso, Chad,

		<ul style="list-style-type: none"> - Selection of service providers and launch of the work - Construction and rehabilitation of 175 water points (reservoirs, ponds, wells, boreholes) for farming and 100,000 km of transhumance pathways. 	Mali, Mauritania, Niger, Senegal, The Gambia)
2.1.10. Construction of rainwater harvesting infrastructure along 7 transhumance corridors	The project will support the construction of rainwater harvesting infrastructure along 7 transhumance corridors. These infrastructures will help countries collect rainwater for multipurpose use	<ul style="list-style-type: none"> - Preparation of standard tender document for procurements - Call for tender - Selection of the service providers and launch of the work 	- 1 Rainwater harvesting infrastructure constructed per country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
2.1.11 Install 392 mini-grids to power agricultural and livestock value chains and improve households' access to energy	The programme will support the installation of 392 mini-grids to power agricultural and livestock value chains and improve households' access to energy	<ul style="list-style-type: none"> - Preparation of standard tender document for procurements - Call for tender - Selection of the service providers and launch of the work - Construction of 392 minigrids 	- 56 minigrids installed in each country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
2.1.12. Support training activities for 50,000 farmers on sustainable agriculture, community maintenance of infrastructures and watershed management	The programme will support training activities for 50,000 farmers on sustainable agriculture, community maintenance of infrastructures and watershed management	<ul style="list-style-type: none"> - Training materials prepared - Provide training to 50,000 farmers on sustainable agriculture, community maintenance of infrastructures and watershed management 	- 7,142 farmers trained on sustainable agriculture, community maintenance of infrastructures and watershed management in each of country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
2.2.1. Establishment of 200 modern communal poultry farms for youth and women.	The programme will support the construction of 200 poultry farms to help youth and women diversify their activities across the 7 countries	<ul style="list-style-type: none"> - Preparation of standard tender document for procurements - Call for tender - Selection of service providers and launch of the work - Set up the 200 modern communal poultry farms 	- 28 modern communal poultry farms established for youth and women in (Burkina Faso, Chad, Mali, Mauritania, Niger, The Gambia) and 30 modern communal poultry farms Senegal,
2.2.2. Construction of 200 earth dams for fish farming activities.	The programme will support the construction of 200 earth dams to help farmers diversify their activities across the 7 countries	<ul style="list-style-type: none"> - Preparation of standard tender document for procurements - Call for tender - Selection of service providers and launch of the work - Set up of the 200 earth dams 	- 28 earth dams constructed in (Burkina Faso, Chad, Mali, Mauritania, Niger, The Gambia) and 30 earth dams in Senegal
2.2.3. Establishment of 100 integrated vegetable gardens based on community models on at least 4-5 ha (solar pumps, compost systems, daycare facility for women, agroforestry and rotation of crops; transport systems).	The programme will support the establishment of 100 integrated vegetable gardens based on community models on at least 4-5 ha (solar pumps, compost systems, daycare facility for women, agroforestry	<ul style="list-style-type: none"> - Preparation of standard tender document for procurements - Call for tender - Selection of service providers and launch of the work - Set up of the 100 integrated vegetable gardens with community-based model 	- 15 integrated vegetable gardens with community-based model established (Burkina Faso, Chad, Mali, Niger, The Gambia) and 10 integrated vegetable gardens in Mauritania
2.2.4. Provide support to 2500 off-farm activities (mechanical workshops for equipment maintenance; solar system maintenance; stores and bakeries; digital finance and money transfers).	The programme will support 2500 off-farm activities (mechanical workshops for equipment maintenance; solar system maintenance; stores; bakeries; digital finance and money transfers) to complement farming activities	<ul style="list-style-type: none"> - Preparation of ToRs - preparation and standard tender document for procurements - Call for tender - Selection of service providers - Provision of support to recipients for selected off-farm activities 	357 off-farms activities (mechanical workshops for equipment maintenance; solar system maintenance; stores; bakeries; digital finance and money transfers) launched in each of the country (Burkina Faso, Chad, Mali, Niger, The Gambia, Mauritania) and 358 off-farms activities in Senegal
2.2.5. Climate-proof 700 km feeder roads and farm tracks to ensure year-round and all-weather usability	The programme will support the climate proofing of 700 km feeder roads and farm tracks to ensure year-round and all-weather usability	<ul style="list-style-type: none"> - Identification of roads and farm tracks 	- 100 km feeder roads and farm tracks climate proofed (Burkina

(culverts, sand stabilization, side-drains to reduce erosion, etc.) and connection to markets.	(culverts, sand stabilization, side-drains to reduce erosion, etc.) and connection to markets.	<ul style="list-style-type: none"> - Preparation of standard tender document for procurements - Call for tender - Selection of service providers and launch of works 	Faso, Chad, Mali, Niger, The Gambia, Mauritania, Senegal)
2.2.6. Develop and deliver training modules on financial literacy, marketing and business management for 2500 farmers' organizations, 1500 MSMEs and 2000 cooperatives.	The programme will support the delivery of training modules on financial literacy, marketing and business management for 2500 farmers' organizations, 1500 MSMEs and 2000 cooperatives.	<ul style="list-style-type: none"> - Trainings modules prepared - Provide training to 2500 farmers' organizations, 1500 MSMEs and 2000 cooperatives on financial literacy, marketing and business management 	- 357 farmers' organizations, (Burkina Faso, Chad, Mali, Niger, The Gambia, Mauritania) and 258 from Senegal 214 MSMEs (Burkina Faso, Chad, Mali, Niger, The Gambia, Mauritania) and 215 from Senegal and 285 cooperatives trained on financial literacy, marketing and business management (Burkina Faso, Chad, Mali, Niger, The Gambia, Mauritania) 286 cooperatives for Senegal
2.2.7. Construct/ rehabilitate 200 warehouses and processing facilities that are resilient to climate change.	The programme will support the construction or rehabilitation of 200 warehouses and processing facilities that withstand climate changes.	<ul style="list-style-type: none"> - Prepare standard tender document for procurements - Launch call for tender - Selection of service providers - Construction or rehabilitation of 200 warehouses and processing facilities are resilient to climate change 	- 28 warehouses and processing climate resilient facilities constructed or rehabilitated (Chad, Niger, The Gambia, Mauritania Senegal); 30 warehouses for Burkina and 20 for Mali
2.2.8. Construct or rehabilitate 100 vet points.	The programme will support the construction and rehabilitation of 100 vet points across the 7 countries	<ul style="list-style-type: none"> - Prepare standard tender document for procurements - Call for tender - Selection of the service providers - Construction of the vet points 	- 14 vet points constructed or rehabilitated in each of the country (Burkina Faso, Chad, Mali, Niger, Mauritania) and 15 points for Senegal and the Gambia
2.2.9. Support the deployment of 100 micro grid to power agricultural value chains.	The programme will support the deployment of 100 microgrids to power agricultural value chains across 7 countries	<ul style="list-style-type: none"> - Prepare standard tender document for procurements - Call for tender - Selection of service providers - Install 100 microgrids to power agricultural value chains 	15 microgrids deployed to power agricultural value chains in each country (Burkina Faso, Chad, Mali, Niger, Mauritania) and 14 points for Senegal and 14 micro grids for the Gambia
2.2.10. Provide support to districts for the development of feeder road maintenance plans and to farmers for road maintenance.	The programme will support the efforts of districts develop feeder roads maintenance plans, as well as farmers in the area of road maintenance.	<ul style="list-style-type: none"> - Training materials prepared - Training districts on how to develop feeder roads maintenance plans and to farmers on roads maintenance. 	- At least 2 Districts leaders trained on the development of feeder roads maintenance plans and farmers trained on road maintenance in each of the country (Burkina Faso, Chad, Mali, Niger, Mauritania the Gambia)
3.1.1. Conduct an inception assessment in each of the 7 countries	The programme will support the execution of an inception assessment to obtain a clearer understanding of the situation in the micro insurance market	<ul style="list-style-type: none"> - Prepare ToRs - Selection of consultation participants and key stakeholders - Carry out research (in-field interviews, consultations, documentation review) for the inception assessment in each country 	1 Inception assessment report elaborated in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.1.2. Data collection and index design, pricing and product finalization,	The programme will support data collection, index design, pricing and product finalization	<ul style="list-style-type: none"> - ToRs prepared - Selection of consultants - Surveys and report design 	index design, pricing and product finalized in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.1.3. Design of distribution and consumer education strategy,	The programme will support the design of distribution and consumer education	<ul style="list-style-type: none"> - ToRs prepared - Consultants hired - Field missions organized 	distribution and consumer education strategy, including design of the integration approach, developed in

including design of the integration approach	strategy, including the design of the integration approach.	- Design distribution & consumer education strategy, including the integration approach	each of the 7 countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) -
3.1.4. Development and consolidation of product distribution channels during the first sales season	The programme will support the development and consolidation of product distribution channels during the first sales season for each insurance company	- ToRs prepared - Consultants hired - Field missions organized - Development and consolidation of products distribution channels during the first sales season for each insurance company	product distribution channels developed during the first sales season for each insurance company in each in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) -
3.1.5. Design the graduation strategy and business model	The programme will support the design of the graduation strategy and business model.	- ToRs prepared - Consultants hired - Field missions organized - Design graduation strategy and business model	Graduation strategy and business model developed in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) -
3.1.6. Capacity-building on product design for private insurers and governments and on handing over to insurance sector	The programme will support capacity-building on product design for private insurers and governments and on handing over to insurance sector	- ToRs prepared - Consultants hired and - Training material prepared - Provide training on product design to private insurers and governments and on handing over to insurance sector	Private insurers and government representatives trained on product design and handing over to insurance sector in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) -
3.1.7 Technical support at institutional level to create a dedicated insurance company, a public scheme or a coinsurance pool	Depending on the country context and needs, the programme will provide technical assistance to help build market capacity and strengthen the market	- Needs assessment/ prefeasibility studies - ToRs prepared - Consultants hired - Field missions organised - Studies finalised - Training and capacity building activities completed	- Assistance on market capacity-building provided, market strengthened - support to create a dedicated insurance company, a public scheme or a coinsurance pool provided in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) -
3.1.8 Establish an M&E system using WFP framework under R4.	The programme will support the establishment of an M&E system using WFP framework under R4.	- ToRs prepared - Consultants hired - Field missions organised - M&E system using WFP framework under R4 established	M&E system using WFP framework under R4 established in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) -
3.1.9. Support the implementation of digressive premium payments for smallholders	The programme will support digressive premiums payments for smallholder farmers to national companies	- standard tender document for procurements - Call for tender - Selection of best service providers for an digressive premium payment scheme for smallholders	Digressive premium payment scheme for smallholder farmers implemented in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) -
3.2.1. Foster formulation of 7 national disaster risk financing (DRF) strategies and 14 local contingency plans for the 7 countries;	The programme will support the formulation of 7 national DRF strategies and 14 local contingency plans for the 7 countries.	- ToRs organised - Consultants hired - Formulation of 7 national DRF strategies and 14 local contingency plans for the 7 countries	1 national DRF strategies and 2 local contingency plans prepared in in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.2.2. Provide trainings for 420 government officials and representatives from other sector ministries on the use of ARC view	The programme will provide training to 420 government officials and representatives from other sector ministries on the use of ARC view	- Training materials prepared - Provide training for 420 government officials and	60 government officials and representatives from other sector ministries trained on the use of ARC view in each of the country (Burkina

		other sector ministries on the use of ARC view	Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) -
3.2.3. Review and assess the ARC agricultural, rangeland and drought model.	Currently, the ARC agricultural, rangeland and drought model requires an update and a review to better respond to countries' needs. A review will be undertaken through this activity	- ToRs developed - Consultants hired - Design of the ARC agricultural, rangeland and drought model assessed.	- 1 ARC agricultural, rangeland and drought model assessed and assessment report prepared
3.2.4. Build the capacity of 1000 farmers organizations and cooperatives to identify triggering thresholds and assess the best insurance options	The programme will support activities to build the capacity of 1000 farmers organizations and cooperatives on identifying thresholds triggering and the best insurance options for farmers.	- Training materials prepared - Organize capacity-building for 1000 farmers' organizations and cooperatives on thresholds triggering and best options	140 farmers' organizations and cooperatives trained on threshold triggers and best options view in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, The Gambia) and 160 farmers' organizations and cooperatives trained on threshold triggers and best options in Senegal -
3.2.5. Develop tools and financing instrument to identify, quantify existing disaster risks estimating the financing needs depending on the severity and frequency of the risks.	The programme will support the development of tools and financing instrument to identify, quantify existing disaster risks estimating the financing needs depending on the severity and frequency of the risks	- ToRs developed - Hiring consultants - Develop tools and financing instrument to identify, quantify existing disaster risks estimating the financing needs depending on the severity and frequency of the risks	- Tools and financing instrument to identify, quantify existing disaster risks estimating the financing needs depending on the severity and frequency of the risks developed in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.2.6. Develop 7 national integrated climate risks frameworks using a comprehensive layering approach	The programme will support the development of 7 national integrated climate risks frameworks using a comprehensive layering approach	- ToRs developed - Hiring of consultants - Develop 7 national integrated climate risks frameworks and a comprehensive layering approach	- 1 country integrated climate risks frameworks and a comprehensive layering approach developed in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.2.7. Provide technical support to 7 countries on sustaining premium payments to ARC from their own national budget through ecotax reallocation, climate budget tagging (CBT) or national climate/ contingency funds	The programme will provide technical support to 7 countries on how to sustain premium payments to ARC using resources from their own national budgets through eco tax reallocation, climate budget tagging (CBT) or with resources from national climate / contingency funds;	- ToRs developed - Hiring of consultants - Provide support to countries on sustaining premium payments to ARC from their own national budget through ecotax reallocations, climate budget tagging (CBT) or with resources from national climate / contingency funds;	- 7 countries sustain premiums payments from their own national budget to ARC through eco tax reallocation, climate budget tagging (CBT) or resources from national climate / contingency funds;
3.2.8. Develop 7 climate fiscal frameworks	The programme will support the development of 7 climate fiscal frameworks	- ToRs developed - Hiring of consultants - Formulation of 7 climate fiscal frameworks	- 1 climate fiscal frameworks developed in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.2.9. Strengthen institutional and coordination mechanisms for an effective use of the payouts to ensure they reach the end users, using citizen engagement (shadow reports from the civil society), and alignment/ linkages with the micro insurance	The programme will strengthen institutional and coordination mechanisms for an effective use of the pay-outs to ensure they reach end users using citizen engagement (shadow reports from the civil society) and align and make linkages with the micro insurance	- ToRs developed - Hiring of consultants - Identify institutional and coordination mechanisms to be adopted or strengthened to ensure the effective use of payouts to reach the end users with citizen engagement (shadow reports from the civil society) and align and make linkages with the micro insurance	- institutional and coordination mechanisms for an effective use of the pay-outs to ensure they reach end users with citizen engagement (shadow report from the civil society) adopted and alignment/ linkages with micro insurance enhanced in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.2.10. Organize events and workshops with micro and macro insurance industry and financial institutions.	The programme will support the organization of events and workshops with micro and macro insurance industry and financial institutions.	- ToRs - Contract of services and venues - Organize the workshops	- 3 events and workshops with micro and macro insurance industry and financial institutions organized in each of the country (Burkina Faso,

			Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.2.11. Support ARC in developing an approach to scaling up coverage in the Sahel region and the entire continent	The programme will support ARC in developing an approach to scale up coverage in the Sahel region and the entire continent	<ul style="list-style-type: none"> - ToRs - Hiring of consultants - Development of continental strategy 	- a scaling up approach for the Sahel region and the entire continent developed in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.2.12. Support research to develop new tools and instruments	The programme will support ARC in developing specific tools and instruments to advance the payment premiums	<ul style="list-style-type: none"> - ToRs - Hiring of consultants - Development of tools and instruments 	- Tools and instruments are produced in each of the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.2.13. Organize 4 high level events on this integrated approach	The programme will support the organization of 4 high level events on this integrated approach	<ul style="list-style-type: none"> - ToRs preparation - Contractual services and venue - Organize the workshops 	- 4 high level events on this integrated approach with the Africa organized across the country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)
3.2.14. Provide countries support for ARC premium payments and technical assistance (by ADRIFI-AfDB and countries)	The programme will provide countries support to ARC pay premiums through ADRIFI programme	<ul style="list-style-type: none"> - Countries request resources via ADRIFI - Countries undertake their payment to ARC - ARC provides TA to countries during the process 	- All countries premiums paid to ARC

Note: Activities disaggregated by country are presented in in Appendix “Disaggregated Activities for each country programme”

E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

191. On the GCF-funded Programme level: IFAD, in coordination with the AfDB, undertakes monitoring and selected reviews of country projects funded by the GCF Programme to assess implementation progress and compliance with all Programme agreements, as well as to monitor progress in achieving outputs and evidence of use of funds. On the sub-project level: Monitoring of the grant activities is considered essential for an effective funding mechanism. PMUs have the main responsibility for monitoring at project level. The Regional Coordination Unit located in Abidjan supervises the implementation of each country projects. At the beginning of the project and start up workshop, PMUs are required to submit a detailed project work plan divided into quarterly actions and deliverables. Every six months, PMUs update the project work plan to reflect actions and deliverables achieved and any changes. Each project requires a Mid-term Technical Review and a Final Financial and Technical Review. The Technical Reviews will be implemented by the AfDB and IFAD supported by WFP and ARC. The IFAD’s monitoring, internal evaluation and reporting will mainly be done through bi-annual funding advance requests, annual reports, and on-the ground missions. In addition, IFAD contributes to monitoring implementation of country projects at field level and ensures that eligibility criteria are met.

192. A midterm review will be carried out in the third year of the programme implementation by independent evaluators. It will include: (I) Review of the institutional, technical, environmental, social, economic and financial aspects of the programme; (II) Review of the portfolio of country programmes, including activities, planned outputs, expected impacts, cost and financing; (III) Review of the achievement of planned impacts and indicators (including estimates for beneficiaries); and (IV) Assessment of the need to restructure or reformulate the programme. ARC will accompany programme implementation on a regular basis, particularly on macro insurance activities, while WFP will focus on micro insurance. AfDB headquarters staff and the IFAD regional team based in Abidjan will support IFAD on technical issues. IFAD country offices in the participating countries will follow up on programme implementation and maintain direct contact with implementing partners and national counterparts (NDAs, sector ministries).

E. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

193. For probability: High has significant probability, Medium has moderate probability, Low has negligible probability For impact: High has significant impact, Medium has moderate impact, Low has negligible impact. Prohibited practices include abuse,

conflict of interest, corruption, retaliation against whistle blowers or witnesses, as well as fraudulent, coercive, collusive, and obstructive practices.

194. The programme might face risks in several different categories: macroeconomic, implementation, financial, environmental and social risks. The levels of these risks are considered moderate to low and expected to be mitigated by IFAD and partners' operational tools and control mechanisms. IFAD will regularly evaluate the overall potential risks related to the implementation of the project and will provide recommendations for procedures to mitigate and address the risks.

195. In the COVID-19 context, the pandemic is expected to affect the programme. This could mean delays in start-up and operational risks during implementation if there is second wave of the COVID-19 in the region. The programme itself is a response to those risks, as it involves risk sharing mechanisms, such as insurance that will prepare countries for pandemics. Nevertheless, IFAD has prepared a comprehensive COVID-19 risks management approach. It includes the setup of the COVID-19 Rural Poor Stimulus Facility to support countries in addressing the impact of COVID-19; guidelines for remote and tele-supervision, design, midterm review; repurposing baseline investments with a set of activities such as training on safe labour practices and transportation; increasing access to more protective equipment such as masks and gloves, restrictions on workers in producers' fields; use of drones and other digital extension tools for labour and input-saving practices, shared mechanization; digital marketing platforms and logistics, sanitary and phyto-sanitary controls; good practices to address the gender dimension of COVID-19 to reduce women's exposure to the virus and violence against women; increased access to finance and agri-service centres for inputs; inputs provision (seed, fertilizer, forage/fodder saplings, fingerlings, vaccines, medicines); increased allocations from the debt redemption fund for fisherfolk and farmers; outsource the affected activities to local institutions and NGOs, including executing partners such as FAO and international NGOs.

Selected Risk Factor 1

Category	Probability	Impact
Technical and operational	Medium	Medium

Description

196. The insurance industry and financial actors, national partners, smallholder farmers do not participate in the development of the agricultural insurance and feel no responsibility to unlock or develop new products and an integrated climate risk management to address climate risks.

Mitigation Measure(s)

Confirmation of the willingness of private and public insurance companies, smallholder farmers, governments during the design in all the programme to participate in this programme and assume responsibility will be a key criterion for the success of the programme. The implementation of a participatory and inclusive approach will facilitate this social mobilization and help ensure the adherence of the beneficiary populations. Policy dialogue between public and private actors will be promoted to mitigate the risks. Potential technical risks related to insurance industry development will be mitigated thorough due diligence process led by the AfDB, IFAD, WFP and ARC technical and financial experts, and by ensuring robust engineering, procurement and governance systems. Programme operation risk will be mitigated by a thorough due diligence process led by IFAD technical and financial experts and by ensuring a robust M&E system is in place. With regard to TA agreements and procurements procedures established at each EE level (table 8), they will help in supporting the high delivery quality delivery. Additionally, the agreements between the recipient governments and their respective Met Agencies and other relevant sector ministries are to ensure that they better manage the infrastructures during and beyond the project lifecycle. The IFAD grievance mechanism will be used for the reporting of complaints or allegations of wrong-doing within the projects or activities (whistle blower programme). The description of IFAD grievance mechanism is presented in the ESMF. The programme will establish a community engagement process and provide access to information on a regular basis.

The objective of the IFAD Complaints Procedure is to ensure that appropriate mechanisms are in place to allow individuals and communities to contact IFAD directly and file a complaint if they believe they are or might be adversely affected by an IFAD-funded project/programme that does not comply with IFAD's Social and Environmental Policies and mandatory aspects of SECAP. Complaints must concern environmental, social and climate issues only and should not be accusations of fraudulent or corrupt activities in relation to programme implementation; these are dealt with by IFAD's Office of Audit and Oversight.

Eligibility criteria according to IFAD's grievance mechanism:

To file a complaint for alleged non-compliance with IFAD's social and environmental policies and mandatory aspects of its SECAP, IFAD will consider only complaints meeting the following criteria:

- The complainants claim that IFAD has failed to apply its social and environmental policies and/or the mandatory provisions set out in SECAP and Safeguards of the Adaptation Fund project.
- The complainants claim that they have been or will be adversely affected by IFAD's failure to apply these policies.
- Complaints must be put forward by at least two people who are both nationals of the country concerned and/or living in the programme area. Complaints from foreign locations or anonymous complaints will not be taken into account.
- Complaints must concern projects/programmes currently under design or implementation. Complaints concerning closed projects, or those that are more than 95 per cent disbursed, will not be considered.
- The process according to IFAD's grievance mechanism:

The complainants should first bring the matter to the attention of the government or non-governmental organisation responsible for planning or executing the project or programme (Ministry of Agriculture implementing agency and the Ministry of Economy and finance and The Environmental Protection Agency that have with the responsibility for overseeing the work on the field. If the Implementing Agency does not adequately respond, then the matter may be brought to the attention of IFAD. The issue may be brought straight to IFAD if the complainants feel they might be subject to retaliation if they went to the Lead Agency directly.

How to submit a complaint:

A complaint relating to non-compliance with IFAD's Social and Environmental Policies and mandatory aspects of its SECAP can be submitted in any of the following ways:

- Download the complaints form (Word) through IFAD website : <https://www.ifad.org/en/accountability-and-complaints-procedures>
- Send an email to SECAPcomplaints@ifad.org

In addition, the AF Project will as much as possible utilize every available grievances redress mechanisms including: associations (including farmers' associations/organizations) traditional council (Paramount Chiefs and elders), village square engagement (consisting of representatives of men, women and social groups), village general assembly, the project NCPU, etc

Selected Risk Factor 2

Category	Probability	Impact
Forex	Medium	Low

Description

169. The region and recipient countries experience currency devaluation or currency fluctuation linked to external shocks.

Mitigation Measure(s)

197. The region has experienced a devaluation in 1994. Since and as a mitigation measures, the Franc CFA (XOF) is pegged to the euro. In most countries, the XOF has a fixed rate to shield it from currency fluctuations. The grant proceeds will be allocated IFAD which has strong credit risk management with and is hedging to reduce exchange rate risk. In the other non-XOF countries (The Gambia and Mauritania), the countries are hedge against forex risk.

Selected Risk Factor 3

Category	Probability	Impact
Governance	Medium	Medium

Description

171. Governance systems remain a key challenge in the regions. However, IFAD, AfDB and ARC engagement at country level, the use of IFAD PMU and risk management framework, policy dialogue and partnerships will help countries manage this risk.

Mitigation Measure(s)

172. The programme proposes a robust management arrangement using existing IFAD and countries project governance management. Additionally, the programme will establish a regional coordination unit to support the overall implementation and good performance of the programme. During the lifecycle of the programme, measures will be taken to ensure that the outcome and system are sustained beyond the programme lifecycle. The programme will work jointly with AfDB, ARC and WFP that have strong governance systems and ensure proper implementation. With regards to corruption, the

by IFAD board members during the submission of the baseline investments. The ESMF provides a description of processes to ensure that environmental and social (E&S) and climate issues, including in other cross-cutting areas (nutrition, gender, indigenous people and youth) are duly addressed. In line with IFAD's SECAP I, the ESMF defines procedures, tools and responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with projects supported throughout the entire programme lifecycle, in line with its international and national requirements. This ESMF will be applicable to all sub projects under this programme . It gives ideas on turning climate risks into opportunities in a more integrated way. A grievance mechanism is included in the ESMF

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

184. Across the African continent, women are the backbone of the development of rural and national economies as they make up almost 50 percent of the agricultural labour force (a figure which rises to 70 percent in some countries). They work primarily in smallholder production and receive a significantly lower share of income in comparison to men. They bear the greatest blunt of climate change and climate-related disasters, as they have limited access and control over land, productive resources and information (SCPZ, AfDB). In general, women also have less access to skilled jobs compared to men (8 percent in paid employment against 12 percent of men), and they tend to be marginalized in the labour market outside the agricultural sector. They represent only 8 percent of entrepreneurs. They are mainly concentrated in traditional agriculture (70 percent) and in the informal sector (60 percent), especially in trade. The causes of these inequalities are linked to other widespread poverty that affects both women and men, the vulnerability of women and girls in conflict and post-conflict (insecure), and also resulting a patriarchal system deeply rooted in religious and customary social standards at all levels of society, from the family unit to the highest political levels.

185. Equality between women and men is a condition for the effectiveness of public policies and sustainable and equitable human development. This gender action plan is designed to contribute to better mainstream gender in the "Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in Africa". It also aims to achieve the following: Equal opportunities to access to climate information systems and services which guide adaptation/mitigation techniques and choice of technologies as well as the design of insurance products to build their resilience to climate shocks.; (ii) Equal opportunity for women and men smallholder farmers to adopt diversified, climate-resilient livelihood options; (iii) Better understanding and access to risk transfer insurance schemes (micro insurance and macro insurance), and (iv) Gender responsive and equal participation of women in coordination mechanisms, programme management and decision-making spaces.

186. At the onset of the project, an in-depth gender analysis will be undertaken to collect additional information relevant for the implementation and ultimately the success of this programme. The gender analysis looks at: (i) gender disparities relevant to the implementation of the programme; (ii) systemic barriers to gender equality in the agriculture sector and opportunities to address them within the capacity of the programme; (iii) women's current level of knowledge on CSA practices and knowledge gaps to be addressed through capacity-building and awareness-raising activities; and (vi) specific components or other mechanisms to ensure that both women and men participate in and benefit from the programme.

187. Improving the knowledge and hence the capacity of women is a key component of the programme and women will have a key role in its implementation. See Annex 8- Gender Assessment and Action Plan

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

188. IFAD baseline PMUs will be in charge of financial management and reporting on GCF Funds proceeds at country level. The RCU under IFAD will be responsible for consolidating financial reports to meet IFAD and GCF requirements. IFAD in its role as AE has the overall responsibility and oversight for the programme, including programme preparation and implementation; financial management and procurement.

189. To facilitate financial reporting: (a) all financial agreements will be signed in the same currency of the grant provided by GCF; (b) each IFAD baseline PMU and the RCU will be equipped with the same accounting software; (c) a dedicated financial management specialist at the level of the regional coordination unit will be working on financial consolidation and financial oversight of national PMUs.

190. The MoUs signed by the national PMUs with implementing partners will include clear financial reporting requirements and timelines in line with GCF and IFAD standards. After the disbursement of the first tranche of each MoU, the disbursement of the following tranches will be conditional to the respect of operational and reporting standards which will be clearly described by each MoU. The RCU will support the national PMUs in formulating and enforcing each MoU to ensure their quality and provide coordination among countries.

191. The financial and administrative manual of each IFAD baseline PMU will be updated to establish specific procedures and reporting requirements for the management of GCF funds.
192. A specific designated and operational account will be opened to exclusively receive GCF funds in order to avoid mingling of funds and to facilitate a separate financial reporting for each financier.
193. The financial statements of each national PMU will be audited on an annual basis and a specific audit opinion will be provided on the usage and accounting of GCF funds. The audit will be carried out by independent auditing companies and the audit opinion will be communicated once per year at 30th of June for the period ending on 31st of December. In addition to the financial statements, APRs will also need to be submitted to the GCF per clause 15.02 (a) of the AMA.
194. As part of standard IFAD supervision missions, which will take place at list once a year for every national PMU, a Financial Management specialist will assess the capacity of the national PMUs in terms of financial management and the solidity of internal control systems in place.
195. The IFAD handbook further elaborates on the Procurement Guidelines to be followed in the procurement of goods, works and services under IFAD financed loans and grants and aims at the following:
- give advice and assistance to IFAD staff to help them carry out their own procurement responsibility and to help IFAD Borrower/ recipients on how to handle procurement actions using IFAD financing; •
 - provide detailed guidance for assessing the procurement capacity of the Borrower/ recipient as would be required to implement the provisions made in applying the Borrower/ recipient's procurement regulations, provided that they are deemed to be consistent with IFAD's guidelines as per the amendment of the General Conditions in April 2009; and act as a principal reference in situations where it is deemed that Borrower/recipient's procurement systems are not acceptable or consistent with IFAD Procurement Guideline. More detail are compiled in the IFAD guideline.
196. With the regards to the procurement implementation and due diligence arrangement, procurement of goods, works and services financed by IFAD or through the IFAD shall be carried out in accordance with the provisions of the Recipient's procurement regulations, to the extent such are consistent with the IFAD Procurement Guidelines. Each Procurement Plan shall identify procedures which must be implemented by the Recipient in order to ensure consistency with the IFAD Procurement guidelines. By notice to the Recipient, the IFAD may require that all bidding documents and contracts for procurement of goods, works and services financed by the GCF grant include provisions requiring bidders, suppliers, contractors, sub-contractors and consultants to: By notice to the recipient, the AE may require that all bidding documents and contracts for procurement of goods, works and services financed by the Financing include provisions requiring bidders, suppliers, contractors, sub-contractors and consultants

G.4. Disclosure of funding proposal

- No confidential information:** The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.
- With confidential information:** The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:
- full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
 - redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

G. ANNEXES

H.1. Mandatory annexes

- Annex 1 NDA no-objection letter(s) **(template provided)**
- Annex 2 Feasibility study - and a market study, if applicable
- Annex 3 Economic and/or financial analyses in spreadsheet format
- Annex 4 Detailed budget plan **(template provided)**
- Annex 5 Implementation timetable including key project/programme milestones **(template provided)**
- Annex 6 E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3):
(ESS disclosure form provided)
 - Environmental and Social Impact Assessment (ESIA) or
 - Environmental and Social Management Plan (ESMP) or
 - Environmental and Social Management System (ESMS)
 - Others (please specify – e.g. Resettlement Action Plan, Resettlement Policy Framework, Indigenous People’s Plan, Land Acquisition Plan, etc.)
- Annex 7 Summary of consultations and stakeholder engagement plan
- Annex 8 Gender assessment and project/programme-level action plan **(template provided)**
- Annex 9 Legal due diligence (regulation, taxation and insurance)
- Annex 10 Procurement plan **(template provided)**
- Annex 11 Monitoring and evaluation plan **(template provided)**
- Annex 12 AE fee request **(template provided)**
- Annex 13 Co-financing commitment letter, if applicable **(template provided)**
- Annex 14 Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

- Annex 15 Evidence of internal approval **(template provided)**
- Annex 16 Map(s) indicating the location of proposed interventions
- Annex 17 Multi-country project/programme information **(template provided)**
- Annex 18 Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
- Annex 19 Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
- Annex 20 First level AML/CFT (KYC) assessment
- Annex 21 Operations manual (Operations and maintenance)
- Annex x Other references

* Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.

No-objection letter issued by the national designated authority(ies) or focal point(s)

PRIMATURE

SECRETARIAT GENERAL

**SECRETARIAT EXECUTIF DU
FONDS VERT POUR LE
CLIMAT AU BURKINA FASO**

BURKINA FASO

Unité – Progrès – Justice

N° 2020-002 /PM/SG/SE-FVC/BF

National Designated Authority

To

The Green Climate Fund (“GCF”)

Ouagadougou, October 13th 2020

Re: Funding proposal for the GCF by The International Fund For Agricultural Development (IFAD) regarding “ The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)”

Dear Yannick GLemareck,

Executive Director of the Green Climate Fund,

We refer to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**” in Burkina Faso as included in the funding proposal submitted by IFAD to us on 11 February 2020.

The undersigned is the duly authorized representative of the National Designated Authority/Focal point of the Republic of Burkina Faso



Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to **The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal.

By communicating our no-objection, it is implied that:

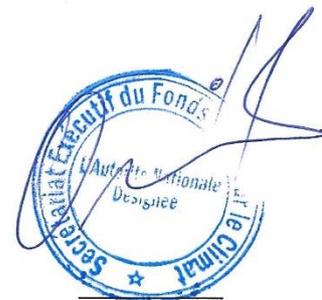
- (a) The government of The Republic of Burkina Faso has no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**” as included in the funding proposal;
- (b) **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**” as included in the funding proposal is in conformity with Burkina Faos ’s national priorities, strategies and plans;
- (c) In accordance with the GCF’s environmental and social safeguards, **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,



Issaka OUEDRAOGO

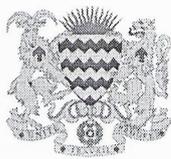
Advisor to the Prime Minister

Inspector of Environment

REPUBLIQUE DU TCHAD

PRESIDENCE DE LA REPUBLIQUE

MINISTERE DE L'ENVIRONNEMENT ET DE LA PECHE



UNITE-TRAVAIL-PROGRES

N'Djamena, Chad, October 16 2020

N° 011 /PR/MEEP/PNFFVC/2020

The Focal Point

To

The Green Climate Fund,
G-Tower, 175 Art Center daero,

Yeonsu-gu, Incheon, 406-840

Republic of Korea

Re: Funding proposal for the GCF by The International Fund for Agricultural Development (IFAD) regarding "The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)"

Dear Yannick G Lemareck,

Executive Director of the Green Climate Fund,

We refer to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**" in Chad as included in the funding proposal submitted by IFAD to us on 11 February 2020.

The undersigned is the duly authorized representative of the National Designated Authority/Focal point of the Republic of Chad

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to **The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of The Republic of Chad has no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**" as included in the funding proposal;

- (b) **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**” as included in the funding proposal is in conformity with Chadian’s national priorities, strategies and plans;
- (c) In accordance with the GCF’s environmental and social safeguards, **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,



Name: Mr. AHMAT DJAMALADINE MAHAMAT

Ministère de l'Environnement et de la Pêche

Title: POINT FOCAL

FONDS VERT POUR LE CLIMAT

TCHAD



N° _____ /MEADD-AEDD-DGA.

Bamako, le **12 OCT 2020**

*The Director General of the Environment and
Sustainable Development Agency*

To

Mr Yannick Glemarec
Director Executive of Green Climate Funds
G-Tower, 24-4 Songodo dong Yeonsu gu
Incheon City Republic of Korea

Re: Funding proposal for the GCF by The International Fund For Agricultural Development (IFAD) regarding " The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)"

Dear Sir,

We refer to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** in Mali as included in the funding proposal submitted by IFAD to us on 11 February 2020.

The undersigned is the duly authorized representative of the National Designated Authority/Focal point of the Republic of Mali

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to **The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of The Republic of Mali has no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal;
- (b) The **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal is in conformity with Malian 's national priorities, strategies and plans;
- (c) In accordance with the GCF's environmental and social safeguards, **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,


The Director general,
Boureïma CAMARA
Chevalier de l'Ordre national





Ministère de l'Environnement et du
Développement Durable

Cellule de Coordination du Programme
National Changement Climatique
(CCPNCC)

خلية تنسيق البرنامج الوطني لتغير المناخ

N° : 88/20.....

Nouakchott, le 14/10/2020.. أنواكشوط في

LE CHARGE DE MISSION
COORDINATEUR CCPNCC

Re: Funding proposal for the GCF by The International Fund For Agricultural Development (IFAD) regarding “ **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**”

Dear Yannick G Lemareck,
Executive Director of the Green Climate Fund,

We refer to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**” in Mauritania as included in the funding proposal submitted by IFAD to us on 11 February 2020.

The undersigned is the duly authorized representative of the National Designated Authority/Focal point of the Republic of Mauritania.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to **The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal.

By communicating our no-objection, it is implied that:

- The government of The Republic of Mauritania has no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**” as included in the funding proposal;
- The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**” as included in the funding proposal is in conformity with Mauritanian’s national priorities, strategies and plans;
- In accordance with the GCF’s environmental and social safeguards, **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

CC : MEDD

Sidi Mohamed EL WAVI
NFP/ AND - Mauritania



REPUBLIQUE DU NIGER



Fraternité - Travail - Progrès
CABINET DU PREMIER MINISTRE

=====
CONSEIL NATIONAL DE L'ENVIRONNEMENT
POUR UN DEVELOPPEMENT DURABLE

=====
SECRETARIAT EXECUTIF

Niamey, 15th october 2020

The Focal Point

To

The Green Climate Fund ("GCF")

Re:

Funding proposal for the GCF by The International Fund For Agricultural Development (IFAD) regarding "The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)"

Dear Yannick GLemareck,
Executive Director of the Green Climate Fund,

We refer to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** in Niger as included in the funding proposal submitted by IFAD to us on 11 February 2020.

The undersigned is the duly authorized representative of the National Designated Authority/Focal point of the Republic of Niger.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal.

By communicating our no-objection, it is implied that :

- (a) The government of The Republic of Niger has no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience**

C.N.E.D.D

BP : 10 193 Niamey

Tél : (227) 20 72 25 59/ 20 72 42 64

Email : biocnedd@intnet.ne

10182
N°

- of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)" as included in the funding proposal ;
- (b) **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)"** as included in the funding proposal is in conformity with The Niger 's national priorities, strategies and plans ;
- (c) In accordance with the GCF's environmental and social safeguards, **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Name: Dr KAMAYE MAAZOU P. O

Title : SECRETAIRE EXECUTIF DU CNEDD
FOCAL PONT / National Authority Designated





Dakar, le 04 August 2020

To: The Green Climate Fund ("GCF")

Mr Yannick Glemareck

Executive Director

G-Tower, 24-4 Songdo-dong, Yeonsu-gu
Incheon City, Republic of Korea

Re: Funding proposal for the GCF by International Fund for Agricultural Development (IFAD) regarding " **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian countries of the Green Great Wall (GGW)** "

Dear Sir,

We refer to **The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian countries of the Green Great Wall (GGW)** " in Senegal as included in the funding proposal submitted by IFAD to us on 11 February 2020.

The undersigned is the duly authorized representative of the National Designated Authority of Senegal.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to " **the Africa Integrated Climate Risk Management Programme: Building The Resilience of smallholder farmers to climate change impacts in 7 Sahelian countries of the Green Great Wall (GGW)** " as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Senegal has no-objection to the programme as included in the funding proposal;
- (b) The Programme as included in the funding proposal is in conformity with Senegal's national priorities, strategies and plans;
- (c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the Programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Madeleine Diouf SARR/AND Senegal





REPUBLIC OF THE GAMBIA
MINISTRY OF FINANCE AND ECONOMIC AFFAIRS
THE QUADRANGLE, BANJUL, THE GAMBIA.

LDM/59/342/01/(80)

12th October 2020

The Executive Director
Green Climate Fund (GCF)
South Korea

Re: Funding proposal for the GCF by The International Fund For Agricultural Development (IFAD) regarding "The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)"

Dear Sir,

We refer to **The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**" as included in the funding proposal submitted by IFAD to us on 11 February 2020.

The undersigned is the duly authorized representative of the National Designated Authority/Focal point of the Republic of The Gambia.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to **The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The Government of The Republic of the Gambia has no-objection to **The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**" as included in the funding proposal;
- (b) **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)**" as included in the funding proposal is in conformity with The Gambian 's national priorities, strategies and plans;
- (c) In accordance with the GCF's environmental and social safeguards, **The Africa Integrated Climate Risk Management Programme : Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the**

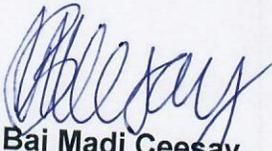
Green Great Wall (GGW) as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to **The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)** as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,



Bai Madi Ceesay
National Designated Authority

Cc: File
R/File

Environmental and social safeguards report form pursuant to para. 17 of the IDP

Basic project or programme information	
Project or programme title	The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW)
Existence of subproject (s) to be identified after GCF Board approval	No
Sector (public or private)	Public
Accredited entity	International Fund for Agricultural Development (IFAD)
Environmental and social safeguards (ESS) category	Category B
Location-specific location(s) of project or target country or location(s) of programme	Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia
Environmental and Social Impact Assessment (ESIA) (if applicable)	
Date of disclosure on accredited entity's website	Thursday, February 4, 2021
Language(s) of disclosure	English and French
Explanation on language	English is the official language of The Gambia. French is the official language of Burkina Faso, Chad, Mali, Niger, and Senegal. French is a working language of Mauritania.

Link to disclosure	<p>English: https://www.ifad.org/documents/38711624/40206666/aic_risk_esmf_e.pdf/d9d148f8-c667-d578-bcd9-7f50c65ebd78</p> <p>French: https://www.ifad.org/documents/38711624/40206666/aic_risk_esmf_f.pdf/d0c25448-c434-ad19-b671-9eaca87325bf</p>
Other link(s)	<p>https://www.ifad.org/en/secap-disclosed-documents</p> <p>https://cutt.ly/lkEq5ek</p> <p>http://fier-mali.org/programme-de-gestion-integree-des-risques-climatiques-en-afrique-cadre-de-gestion-environnementale-et-sociale-cges/</p> <p>http://inclusifmali.org/programme-de-gestion-integree-des-risques-climatiques-en-afrique-cadre-de-gestion-environnementale-et-sociale-cges/</p> <p>https://l.facebook.com/l.php?u=https%3A%2F%2Fwww.ifad.org%2Fen%2F%2Ffbclid%3DIwAR1UO-St7gMTmYmlybr2zmIITqbS5LXA2cXO-HtsbO0JtgcYn7Dv5PBtlvg&h=AT2Fu7bEUvtzZuvImFq2E4Cr2-RW9tyuGWW0rEY0OXIEao-Lundpi_tHhC47Y1x8Yk kdikxwRQIv3WzsFO4XCBZf3E7b1CgwCXa7xP3Vb7nCiTX798rpH7sO7ISzV3nWINPwHLDcelp</p> <p>https://neertamba.org/index.php/actualite/95-programme-de-gestion-integree-des-risques-climatiques-en-afrique</p> <p>http://www.prodaf.net/node/1</p> <p>https://www.parsat.org/post_det.php?post=MzA5Mg==</p>
Remarks	An ESIA consistent with the requirements for a Category B project is contained in the “Environmental and Social Management Framework (ESMF)”.
Environmental and Social Management Plan (ESMP) (if applicable)	
Date of disclosure on accredited entity’s website	Thursday, February 4, 2021
Language(s) of disclosure	English and French
Explanation on language	English is the official language of The Gambia. French is the official language of Burkina Faso, Chad, Mali, Niger, and Senegal. French is a working language of Mauritania.
Link to disclosure	<p>English: https://www.ifad.org/documents/38711624/40206666/aic_risk_esmf_e.pdf/d9d148f8-c667-d578-bcd9-7f50c65ebd78</p> <p>French: https://www.ifad.org/documents/38711624/40206666/aic_risk_esmf_f.pdf/d0c25448-c434-ad19-b671-9eaca87325bf</p>

Other link(s)	https://www.ifad.org/en/secap-disclosed-documents https://cutt.ly/lkEq5ek http://fier-mali.org/programme-de-gestion-integree-des-risques-climatiques-en-afrique-cadre-de-gestion-environnementale-et-sociale-cges/ http://inclusifmali.org/programme-de-gestion-integree-des-risques-climatiques-en-afrique-cadre-de-gestion-environnementale-et-sociale-cges/ https://l.facebook.com/l.php?u=https%3A%2F%2Fwww.ifad.org%2Fen%2F%3Ffbclid%3DIwAR1UO-St7gMTmYmlybr2zmIITqbS5LXA2cXO-HtsbQ0JtgcYn7Dv5PBtIvg&h=AT2Fu7bEUvtzZuvImFq2E4Cr2-RW9tyuGWW0rEY00XIeao-Lundpi_tHhC47Y1x8YkIkdikxwRQIv3WzsFO4XCBZf3E7b1CgwCXa7xP3Vb7nGjTX798rpH7s07ISzV3nWINPwHLDcelp https://neertamba.org/index.php/actualite/95-programme-de-gestion-integree-des-risques-climatiques-en-afrique http://www.prodaf.net/node/1 https://www.parsat.org/post_det.php?post=MzA5Mg==
Remarks	An ESMP consistent with the requirements for a Category B project is contained in the “Environmental and Social Management Framework (ESMF)”.
Environmental and Social Management (ESMS) (if applicable)	
Date of disclosure on accredited entity’s website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Any other relevant ESS reports, e.g. Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF), Indigenous Peoples Plan (IPP), IPP Framework (if applicable)	
Description of report/disclosure on accredited entity’s website	N/A

Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A

Disclosure in locations convenient to affected peoples (stakeholders)

Date	Friday, February 5, 2021
------	--------------------------

Place	Countries	IFAD office	Project addresses	Locations covered
	Burkina Faso	Bureau Pays du FIDA, Immeuble des nations unies, 4 ^{ème} étage 34, Avenue du Conseil Economique et Social, Secteur 4, Koulouba 01 BP 575 Ouagadougou 01 Burkina Faso	PAPFA- Projet d'Appui à la Promotion des Filières Agricoles 01 BP 2323 Bobo Dioulasso 01 Burkina Faso	Boucle du Mohoun, Haut Bassin, Cascades, Touri, Bouromand Yalgo, Dori, Seytenga, Oula, Leba, Basi and Goursi
	Chad	IFAD country Office in Yaoundé, IFAD office	RePER-Renforcement de la Productivité des Exploitations Agropastorales Familiales et Résilience Quartier Résidentiel BP 3129, N'djamena, TCHAD	Guera, Baguirmo, Mongo, Ati, Adjer Lamis; Kanem: Kanem nord, Lake: Mamdi, Wayi; Hadjer Lamis: Haraz-Al-Bia
	Mali	Bureau Pays FIDA Badalabougou Est, Immeuble Mangane, Bamako, MALI	MERIT Ministère de l'Agriculture, Cité Administrative de Bamako, Bamako, MALI	Kayes, Segou, Koulikoro, Sikasso, Kayes, Mopti, Tombouctou, Gao, Menaka

	Mauritania	<p>Outposted Office: FIDA-Hub de Dakar</p> <p>Villa 1427</p> <p>Corniche Ouest - Almadies, Dakar, Sénégal</p>	<p>PROGRES- Projet de Gestion durable des ressources naturelles, d'équipement communal et de structuration des producteurs ruraux</p> <p>Îlot K-Extension</p> <p>Section 1 - Lot n. 98</p> <p>Nouakchott, MAURITANIA</p>	<p>Brakna, KAedi, Kiffa, Hod El gharbi, Wilaya Hodh Echargui, Wilaya Hodh Elgharbi, Diffa Region: N'Guigmi</p>
	Niger	<p>FIDA Bureau Pays C/O</p> <p>WFP 188 Rue Y.N 12,</p> <p>Avenue des Djermakoyes, B.P 10 113 Niamey, Niger</p>	<p>PRECIS- Project to Strengthen Resilience of Rural Communities to Food and Nutrition Insecurity</p> <p>Cellule Nationale de Représentation et d'Assistance Technique (CENRAT) de Niamey</p> <p>Programme de Développement de l'Agriculture Familiale (ProDAF)</p> <p>Quartier Koira Kano BP 13 233 Niamey Niger</p>	<p>Dosso, Tahoua, Maradi et Zinder</p>
	Senegal	<p>FIDA-Hub de Dakar</p> <p>Villa 1427</p> <p>Corniche Ouest - Almadies, Dakar, Sénégal</p>	<p>PADAER II - Programme d'Appui au Développement Agricole et à l'Entreprenariat Rural - Phase 2</p> <p>Projet d'Appui à l'Insertion des Jeunes Ruraux Agri-Preneurs (Agri-Jeunes, Tekki Ndawñi)</p> <p>Lot 963</p>	<p>Louga, Thiès, Diourbel, Fatick, Kaolack, Kaffrine, Sédhiou et Ziguinchor, Matam Matam, Kanel, Ranerou, Tambacounda Region: Bakel, Goudiri, Podor</p>

			Quartier Touba Ndongorong après rond pond Passoire Immeuble Gouye Tounkara Kaolack, SENEGAL	
	The Gambia	Outposted office: FIDA-Hub de Dakar Villa 1427 Corniche Ouest - Almadies, Dakar, Sénégal	ROOTS Ministry of Agriculture, Quadrangle, Banjul Abuko, The Gambia	Central River Region (CRR); North Bank Region (NBR); Lower River Region (LRR); West Coast Region (WCR), and Upper River Region (URR).
Date of Board meeting in which the FP is intended to be considered				
Date of accredited entity's Board meeting	Monday, February 8, 2021			
Date of GCF's Board meeting	Tuesday, March 16, 2021			

Note: This form was prepared by the accredited entity stated above.

Secretariat's assessment of FP162

Proposal name:	The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW)
Accredited entity:	International Fund for Agricultural Development (IFAD)
Country/(ies):	Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and the Gambia
Project/programme size:	Medium

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The programme implements an integrated approach to risk assessment (climate information and early warning systems), risk reduction (investments) and risk transfer (insurance) across a highly climate-vulnerable region (seven Sahelian countries) and population (agro-pastoralists).	While accredited entities (AE) and executing entities (EEs) are experienced in collaborating in joint programmes, the range of programme activities requires strong oversight by the AE across the six-year implementation period.
The AE leverages the expertise of a panel of EEs and country governments to implement a complex programme at sizable scale using the financial and technical resources of a range of experienced partners in the region.	Lessons learned from programme implementation will need to be accessible to and well integrated in future projects.
The programme makes a significant contribution to the development of nascent domestic re/insurance markets in the Sahel, bringing innovative instruments (index-linked drought coverage) to smallholders, agro-pastoralists and governments.	
The programme invests in institutions and builds government capacity for planning and implementing ex-ante risk financing instruments at the sovereign level.	

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the term sheet and addendum XVII, titled "List of proposed conditions and recommendations", respectively.

II. Summary of the Secretariat's assessment

2.1 Project background

3. The objective of this programme is to build, strengthen and scale up the resilience and adaptive capacity of smallholder farmers and rural communities of seven Sahelian least developed countries (LDCs) – Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and the Gambia – to climate change using an integrated climate risk management approach. The programme combines climate risk preparedness with climate risk reduction and climate risk transfer by means of insurance mechanisms, at the micro and sovereign levels. In relation to preparedness, the programme will strengthen the hydro-meteorological network and develop climate information and early warning systems (CIEWS) that provide robust climate data to governments, smallholder farmers and other relevant stakeholders to enable them to make more informed decisions and adopt effective preventative and adaptive measures to reduce the risks and impacts of climate change and extreme weather events.

4. The climate risk preparedness actions will be combined with climate risk reduction measures aimed at enabling farmers to adopt the best climate adaptation and mitigation practices. Data from the strengthened CIEWS will inform farmers' choices on the most effective and sustainable agricultural and resource management practices in their respective area's climate conditions.

5. The project will also support the development of climate insurance programmes, which are a cost-efficient and effective way of offering a faster response to disaster and losses of crops and livestock and shielding smallholder farmers from climate events by transferring and distributing climate risk among stakeholders in the insurance market. Under its third component, the project aids in the development of index-linked micro-insurance schemes in the seven Sahelian countries and provides support to governments to utilize sovereign risk insurance to bolster their ability to finance recovery following climate disasters, particularly drought. The risk transfer element engages a broad range of stakeholders involved in climate risk insurance on the African continent and brings insurance products and instruments to countries in the Sahel region. In doing so, it expands the micro- and macro-level risk financing instruments available following climate events.

6. As a cross-cutting mitigation and adaptation programme, this proposal will reduce greenhouse gas emissions from energy use within agricultural value chains through the adoption of renewable energy technologies (RETs) for water mobilization and to power processing and packaging, among other activities in the value chains. RETs enable farmers to reduce deforestation, desertification and smoke from the use of fuelwood, while improving health, education and other off-farm activities after daylight. Combined with sustainable forest management and land use, the programme will support the efforts of the countries of the Sahel region to transition towards low-emission and climate-resilient development pathways in agriculture, as expressed in their nationally determined contributions (NDCs), in order to meet the following targets of unconditional emission reductions by 2030: Burkina Faso: 7,808.3 gigagrams of carbon dioxide equivalent (GgCO₂eq); Chad: 23,449.07 GgCO₂eq; Mali: 33,628,772 kilotonnes of carbon dioxide equivalent KtCO₂eq; Mauritania: GgCO₂eq, and Niger and Senegal: 3.5 per cent and 5.0 per cent below business-as-usual levels, respectively. The Gambia pledged to achieve a conditional reduction of 1750.4 GgCO₂eq.

7. The accredited entity (AE) for the programme is IFAD. Executing entities (EEs) are the African Development Bank (AfDB), the Africa Risk Capacity (ARC), the World Food Programme (WFP) and hydro-meteorological agencies in each of the seven Sahel countries. The environment and social safeguards category is B.

2.2 Component-by-component analysis

8. The programme seeks GCF funding of USD 82.85 million for a programme of activities with a total cost of USD 143.33 million implemented across six years in seven Sahelian countries. The programme reaches 817,922 direct beneficiaries and 5.33 million indirect beneficiaries. It has a lifetime (20-year) mitigation impact of 21.45 million tonnes of CO₂ equivalent (tCO₂eq).

9. The programme has three components as further described below:

Component 1: Climate risk preparedness (total cost: USD 19.28 million; GCF cost: USD 19.28 million)

10. The main outcome of this component is strengthened climate weather information/services to support decision-making and planning in agro-forestry, livestock farming, agricultural insurance products and services, and capacity development for farmers, government and the private sector. The component has two outputs.

- (a) Output 1.1: Increased access to agro-climatic information services and early warning infrastructure to support integrated climate risk management (EE: AfDB, ARC and hydro-meteorological agencies).
- (b) Output 1.2. Improved awareness-raising, capacity-building and institutional development on integrated climate risk management (EE: AfDB).

Component 2: Climate risk reduction (total cost: USD 51.22 million; GCF cost: USD 23.15 million; IFAD co-financing of USD 28.06 million)

11. The component will strengthen climate-resilient agroforestry and pastoral value chains powered by reliable and affordable renewable energy sources. Reliable climate information generated through Component 1 will be used to guide decisions on (i) the best adaptation/mitigation techniques, including forestry and land-use practices and technologies; and (ii) energy sources for agricultural use per country developed and implemented in this component. Combining these adaptation options with access to insurance schemes developed under Component 3 will boost farmers' resilience to shocks and climate variability.

12. Under this component, the programme will focus on the selection and implementation of adaptation measures under Output 2.1, while Output 2.2 supports the shift towards climate resilient production and post-harvest systems combined with livelihood diversification in the targeted areas, which involves the adoption of on-farm practices and technologies to improve resilience and opportunities.

13. Output 2.1: Best available technologies for adaptation/mitigation (forest and land use; renewable energy) adopted and implemented with agricultural insurance schemes (EEs: Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and the Gambia).

14. Output 2.2. Diversified livelihoods through the promotion of income-generating activities powered with renewable energy (EEs: Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and the Gambia). The Output is funded only by IFAD baseline investments and the IFAD G5+1 Sahel regional programme.

Component 3: Climate risk transfer: (total cost: USD 68.15 million; GCF cost: USD 38 million; AfDB co-financing: USD 22.92 million; ARC co-financing USD 7.24 million)

15. Component 3 promotes climate risk transfer mechanisms at both the micro and macro levels to address the residual risk of climate hazards. The main outcome under Component 3 is reduced obstacles (ill-adapted financial market products and services/high premiums) to governments and improved access for smallholder farmers to agricultural insurance to enhance their resilience-building. To achieve this, the programme will build on climate information generated through the climate networks and early warning systems expanded and upgraded under Component 1 to support the agricultural insurance industry. In addition, the programme

will support government involvement by developing local champions and working partnerships with distribution channels to ensure that the programme reaches scale and is sustainable; by assessing the technical feasibility of covering identified climate risks through index insurance; and by putting into place infrastructure, a fiscal, policy and regulatory framework, if needed, and a governance structure.

16. This component comprises two outputs. Output 3.1 aims at supporting countries to establish, strengthen and consolidate agricultural micro-insurance policies, institutions, products and services to better respond to national and local climate risks and shocks. The proposed strategy and incentive for providing smallholder farmers support to cover the insurance costs will use a digressive approach in which the percentage of the insurance premiums assumed by the project decreases gradually over a four-year period. The micro-insurance component will become one of the layers of protection to help farmers withstand climate shocks. Output 3.2 supports the sovereign risk transfer mechanism (macro-insurance) by strengthening the efforts of ARC. It will focus on fiscal and regulatory capacity-building in relation to countries' premiums payments and the governance of the use of payouts to reach end users. Under this output, ARV tools and models will be strengthened and support will be provided for local development and national contingency plans.

17. Output 3.1. Access to micro-insurance expanded to enhance integrated climate risks management (EE: WFP).

18. Output 3.2. Sovereign risk transfer supported and promoted to strengthen integrated climate risk management (EE: ARC).

Programme management and coordination (total cost: USD 4.66 million; GCF cost: USD 2.41 million; IFAD cost USD 2.25 million)

19. IFAD will act as EE for its regional coordination role. A regional coordination unit (RCU) will be established at the regional level under IFAD at its G5 Sahel headquarters in Nouakchott, Mauritania. Through the RCU, IFAD will implement all coordination activities as an EE. A regional steering committee will be established to provide general guidance for implementation. At the national level, each country component will be supervised by the programme management unit (PMU) of the related baseline investment and a national steering committee (NSC), which will be composed of various stakeholders. The NSC will include the ministries of strategic interest, within which focal points will be designated, as well as producer organizations, insurance committees and banks, among other entities.

20. To govern the flow of funds, agreements will be signed between the AE (IFAD) and its partners within the recipient's countries (ministries of economy and finance) and the PMUs (ministries of agriculture). As this a public programme, all agreements (grants) will be signed between the IFAD and the governments of the seven countries represented by their ministries of economy and finance for the respective outputs that the governments are responsible for implementing.

III. Assessment of performance against investment criteria

21. The project scores well against GCF investment criteria, as further described below.

3.1 Impact potential

Scale: High

22. The proposal has provided an extensive assessment of historical climate variability and change and associated impacts. This evidence points to recurrent droughts, desertification, declining rainfall, locusts and famine, with limited capacity and appropriate approaches to adapt. Interactions of climate hazards with vulnerable social conditions has resulted in famine,

deaths and severe poverty as the predominantly rain-fed agriculture has been compromised. The projected assessment also shows significant reduction in rainfall and intensified drought episodes that could exacerbate existing situations as climate change gathers pace.

23. The proposal seeks to achieve a mitigation impact of reduced emissions of 21,445,499 tCO₂eq covering the GCF results areas of Energy access and power generation (4 per cent) and Forestry and land use (18 per cent). For adaptation impact, it aims to increase the resilience of 817,922 direct beneficiaries and 5,332,754 indirect beneficiaries covering the GCF results areas of most vulnerable people, communities and regions (52 per cent), Health and well-being, and food and water security (6 per cent) and Ecosystem and ecosystem services (20 per cent). This represents 6.19 per cent of the total population, estimated to be 99,287,386 for the seven countries (World Bank, 2020). The percentage benefiting from only adaptation interventions represent 4.58 per cent of the total population.

24. The proposal describes the target beneficiary groups as (i) small producers engaged in staple crops (millet, maize, sorghum and groundnuts), livestock (dairy/beef, sheep, goats and chicken) and non-timber forest products (forestry) value chains characterized by subsistence production and the reduced size of agricultural land and livestock capital; (ii) rural smallholder farmers that are extremely vulnerable to climate change and climate variability; (iii) rural marginalized communities including persons living with disabilities, the elderly, widows and widowers, and displaced people; and (iv) young people and women heads of households, which are all characterized by a pronounced weakness or lack of production capital (agricultural and livestock) and a lack of economic opportunities and jobs.

25. These estimates will benefit from further validation during the inception and implementation phases when ground-truthing exercises have been undertaken. This could be done as part of an impact evaluation study.

3.2 Paradigm shift potential

Scale: High

26. The proposal has articulated the low capacity of smallholder farmers to adapt to climate variability and change, highlighting the unsustainable and negative practices that render them highly vulnerable to climate variability and change.

27. The proposal also clearly identifies the key barriers and root causes that must be addressed by the programme (see table 9 of the funding proposal) and alternative solutions through GCF investments.

3.2.1. Innovation

28. The proposal seeks to address these challenges by strengthening institutional and regulatory systems for climate-responsive planning and development (performance measurement framework (PMF)-A 5.0 and related indicator(s)) through capacity-building activities that will increase country-level knowledge on (i) early warning systems; (ii) contingency planning; (iii) climate risk insurance; and (iv) climate adaptation finance. It has detailed the potential for expanding the scale and impact of the proposed interventions and explicitly identified target sectors for scaling up. This includes the promotion of land management and gender-sensitive climate-resilient agricultural practices and technologies; and increases the availability of water and efficiency of water use in smallholder agricultural production and processing. It will also promote the generation and use of impact-based forecasting, fintech and forecast-based financing for risk-informed decision-making (PMF-A 6.0 and related indicator(s)) through capacity-building and technology transfer. The blending of the ADRiFi, AfDB, ARC, IFAD and WFP R4 Rural Resilience Initiative at the regional/national scale with local micro-insurance schemes constitutes a unique multi-scale innovation.

29. If successful, this proposal will enable the scaling up of the approach at the continental scale and demonstrate resilience and adaptation at scale.

3.2.2. **Contribution to the creation/strengthening of knowledge and collective learning**

30. The proposal contains significant capacity development and technology transfer interventions that seek to effect long-term behavioural change to ensure the improved utilization of natural resources and the preservation of the environment through climate-smart agriculture and resilient livelihood activities. The use of national- and local-scale insurance is an approach that is also innovative for the countries/region.

31. The proposal sets out learning exchanges or institutional knowledge-sharing activities between organizations partnering in the project. More importantly, it articulates procedures for enhancing learning exchange between partner organizations and other entities as well as a plan with roles and responsibilities and implementation modalities.

32. Although the proposal details monitoring, evaluation and learning, the diffusion of learning on programme development and implementation can be explored further. It will benefit from a broader coalition of partners in the region undertaking knowledge brokering in early warning and early action. This will broaden and strengthen mechanisms to enhance coherence and complementarity among broader actors through the strengthening of cooperation between partner organizations responsible for implementing the activities.

33. The proposal will benefit from impact evaluation activities to ensure that the impacts of the project can be documented and used to inform the design and implementation of future programming.

3.2.3. **Market development and transformation**

34. The proposal seeks to create new insurance and risk information products in the countries and localities where insurance and use of climate information for investment decisions did not exist or could not expand due to the lack of enabling environments and appropriate policies. It proposes enabling market transformation by expanding capacity and knowledge on risk-informed investments in existing businesses and new sectors at the local and national levels.

3.3 Sustainable development potential

Scale: *High*

35. The proposal has provided an extensive assessment of historical climate variability and change and associated impacts. This evidence points to recurrent droughts, desertification, declining rainfall, locusts and famine, with limited capacity and appropriate approaches to adapt. Interactions of these climate hazards with vulnerable social conditions has resulted in famine, death and severe poverty, as the predominantly rain-fed agriculture has been compromised.

36. With this knowledge, government staff will enhance their skills in pre-emergency-level drought response planning and execution.

37. The proposal increases resilience of smallholder farmers (particularly vulnerable women) and livelihoods. It contributes to the national economies of the seven Great Green Wall initiative countries by providing support for the establishment of climate risk reduction mechanisms that will enhance adaptation measures, and by investing in smallholder agriculture that will strengthen value chains and food systems.

3.3.1. **Expected positive environmental impacts**

38. The Sahel is one of the continent's most prominent livestock-rearing regions, and climate change threatens sector productivity and traditional herd migration routes with its environmental constraints, including water scarcity and extreme weather events.
39. Climate analyses for the seven countries based on RCP4.5 and RCP8.5 scenarios show increasing trends of multi-hazard events (heat waves, extreme rain events and dry spells), which affect crop productivity levels in areas with the major river basins (Senegal River, Gambia River, Lake Chad, Niger River and Volta River) and without irrigation and in case of temperatures increases of 0.1 to 0.5 °C in the regions per country.
40. Integrated landscape management will promote the multi-functionality of landscapes and provide a mechanism that enables local stakeholders to reduce conflicts among different types of specialized resource users who differ in their dependencies on a range of ecosystem services (e.g. herders, farmers or fishers). This work will address conflict over natural resources, which may be climate-induced. Improved water infrastructure will help to de-escalate tensions, promote stability and increase resilience to hydrological shocks that might otherwise trigger conflict. Targeted areas will include transhumance corridors and rangelands. This is consistent with Sustainable Development Goal (SDG) 17 on partnership.
41. Over 70 per cent of the African savannah is burnt annually, mostly as part of farm management practice; it has been found to increase the diurnal temperature range of about 10 degrees Celsius. In addition to reducing soil fertility and increasing air pollution (direct inhalation of toxic particulate matter of approx. 2.5 microns), it creates threshold changes in the surface energy fluxes and negatively disrupts microclimates. The proposal seeks to address these risks through behavioural change and the adoption of climate-smart approaches. These include replacing slash-and-burn practices with alternative environmentally-friendly climate-smart agriculture practices to improve ecosystem functions and services (recreational, cultural services, natural, spiritual, medicinal, etc.). This is aligned with SDG 15 (protecting, restoring and promoting the sustainable use of terrestrial ecosystems, reversing land degradation, and halting biodiversity loss), as well as SDG 6 on water). It will also generate positive impacts through decentralized electrification and improved income and livelihoods for smallholder farmers and rural communities. This contributes to SDG 3 on health.
42. The proposal will benefit from exploring a broader coalition of partners to address the environmental and human security challenges that it seeks to address. It should endeavour to leverage ongoing interventions and the rich and broad experience of disaster management agencies, environmental protection agencies, forestry commissions, ministries of health, peace and security agencies, the Food and Agriculture Organization of the United Nations, the United Nations Environment Programme and the World Health Organization. Coordination could be done by one of the key environmental and security institutions in the region.

3.3.2. **Expected positive social and health impacts**

43. Historically, pastoralists maximized productivity by migrating herds south during the dry season (October to June) and north during the wet season, thereby exploiting grazing and water imbalances. However, erratic rainfall and ongoing drought have forced pastoralists to alter traditional migratory corridors in search of new seasonal watering holes and rangelands, leading to conflicts.
44. While farmers and pastoralists historically worked together (with pastoralists benefiting from grazing of crop residue and farmers benefitting from manure droppings), growing competition and conflict is now an issue of concern between the Sahel's farming and pastoralist communities as land degradation and competition over water and land resources (grazing versus crop cultivation) increases. In some countries, migration is also contributing significantly to competition: Malian refugees have three times as many livestock than locals, increasing the likelihood of competition over land and water resources.

45. The proposal seeks to implement integrated landscape management to enable the conjunctive use of landscapes and provide an enabling environment for dialogue among local stakeholders to reduce climate-induced resource conflicts. It will target the transhumance corridors and rangelands.

46. Additionally, the proposal will improve women's health by reducing smoke from the use of fuelwood for cooking, as well as increasing time for the pursuit of educational and other off-farm activities after daylight hours. The sustainable management of pests and diseases can be achieved through the use of renewable energy sources and by adopting sustainable best practices and technologies for adaptation and mitigation.

3.3.3. **Expected positive economic impacts**

47. The proposal, through a cost-benefit analysis, shows a discounted net present value of USD 90 million with a 10 per cent discount rate. The economic internal rate of return (EIRR) of 24 per cent exceeds the discount rate of 10 per cent, demonstrating the value addition of the interventions. All scenarios of a sensitivity analysis i.e. (i) total cost increase of 20 per cent; (ii) total benefits decrease of 20 per cent; and (iii) total cost increase of 20 per cent and total benefits decrease of 20 per cent, result in EIRR above the minimum threshold. This suggests the proposal has the potential for green job creation and can unlock opportunities for women and youth who constitute 50 per cent and 40 per cent of the beneficiaries, respectively.

48. By creating and enabling access to robust climate services, forecast-based financing and insurance schemes, the beneficiary community livelihoods will be made more resilient with productivity increases and improvements in food security and well-being.

49. The proposal implementation period is six years, but it is expected to have impacts over 20 years. The hydromet systems and water, land and energy infrastructures are also expected to last between 30 to 40 years. Development of nascent insurance sectors and delivery channels can be expected to have further impacts on economies and the evolution of financial systems in the target countries.

50. The operations and maintenance costs are estimated to be 1 per cent of programme investments and will be covered by governments' and hydromet agencies' budgets after the programme.

51. The proposal has indicated that there are additional potential benefits that have not been quantified. Given the benefits the proposal presents, it will benefit from a detailed analysis of the full range of benefits that can be realized from the proposal. This could be done together with the recommended impact evaluation exercise during project implementation.

52. It should also explore potential long-term sources of funding and technical assistance for the hydromet and early warning systems infrastructure through the World Meteorological Organization-led Global Basic Observing Network, the Systematic Observation Financing Facility and the Risk-informed Early Action Partnership.

3.3.4. **Potential for reduced gender inequalities in climate change impacts and/or equal participation by gender groups in contributing to expected outcomes**

53. Women constitute about 70 per cent of the workforce in the agricultural sector and face barriers in accessing productive assets, finance and knowledge. The proposal has a gender focus as 50% beneficiaries of interventions are women, and thereby targets an alignment with SGD 5 (gender equality). The proposal also strengthen the technical and managerial capacities of women by providing tools for identifying and managing climate risks. In addition, it seeks to ensure women are active participants in the governance and decision-making process by giving them equal representation on the National Steering Committees.

54. A significant contribution of this proposal will be to create a voice for women to be active participants in climate action. The proposal should ensure that the impacts of this activity are captured in the recommended impact evaluation exercise.

3.4 Needs of the recipient

Scale: High

55. The seven participant countries are LDCs that are highly exposed to climate risks. They also have a significant debt burden and limited access to grant finance for climate action.

56. Increasing evidence of climate-related hazards, namely prolonged and intense droughts, rains and associated floods, and heatwaves, have interacted with vulnerable social conditions to create unprecedented disasters over the past decades. And if these were not problematic enough, projected scenarios of the future climate show increasing frequency, duration and intensity of heat-related hazards. There is no consensus among climate models on future rainfall predictions under the different climate scenarios over the region, creating uncertainty in understanding how global warming will impact rainfall-related hazards.

57. Based on the Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index, the participating countries are ranked among the world's least resilient countries to climate change. With the projected high demographic growth, competition for the climate-induced natural resource scarcity will lead to food insecurity and fragile socioeconomic conditions. Climate-induced conflicts already being experienced between the nomadic tribes and rural farming communities is envisaged to increase as climate change gathers pace.

58. The proposal presents an opportunity for GCF to support the region to address climate change and human security challenges. The interventions are aligned with the local, national and regional development strategies, in particular the NDCs, NAPs, SDGs, regional integration and trade strategies, as well as the African Union Agenda 2063.

3.5 Country ownership

Scale: High

59. This programme interventions are aligned with the countries' national strategic and development plans, NAPs, NDCs and related commitments under the United Nations Framework Convention on Climate Change. It is also aligned with the 2015 global agendas (SDGs, PA and SF) and the African Union 2063 Agenda, as well as the Economic Community of West African States (ECOWAS) regional framework for climate services and the Great Green Wall Initiative. It seeks to support coherence and complementarity among the above strategies and agendas to ensure the efficiency and effectiveness of programme implementation.

60. The active participants of local, national, regional and continental institutions underpin the strong country ownership of the programme.

3.6 Efficiency and effectiveness

Scale: Medium to high

61. The proposal has requested a grant of USD 82.85 million from the GCF. Given the level of poverty in the targeted communities and limited fiscal bandwidth for the governments to take on loans, the grant instrument is appropriate for the interventions. The GCF investment is envisaged to unlock barriers to the adoption of innovative policies and technologies.

62. The proposal has demonstrated that if the grant component is replaced by other instruments (e.g. debt), the project revenue would not be able to cover its payment. The co-financing ratio of 1:0.7. Grants are intended to leverage insurance capital via ARC, the private sector and government funding.

63. A cost-benefit analysis shows that the proposal has a discounted net present value of USD 90 million with a 10 per cent discount rate. All three scenarios of the sensitivity analysis, i.e. (i) total cost increase of 20 percent; (ii) total benefits decrease of 20 per cent; and (iii) total cost increase of 20 per cent and total benefits decrease of 20 per cent, result in an EIRR above the minimum threshold.

64. The solutions being proposed by the project provides a low-emission, climate-resilient development pathway compared to the baseline. Further efficiency gains can be realized through good planning and programming.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

65. The programme intends to scale up the resilience and adaptive capacity of smallholder farmers and rural communities of seven Sahelian countries. It aims to improve risk preparedness by building the capacity of governments and communities, reduce risk by improving agricultural productivity, and promote climate risk transfer schemes using insurance. The AE has classified the programme as medium risk and category B based on the screening of potential environmental and social risks. The Secretariat confirms the category B classification given that the proposed activities are expected to have potential limited adverse environmental and/or social risks and impacts that, individually or cumulatively, are few, generally site-specific, largely reversible, and readily remedied by appropriate mitigation measures.

66. The programme will be implemented over a large geographic area for which specific locations have not yet been identified; therefore an environmental and social management framework (ESMF) was developed and submitted with the funding proposal. The ESMF will be a guidance document for assessing potential environmental and social risks and impacts of the programme and provide direction when incorporating measures that may be needed to avoid, minimize and mitigate any adverse impacts that the programme may have on people and the environment. An overview of applicable national laws and standards is presented in the ESMF. Detailed gap assessments of the countries environmental and social policy frameworks, legal and regulatory instruments, and GCF and AE environmental and social standards will be undertaken prior to implementation. The AE is required to ensure that identified inconsistencies are addressed during the implementation of subprojects.

67. Each subproject will be screened and categorized by administering the environmental and social risk screening form, which is included in the ESMF. Additionally, subprojects will be analysed to ensure that they do not contain elements on the exclusion list. For subprojects categorized as category B, site-specific environmental and social management plans will be prepared and disclosed in line with the GCF Information Disclosure Policy. An outline of a typical environmental and social management plan is annexed in the ESMF. The project risk assessment process has been presented in the ESMF, including factors that will be considered in determining the severity of identified risks.

68. The ESMF lists potential positive and negative impacts associated with the programme. The AE has assessed the programme as having an overall positive impact if risks are mitigated and monitoring plans are implemented. Potential economic benefits to communities will accrue from livelihood diversification; improved access to finance and markets; improved access to land and tenure security; improved access to water and energy; infrastructure development that creates opportunities for entrepreneurship and income generation; and food security to alleviate rural poverty. The environment will also benefit from increases in vegetation cover, for example due to agro-forestry, reforestation and the assisted natural generation of trees. Potential minimal negative impacts are expected from land clearing owing to the rehabilitation

of infrastructure, land degradation due to farming practices, support for agricultural activities that may cause water pollution due to increased use of agrochemicals, waste generated by poultry farming and produce processing activities, and safety and air pollution concerns related to the construction of infrastructure. No physical or economic displacement is foreseen as most activities support smallholder farmers on their existing plots of land.

69. Activities will be undertaken on existing government land or community land after acquiring voluntary consent from communities or free, prior and informed consent (FPIC) where it involves indigenous peoples. Selected sites for the implementation of activities will be secured and beneficiary countries will propose safety plans at the start of the programme to safeguard personnel and property. Other mitigation measures include having personal protective equipment for construction workers, training farmers on waste management, and providing environmental and social guidelines for contractors, including those involved in construction activities. An integrated pest management framework has been included in the ESMF to manage the use of pesticides.

70. In the countries included in the programme, several groups identify as indigenous peoples due to their historic occupation of the Sahara and the Sahel, their continuous adherence to economic and cultural systems of pastoralism and their ongoing marginalization from the political economy. The AE has found that no economic displacement of the marginal or indigenous population is envisaged as a result of the programme. The AE has a detailed FPIC policy that will be applied in any engagement with indigenous peoples.

71. The programme will have an RCU, which will lead the coordination of the programme. It will have a regional environmental and social expert who will plan and monitor environmental and social safeguards issues in the subprojects. The AE will deliver training to PMUs and the regional expert on the implementation of safeguards issues. Each PMU will have environmental and social safeguards specialists to guide this work. The PMUs in each participating country will be responsible for the general coordination of project activities and supervise the development of environmental and social management plans and stakeholder engagement. In addition, they will be responsible for ensuring the implementation of these environmental and social management plans, including compliance by contractors with standards and requirements, monitoring, reporting, and implementation of capacity-building activities as required. Environmental and social guidelines for contractors are annexed in the ESMF. Estimated budgets for capacity-building and monitoring have been included in the ESMF. The AE will conduct capacity assessments of national partners in the programme with roles and responsibilities related to environmental and social issues. The AE is advised to ensure that necessary capacity-building is delivered to them to fulfil any environmental and social safeguards roles and responsibilities assigned. However, the role of the national ministries of environment/environmental agencies and government EEs on environmental and social safeguards management is not clear and should be clarified and well-articulated in subproject management plans.

72. The ESMF summarizes consultations carried out to date in the preparation of the programme, and a plan for ongoing stakeholder engagement during implementation has been provided. Stakeholder engagement activities are expected to provide an accessible means for beneficiary communities to give feedback on subproject design and implementation and ensure inclusion by actively targeting women, indigenous people and youth who may otherwise be insufficiently represented in consultations. The programme will engage stakeholders primarily through consultative meetings. The ESMF notes that a detailed stakeholder engagement plan will be developed, whilst also indicating that the stakeholder engagement plan is annexed in the ESMF. It is not clear where the stakeholder engagement plan will be prepared or whether there will be one plan for the whole programme or whether plans will be developed at the subproject level. The AE is required to ensure that stakeholder engagement plans are prepared for all subprojects using the outline provided to address the needs and priorities of the different

beneficiary communities involved in the programme and included in environmental and social management plans for category B subprojects.

73. The programme will use the grievance redress mechanism of the AE to receive and facilitate the resolution of concerns and complaints related to environmental and social matters. The PMUs will be responsible for ensuring that stakeholders are informed about the grievance redress mechanism. The ESMF includes a description of how grievances can be submitted and the complaints resolution process. The GCF Independent Redress Mechanism will also be available to complainants at any stage. The AE will indicate the GCF Indigenous Peoples focal point to stakeholders, in its communications with such stakeholders on grievance redressal mechanisms for the programme. Details on utilizing both mechanisms are included in the ESMF.

4.2 Gender policy

74. The AE has provided a gender assessment and gender action plan and has therefore complied with the requirements of the GCF Gender Policy.

75. The gender assessment provides an assessment of the commitments of Burkina Faso, Chad, the Gambia, Mali, Mauritania, Niger and Senegal to gender equality and women's empowerment. The countries have put in place gender-related legal, policy and institutional frameworks. Institutions such as ministries are mandated to provide policy guidance support on gender to line ministries, help design programmes on women and children's rights, implement gender strategies and promote gender mainstreaming in national development strategies, among other things. However, policies and laws are not always implemented effectively to promote opportunities and increase access to resources and services for women. Furthermore, patriarchy, lack of political will and a conflicting tripartite legal system of civil, discriminatory customary and religious laws, together with scarce resources, impede the effective implementation of gender-sensitive legal and regulatory frameworks in some of the countries.

76. The gender assessment, prepared using desk reviews, also provides a context of gender matters, gaps, differences and inequalities in countries that will benefit from the programme. Social, cultural and sometimes religious norms impose several constraints on women that limit their access to resources. For example, women lack land tenure security for agricultural activities, which in turn results in them having limited access to extension services and financing to invest in farms. This is despite the fact that women provide most of the labour for traditional agriculture. In addition, women have limited access to knowledge, services and information, including climate information that would allow them to make better decisions on adapting to the effects of climate change.

77. Due to gendered division of labour, many women in the beneficiary countries are still burdened with tasks such as gathering wood for fuel. Wood is still the main source of fuel for cooking purposes for many households, with few households in rural areas having access to electricity. Climate change and natural resource degradation have generally increased the distances that women have to walk to find wood and therefore contribute to time poverty. In addition, using wood for cooking exposes mainly women to risks of respiratory health ailments.

78. The AE has provided a programme-level gender action plan that contains activities, programme components, performance indicators, sex-disaggregated targets with baselines, timelines and costs. Subproject-specific gender analyses and gender action plans will be prepared prior to implementation. Benefits expected from the programme's implementation include access to climate information, improved access to water from the construction and rehabilitation of water points, and access to renewable energy by households from mini-grids and climate-smart irrigation systems. Benefits also accrue from activities related to fish and poultry farming, vegetable gardens and climate risk transfer using agricultural insurance schemes that will help smallholder farmers avoid resorting to negative coping strategies during

weather-related events such as droughts. Activities related to participation included in the action plan include training of smallholder farmers on understanding and using agro-climatic information to assist them in better managing climate shocks. Training will also be provided on (a) sustainable agriculture; (b) community maintenance of infrastructure; (c) watershed management through agro-pastoral/farmer field schools; (d) financial literacy; and (e) marketing and business management for farmer organizations, micro, small and medium-sized enterprises and cooperatives, including those that are women-led. In addition, the programme will support the capacity-building of relevant officials to enable them to be better equipped to provide guidance to smallholder farmers. Activities will help to address some of the gender issues being faced by women in the participating Sahel countries by diversifying livelihoods and increasing resilience to climate change. The responsibilities for the implementation of the gender action plan are assigned to EEs, PMUs and the RCU.

79. The AE has not indicated whether gender experts will be engaged in each country's PMU or whether a gender specialist will be included in the RCU to guide the implementation of the action plan, lead the collection of data and ensure reporting on progress to GCF. Additionally, the role of national ministries responsible for gender affairs in overseeing the implementation of the gender action plan as mentioned in the funding proposal is not reflected in the action plan.

80. The AE is advised to ensure that detailed gender analyses that will be undertaken at the subproject level prior to implementation are informed by stakeholder consultations and the engagement of intended beneficiaries to identify the specific needs and priorities of women and men, including opportunities to address them. The AE is required to ensure that subproject-level gender action plans are informed by the corresponding gender analyses and reflect ambitious targets for participation and access to benefits by both women and men. Furthermore, the AE will need to develop strategies to ensure access to benefits and participation by women given the prevailing patriarchal systems that in some instances are rooted in religious and customary social standards and act as barriers to women.

81. It is advisable that the gender action plan include targets for female-headed households, which are noted in the gender assessment as being more susceptible to food insecurity and poverty. Baseline data will need to be collected and revised based on the circumstances in selected project locations and used to rationalize targets in subproject gender action plans. The AE is also required to ensure that a gender specialist is engaged by each of the PMUs and the RCU prior to starting the programme's implementation. The AE is advised to consider the recommendations above in the preparation of further gender assessments and action plans.

4.3 Risks

4.3.1 Overall programme assessment (medium risk)

82. The programme aims to contribute to a paradigm shift towards climate-resilient and low-emission agriculture through the mobilization of climate finance to strengthen adaptation measures and risk preparedness services and products, and building mechanisms to transfer risk to the insurance industry. The programme consists of three components (i) climate risk preparedness; (ii) climate risk reduction; and (iii) climate risk transfer. Total project costs are USD 143.3 million, of which GCF is proposed to provide USD 82.9 million in grants. Target countries are LDCs in Africa. Co-financing in the form of grants of USD 30 million and USD 23 million will be provided by IFAD and AfDB, respectively. In-kind co-financing of USD 7.2 million will be provided by ARC.

4.3.2 Accredited entity/executing entity capability to execute the current programme (medium risk)

83. The AE has close to 40 years of experience in providing loans and grants to support governments in their efforts to de-risk agriculture. IFAD will administer the transfer of GCF resources to the seven participating countries and provide oversight and implementation support and ensure quality through an established RCU hosted at the G5 Sahel Secretariat in Nouakchott, Mauritania. Given the number of EEs involved in the programme, the AE shall have an important coordinating role to ensure coherence between the activities.

84. AfDB will act as an EE and be responsible for the overall coordination and technical assistance for the component on climate risk transfer in all seven countries in coordination with ARC. The AfDB is the premier pan-African development institution promoting economic growth and social progress. The AfDB has 81 shareholders, including 54 regional member countries and 27 non-regional member countries. AfDB is rated Aaa by Moody's.

85. ARC will be the EE for part of Output 3.1 (1.1.6) and for all of output 3.2. ARC is a specialized agency of the African Union established in 2012 to help African governments improve their capacities to better plan, prepare for and respond to extreme weather events and natural disasters. To date, ARC has provided 41 sovereign insurance policies offering cumulative insurance coverage of approximately USD 600 million to protect 58 million people. ARC has engaged with and provided capacity-building in disaster contingency planning, early warning risk modelling and risk transfer to over 10,000 government officials and civil society and private sector representatives over a six-year period.

86. WFP will be one of the EEs of this programme. It will bring its expertise in climate risk financing and insurance to support partners in their efforts to strengthen climate resilience and achieve food security. As an EE, WFP will be responsible for the implementation of Output 3.1. Over the last decade, WFP has been working with its partners to test and scale up ways of providing micro-insurance products, particularly index-based insurance.

87. Burkina Faso, Chad, the Gambia, Mali, Mauritania, Niger and Senegal, represented by their respective ministries of economy and finance, are EEs and will be the recipients of the GCF financing. The respective governments (EEs) will enter into agreements with their respective national meteorological agencies. At the country level, the ministries of agriculture and PMUs of baseline investments will represent the governments (EEs) and be in charge of implementing the programme at the country level. National EEs will sign contracts for goods and services with private and other service providers.

4.3.3. Programme-specific execution risks (medium risk)

88. Market demand: Low demand for agricultural insurance, climate information services and adaptation/mitigation solutions would result in lower impacts for the programme. Comfort is derived from market studies conducted by ARC, IFAD and WFP.

89. The project will provide financing for training, capacity-building, and expanding and upgrading existing early warning systems and infrastructure such as mini-grids. Project success will depend on the successful procurement, construction, maintenance and knowledge transfer to ensure its continued use throughout the lifespan of the project. Comfort can be derived from capacity development provided to the countries' meteorological agencies and agreements signed with agencies for operations and maintenance of the mini-grids.

90. Political and security risk: The AE has identified risk relating to insecurity, conflict, local governance and regulations as potential challenges to the project. Comfort is derived from the track record of the AE and EEs in operating in the region. COVID-19 could affect the fiscal space of countries and their ability to pay premiums under output 3.2.

91. Microinsurance: Under component 3.1, activities shall be undertaken to develop and support the microinsurance market, including premium support for beneficiaries. Success under this component will be driven by continued availability of affordable insurance products

and beneficiaries' willingness to pay during and after premium support is provided. Comfort is derived from the feasibility studies conducted, product and market development activities to be undertaken under this component, experience of the EEs in the sector and the involvement of the EE in the product development process so that pricing remains fair and affordable.

92. The activities under component 2 supported by the microinsurance under component 3.1 are expected to have revenue generation potential as a result of increases in crop yields. The AE considers the grant request justified as a result of the needs of the recipients (LDCs) with narrow fiscal space. Furthermore, the use of grants is supported by the target beneficiaries: small producers, smallholder farmers, marginalized communities and young people. The term sheet contains provisions to ensure concessionality for microinsurance shall be passed on to the end beneficiaries.

4.3.4. Compliance risk (medium risk)

93. IFAD has confirmed that the project will not be undertaken in any jurisdictions (with the exception of Mali) that are subject to or affected by United Nations Security Council (UNSC) sanctions resolutions.

94. IFAD further confirmed that no individual or entity that is listed on any UNSC sanctions list, including the United Nations Security Council Consolidated Sanctions List, will be involved with the project or its activities either as a counterparty, implementer or beneficiary in any manner.

95. IFAD acknowledged that Mali is a jurisdiction subject to or affected by UNSC Resolution 2374 (2017),¹ and that no individuals or entities listed on any UNSC lists will be involved in the project or its activities.

96. IFAD confirmed that, as a United Nations organization, its strategy for dealing with sanctioned jurisdictions and identifying risks and mitigation measures (including exemptions from UNSC sanctions regimes) is aligned with the relevant joint United Nations decision within said jurisdiction. These strategies involve the following:

- (a) Financial agreements for all projects managed by IFAD (like GCF projects) include clauses that the projects will not involve individuals or entities listed on any UNSC sanctions resolution lists;
- (b) Targeting mechanisms of IFAD are used to direct the project to the main beneficiaries and individuals, and not individuals or entities listed on any UNSC sanctions resolution lists; and
- (c) Regular follow-up and verification through IFAD supervisory missions is used to ensure projects are implemented according to financing agreements.

97. IFAD advised that the programme is complementary to its baseline investments, which are being implemented in countries/areas and with beneficiaries that are not involved in money laundering and financing of terrorism, UNSC sanctions violations or prohibited practices.

98. IFAD advised that proposed activities to be undertaken in this programme will not occur in, or involve any, jurisdiction subject to or affected by UNSC resolutions. No review or clearance by any relevant UNSC sanctions committee is required. When IFAD provides a grant to an institution, due diligence on the recipient is conducted by consulting various databases.

99. IFAD confirmed there are no planned disbursements or distributions of cash, vouchers, commodities, or other items of value directly or indirectly to beneficiaries as part of any activities in this project.

¹ <https://www.un.org/securitycouncil/sanctions/2374>.

100. IFAD advised that it has its own grievance mechanism to be used for the reporting of complaints or allegations of wrongdoing within the projects or activities (whistleblower programme). The IFAD grievance mechanism has been updated and is contained in the ESMF.

101. **Recommended risk rating:** The Office of Risk Management and Compliance (ORMC)/Compliance Team has conducted a review of the project in accordance with relevant GCF Board-approved policies and does not find any material issue or deviation with respect to compliance issues. Based on available information for this funding proposal, ORMC/Compliance has determined a risk rating of 'medium'.

102. As at the time of reviewing the proposal, the Malian coup d'état on 18 August 2020 did not trigger an expansion of those sanctions already imposed by United Nations Security Council Sanctions Committee on Resolution 2374. As such, the proposal should not be disadvantaged because of the possibility of an outcome that may or may not occur. ORMC/Compliance has reviewed IFAD's mitigation strategies to address potential risks and has decided to provide no objection to this request proceeding to the next steps for processing. However, the matter of sanctions would need to be revisited at sanctions screening for disbursements in the future.

103. GCF has reminded IFAD, as the AE, of its continuing obligations and responsibilities with regard to monitoring and reporting any risks of money laundering, terrorist financing, or prohibited practices among the intended counterparties, EEs, beneficiaries, persons involved, or any of the proposed activities.

4.3.5. GCF portfolio concentration risk (low risk)

104. In the case of approval, the impact of this proposal on the GCF portfolio concentration in terms of result area and single proposal is not material.

4.3.6. Recommendation

105. It is recommended that the Board consider the above factors in its decision.

Summary risk assessment		Rationale
Overall programme	Medium	Project success will depend on successful procurement, construction, maintenance and knowledge transfer to ensure continued use throughout the lifespan of the project. The project is exposed to political and security risks.
Accredited entity/executing entity capability to implement this programme	Medium	
Project-specific execution	Medium	
GCF portfolio concentration	Low	
Compliance	Medium	

4.4 Fiduciary

106. There are four EEs in this programme: IFAD, AfDB, ARC and WFP.

107. IFAD will undertake the dual role of AE and EE. As AE, it will provide oversight and implementation support and ensure program quality. It will also provide technical support to the other EEs for the implementation of the programme activities.

108. As EE, AfDB will be responsible of the overall coordination and technical assistance of the component on climate risk transfer in all seven countries in coordination with the ARC on

Output 3.2. Component 3, including each countries' risk preparedness (Output 1.1 Component 1). In addition, ARC will be responsible for the implementation of activities 1.1.6 under component 1 and all activities under Output 3.2 of Component 3. WFP will procure goods and services to support the implementation of the selected activities under output 3.2. at country level and will also be responsible for output 3.1 of Component 3. Furthermore, WFP will act as implementing partner of IFAD, providing support to countries on the micro-insurance using the R4 approach and adapting it to each context.

109. A regional coordination unit will be established at the regional level under IFAD, AfDB, ARC and WFP located at the G5+Sahel headquarters in Nouakchott. A Regional Steering Committee of the Program (RSC), which will provide general guidance for the implementation of the programme, will be established. At the national level, each country component will be managed by the Ministry of Agriculture through the financially and administratively autonomous IFAD baseline Project Management Unit (PMU) in each country. The PMU in each country will be responsible and accountable to the Government and IFAD for the efficient use of programme resources in compliance with the funding as well as the administrative, financial procedures and monitoring and evaluation (M&E) of the programme. The PMU will also prepare financial and technical reports for the Regional Coordination Unit that will ensure quality review and clearance before sending to IFAD for submission to the GCF.

110. In its role as AE, IFAD has the overall responsibility and oversight for the programme, including programme preparation and implementation; financial management and procurement. To channel GCF resources, IFAD and the selected countries in the programme will enter into grant agreements, which will also govern the use of the grant proceeds. An Annual Work Plan and Budget (AWBP) will be developed and shall include AfDB and IFAD co-financing. The AWBP will be validated by the Steering Committee chaired at regional level by representatives of countries through the Ministry of Finance wherein IFAD will participate in the committee as an observer. GCF grant proceeds will be passed by IFAD to the selected countries under a single agreement. The selected countries will sign agreements with the EEs to provide support on the implementation on the various outputs and each IFAD country office will provide its no-objection (final decision with recipient government) to all activities over a certain threshold or type of activity as to be specified by IFAD.

111. IFAD baseline PMUs will oversee financial management and reporting on GCF grant proceeds at country level. The regional coordination unit will instead be responsible for consolidating financial reports to meet IFAD and GCF requirements. The financial statements of each national PMU will be audited by independent auditing companies on an annual basis and a specific audit opinion will be provided on the usage and accounting of GCF funds. The MoUs signed by the national PMUs with implementing partners will include clear financial reporting requirements and timelines in line with GCF and IFAD standards.

112. As a confirmation of capacity assessment of ARC, in terms of its financial management and technical competence remains forthcoming from the AE to undertake the role of EE in the programme, and a review of the updated budget is yet to be concluded, it is recommended that these two matters are inserted as condition precedents in placeholders temporarily. This assessment is subject to change pending satisfactory submission/assessment of the above related documents.

4.5 Results monitoring and reporting

113. The proposed programme is a multi-country cross-cutting programme with the core objective of building, strengthening and scaling up the resilience and adaptive capacity of smallholder farmers and rural communities of seven Sahelian countries to climate change using an integrated climate risk management approach. This approach combines climate risk preparedness with climate risk reduction and climate risk transfer. The programme is expected

to generate more than 21 million tCO₂e over a period of 20 years and reach 817,922 direct and 5,332,754 indirect beneficiaries.

114. The logical framework of the project is developed in line with the GCF Results Management Framework and Performance Management Framework and followed the additional guidance provided in the GCF Programming Manual. The appropriate core, fund-level impact and fund-level outcome indicators have been selected. The AE has also proposed relevant performance indicators with clear linkages to the fund-level outcomes and outputs.

115. The AE has also developed implementation timetable in Annex 5 of the funding proposal with clearly identified milestones and deliverables.

116. The GHG emission reductions were estimated using the FAO Ex-Act Tool and CDM methodology AMS-I.A. The AE has taken a conservative approach and provided separate estimates for each country taking into consideration the national circumstances, as well as assumptions used by each country in its national GHG emission reporting. The AE has also developed a methodological note in Annex 22 with clear explanations of all relevant assumptions, data sources and formulae used in the emission reduction calculations.

117. The AE has also prepared Annex 17 with disaggregated targets per country. However, it is noted that the disaggregation does not include emission reductions related to off-grid electricity generation.

118. The AE has provided in the funding proposal a clear description of the monitoring, reporting and evaluation arrangements.

4.6 Legal assessment

119. The AMA was signed with the AE on 24 September 2018, and it became effective on 9 November 2018.

120. The AE has not provided a legal opinion/certificate confirming that it has obtained all internal approvals and that it has the capacity and authority to implement the programme. It is recommended, prior to the submission of the funding proposal to the Board, that (a) the AE has obtained all its internal approvals; and (b) GCF has received a certificate or legal opinion from the AE in form and substance satisfactory to GCF confirming that all final internal approvals by the AE have been obtained and that it has the authority and capacity to implement the programme.

121. The proposed programme will be implemented in seven countries in which GCF is not provided with privileges and immunities. This means that, amongst other things, GCF is not protected against litigation or expropriation in these countries, and the associated risks need to be further assessed:

122. Burkina Faso: The Secretariat sent a draft agreement together with a background note on privileges and immunities, in English and French, to the national designated authority (NDA) in October 2016, which indicated in February 2017 that the agreement was sent to the Ministry of Finance and Ministry of Foreign Affairs for review. The NDA sent a revised draft agreement with comments in July 2018. Further exchanges were held in November 2019 with the Ministry of Foreign Affairs to resolve pending issues. In January 2020, the Secretariat was informed that the Government has accepted the text of the agreement. However, due to the COVID-19 pandemic, the final approval from the Presidency was put on hold, and was obtained in October 2020. The Secretariat sent a final version of the agreement to the Ministry of Foreign Affairs in November 2020 for signatures, which is still outstanding.

123. Chad: The Secretariat sent a draft agreement together with a background note on privileges and immunities to the NDA in December 2015, and a meeting was held with the Chad

delegation at the twenty-first session of the Conference of the Parties (COP 21). Upon request of the NDA, in October 2016 the Secretariat sent the draft agreement and background note in both English and French, and a reminder was sent in February 2017; however, no response has been received so far.

124. The Gambia: In May 2016, the Secretariat sent a draft agreement together with a background note on privileges and immunities to the NDA, and a meeting was held during a visit by the NDA in Songdo. Exchanges were held regarding the text of the draft agreement, and in February 2018 the Secretariat was informed that the agreement had been forwarded to the Ministry of Justice for finalization of the Government's position. A reminder was sent on October 2018, however no response has been received so far.

125. Mali: The Secretariat sent a draft agreement together with a background note on privileges and immunities to the NDA in December 2015, and a meeting was held with NDA representatives during the Global NDA Conference in October 2018. However, no formal response on the text of the agreement has been received so far.

126. Mauritania: The Secretariat sent a draft agreement together with a background note on privileges and immunities to the NDA in November 2016, followed by an official letter addressed to the Ministry of Environment and Sustainable Development mentioning the context of the agreement in February 2017. In August 2017, the Secretariat sent reminders to the NDA on the progress of the review and was informed that the agreement had been forwarded to the Ministry of Foreign Affairs. A reminder was sent in February 2018, however no response has been received so far.

127. Niger: The Secretariat sent a draft agreement on privileges and immunities together with a background note on privileges and immunities to the NDA in December 2015, and a meeting was held with the Niger delegation during COP 21. In February 2017, the draft agreement and background note was sent again in both English and French to the NDA, however no response has been received so far.

128. Senegal: The Secretariat sent a draft agreement together with a background note on privileges and immunities to the NDA in September 2015. Meetings were held at COP 21 in December 2015, COP 22 in November 2017 and also at the Permanent Mission of Senegal to the United Nations in August and October 2016. In February 2017, the NDA informed the Secretariat that all documents were sent to the Ministry of Finance at the request of the Ministry of Foreign Affairs and that they will then inform the GCF of the status of consideration by the Ministry of Foreign Affairs. A reminder email was sent in August 2017, however no response has been received so far.

129. The Heads of the Independent Redress Mechanism and the Independent Integrity Unit both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where the GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by the GCF are made only after the GCF has obtained satisfactory protection against litigation and expropriation in the country(ies), or has been provided with appropriate privileges and immunities.

130. The Programme envisages the implementation of three Components, which consist of relevant Outputs and Activities thereunder. The Funding Proposal currently states that the Executing Entities will be the Accredited Entity, the African Development Bank, the African Risk Capacity (specialized agency of the African Union) and the Governments of the Host Countries, acting through their respective ministries. However, where there is more than one Executing Entity for an individual Activity, the respective roles and responsibilities of each of those Executing Entities have not yet been clearly defined. Furthermore, while the Accredited Entity will enter into the relevant subsidiary agreements with each Executing Entity in accordance with the AMA, further details on other contractual arrangements to be entered into by the

Accredited Entity, Executing Entities and the final beneficiaries of the Programme are still required.

131. Moreover, the Accredited Entity requested from the Secretariat a deviation from the terms of the AMA to exclude the application of GCF's step-in rights for this programme, indicating that since this is a public-sector programme involving sovereigns and other international organizations as counterparties, it is not feasible for the Accredited Entity to allow GCF or any other party to take over its contractual relationship with the executing entities under the subsidiary agreements. Accordingly, and subject to, as a condition for execution of the funded activity agreement, the receipt by the Secretariat of relevant written confirmations from the Accredited Entity that the National Designated Authorities (NDAs) of each Host Country have been informed of this deviation to the AMA and its implications, an express provision has been included in the term sheet to allow for such deviation from the AMA. This means that, subject to Board approval, in case the Accredited Entity decides to discontinue programme implementation, the GCF will not have recourse to take over the Accredited Entity's role or appoint another party to replace the Accredited Entity, and the only alternative would be cancellation, without prejudice to other remedies available to GCF under the AMA.

132. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

- (a) Submission by the AE to GCF of a certificate or legal opinion, in form and substance satisfactory to the GCF Secretariat, within 120 days after Board approval, confirming that the AE has obtained all final internal approvals needed by it and has the capacity and authority to implement the proposed programme. In case the Board approval of the funding proposal is conditional on substantial modification of the funding proposal, in accordance with the terms of the AMA, the Accredited Entity shall have a period of 180 days to obtain its final internal approvals and to provide to the Fund such certificate or opinion;
- (b) Signature of the funded activity agreement in a form and substance satisfactory to the GCF Secretariat within 180 days from the date of Board approval, or the date the AE has provided a certificate or legal opinion confirming that it has obtained all final internal approvals, whichever is later; and
- (c) Completion of the legal due diligence to the satisfaction of the GCF Secretariat.

Independent Technical Advisory Panel's assessment of FP162

Proposal name:	The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW)
Accredited entity:	International Fund for Agricultural Development (IFAD)
Country/(ies):	Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and the Gambia
Project/programme size:	Medium

I. Assessment of the independent Technical Advisory Panel

1.1 Impact potential *Scale: High*

1. **Project overview.** The project's target Sahelian countries are Burkina Faso, Chad, The Gambia, Mali, Mauritania, Niger and Senegal. The project seeks to increase the resilience of smallholder farmers. Based on its theory of change,¹ the project's ultimate goal is to increase the resilience of smallholder farmers to climate change impacts. To do this, the following outcomes should be achieved:

- (a) Strengthened climate and weather information/services to support decision-making and planning in agroforestry and livestock, agricultural insurance products and services, and capacity development for farmers, government and the private sector;
- (b) Strengthened climate-resilient smart agroforestry and pastoral value chains, powered by reliable and affordable renewable energy sources; and
- (c) Reduced obstacles (financial market products and services / high premiums) to access agricultural insurance for governments and smallholder farmers to enhance resilience-building.

2. In order to accomplish these outcomes, the project proposes three strategic interventions: (i) climate risk preparedness; (ii) climate risk reduction; and (iii) climate risk transfer.

3. The project will run for 20 years, including the 5-year implementation period. It will directly target smallholder farmers, numbering 817,922 direct beneficiaries, and also cover 5.3 million indirect beneficiaries; representing 6.19 per cent of the total population of the seven countries (99,287,386).² It will also cover 296,000 ha of land.

4. **Greenhouse gas (GHG) mitigation.** A total of 21,446,499 tCO₂eq in mitigation is estimated from the project; 4.9 per cent will come from the use of solar energy for agriculture, irrigation and household use, while the remaining 95.1 per cent will come from climate-smart agriculture (CSA), land-use management (LUM), and sustainable management of forests (SFM).

5. The GHG emission reduction from energy will be achieved through the installation and use of 492 solar panels, and then the creation of a mini-grid for farmers not connected to any

¹ Annex on theory of change.

² World Bank source 2020.

diesel-powered grid. The solar energy source will electrify agricultural and irrigation facilities used in production and post-production activities. The 492 panels will be greenfield installations and, thus, potentially displace fossil fuel sources (mainly diesel and some biomass) in the targeted areas during the implementation stage. Each of the seven countries will set up an average of 70 mini-grids of 100 kWp/grid or an installed capacity of 7.0 MW. These grids will run 1,825 hours per year; daily effective insolation will be five hours per day, and the project assumes a 1 per cent decrease in panel efficiency per year. Climate-proofing against sandstorms will be integrated in the project installations.³ The reduction in total GHG emissions over the 20-year lifetime period of the project is estimated at 1,047,127 tCO₂eq. Potential leakage from the burning of biomass has been factored into the grid emissions using a factor of 0.8 kgCO₂eq/kWh. The methodology used for measurement, reporting and verification is based on that of the methodology approved by the Clean Development Mechanism⁴ (see table 1).

Table 1: Estimated GHG emission reduction via solar energy use

Timeline	tCO ₂ eq
Annual average of project emission reductions	52,006
Total project emissions for 6 years	336,174
Total project emissions by 2030 nationally determined contribution	548,796
Total project emissions by project lifetime – 20 years	1,040,127
Total emission reductions by 2045 – project lifetime	1,040,127

Source: Annex 3 EFA IFAD SAHEL

6. The GHG emission reduction will come from the activities on 296,000 ha of land (see table 2). These activities will include the implementation of CSA (e.g. annual and perennial cropping, judicious use of fertilizers, and climate-resilient seeds/crops), LUM (e.g. application of half-moon, and zai techniques) and SFM (e.g. improved management of dryland forests). It is estimated that a total of 20,406,372 tCO₂eq of emissions will be mitigated over a period of 20 years (see tables 3 and 4).

Table 2: Total area of land covered by CSA, LUM and SFM

Programme activity category	EX-ACT* final land use	Area (ha)
Sustainable forest management	Forest	40,000
Agriculture	Annual crop	60,000
Agriculture	Perennial crop	96,000
Grassland restoration	Grassland	100,000
Total		296,000

Source: Annex 22: EX-ACT Methodology and Monitoring (GCF SAHEL)

* The Ex-Ante Carbon-balance Tool (EX-ACT) is an appraisal system developed by FAO to provide estimates of the impact of agriculture and forestry development projects, programmes and policies on the carbon balance. The carbon balance is defined as the net balance from all greenhouse gases expressed in carbon dioxide equivalent emitted or sequestered due to project implementation as compared to a business-as-usual scenario.

7. The baseline assumption in the computation of emissions using the Ex-Ante Carbon-balance Tool (EX-ACT) analysis is that “the hectares of degraded land and of extremely degraded forests will remain degraded land and extremely degraded forests without the project. The baseline is neutral; the level of degradation is the same in the long term. On degraded land in Sahel countries, the level of biomass is around zero on crusted soils.”⁵ (see table 4).

³ IFAD response to second batch of questions from the Independent Technical Advisory Panel (TAP).

⁴ Clean Development Mechanism. 2021. *Methodologies: AMS-IA.: Electricity generation by the user --- Version 17.0*. Available at <<https://cdm.unfccc.int/methodologies/DB/KDHBNSAMLG4HC7WW9GMRJ2KEXZMY9S>>.

⁵ Annex 22: EX-ACT Methodology and Monitoring (GCF Sahel).

Table 3: Reductions per country (tCO₂eq)

Country	3 years	6 years	20 years
Burkina Faso	-962,635	-1,209,094	-3,509,377
Chad	-616,609	-787,717	-2,384,726
Gambia	-948,225	-1,224,704	-3,805,172
Mali	-895,585	-1,124,465	-3,260,678
Mauritania	-596,527	-752,392	-2,207,135
Niger	-611,730	-779,058	-2,340,788
Senegal	-689,694	-903,449	-2,898,496
Total	-5,321,005	-6,780,879	-20,406,372

Source: Annex 22: EX-ACT Methodology and Monitoring (GCF Sahel)

Table 4: Reductions per activity per country (tCO₂eq)

	Burkina Faso	Chad	Gambia	Mali	Mauritania	Niger	Senegal	Grand Total
Other Land Use Change	-1,098,295	-631,927	-1,443,267	-1,064,638	-613,300	-631,214	-1,054,041	-6,539,682
Annual Agriculture	-9,183	-9,183	-8,672	-9,183	-9,183	-9,183	-9,183	-63,768
Perennial Agriculture	-1,687,840	-1,306,690	-1,687,714	-1,521,339	-1,144,726	-1,268,146	-1,346,494	-9,962,948
Forest Degradation	-798,310	-516,495	-745,089	-745,089	-516,495	-516,495	-568,348	-4,406,322
Inputs & Investments	84,250	79,570	79,570	79,570	79,570	84,250	79,570	566,348
Total per country	-3,509,377	-2,384,726	-3,805,172	-3,260,678	-2,207,135	-2,340,788	-2,898,496	-20,406,372

Source: Annex 22: EX-ACT methodology and monitoring (GCF Sahel)

8. Leakage is assumed to be zero. The baseline assumption for forest degradation is that poor farmers in the Sahel region gather wood for fuel and extra income. With the resulting surplus on cereal production for families after the CSA interventions, poor families will have more cereals to sell and generate income. Cereal balance sheets of poor households in selected regions in the seven countries⁶ and calculations by the International Fund for Agricultural Development (IFAD) are based on an average annual cereal consumption of 200 kg/person in Sahel countries and cereal yields retrieved⁷ (see table 5).

Table 5: Cereal balance

Country/region	Mauritania/ Gorgol	Senegal/ Ranerou	Mali/ Kayes	Burkina Faso/Kaya
Number of people per poor household (a)	7	8	12	10
Number of hectares without project (b)	1	1.5	3	3
Average cereal yield (kg/ha) (c)	500	700	900	950
Production without project (kg) (d = b × c)	500	1,050	2,700	2,850
Household cereal needs (kg) (e)	1,400	1,600	2,400	2,400
Cereal balance without project (kg) (f = d - e)	-900	-550	+300	+450
Production with project (kg/ha restored) (g)	1,000	1,750	3,600	3,800
Cereal balance with project (h = g - e)	-400	+150	+1,200	+1,400

⁶ HEA Sahel. 2021. HEA Sahel. Available at <www.hea-sahel.org>.

⁷ IFAD response to second batch of questions from the independent TAP.

Source: FAOSTAT

1.1.1. Adaptation Impact

9. **Context of vulnerability.** The funding proposal targets vulnerable poor farmers; 8 out of 10 farmers in Sub-Saharan Africa rely on rain-fed agriculture and agropastoralism; and most households earn at least 55 per cent of their income from agricultural sources, reaching about 80 per cent in several countries.⁸ Poor agriculture infrastructure (e.g. low electrification, poor irrigation, limited water sources, weathered roads, and limited post-production facilities) exacerbates the problems facing farmers. Aggravating these vulnerabilities further is the poor state of operations of the national hydrometeorological agencies in these countries to provide reliable weather and climate advisories. As per the funding proposal: “hydro meteorological infrastructure capacity is the lowest of all the global regions, with observation network density (defined as the number of stations per 10,000 km sq.) as low as 0.4 in Niger, 0.5 in Mali and 1.6 in Senegal.”⁹ Since 1901, temperatures have been observed to have risen by an average of 1.9 °C. Moreover, precipitation has been observed to have declined, and has not recovered since the late 1960s (See Figure 2).. The frequency of droughts and flood incidents that began in the 1960s has been increasing since 1998. These observed changes in climate have adversely affected the crops and livelihoods of farmers in the Sahel region. The impact of climate also forces the migration of farmers to resource-rich areas, thus threatening the degradation of land and water resources in other territories, which in turn triggers conflict between farmers and pastoralists.

1.1.2. Historical observations and projections on climate

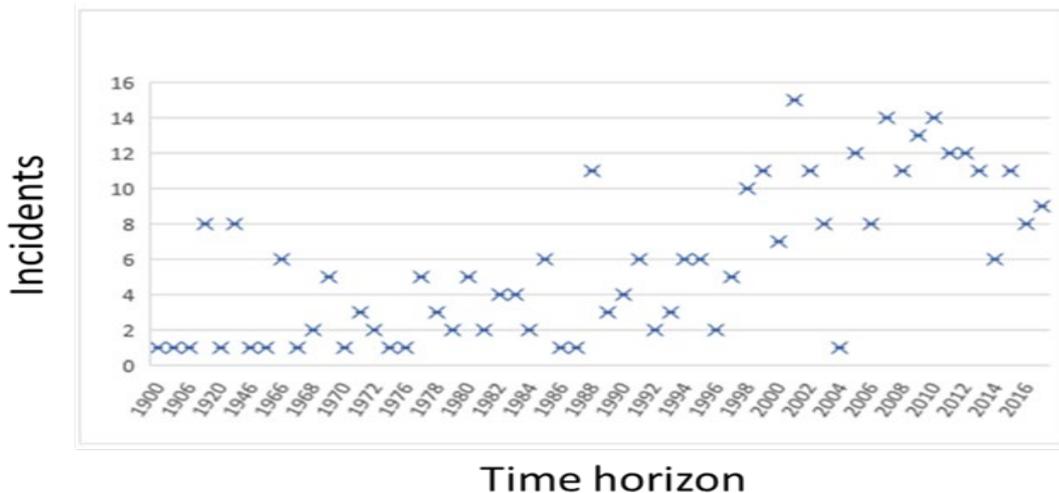
10. **Extreme events (1900–2019).** In recent decades, each of the seven African least developed countries (LDCs) included in the funding proposal have been experiencing declining rainfall at the same time as droughts, wildfires, desertification, intense rain, floods, locust outbreaks, and diseases, among others. Many of the disasters recorded in these countries have been hydrological, climatological, and meteorological in nature. They have fatally affected millions of people and impacted the food security of more than 24 million people in the Sahel region¹⁰. For the Sahel region in general, most disasters are hydrometeorological in nature. Droughts still affect the largest number of people on the continent, and floods occur frequently along the major river systems and in many urban areas. As presented in figure 1, the incidence of droughts and floods has been increasing since the 1900s.

Figure 1: Total drought and flood frequency in 10 African countries

⁸ Davis B, Di Giuseppe S and Zezza A. 2017. Are African households (not) leaving agriculture? Patterns of households' income sources in rural Sub-Saharan Africa. *Food Policy*, 67: 153–174. doi: 10.1016/j.foodpol.2016.09.018.

⁹ Funding proposal, para. 136.

¹⁰ Funding proposal, para 137.



Source: Emergency Events Database (EM-DAT)

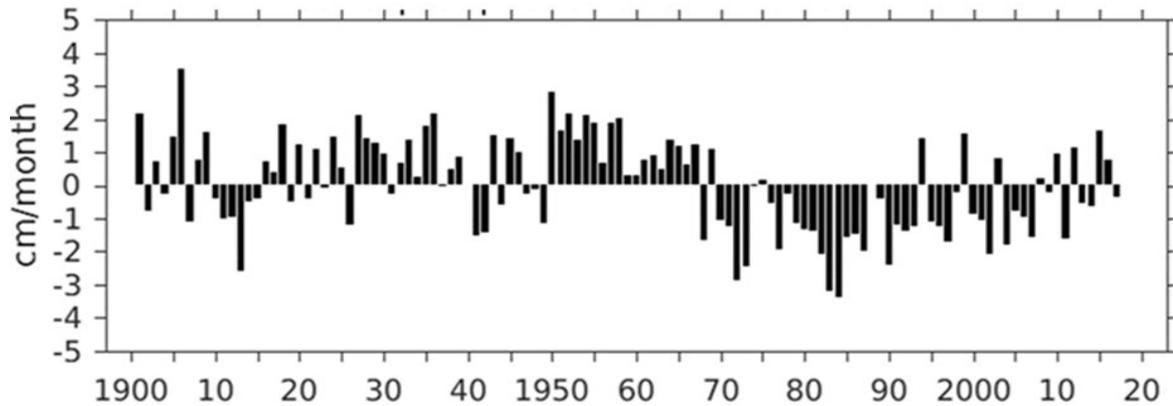
11. **Past observations: increasing temperature (1901–2018).** “Over West Africa and the Sahel, 2018 was the 7th warmest year on record. The rate of increase in temp was 2.27°C (from 1950–2018) and 3.88°C (1990–2018) per century (ACMAD, 2020). As may be expected, the largest trend ($0.023^{\circ}\text{C}/\text{year}$) occurs in the Inner Delta-Middle Niger Sub-Basin. This rate translates to a change in the average temperature of 0.85°C between 1970 and 2006 or, using the trend since 1901, an increase of 1.91°C and led to a 4-percent increase in global total runoff. Overlain on this has been a gradual warming of the region since the 1980s of between $0.3\text{--}1.0^{\circ}\text{C}$ (Padgham et al. 2013), with an increase of $0.2\text{--}0.5^{\circ}\text{C}$ per decade in some countries (Sylla et al., 2016) such as Ghana, la Cote d’Ivoire, Guinea, and Senegal. However, some parts of the northern Sahel (e.g., southern Mauritania, Mali and Niger and northern Burkina Faso) show little warming over this period. The overall warming has been accompanied by an increase in hot extremes, making the region a hotspot region for climate change (Turco et al., 2015). This warming may be contributing to some of the changes in precipitation extremes as well as high evapotranspiration of Surface Water supply of the main transboundary river basins.”¹¹

12. **Past observations: declining precipitation (1901–2017).** “The first part of the 20th century shows a predominance of anomalously wet years and decades, followed by a decline in seasonal rainfall totals during the latter half of the record, with overall low rainfall decades punctuated by devastating short-term droughts such as those of 1972 and 1983–1984. The Sahelian climate over the past decades has been dominated by the prolonged drought conditions during the mid-1960s to the mid-1980s (Hulme, 1992; L’Hote et al., 2002; Tarhule and Lamb, 2003), which reached peak extent in 1972 and 1984 with a 30% decrease in rainfall. Since the 1980s rainfall has not returned to pre-1960s levels. Precipitation has still not recovered completely since then, and drought continues to occur recurrently. For example, the droughts of 2011–12 hit many countries across the region (Masih et al., 2016). Despite this partial recovery, there is evidence of changes in the characteristics of the seasonal cycle of rainfall (Biasutti, 2019). There has been an increased number of rain days with wetting concentrated in the late rainy season but also more intense and intermittent, higher inter-annual variability, and a delayed onset and an early retreat of the monsoon season (Biasutti and Sobel 2009; Diallo et al. 2013; Seth et al. 2013; Hartmann et al. 2013; Ibrahim et al., 2014; Sanogo et al., 2015; Panthou et al., 2014) leading to earlier dry seasons and shorter rainy seasons. These have likely had impacts on agriculture and livelihoods in terms of changes

¹¹ Annex: Feasibility Study, para 19.

relative to traditional crop calendars, and potentially increased flooding and short-term drought.”¹² See figure 2.

Figure 2: Sahel precipitation anomalies, 1901–2017

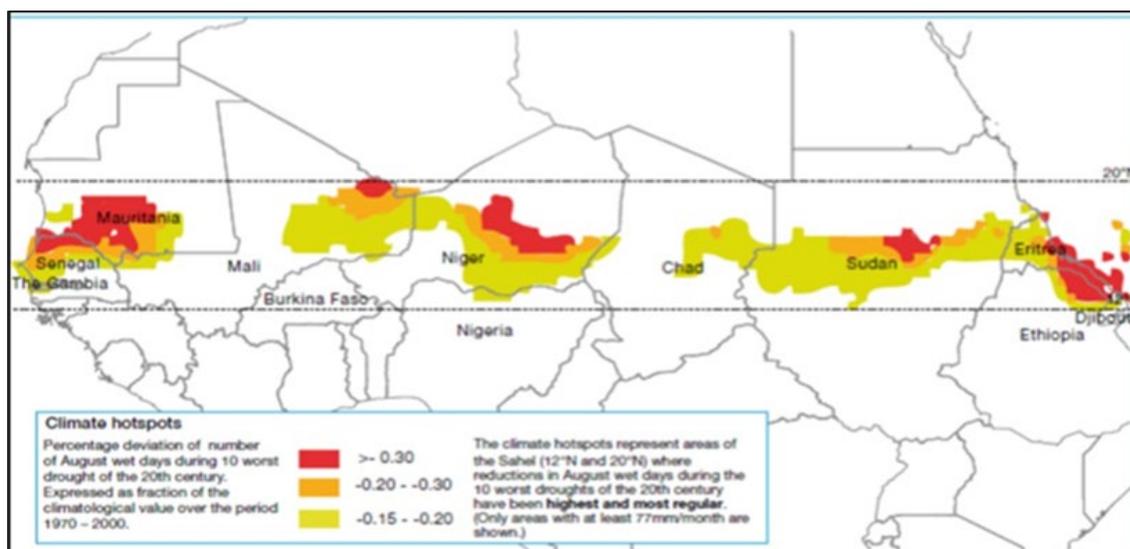


June through October averages over 20-10°N, 20°W-10°E. 1900-2017 climatology
Deutscher Wetterdienst Global Precipitation Climatology Centre data

Source: University of Washington, Joint Institute for the Study of the Atmosphere and Ocean & Deutscher Wetterdienst Global Precipitation Climatology Centre data

13. “An analysis of historical observations for the average precipitation for the month of August over the period 1990 -2000 in the Sahel, suggests the presence of at least three climate hotspots in the Sahel of which two are in the West Sahel: one lies along the most western part of the region (Senegal and Mauritania) with the second stretching between Mali and Niger. These climate hotspots experienced rainfall declines by up to 100% during the 10 most severe droughts of the 20th century (West Sahel countries report, to the UNFCCC, 2015).”¹³ See figure 3.

Figure 3: Sahel – climate hotspots



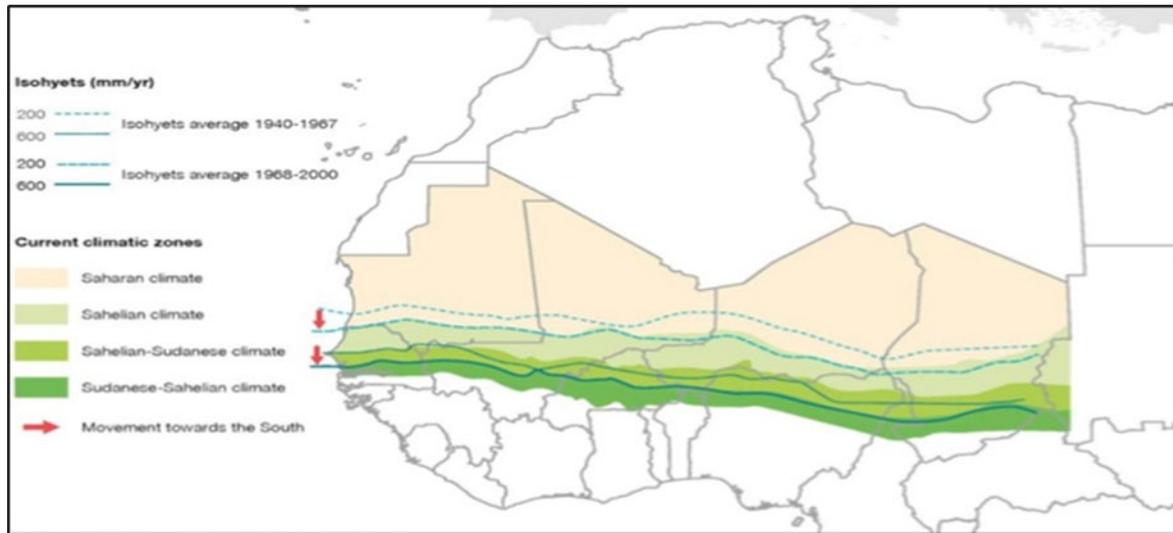
¹² Michela Biasutti, 2019, “Rainfall trends in the African Sahel: Characteristics, processes, and causes”, Wiley Interdisciplinary Reviews Climate Change. Jul-Aug; 10(4): e591. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6617823/>

¹³ Annex 2_GCF Sahel_Feasibility Study _ Nov, para 23

Source: UK Met Office Hadley Centre and OECD Sahel and West Africa Club Secretariat

14. “The report include observations of erratic rainfall, the shift of isohyets to the south, increased occurrences of dry spells, and severe multi-year droughts, such as the droughts in 1972-1990 and the more recent droughts over the last 10 years.”¹⁴ See figure 4.

Figure 4: Shifting of isohyets to the south



Source: OECD/SWAC. Regional Atlas on West Africa 2009

15. **Projections.** The Sahel is a fairly large region in the continent of Africa, and its future vulnerability to climate change has been well studied¹⁵. Because of the large area covered by the region, general circulation models (GCMs) are capable of capturing continental-scale climatology. The dynamic scaling down under CORDEX regional climate models (RCMs) applied on GCMs gives finer resolution projections for common parameters such as temperature and precipitation. The funding proposal used the following validated models to project future changes in temperature and precipitation: GCM CMIP3 was used under A2 and A1B emission scenarios, and GCM CMIP5 was used for the representative climate pathway (RCP) 4.5 and 8.5 scenarios; while the scaling down was accomplished using CORDEX RCM model. It is reported that the western Sahel subregion will experience an increase in temperature in the order of 4 °C, whereas the southern coastal subregion will experience an increase in surface temperature of up to 3 °C compared to the baseline of 1980–2010.

16. The projections of the two GCMs for precipitation indicate rather large intermodel variability. This is partially attributed to the inability of GCMs to resolve convective rainfall, as observed by Working Group 1 of the Intergovernmental Panel on Climate Change in its Fifth Assessment Report. However, different variations in the algorithm for the core CMIP5 GCM suggest that the projected rainfall in the Sahel will result in a wetter rainfall season with a small delay in the onset of the rainy season by the end of the twenty-first century with respect to the baseline of 1980–2010.¹⁶ However, the delay in the onset of the rainy season will not be a prominent feature for the projection during the 2020–2050 time frame, representing a projected climatology of the 2030s.

17. The RCMs provide for higher resolution projections, indicating a 5–10 per cent decrease in annual rainfall by the 2030s with respect to the baseline of 1971–2000 under the RCP4.5

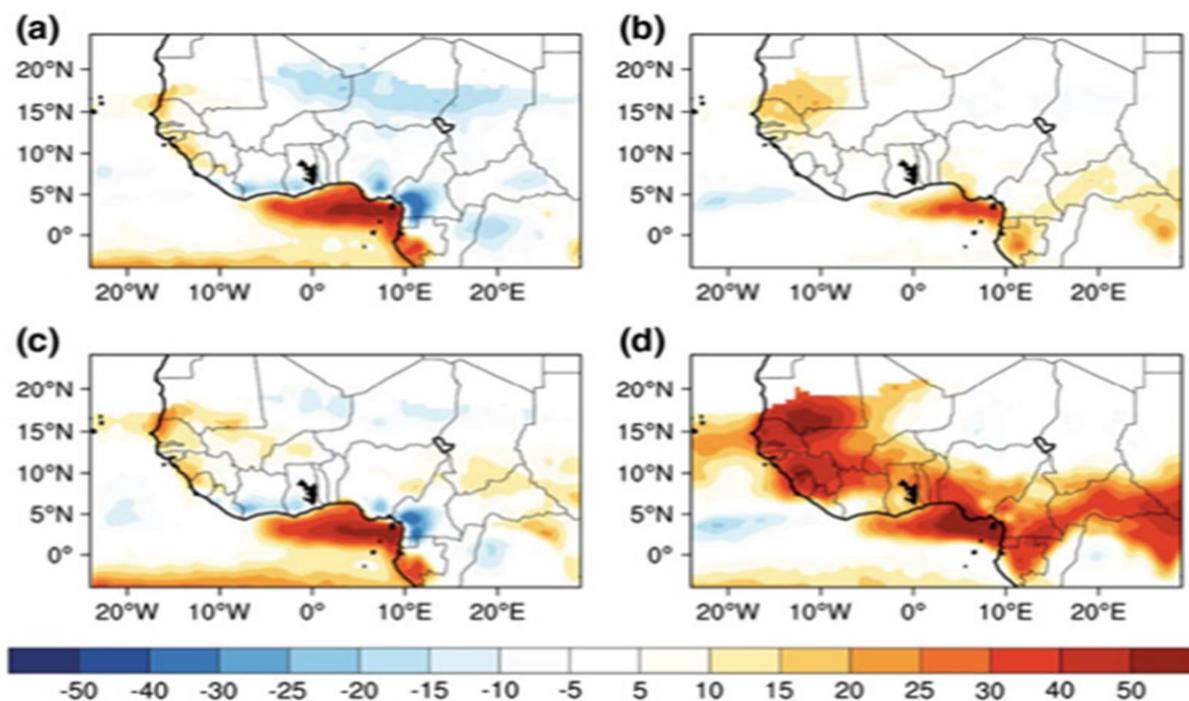
¹⁴ Annex 2_GCF Sahel _Feasibility Study _ Nov, para 23.

¹⁵ Meehl et al., 2007; Fontaine et al., 2011; Diallo et al., 2012; Monerie et al., 2012; Christensen et al., 2007.

¹⁶ Biasutti, 2013.

scenario. Such a decline in total annual rainfall will be accompanied by a slight lengthening of the maximum dry-spell length within the rainy season (see figure 5). The combination of increasing temperature and decline in total annual rainfall (see figure 6), coupled with a delay in onset of the rainy season in a known dry region, means much invigorated dryness and perhaps an increase in drought intensity. The model-driven scenario under RCP4.5 for the 2030s indicates that evapotranspiration will increase by 2.0–4.5 per cent, which is indicative of increased drought conditions. Such escalated drought conditions will tend to adversely affect moisture availability in the crop root zones, thereby leading to declining crop productivity as well as affecting the availability of water for livestock – both having a detrimental effect on agriculture- and agropastoral-based livelihoods in the Sahel region.

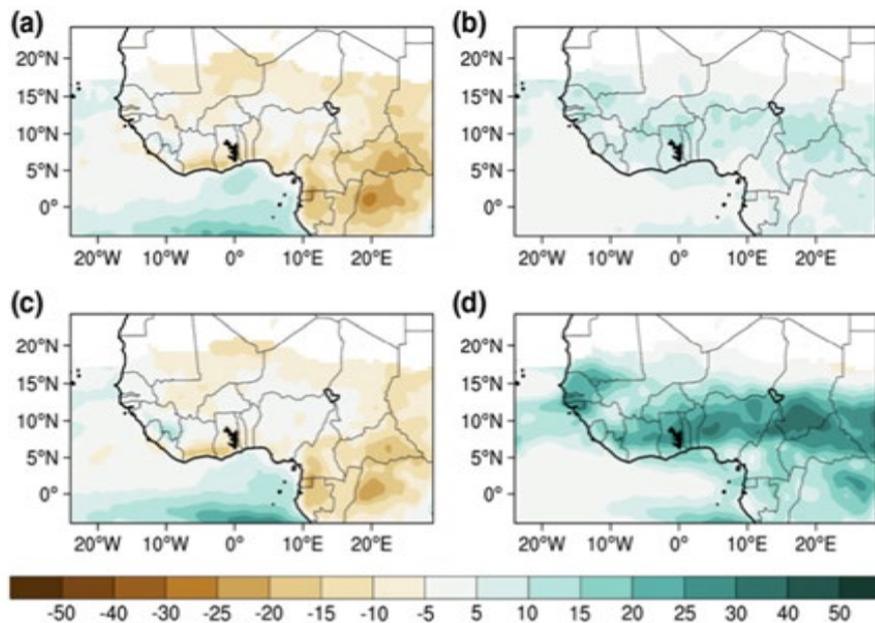
Figure 5: Changes in seasonal (May–September) mean maximum dry-spell length based on multimodel ensemble of CORDEX simulations for: (a) RCP4.5 (2036/2065); (b) RCP8.5 (2036/2065); (c) RCP4.5 (2071/2100); and (d) RCP8.5 (2071/2100)



Source: Annex 2_GCF Sahel_Feasibility Study_Nov¹⁷

¹⁷ Annex 2 GCF Sahel Feasibility Study citing Sylla et al., 2016a.

Figure 6: Changes in seasonal (May–September) mean intensity of precipitation events above the ninety-fifth percentile (95Ptot) based on multimodal ensemble of CORDEX simulations for: (a) RCP4.5 (2036/2065); (b) RCP8.5 (2036/2065); (c) RCP4.5 (2071/2100); and (d) RCP8.5 (2071/2100)



Source: Annex 2_GCF Sahel_Feasibility Study_Nov (See Footnote 15)

18. **Projection of extreme events.** “Climate projections based both on models and observations indicate that one of the most profound consequences of global warming is the likelihood of greater frequency and intensity of extreme weather events^{18,19}”

19. The climate rationale for this project is satisfactory. The climate analysis established the historical climatology of the Sahel region using the available 100-year historical data sets for temperature and precipitation (1901–2017) and disasters / climate extreme events (1900–2017). It then projected the future climatology using three regionally validated models that show continuation of the trends in rising temperature and inter-annual variability, but with decreasing precipitation, and occurrence of more extreme events, especially droughts and floods. Using CORDEX, the time slices for the future considered were 2036–2065 and 2071–2100 for the RCP4.5 and RCP8.5 scenarios to project temperature and precipitation trends.

20. **Impacts of climate change and variability and extreme events.** Given the reliance of the agriculture sector on rain-fed farming, the impacts will disproportionately affect people (farmers and communities whose population is projected to double by the end of 2040),²⁰ critical resources (the agriculture sector and ecosystems [i.e. water, land and forests]), built infrastructure (i.e. irrigation, roads, production and post-production facilities), and investments (e.g. for farmers, crop and livestock, farming tools and equipment; for businesses, farm inputs, loans and investments in the agriculture business value chain [BVC]; and for governments, public finance and development programmes). Extreme events such as prolonged droughts and flash floods will reduce farmers’ yields from crops and livestock, and/or wipe out farmers’ assets and tools of the trade. This will impact farmers’ ability to put food on the table and affect other basic needs (e.g. health, nutrition, education and jobs). The need to survive will force farmers and pastoralists to migrate or compete for scarce resources, such as water, grazing and

¹⁸ IPCC, 2013; Coumou and Rahmstorf, 2012; Groisman et al., 2004

¹⁹ Annex 2_GCF Sahel_Feasibility Study_Nov, para 38.

²⁰ Funding proposal citing World Population Prospects 2019. Available at <https://population.un.org/wpp/Publications/Files/WPP2019_DataBook-let.pdf>.

cropland, thus causing friction among them. Investors and financiers will raise the cost of doing business for farmers. Moreover, government, as resource provider of the last resort, will widen its fiscal deficits to the detriment of other developmental programmes. Given the interlinkages of these impacts, the business risks in this sector will increase and government's response to these problems will be stymied – all to the detriment of poor farmers and rural communities, who will thus become more vulnerable under this climatological scenario. The absence of reliable hydrometeorological agencies compounds the vulnerabilities of all stakeholders, simply by not being able to provide adequate and timely climate and weather advisories (e.g. early warning systems [EWS] on floods, droughts or extreme events) to make informed decisions. The limited availability of insurance products to insure the risks of farmers and business means that these products are resorted to as short-term stopgap measures at the local and national levels. This creates an unsustainable dependence by vulnerable farmers and communities on government relief and social programmes.

1.1.3. Actions to address the vulnerabilities

21. The funding proposal squarely addresses the vulnerabilities of the target farmers and communities, the government, and other stakeholders (e.g. business), and the barriers exacerbating such vulnerabilities. Through the combination of interventions on risk preparedness, risk reduction and risk transfer, it seeks to strengthen the absorptive, adaptive and transformative capacities of the target 817,922 farmers and the indirect 5.33 million beneficiaries (4.58 per cent of population, of which 50 per cent are women) living in rural communities and relying on ecosystems for livelihoods and food.
22. **Risk preparedness.** Risk preparedness will be strengthened beginning with the upgrading of the national hydrometeorological agencies (NHMAs) to standards of the World Meteorological Organization (WMO) in terms of facilities and personnel. The NHMAs will be rehabilitated, upgraded or constructed anew. They will be equipped with the latest equipment (e.g. automatic weather stations, rain gauges, super computers, and communication systems) and staffed by meteorologists newly trained on data collection, processing, impact-based forecasting, and other climate and weather services. Once established, access to NHMA improved climate services on agroclimatic information and the timely dissemination of actionable climate information will improve understanding or appreciation of the need for preparation and planning in farming and agropastoral activities to contrast rising temperatures, changes in precipitation, changes in planting and harvesting seasons, and the slow onset of prolonged drought or fast onset of flash floods due to intense precipitations. The set-up of EWS for climate extreme events (e.g. heatwaves, flash floods, storms and sandstorms), and the dissemination of risk advisories to both farmers and communities in general via available modern communications (e.g. radio and text messages) directly to farmers by the new or rehabilitated NHMAs will also enhance the climate and disaster risk readiness of farmers and communities as well as of the various stakeholders linked with the agri-based BVC. A series of awareness campaigns and capacity-building workshops with farmers, communities, and decision makers in the public and private sector will be conducted on the application of climate services and information in their activities or business operations. This activity is under component 1 Climate risk preparedness (i.e. output 1.1. Increased access to agroclimatic information services and early warning infrastructure to support integrated climate risks management, and output 1.2. Awareness-raising, capacity-building and institutional development on integrated climate risks management).
23. **Risk reduction.** Through a combination of awareness campaigns and capacity-building (e.g. workshops and seminars) and hands-on agropastoral/farmer field schools, risk reduction will be achieved by moulding the mindsets, skills and behaviour of farmers and communities. The training and skills development on CSA, LUM and SFM will be conducted on site or virtually, depending on COVID-19 protocols and restrictions. In addition to upskilling and education

training on CSA through agropastoral/farmer field schools, focused workshops on financial literacy and risk transfer mechanisms will be held.

24. Complementing this set of activities on farmer behaviour, another component of risk reduction will be the strengthening of agriculture and irrigation facilities used by farmers and agropastoralists in identified transhumance corridors. The interventions will include the construction of water and irrigation facilities. Other activities will focus on knowledge management and on developing knowledge products on integrated climate risk management for policy or planning inputs to each of the governments. These activities fall under component 2 Development of population resilience (i.e. output 2.1. Best available technologies, adaptation/mitigation practices adopted and implemented with agricultural insurance schemes, and output 2.1. Best available technologies, adaptation/mitigation practices adopted and implemented with agricultural insurance schemes).

25. **Risk transfer.** The introduction of risk management instruments at the level of communities (i.e. microinsurance) and countries (e.g. macroinsurance – sovereign climate-risk pools, and the Extreme Climate Facility) will further contribute to the increased absorptive, adaptive and transformative capacities of farmers, communities, agri-based BVC, and national governments. The management of residual risks through climate-linked microinsurance products will incentivize farmers to participate in the massive capacity-building, and eventually lead to the implementation of the new ways of conducting business activities under CSA, LUM and SFM. Macroinsurance for national governments will reduce their fiscal burden in financially supporting their affected poor populations both before and after major disasters. (However, Chad will aim for the integration of the disaster risk insurance pool within its budget planning.)

26. Each of the interventions should be viewed holistically in order to appreciate the impact of the funding proposal on the whole of the agri-based BVC. The funding proposal attempts to cover all bases, beginning with the NHMAs on climate services, and then continuing with the provision of climate-resilient agri-based infrastructure, the capacity-building of farmers along with the other agri-based BVC stakeholders on CSA and finance and investments, and the capping of climate insurance at the local and national levels for risk management.

1.2 Paradigm shift potential

Scale: High

27. The potential for paradigm shift from each of the interventions is high. These interventions have been tested in other countries; thus, it can be said they are not innovative. However, from the perspective of African LDCs that have not experienced these interventions before and will benefit from these integrated climate risk management approaches for the first time. Thus, they will be innovative and transformative.

1.2.1. Transformation of NHMAs and of government institutions' way of doing business due to climate services

28. Backed with modern NHMAs with quality equipment, evidence-based data and information, as well as highly trained meteorologists, the seven countries will be able to create access to reliable climate information (e.g. agroclimatological) and services (e.g. impact-based forecasting and EWS) for informed decision-making, initially by the stakeholders in agriculture. However, these NHMA climate services will also enable the operationalization of a climate-resilience agenda in the development and investment policies, strategies, plans, programmes and projects of government and private sector stakeholders. Decision makers in various sectors, for example, transport (e.g. aviation, maritime and land), urban planning (e.g. housing, energy management), social services (e.g. social welfare, education, technical and vocational education and training, and public health), public finance, budget, trade, finance and investment, among others, will be able to use impact-based forecasting to climate-proof their critical

infrastructures, enhance resilience of their programmes, and use EWS to manage the risks of climate extreme events and disasters. The use of climate services can enhance public institutions' responsiveness, the effectiveness of their public services, and the private sector's competitiveness by integrating appropriate climate adaptation measures in their development and investment plans. All in all, the availability of climate information services and EWS will enable the transformation towards a climate-resilient development pathway for public and private institutions.

1.2.2. Transformation of farmers and agriculture-based livelihoods

29. The targeted focus to address the vulnerability of farmers and their activities along the agri-based BVC through an integrated approach (i.e. risk preparation, risk reduction and risk transfer) will help form 817,922 climate-smart farmers as direct farmer beneficiaries and members of rural communities, which include 5.3 million indirect beneficiaries. The capacity-building component on CSA for farmers is the key component supporting transformation in their way of doing business. First, this will result in increasing the resilience of the farmers and agri-based BVC stakeholders through behavioural changes, such as the adoption of cropping calendar planning, zai and half-moon farming techniques, CSA, LUM, SFM, and the efficient use of resources (e.g. electricity from solar power, water for irrigation, and organic farm inputs). Second, there is the set of interventions on improving agricultural supply chain infrastructure from production to post-production through: rehabilitation; upgrading or construction of farm roads; irrigation; water sources in transhumance corridors; renewable energy sources; and production (e.g. nurseries and vegetable gardens) and post-production facilities. These will enhance the resilience of vulnerable resources, infrastructure and investments in the agriculture sector. This transformation will establish a new benchmark for farmers' productivity and sustainable farming activities. These activities will bring food to the table, increase incomes through the sale of surplus cereals and livestock, and further de-risk the activities of farmers and the agriculture sector.

1.2.3. Scaling up of sustainable and innovative finance

30. The de-risking of farmers and the agriculture sector will lead to a new era of innovative financial instruments that will be available, accessible, affordable and acceptable. The development of parametric microinsurance (e.g. weather index-based products) and climate-linked disaster risk insurance pools will attract financial resources from both the international development agencies and private financial institutions. The bundling of insurance with credit facilities (as well as agricultural inputs) is likely to enhance the accessibility of finance for farmers and other agri-based BVC activities. Given the lower risk perception and increased creditworthiness, the cost of doing business will also go down (e.g. interest rates,²¹ longer terms, and reduced collateral requirements). Due to the de-risking of farmers and the agri-based BVCs, and the important role of the agriculture sector in any COVID-19 recovery scenario, the increased need for financing by farmers and agri-based entrepreneurs will open up alternative or complementary finance sources. These will be made available through local development financial institutions (e.g. via on-lending, co-financing, and technical assistance grants from multilateral development banks) or private financial institutions. Financially inclusive products in general (e.g. digital finance) and Islamic finance catering to Muslim farmers may also be developed, considering that they form the majority of this population in

²¹ During the design, some microfinance institutions stated that they could lower the interest rate on their loans by 1 to 3 % if such measures were in place. AE response to second batch of questions from the independent TAP.

each of these countries. New Islamic financial products (e.g. climate takaful, musharaka and mudaraba) will be aligned with sharia principles.²²

31. The scaling up of finance will be built on the previous and ongoing initiatives of IFAD, the accredited entity (AE) in this region and in the agriculture sector (component 2). As per the AE, “the access to finance challenges have been addressed as financial institutions worked with farmers through cooperatives, unions or organizations.”²³ Loans to farmers in the region have improved due to the professionalization efforts of cooperatives, farmers’ organizations, and unions, rather than individuals, but also owing to the penetration of mobile banking. Access to financial resources geared towards preparation, planning, climate-proofing, or diversification of livelihoods or sources of income will also increase demand for new financial products and services from banks and non-bank financial institutions that may be affordable. During the design, some microfinance institutions stated that they could lower the interest rates on their loans by 1–3 per cent if such measures were in place. When asked if any of the activities under output 2.2 (Diversified livelihood through the promotion of income-generating activities) would be linked with financial institutions, the AE responded that they “will promote that under this programme and promote synergies with IFAD baseline investments.”²⁴

1.2.4. Scaling up of risk transfer mechanisms

32. Currently, insurance penetration and understanding are very low in the region. Thus, the potential replication or scaling up of the risk transfer mechanism is also high, especially after the implementation of integrated climate risk management programme. The use of microinsurance to reward farmers’ behaviour by practising CSA as envisioned under the funding proposal can be scaled up by government. The existing infrastructure for social programmes (i.e. cash transfers) could be used to target and enrol poor farmers.²⁵ The proposed microinsurance builds on the Rural Resilience Initiative of the World Food Programme (WFP R4). WFP R4 has already been successfully rolled out in eight countries on the African continent, with more than 500,000 beneficiaries insured in 2019. This will further pave the way for more enrolment of farmers in microinsurance. From a national standpoint, the outputs under component 3 – such as the development of studies (e.g. national disaster risk financing strategies for 7 countries, and 4 local contingencies planning for the 7 countries; and climate fiscal framework, tools and financing instruments to identify and quantify existing disaster risks, estimating the financing needs depending on the severity and frequency of the risks), review and assessment of the African Risk Capacity (ARC) agricultural, rangeland and drought models – will provide an enabling mechanism for the roll-out of a national macroinsurance (e.g. sovereign, climate-linked disaster risk pool) scheme per country. As per the ARC analysis, the risk of “widespread catastrophic drought in sub-Saharan Africa today could cost upwards of US \$3 billion in emergency assistance, which would put an unprecedented financial strain on African countries and donor countries’ aid budgets.”²⁶ These risk management tools will also further de-risk the countries as a whole and the priority sectors (e.g. agriculture). Currently, the approach on “bundling of services,” which essentially links microinsurance with other activities (e.g. purchase of inputs, and availing of loans), is already an innovation. While traditional banking and insurance products already exist to service farmers, the improved credit rating and the needs of farmers (especially Muslim farmers) can potentially trigger the development of more-inclusive financial services (e.g. Islamic finance, and digital finance), especially in the face of a pandemic scenario.

²² According to WFP, Islamic financial products are very limited in the Sahel region. AE response to second batch of questions from the independent TAP.

²³ AE responses to second batch of questions from the independent TAP.

²⁴ AE responses to third batch of questions from the independent TAP.

²⁵ Annex 2. GCF Sahel feasibility study, section 8.3.

²⁶ African Risk Capacity. 2021. *How the African Risk Capacity Works*. Available at <<https://www.africanriskcapacity.org/about/how-arc-works/>>.

33. **The alignment of the funding proposal with ongoing risk transfer programmes (i.e. WFP R4) and ARC.** ARC enables countries, through a pan-African response system, to strengthen their disaster risk management systems, and access rapid and predictable financing when disaster strikes to protect the food security and livelihoods of their vulnerable populations.

1.2.5. **Scaling up the CSA, LUM, SFM and renewable energy interventions**

34. The transformation of farmers and rural communities as CSA practitioners will further attract more farmers and rural communities to do the same.

35. The risk reduction efforts by means of propagating climate-resilient agriculture and the promotion of agroforestry production systems will largely rely on organizing training that involves the producers at the grass-roots level. The learning opportunities are important for smallholder farmers in order to safeguard their production systems, despite increased exposure to droughts and occasional floods. Moreover, the integration of production systems with product-specific value chains will also rely on imparting training and cross-learning involving farmers and cooperatives. Therefore, to this end, the project will create opportunities for learning.

1.3 Sustainable development potential

Scale: High

36. The sustainable development potential of the funding proposal is as follows.

1.3.1. **Environment, social and climate**

37. The project is rated category B. An environmental and social management plan per country has been prepared. Environmental and social safeguards studies for seven African LDCs will be prepared under component 1, Output 1.1 under risk preparedness. Among the key issues that will be monitored are the non-use of alien and invasive plant species, including genetically modified organisms, in the programme.

38. **Youth and gender.** Under component 1 (i.e. 1.2.4. Conduct gender and youth impact analyses and training of 100,000 women and 100,000 youth), there is a dedicated capacity-building component for youth and women. The knowledge products developed for women and youth will support policymaking and decision-making at the local and national levels. The enhancement of skills and training of vulnerable youth and women can effectively address youth migration and the empowerment of women. COVID-19 protocols will be followed. A gender assessment and action plan has also been prepared.

39. **Country breakdown of adaptation impacts on beneficiaries.** Women will benefit from the project. Of the direct and indirect beneficiaries, an estimated 9.4 per cent and 10 per cent, respectively, will be women benefiting from the project (see table 6).

Table 6: Adaptation impacts on women

Country	Adaptation impact on beneficiaries							
	Expected total no. of direct beneficiaries	Percentage of females relative to expected total no. of direct beneficiaries	Expected total no. of indirect beneficiaries	Percentage of females relative to expected total no. of indirect beneficiaries	Percentage of direct beneficiaries relative to total population	Percentage of female direct beneficiaries relative to total population	Percentage of indirect beneficiaries relative to total population	Percentage of female indirect beneficiaries relative to total population
Burkina Faso	85,000	5%	510,000	5%	0.43%	0.22%	2.6%	1.3%



Chad	164,500	10%	986,000	9%	7.21%	3.61%	43.2%	21.6%
Gambia	40,000	2%	240,000	2%	0.26%	0.13%	1.6%	0.8%
Mali	82,000	5%	680,000	6%	1.86%	0.93%	15.4%	7.7%
Mauritania	47,500	3%	293,500	3%	0.25%	0.12%	1.5%	0.8%
Niger	229,722	14%	1,608,054	15%	1.02%	0.51%	7.2%	3.6%
Senegal	169,200	10%	1,015,200	10%	1.07%	0.53%	6.4%	3.2%
	817,922		5,332,754					

Source: Annex 17 GCF-SAHEL Multi-Country Project Information

40. **Indigenous peoples.** The Sahel region is home to several ethnic groups. As per the stakeholder engagement plan, the funding proposal will deal with indigenous peoples in a “manner consistent with the Environment and Social Standard (ESS) 7 on Indigenous Communities to enable targeted meaningful consultation, including identification and involvement of IP [indigenous peoples] communities and their representative bodies and organizations; culturally appropriate engagement processes; providing sufficient time for IPs decision-making processes; and allowing their effective participation in the design of project activities or mitigation measures that could affect them either positively or negatively.”²⁷ ESS7 pertains to Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities. Under ESS 7, indigenous peoples are ensured “that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities. ESS7 is also meant to avoid adverse impacts of projects on Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.”²⁸

41. **Decent work and economic growth (Sustainable Development Goal [SDG] 8).** Under component 2 (i.e. output 2.2. Diversified livelihood through the promotion of income-generating activities), job generation will be accomplished. The combined effect of the three interventions (risk preparation, risk reduction and risk transfer) will improve the livelihood opportunities of farmers and agri-based BVC entrepreneurs due to their de-risking impacts on these groups.²⁹ The increased awareness and access to climate information, better understanding of basic financial products and microinsurance applications on finance, improved agriculture production, post-production facilities, and infrastructure (e.g. climate-proofed roads, and cheap renewable energy sources) will greatly enhance access to diversified jobs or livelihood opportunities at the level of farmers and small and medium-sized enterprises. Under output 1.2.5, 2000 cooperatives, SMEs or farmers organizations and 3 sets of capacity-building sessions (e.g. training, workshops or conferences) will be conducted in each of the seven African LDCs. COVID-19 protocols will be followed (see note 3).

42. **Good health and well-being (SDG 3).** The funding proposal has integrated COVID-19 protocols or measures in the course of implementing the programme, especially during the

²⁷ Annex 7: Summary Stakeholder Engagement Plan, Section 7.2

²⁸ World Bank. 2021. *Environment and Social Standards 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities*. Available at <<https://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards>>.

²⁹ AE response to second batch of questions from the independent TAP.

stakeholder engagement. This will help increase the awareness and behavioural change needed to prevent the spread of the virus – a pandemic that can derail the programme. The stakeholder engagement plan incorporates the following measures: “Trainings on safe labor practices, and transports, access to more protective equipment such as masks and gloves, restrictions on workers on producer’s field, use of drones and other digital extension tools for labour and input saving practices, shared mechanization, digital marketing platforms and logistics, sanitary and phyto-sanitary controls amongst other. With regard to mobility and stakeholder engagement, IFAD has developed design guidelines which recommend virtual consultations wherever the risk of COVID contamination is high. For areas where, the risk is high the remote design is prioritized.”³⁰

43. Of the 163,584 food-insecure households, 122,688 (75 per cent) are expected to improve their well-being. Overall, the improved cereal food surplus will enable rural families to secure food for the table and have enough surplus for sale.

1.3.2. Partnerships for goals (SDG 17)

44. **Partnerships on climate services.** The funding proposal will also strengthen the regional partnerships at the community, institutional, country, regional and international levels. At the international and regional levels, the upgrading to WMO standards of the new hydrometeorological agencies will foster a new era of collaboration among the WMO and centres of excellence (e.g. African Centre of Meteorological Application for Development, and AGRHYMET), and neighbouring Sahel LDCs. This will be effected through the constant sharing of climate data and information, and new services such as impact-based forecasting and EWS. The IFAD strategy on South-South and Triangular Cooperation among the seven African LDCs will also strengthen relationships in climate risk management among the African LDCs. The South-South and Triangular Cooperation will facilitate exchange visits between farmers and high-level government representatives and other partners. These will include technical services, the private sector, insurance companies, representatives of regional organizations of agriculture producers, women and youth, organizations working in protected areas, implementing partners, and traditional authorities.

45. **Partnerships on climate risk management.** The development of weather index-based insurance and disaster insurance at the macrolevel will also foster collaboration among financial institutions at the local, regional and international levels. This will be triggered by the need to develop innovative risk management products mutually catering to the needs of the farmers, agri-based BVC entrepreneurs as clients, and the public and private sector institutions as business partners. Among the institutions strengthening their partnerships are local financial and insurance institutions, and ARC, WFP, African Development Bank (AfDB) and IFAD. The AfDB Africa Disaster Risks Financing Programme (ADRFi) will play a key role in promoting disaster risk financing on the continent and in assisting countries to access both capacity-building and disaster risk transfer solutions as part of their long-term resilience-building efforts (ARC on macroinsurance, and WFP on microinsurance are patterned after WFP R4).

46. **Community partnerships.** The commonality of interventions across the seven African LDCs will help reduce the potential conflicts arising from access and use of critical resources such as land, water and ecosystems. This will strengthen understanding and collaborative partnerships at the government and community levels, especially at the borders where transhumance corridors exist.

1.3.3. Economic co-benefits

³⁰ Funding proposal, para 126.

47. The project is expected to generate employment opportunities, especially for women and youth, representing 50 per cent and 40 per cent, respectively, of all beneficiaries of the project. It is anticipated that agricultural and agroforestry-based productivities will be enhanced due to increased resilience, access to climate information and services for forecast-based financing and programmes, access to insurance schemes, etc. Improved water infrastructures will enable farmers to offset rising moisture stress during critical crop growing periods, thereby enhancing crop yields.

1.3.4. Social co-benefits

48. Higher levels of production will have significant social benefits in the form of reduced food insecurity and less out-migration of male community members in search of alternative employments in distant places. The programme will address health risks posed by the use of biomass to the immediate users, such as burns and direct inhalation of toxic PM 2.5 particles, by replacing slash-and-burn practices with CSA. It will generate positive impacts through decentralized electrification, and improved income and livelihoods for smallholder farmers and rural communities. Integrated landscape management will promote the multifunctionality of landscapes and provide a mechanism that will enable local stakeholders to reduce conflicts among different types of specialized resource users who differ in their dependence on a range of ecosystem services (e.g. herders, farmers or fishers). This work will address conflict over natural resources, which may be climate-induced.

1.4 Needs of the recipient

Scale: High

49. The primary recipients under this funding proposal are the 817,922 farmers and 5.3 million indirect beneficiaries belonging to the rural communities. Other recipients are the hydrometeorological agencies. Next are the insurance/financial institutions (i.e. insurance companies), the government as a whole, and the needs of the ecosystems.

1.4.1. Need for climate services

50. The needs of national meteorological and hydrological services are to be met through upgraded, rehabilitated and newly equipped facilities with modern automatic weather stations, rain gauges, computers, and communications equipment that are on a par with WMO standards. Meteorologists are to be trained to collect, analyse, process and interpret data, prepare impact-based forecasts and early warnings, and disseminate these climate (and weather) services information for use by all decision makers. This new set-up will enable NHMAs to provide timely and relevant climate (and weather) data and information as well as EWS for use by the various stakeholders, beginning with the farmers, communities, various public and private sector planners and decision makers, and the regional centres of excellence. Chief among these decision makers are those working in micro, small and medium-sized enterprises (MSMEs) of the agri-based BVC, and those financial institutions strengthening the financial infrastructure, such as insurance, bank and non-bank financial institutions and microfinance entities. These needs are addressed under component 1.

1.4.2. Needs of farmers

51. Farmers need food, improved incomes, and sustainable livelihoods. These needs are to be met through the combined interventions on behavioural changes, financial literacy, sustainable use of resources, availability of resilient infrastructure (e.g. road, renewable energy power, water and irrigation) and agri-based BVC facilities (post-production to markets), and access to risk transfer mechanisms. Farmers and rural communities as a whole will improve their capacities to produce more harvests for food needs and a surplus for income generation. The combined effect of de-risking farmers as clients and their agri-farming businesses will

enable them to access finance to invest in their preparation and planned diversification of farming businesses. These needs are addressed under components 1, 2 and 3.

1.4.3. Needs of government and the private sector (i.e. insurance companies and users of insurance products)

52. The needs of insurance companies are to be met beginning with reliable data from NHMAs and other government or private sources, then from farmers regarding their crops and livestock and triggering thresholds, and from financial institutions on priority coverages in support of their credit facilities, as well as from MSMEs in the agri-based BVC on critical supply chains. These data and information will enable insurance companies to design appropriate risk transfer instruments in support of farmers and in close collaboration with WFP (with its microinsurance as patterned after the WFP R4 programme), and in support of government in close collaboration with ARC (with its macroinsurance, like the sovereign risk pool). With the combined interventions in place, government fiscal burdens to address the losses and damage of vulnerable poor farmers and communities will be reduced, and government will be enabled to focus on other pressing sustainable development issues. These needs are addressed under component 3.

1.4.4. Needs of ecosystems

53. The combined intervention on teaching farmers how to do CSA, LUM and SFM and on building resilient infrastructures (e.g. water wells, and solar-powered energy sources) will directly address the need to reduce the pressures of land degradation and deforestation on ecosystems. These needs are addressed under components 1 and 2.

1.4.5. Absence of alternative financing

54. Sahel countries have been experiencing abject poverty, often due to major crop losses incurred through prolonged droughts. Many of these countries belong to the African LDC group, where there is a dearth of financing for the economic and social agendas of the participating countries. However, climate-related services are central to addressing the root cause of their high rates of poverty. Creating access to finance and linking agricultural and agropastoral production systems with value chains are critically important steps. However, the participating countries have little means to mobilize the necessary financing for the project. As many of the root-cause barriers need to be addressed with public financing, there is hardly any private sector to come forward and take the responsibility of financing such a project. This is why it appears that GCF is the only viable alternative financing window that could extend its support towards financing the project.

55. The institutions, especially the NHMAs, need immediate support to acquire hydrometeorological equipment, modelling capacities and other support so that they can provide early warnings in the seven participating countries. The MSMEs and agri-based BVCs need support to operate for the promotion of value chains, so that farmers can have better returns from their agricultural production. This project has elements that will offer much-enhanced institutional capacity-building support.

1.5 Country ownership

Scale: High

56. The funding proposal was formulated through a series of consultations during the design phase in 2019. IFAD consulted many stakeholders, especially rural and farming communities³¹ including civil society organizations and non-governmental organizations in

³¹ Annex 7, section 8, Summary of consultations.

several missions. Among the stakeholders consulted were government authorities (e.g. African LDC nationally designated authorities, finance, agriculture, environment, and energy), MSMEs, cooperatives, and women and youth representatives.

57. The seven participating countries are parties to the United Nations Framework Convention on Climate Change (UNFCCC), and have signed and ratified the Kyoto Protocol. By ratifying the UNFCCC, these countries have committed to implementing measures to adapt to climate change and reporting on their nationally determined contributions (NDCs). This programme will contribute to the implementation of objectives of the three Rio conventions ratified by all countries, including the UNFCCC, as well as the Paris Climate Agreement, the SDGs, and the Sendai Framework for Disaster Risk Reduction.

58. This programme is fully aligned with the countries' national development plans, and their national commitments on climate mitigation and adaptation included in their national adaptation programmes of action, national climate change policies and strategies, NDCs, national communications, the SDGs, national strategies for disaster risk reduction, and intended nationally determined contributions.

59. The programme is also aligned with the ongoing investment programmes in the Sahel region. Chief among these are those of GCF, IFAD (as the AE), AfDB (executing entity [EE]) via ADRiFi, ARC (EE), and WFP (EE):

- (a) The Great Green Wall (GGW) is a GCF flagship project. The GGW is a GCF umbrella programme aiming to restore 100 million hectares of degraded land measuring 15 km × 8,000 km in the African continent, and helping to sequester 250 MtCO₂e and create 10 million green jobs. The GGW will serve as a framework for planning and programming investment in climate resilience in the Sahel region.
- (b) IFAD is linking its baseline investment programmes covering the seven Sahelian countries.³² The funding proposal will build on the success of IFAD programmes for farmers and the agriculture sector focusing on “risk mitigation strategies, which promote the adoption of techniques and behaviors that reduce climate impacts on production and profitability, and smallholder farmers’ coping strategies towards more comprehensive climate risk management approaches to improving resilience to climate shocks.”³³ IFAD is also to become the lead agency for the GGW.
- (c) The AfDB is the premier pan-African development institution promoting economic growth and social progress across the continent. The AfDB will support the programme through ADRiFi. ADRiFi focuses on: disaster risk management programme development; access to sovereign risk transfer support; and programme management and coordination. ADRiFi will work closely with microinsurance companies, and local financial institutions (banks and microfinance institutions) to better link macroinsurance, microinsurance, and loan products. ADRiFi will run from 2019 to 2023 in partnership with ARC.
- (d) ARC is comprised of the ARC Agency (which hosts the secretariat and conducts ARC advisory and capacity-building activities), and the ARC Insurance Company Limited (which is tasked with delivering risk transfer services). ARC has a track record of insuring 58 million people through 41 million insurance policies worth USD 600 million. With the Strategic Framework 2020–2024, ARC will scale up its operations, innovate new risk management products, and enhance disaster risk management in Africa.
- (e) WFP is a leader in innovative microinsurance solutions (e.g. index-based insurance, and WFP R4) that can complement measures strengthening access to natural and financial capital, and provide vulnerable populations with an effective safety net against climate

³² See table 7 of IFAD baseline investment in the funding proposal.

³³ Funding proposal, Section A.20.Executing Entity Information

shocks and stresses. WFP has very strong experience in working with various international organizations, non-governmental organizations, civil society, and the private sector to enable people, communities and countries.

60. All seven countries have issued a no-objection letter, and the programme has been included in their respective GCF country work programmes. The no-objection letters were all the same, very general in their statements, and without reference to any specific climate-related policy, strategy, plan, programmes or activities. Bilateral agreements on immunities and privileges between GCF and African LDCs have remained pending since 2015.

1.5.1. **ARC output 1.1.7 and activities under output 1.1 (component 1) and all activities under output 3.2 (component 3)**

61. The AfDB will handle the component on microinsurance and macroinsurance (output 3.2. of component 3). It will also coordinate with countries on the implementation of activities under output 1.1. of component 1 on risk preparedness.

1.6 Efficiency and effectiveness

Scale: High

62. The total project cost is budgeted at USD 143.3 million, with the following breakdown: GCF, USD 82.4 million (57.8 per cent); IFAD (AE), USD 30.3 million (21.2 per cent); AfDB (EE) (via ADRiFi), USD 22.9 million (16 per cent); and ARC (EE), USD 7.2 million (5 per cent). Total co-financing is budgeted at USD 60.5 million (42.4 per cent). The GCF investment is able to attract an additional 73 per cent of co-financing. For every GCF USD 1.0, it would be able to raise USD 0.73 in co-financing.

63. GCF project funding costs are allocated mainly to the development of the risk transfer mechanism (at 47.56 per cent), followed by the risk reduction initiatives (at 35.73 per cent) and then the risk preparedness activities (at 13.45 per cent). Specific allocations are presented in table 7.

Table 7: Project funding allocation

Component	Output	Financing source	Total (USD million)	Allocation to total project cost (%)
1. Climate risk preparedness	1.1. Increased access to agroclimatic information services and early warning infrastructure to support integrated climate risks management	GCF	11.621	8.11%
	1.2. Awareness-raising, capacity-building and institutional development on integrated climate risk management.	GCF	7.661	5.35%
Total component 1			19.282	13.46%
2. Development of population resilience	2.1. Best available technologies, adaptation/mitigation practices adopted and implemented with agricultural insurance schemes	GCF	23.153	16.15%
	2.2. Diversified livelihoods through the promotion of income-generating activities	IFAD	28.064	19.58%
Total component 2			51.217	35.73%
3. Risk transfer	3.1 Access to microinsurance	GCF	30.255	21.11%
	Output 3.2. Sovereign risk-transfer mechanism (macroinsurance)	GCF	7.748	5.41%
		AfDB-ADRiFi	22.923	15.99%
		ARC	7.239	5.05%
Total component 3			68.165	47.56%
Programme management	Regional and country project management unit established	GCF	2.412	1.68%



and coordination (PMC)	Regional and country project management unit established	IFAD	2.251	1.57%
Total PMC			4.663	3.25%
Total GCF project cost	82,849,900.00		57.8%	
Total co-financing (IFAD/ADRIFI/ARC)	60,477,000.02		42.2%	
Total budget (GCF + co-financing)	143,326,900.02		100%	

Source: Annex 3 EFA IFAD SAHEL

64. GCF funds have been allocated as equally as possible among the seven countries. An average of 14.8 per cent of the grant money was distributed to each (see table 8).

Table 8: GCF funding and mitigation co-benefits by country

Country	Estimated GCF funding allocation (USD)*	Estimated GCF funding allocation (%)**	Estimated co-financing allocation (USD)	Estimated co-financing allocation (%)	Mitigation
					Expected total emissions avoided (tCO ₂ eq)
Burkina Faso	11,834,017.05	14.28%	8,65	14.28%	-3,509,377
Chad	11,965,675.23	14.44%	8,95	14.78%	-2,384,726
The Gambia	11,477,425.23	13.85%	8,25	13.62	-3,805,172
Mali	12,051,330.82	14.55%	8,91	14.71%	-3,260,678
Mauritania	11,667,300.23	14.08%	8,39	13.85%	-2,207,135
Niger	11,905,374.21	14.37%	8,65	14.28%	-2,340,788
Senegal	11,948,777.25	14.42%	8,75	14.45%	2,898,496

*Funding allocation in USD amounts is preferred but if exact amounts are not available allocation in percentage should be provided

**If funding allocation in USD amounts is provided, allocation in percentage can be left blank

Source: Annex 17 GCF Multi Country Project-Program-Information

1.6.1. GCF funding by type of activity category

65. The project activities can be described as follows: (i) capacity-building (e.g. training, workshops and awareness) is the largest type of activity under risk reduction initiatives of farmers (output 1.2); (ii) knowledge product development and dissemination is also prominent under output 1.2; (iii) partnerships development is focused under outputs 1.2 and 3.2; (iv) integration of soft infrastructure components (e.g. systems, software and manuals) is highlighted under risk reduction (output 2.2) and risk transfer components (output 3.1); and (v) construction of hard infrastructure components (e.g. construction of facilities, and purchase of equipment) is evident under risk preparation focusing on NHMAs (output 1.1), resilient agri-infrastructure (output 2.1), and developing microinsurance (output 3.1) (see table 9).

Table 9: Breakdown of activity categories per project component

	Capacity-building (training, workshops, awareness)	Knowledge product and dissemination	Partnerships	Soft components of project (e.g. systems, manual, software)	Hard components of project (e.g. construction, equipment)	Total	GCF share of total budget
Output 1.1	2.0%	3.3%	2.0%	3.0%	89.7%	100.0%	100.0%
Output 1.2	52.7%	25.2%	13.9%	8.2%	0.0%	100.0%	100.0%
Output 2.1	1.4%	1.4%	1.4%	15.2%	80.6%	100.0%	100.0%
Output 2.2	2.6%	2.6%	2.6%	40.8%	51.4%	100.0%	IFAD

Output 3.1	5.5%	7.6%	5.5%	80.2%	1.2%	100.0%	100.0%
Output 3.2	13.5%	17.2%	13.5%	55.8%	0.0%	100.0%	20.4%
Output 4.0							3.5%

Source: The independent TAP assessment

1.6.2. Cost-effectiveness and efficiency

66. The GHG emission reductions of the project will come from two sources: (i) the use of solar photovoltaic systems for microgrid applications on agriculture; and (ii) implementation of CSA, LUM and SFM.

67. The GHG emission reductions from renewable energy applications will amount to 1,040,127 tCO₂eq over the 20-year life of the project. The emissions reduced during project implementation during the 6 years will be 336,174 tCO₂eq. The cost of using GCF grant funds is estimated at USD 79.65/tCO₂eq, while the overall cost of carbon reduced using total project costs is estimated at USD 137.87/tCO₂eq (Refer to tables 1 and 11).

Table 10: Estimated GHG emission reduction via solar energy use

Total project emissions for 6 years (tCO ₂ eq)	336,174
Total project emissions by 2030 nationally determined contribution (tCO ₂ eq)	548,796
Total project emissions by project lifetime – 20 years (tCO ₂ eq)	1,040,127
Total emission reductions by 2045 – project lifetime (tCO ₂ eq)	1,040,127

Source: Annex 3 EFA IFAD SAHEL

Table 11: Cost of GHG emissions reduced from the renewable energy project (USD/tCO₂eq)

Total amount (USD million) (a)	143.4
GCF funding (USD million) (b)	82.85
Total project emissions by project lifetime (tCO ₂ eq) – 20 years (c)	1.04
Estimated total cost per tCO ₂ eq (USD) (d = a/c)	137.88
Estimated GCF cost per tCO ₂ eq (USD) (e = b/c)	79.66

Source: Annex 3 EFA IFAD SAHEL

68. The GHG emission reduction from activities on CSA, LUM and SFM will amount to 20,406,372 tCO₂eq over the 20-year life of the project. Emission avoidance will be greatest in The Gambia, and smallest in Mauritania (see table 12). The estimated cost from the CSA, LUM, and SFM activities is USD 7.02/tCO₂eq; based on GCF costs, it is USD 4.06/tCO₂eq (see tables 12 and 13).

Table 12: GHG emission reductions per country

Country (rank)	Mitigation	
	Expected total emissions avoided (tCO ₂ eq)	Estimated percentage contribution to total (%)
Gambia (1)	3,805,172	18.6%
Burkina Faso (2)	3,509,377	17.2%
Mali(3)	3,260,678	16.0%
Senegal (4)	2,898,496	14.2%
Chad (5)	2,384,726	11.7%
Niger (6)	2,340,788	11.5%
Mauritania (7)	2,207,135	10.8%
	20,406,372	100.0%

Source: Annex 22: EX-ACT Methodology and Monitoring (GCF Sahel)

Table 13: Cost of GHG emissions reduced from CSA, LUM and SFM

Total amount (USD million) (a)	143.4
GCF funding (USD million) (b)	82.85
Total project emissions by project lifetime (tCO ₂ eq) – 20 years (c)	20.41
Estimated total cost per tCO ₂ eq (USD) (d = a/c)	7.03
Estimated GCF cost per tCO ₂ eq (USD) (e = b/c)	4.06

Source: The independent TAP Assessment

1.6.3. Financial viability and other financial indicators

69. The projected economic internal rate of return (EIRR) shows a positive net present value (NPV) of USD 123.02 million, for an internal rate of return (IRR) of 29 per cent. The positive NPV and IRR represent the value of avoided “losses and damages” due to the implementation of the project. These avoided damages represent the reduced GHG emissions and impacts of drought.³⁴ A 16-year period was used for the discounting of cash flow to match the project lifetime operation and maintenance cost, which was estimated at 3 per cent per annum (see table 14).

Table 14: Economic internal rate of return, sensitivity analysis

	Damages avoided (NPV)	Damages avoided (IRR)	Hurdle rate
Base case	USD 123.02 million	29%	10%
Costs +20%	USD 100.83 million	24%	10%
Benefits -20%	USD 76.22 million	22%	10%
Costs +20% and benefits -20%	USD 54.03 million	18%	10%

70. The projected positive NPV and high IRR (with 10 per cent as the hurdle rate) demonstrate that the strategic interventions from this project are expected to improve farmer productivity and increase compensation for crop losses during drought. Conservative assumptions were used in computing the EIRR.^{35,36,37}

³⁴ For the “avoided loss and damages,” in lieu of crop losses – owing to the absence of data availability – agricultural productivity for each LDC (average agricultural value added per capita for the period 2008–2018) is used. Per the AE, the “agricultural value added estimate used as assumed to be constant the next 20 years but the damage avoided can be expected to increase due to climate change also.” Agricultural productivity is then multiplied by the lower bound of direct beneficiaries from current IFAD projects. A conservative project benefit figure of 0.5 per cent increase in value added is used for agricultural value added, which is similar to the estimates used to appraise investments in early warning systems in Africa by the World Bank and the United Nations Development Programme. (Source: AE responses on third batch of questions from the independent TAP.)

³⁵ Only the fund flows benefiting vulnerable farmers were considered. Excluded from the analysis are the co-benefits on capacity-building of farmers (e.g. financial literacy programmes, and climate-smart agriculture) and institutions (e.g. hydrometeorological institutions, financial institutions, and MSMEs), knowledge development and dissemination (e.g. hydrometeorological institutions, insurance, and micro finance), partnership development, and tackling climate change impacts.

³⁶ Per the AE, the economic analysis covers only the use of renewable energy and not the carbon sequestration and emission avoidance from the Climate Smart Agriculture (CSA), Land Use Management (LUM) and Sustainable Forest Management (SFM) under output 2.1. GHG emissions mitigated by CSA, LUM, Assisted Natural Regeneration (ANR) were excluded because “these measures are based on changes in behavior of the farmers and the value may range significantly.” As per the AE, “including the benefits from this in the economic analysis will lead to a return on investment that is unrealistic and make a case for private sector investment and not GCF. If the high level of carbon can be captured from the project then a private sector should be able to make that investment and get credit for the carbon captured. Carbon benefits in this case are secondary and not the primary reason why these practices are carried out.”

³⁷ Carbon price is assumed to be USD 5/tCO₂eq and to increase by 2.5 per cent per year. This price assumption is at the lower end of the international carbon market prices, ranging from USD 1/tCO₂eq to USD 119/tCO₂eq, with half of the covered emission prices in the USD 10/tCO₂eq range. South Africa’s carbon price is about USD 7/tCO₂eq.

71. When independent Technical Advisory Panel (TAP) requested AE to clarify if the cost-benefit analysis already incorporated the uncertainties of climate impacts and proposed climate interventions, considering that a weak climate rationale leads to higher uncertainty on the impacts of climate and the effectiveness of costs and benefits of the interventions, AE response implied that it is already included and that the: “uncertainty of climate change in this case does not significantly affect the benefits captured in the project. Benefits captured such as carbon emissions and avoided damages due to drought are expected to be higher due to climate change projection.”³⁸

72. The projected financial internal rate of return (FIRR) is based on component 2. The projected FIRR demonstrates that the funding proposal is financially viable, given the NPV of USD 35.96 million and the IRR of 35 per cent, which is higher than the hurdle rate of 15 per cent. Even in the worst case scenario, with costs rising by 20 per cent and the benefits decreasing by 20 per cent, the sensitivity analysis still shows that the project to be viable with an NPV of USD 15.22 million and an IRR of 23 per cent, still above the 15 per cent hurdle rate. A 16-year period was used for the discounting of cash flow to match the project lifetime operation and maintenance cost, which was estimated at 3 per cent per annum (see table 15).

Table 15: Financial internal rate of return, sensitivity analysis

	NPV	IRR	Hurdle rate
Base case	USD 35.96 million	35%	15%
Costs +20%	USD 29.19 million	29%	15%
Benefits -20%	USD 21.99 million	28%	15%
Costs +20% and benefits -20%	USD 15.22 million	23%	15%

73. As per the AE, the funding proposal component has project outputs and activities that have direct quantifiable financial revenue generation or cost saving potential to project beneficiaries. Implied or avoided costs and benefits are typically not considered for financial analysis. This financial analysis has been carried out in accordance with the guidelines for the financial analysis of projects followed by IFAD, the United Nations Development Programme, and other international development agencies. These guidelines clearly mandate that a financial analysis of project cash flows be computed and FIRR calculated only for those proposed project activities or outputs that can clearly result in direct and quantifiable financial revenue generation (incremental earnings from baseline), or in a direct and quantifiable financial savings potential to the project owners or to the project beneficiaries. These guidelines serve to ensure that the minimum concession policy of GCF is always safeguarded in the proposal.³⁹

II. Overall remarks from the independent Technical Advisory Panel

74. The independent TAP recommends that the Board approve this project.

75. The independent TAP further recommends that Board approval be subject to the following conditions and covenants:

Condition precedent to the second disbursement to the AE:

- (a) The AE shall deliver to the Fund the final version of the Programme Implementation Manual (PIM) duly approved by the Accredited Entity and including the content referred to in paragraph (b) below, in a form and substance satisfactory to the GCF Secretariat.

Covenants for inclusion in the FAA:

³⁸ AE responses on third batch of questions from the independent TAP.

³⁹ Annex 3: Economic analysis.

- (b) The AE shall approve the final PIM only if, among others, it includes the following content:
- (i) The eligibility criteria for the selection of the targeted beneficiary organizations that will participate in the relevant Activities of the Programme, as appropriate, including for farmer-based organizations, cooperatives and associations, which shall include among others:
 - (1) a requirement for the targeted beneficiary organization to show proof (e.g. registered members, area of coverage) on the number and profile of the farmers being represented by the organization;
 - (2) a requirement for the targeted beneficiary organizations to meet the ‘context of vulnerability’ (as defined in the funding proposal) which the proposed activities will address; and
 - (3) the submission by the targeted beneficiary organizations of a written ‘statement of intent’ showing the intent and ownership of the relevant beneficiaries to implement the proposed activities being requested in order to address the specific vulnerability(ies) and their commitment to participate in the activities until their finalization;
 - (ii) The templates of the respective contractual agreements to be entered into with the final beneficiaries of, or other counterparties involved in, the implementation of the Activities of the Programme included in the table below, which shall at least include adequate provisions to cover the following aspects:
 - (1) the performance target indicators in respect of the specific activity(ies) to be carried out under such relevant agreements; and
 - (2) the specific provisions set out in the table below for the specific activity(ies) to be carried out under such relevant agreements.
- (c) The Accredited Entity shall ensure that no funds are disbursed to the targeted beneficiary organizations, or other relevant counterparties, unless they have entered into the relevant contractual agreements in accordance with the respective templates and other requirements contained in the PIM;
- (d) The Accredited Entity shall deliver to the Fund, promptly upon its request, the copies of the relevant contractual agreements that have been put in place, in accordance with the PIM, with the targeted beneficiary organizations, or other relevant counterparties, for the Activities of the Programme set out in the table below.

Activity	Beneficiary/ Counterparty	Key items to be included in the contractual agreements
1.1.2.	7 Hydromet Meteorological Agencies	<p>Maintenance and Operation of project assets by the relevant National Hydromet Agencies (e.g. AWS, rain gauges, automatic stage recorders, acoustic doppler current profiler, bathymetric instruments).</p> <p>Agreement on “sharing climate information data and information between Hydromet stations, between and amongst the 7 LDCs, will be undertaken during the implementation before the second disbursement” as per FP 1.1.12 on South South Triangular Cooperation (SSTC).</p>



1.1.3	350 Meteorologists	Minimum # of years of service required to stay at the NHA after training on impact-based forecasting methodologies, data collection and interpretation
1.1.6	LDC HMA Regional Centers of Excellence (ACMAD, Aghyrmnet, or ASECNA)	Continuous sharing of climate data and information and services between and amongst LDCs and regional centers of excellence Establishing policies and protocols on information sharing
1.2.1	50,000 Smallholder Farmers	Targeted beneficiary organization's proof of membership of each of the 6000 smallholder farmers to be trained from Mali, Gambia, Mauritania and 8000 from Burkina Chad, Niger Senegal farmers Context of Vulnerability for each of the LDCs farmers which the early warning products (including agro-climatic information) will address
1.2.2	1.5M Smallholder farmers	Targeted beneficiary Organization's proof of membership of each of the 200,000 smallholder farmers in Burkina, Mali, Gambia, Mauritania, Senegal and 250,000 smallholder farmers from Chad and Niger Context of Vulnerability of the farmers per country that can be addressed by best applicable climate adaptation/mitigation practices/technologies and weather index insurance
1.2.4	100,000 women and 100,000 youth	Targeted beneficiary Organization's proof of membership of each of the 100,000 women and 100,000 youth in Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia Context of Vulnerability of the women and youth in each country which the trainings will address.
1.2.5	2,000 cooperatives, SMEs, or farmers organizations	Proof of membership of small farmholders for each of the 285 cooperatives, SMEs or farmers organizations trained on financial literacy and integrated climate risk management in each country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia) Context of Vulnerability for each country the training on financial literacy and integrated climate risk management
1.2.6	LDCs Planning Agencies	Targeted beneficiary organization's official representation and participation by 200 local government officials per country. Statement of Intent by each of the LDCs representatives or counterpart Local government entity on the integration of integrated



		<p>climate risk management into 5 local development plans in each of the 7 countries.</p> <p>Expected workshops/seminars outputs and its application in LDC government agencies.</p>
1.2.8	<p>1400 Local Government officials and 20,000 Farmers</p>	<p>Targeted beneficiary organization's official representation and participation by 200 local government officials per country.</p> <p>Proof of membership in Targeted beneficiary organization of 2858 farmers.</p> <p>Local financial institutions (FIs) official representation and participation on the training on climate information and use per country (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia)</p> <p>Expected outputs or application of capacity building of the LDC representatives and Local FIs</p>
2.1.1- 2.1.8	<p>Farmer organizations, Carbon Project Consultant</p> <p>NDC Representatives</p>	<p>Presentation of carbon project (MRV plan and estimated GHG reductions) to national stakeholders during workshops (i.e., NDCs)</p> <p>Assignment to specific counterparty the task to prepare and implement the full Monitoring-Reporting-Verification (MRV) plan for</p> <p>a) Solar Energy Project</p> <p>b) CSN, LUM, and SFM project.</p>
2.1.1	<p>Farmer organizations CSO/NGOs Service providers</p>	<p>Targeted beneficiary organizations per country tasked to maintain and operate each of the 72 Agro-Pastoral/Farmer Field Schools (AP/FFS) in Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, and 68 AP/FFS for The Gambia</p> <p>Context of Vulnerability of the farmers per country that can be addressed by AP/FFS</p> <p>Proof of registered enrollees of small farmholders for each of the AP/FFS</p> <p>Geo referencing of each of the project areas per country for monitoring-reporting-verification.</p>



2.1.2	Farmer organizations for 1000 nurseries Ministry of Environment	<p>Targeted beneficiary organization's proof of membership and number of hectares owned by farmers participating in the 1000 nurseries program</p> <p>Targeted beneficiary organizations per country tasked to implement and maintain each of the 145 nurseries tasked to grow selected climate-adapted varieties established in each of the countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal) and 130 nurseries for the Gambia</p> <p>Identification and assessment of heat-tolerant, submergence, drought, and salinity tolerant, pest resistant and prevention of alien / invasive species being propagated in nurseries that may cause harm to the ecosystem.</p> <p>Geo referencing of each of the project areas per country for monitoring-reporting-verification.</p>
2.1.3	Local Government Communal Land Owners Small Farmholders Pastoralists	<p>Targeted beneficiary organization's proof of authority or control and capacity to implement and maintain CSA, dune stabilization, degraded land restoration, and SFM activities on 29,000 has of land in each of the countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal) and 26,000 ha for the Gambia to sustain project activities.</p> <p>Targeted beneficiary organization's proof of membership and number of hectares owned by farmers and entrepreneurs participating in the dune stabilization, degraded land restoration, and SFM activities</p> <p>Identification, assessment of climate resilient species and prevention of alien / invasive species being propagated that may cause harm to the ecosystem.</p> <p>Geo referencing of each the project areas per country for monitoring-reporting-verification.</p>
2.1.4	Local Government Communal Land Owners Small Farmholders Pastoralists	<p>Targeted beneficiary organization's proof of authority or control and capacity to Operate and Maintain 15,000 has of restored pasture lands via mechanical/biological pasture restoration management in Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal each and 10,000 has for the Gambia.</p> <p>Targeted beneficiary organization's proof of membership and number of hectares owned by farmers and entrepreneurs participating in the mechanical/biological pasture restoration management</p> <p>Geo referencing of each the project areas per country for monitoring-reporting-verification.</p>
2.1.5	Local Government Communal Land Owners Small Farmholders Pastoralist	<p>Targeted beneficiary organization's proof of authority or control and capacity to implement and maintain the Sustainable Forest Management program for each country.</p> <p>Targeted beneficiary organization's proof of membership and number of hectares owned by farmers or farmer entrepreneurs participating in the Sustainable Forest Management program covering 5,600 has of forests in Faso, Chad, Mali, Mauritania, Niger and 6000 has of forests in Senegal and Burkina.</p>



		<p>Identification, assessment, and prevention of alien / invasive species being propagated that may cause harm to the ecosystem.</p> <p>Geo referencing of each the project areas per country for monitoring-reporting-verification.</p>
2.1.6	<p>Local Government</p> <p>Communal Land Owners</p> <p>Small Farmholders</p> <p>Pastoralists</p>	<p>Targeted beneficiary organization’s proof of authority or control and capacity to implement and maintain the integration of agroforestry into farming systems on selected watersheds covering 4000 has in Burkina and Chad and 3600 has in Gambia, Mali, Mauritania, Niger, Senegal.</p> <p>Targeted beneficiary organization’s proof of membership and number of hectares owned by farmers or farmer entrepreneurs participating in the agroforestry program.</p> <p>Identification, assessment, and prevention of alien / invasive species being propagated that may cause harm to the ecosystem.</p> <p>Geo referencing of each the project areas per country for monitoring-reporting-verification.</p>
2.1.7	<p>Local Government</p> <p>Communal Land Owners</p> <p>Small Farmholders</p> <p>Pastoralist</p>	<p>Targeted beneficiary organization’s proof of membership and number hectares owned by farmers or farmer entrepreneurs participating in the Integration of Assisted Natural Regeneration of trees (ANR) in their rain fed production systems, crop rotation and association, ecosystems covering 10,000 has each in Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and the Gambia</p> <p>Identification, assessment, and prevention of alien / invasive species being propagated that may cause harm to the ecosystem.</p> <p>Geo referencing of each the project areas per country for monitoring-reporting-verification.</p>
2.1.8	<p>Local Government</p> <p>Communal Land Owners</p> <p>Small Farmholders</p> <p>Pastoralists</p>	<p>Targeted beneficiary organization’s proof of membership and number of hectares owned by farmers or farmer entrepreneurs directly participating in the 9,000 has Zai and half-moon farming techniques in Burkina and Niger and 8500 has in Mauritania, , Senegal, Chad and the Gambia</p> <p>Geo referencing of each the project areas per country for monitoring-reporting-verification.</p>
2.1.9	<p>Local Government</p> <p>Communal Land Owners</p> <p>Small Farmholders</p> <p>Pastoralists</p>	<p>Targeted beneficiary organization’s proof of authority or control and capacity to implement and maintain the 25 constructed/rehabilitated water points (i.e., reservoirs, ponds, wells, boreholes) for farming and covering 14,285 km of transhumance pathways cutting across Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal, The Gambia.</p>



		<p>Targeted beneficiary organization's proof of membership and number of farmers or farmer entrepreneurs directly and indirectly using the water points along the 14,285 km transhumance pathways</p> <p>Geo referencing of each the project areas per country for monitoring-reporting-verification.</p>
2.1.10	<p>Local Government</p> <p>Communal Land Owners</p> <p>Small Farmholders</p> <p>Pastoralists</p>	<p>Targeted beneficiary organization's proof of authority or control and capacity to implement and maintain the constructed 1 rainwater harvesting infrastructure in 1 transhumance corridors per country.</p> <p>Targeted beneficiary organization's proof of membership and number of farmers or farmer entrepreneurs directly and indirectly using the rainwater harvesting infrastructure in 1 transhumance corridors per country</p> <p>Geo referencing of each the project areas per country for monitoring-reporting-verification.</p>
2.1.11	<p>Farmer and rural community organizations,</p> <p>National and/or Local Government</p> <p>Electric Distribution Utilities</p>	<p>Targeted beneficiary organization's proof of membership and number of farmers and community members having electricity access to the solar mini grids</p> <p>Agreement on the Maintenance and Operation of the 56 Solar mini grids set up in each country with an identified national agency (as mentioned in Para 181 of the FP).</p> <p>Geo referencing of each the project areas per country for monitoring-reporting-verification.</p>
3.2.4.	Farmer and rural community organizations	<p>Targeted beneficiary organization's proof of membership of farmers belonging to different areas or regions, or type of crop and/or livestock produced</p> <p>This will enable a diversified coverage of risk per area, crop, livestock, livelihood which can help identify triggering thresholds for climate extreme events.</p>

Response from the accredited entity to the independent Technical Advisory Panel's assessment (FP 162)

Proposal name:	The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW)
Accredited entity:	International Fund for Agricultural Development (IFAD)
Country/(ies):	Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and the Gambia
Project/programme size:	Medium

Impact potential

The Accredited Entity (IFAD) and partners (WFP, AfDB, ARC) and recipients government would like to thank iTAP for the overall positive and detailed assessment of the Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW). More specifically, the AE commends the strong technical assessment of the potential impact of the programme and acknowledge with many thanks the High rating for these evaluation criteria. Specific recommendations will be taken into consideration by the AE during the implementation stage.

Paradigm shift potential

The Accredited Entity (IFAD) and partners (WFP, AfDB, ARC) and recipients government would like to thank iTAP for the overall positive and detailed assessment of the Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW). More specifically, the AE commends the strong technical assessment related to the paradigm shift potential of the programme and acknowledge with many thanks the High rating for this evaluation criterion. The AE thanks ITAP for underlying indirect potential Islamic financial products (e.g. climate takaful, musharaka and mudaraba) aligned with sharia principles which will be explored at implementation stage.

Sustainable development potential

The Accredited Entity (IFAD) and partners (WFP, AfDB, ARC) and recipients government would like to thank iTAP for the overall positive and detailed robust assessment of the Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW). More specifically, the AE commends the strong technical assessment related to the Sustainable Development potential of the programme and acknowledge with many thanks the High rating for this evaluation criterion.

Needs of the recipient

The Accredited Entity (IFAD) and partners (WFP, AfDB, ARC) and recipients government would like to thank iTAP for the overall positive and detailed robust assessment of the Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW). The AE thank iTAP for its satisfactory evaluation under this criterion.

Country ownership

The Accredited Entity (IFAD) and partners (WFP, AfDB, and ARC) and recipients government would like to thank iTAP for the overall positive and detailed robust assessment of the Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW). The AE thank iTAP for its satisfactory evaluation under this criterion.

Efficiency and effectiveness

The Accredited Entity (IFAD) and partners (WFP, AfDB, and ARC) and recipients government would like to thank iTAP for the overall positive and detailed robust assessment of the Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW). The AE thank iTAP for its satisfactory evaluation under this criterion.

Overall remarks from the independent Technical Advisory Panel:

Overall, The Accredited Entity (IFAD) and partners (WFP, AfDB, ARC) and recipients government would like to thank iTAP for the final evaluation of the regional programme. The AE commends the robust technical robust and very positive evaluation of iTAP. The AE and partners have taken good note of Condition precedent to the second disbursement to the AE and all covenants for inclusion in the FAA. The AE agrees to take into consideration the recommendations provided by iTAP during the implementation stage.

GENDER ASSESSMENT AND ACTION PLAN

The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Green Great Wall (GGW)”

Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and The Gambia



December 2020

Introduction

1. Across sub-Saharan Africa, the agricultural sector remains critical to local and regional economies. It is the basis for food security and an important source of employment, particularly for women. Rural women are the backbone of rural development and national economies, as they make up almost 50 percent of agricultural labour force. In Burkina Faso and Mali, for example, an estimated 93 percent and 78 percent respectively of active women work in agriculture (World Bank, 2020). High levels of rural poverty coupled with a fragile agro-ecological environment impacted by climate change and climate variability make the contribution of women's productive activities to the household and community a crucial element in the survival of the rural population. They work primarily in smallholder production and receive a significantly lower share of income in comparison to men. They bear the greatest blunt of climate change and climate-related disasters, as they have limited access and control over all land, productive resources and information (SCPZ, AfDB, 2019).
2. In addition, natural disasters do not affect all people equally. Marginalized populations, including women, tend to be disproportionately negatively impacted. For instance, women and girls are “14 times more likely than men to die during a disaster”. This can be explained by the fact that “natural disasters exacerbate previously existing patterns of discrimination that render females more vulnerable to their fatal impact”. According to the World Bank report *Shockwaves*, women are particularly vulnerable during disasters and floods, as they often take greater responsibility for household chores, increasing their hardships during floods, and their likeliness to contract waterborne diseases. Women and girls are also more likely to experience loss of housing, lack access to services and relief and are at far greater risk of experiencing physical and sexual violence in emergency settings.
3. Women in sub-Saharan Africa rely heavily on agriculture for their livelihood. Due to the high climate-sensitivity of the agriculture sector, women's livelihoods are much more fragile, as they are becoming increasingly vulnerable to the impacts of extreme weather events (UNDP, 2012). The susceptibility to climate change impacts varies by geographical location, and unmitigated climate change is regarded as potentially one of the biggest stressors to agriculture production in sub-Saharan Africa (UNDP 2011; FAO 2007; IPCC 2007a, 2007b).
4. Therefore, effective support for women farmers is critical for the improvement of agricultural development, food security and sustainable improvement of rural livelihoods. Women farmers receive only a fraction of the inputs and extension support that men farmers receive. They have less access to farm labour. As many women are engaged in sustenance farming, they often do not receive a cash income for their work, which translates into less frequent use of modern, sustainable farming technologies and less investment. This negatively affects their productivity levels: the gender gap in agricultural productivity – measured by the value of agricultural produce per unit of cultivated land – ranges from 4 to 25 percent, depending on the country and the crop (UN Women, 2018). Not only is equalizing women's access to agricultural inputs (including labour, time-saving equipment, information and more efficient technologies particularly for adaptation and mitigation for low emission and climate resilient agriculture) critical to close gender gaps in agricultural productivity, but it also promises to yield important broader economic and social gains. Across many Sub-Saharan countries, it could raise crop production by up to 19 percent, boost the agricultural sector and overall GDP and lift hundreds of thousands of people out of poverty (UN Women, Policy brief no. 11). Furthermore, a changing climate means that there is a shrinking window of opportunity for action, and it is imperative that climate-smart approaches to agriculture help close the gender gap and promote women's empowerment, economic development and societal resilience to shocks.

5. Social and cultural norms in the seven-targeted countries (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and The Gambia) in this proposal impose several constraints on women. The gendered division of labour in the households place the burden of securing water and fuel supplies and caring for the children and the elderly entirely on the women, leaving them with very little time to engage in income-generating activities or to further their education. Women's high burdens of unpaid care and domestic work leave them less able than men to invest their time in agricultural work, particularly in polygamous households . Even in countries where women's right to own land is legally recognized, the majority of the land continues to be owned, passed on to (inheritance) and controlled by men. These norms reduce the amount of time that women have available for their own plots and their likelihood of investing in higher-value, higher-maintenance crops. Women often lack security of tenure in the land that they cultivate and are therefore unable to benefit from extension services and access to finances to invest. It also makes them less likely to plant high-value crops. In a context of a changing climate, women do not have access to knowledge and climate information generated by climate information and early warning systems (CIEWS) which are for preparedness, to better adapt and mitigate the effects of climate and transfer part of the climate risk in the market through agricultural insurance schemes.
6. Women in the region also having less access to skilled jobs compared to men (8 percent in paid employment against 12 percent of men) and they tend to be marginalized in the labour market outside the agricultural sector. They represent only 8 percent of entrepreneurs. They are mainly concentrated in traditional agriculture (70 percent) and in the informal sector (60 percent), especially in trade. The causes of these inequalities are linked to widespread poverty that affects both women and men, the vulnerability of women and girls in conflict and post-conflict (insecure) and a patriarchal system deeply rooted in religious and customary social standards at all levels of society, from the family unit to the highest political levels.
7. Since the mid-2000s, almost every country has created a national gender policy or strategy. However, legislation that discriminates against women still exists. In practice, gender is usually considered as an after-thought and gender policies are often not implemented effectively. Patriarchy and lack of political will, a conflicting tripartite legal system of civil, customary and Sharia laws, coupled with scarce resources impede the effective implementation of any gender responsive legal and regulatory framework. In some countries, attempts by the state to introduce laws promoting equality and gender equity in the past were met with strong resistance from religious organizations, as was the case in Niger, Mali and Chad in relation to the Family Code. However, through communication and advocacy actions carried out by civil society organisations, projects and programmes implement activities that take into account gender equality and equity. The programme will have to consider these constraints related conflicting tripartite legal systems and patriarchal systems deeply rooted in religious and customary social standards and use the same channels (community and customary) to implement the activities. The aim will not be to challenge social norms, but to gain acceptance of the programme's principles of intervention and specifically address the needs and priorities of women and minority/marginalised groups in each of the selected countries and regions.
8. The 2016 Human Development Report shows that the situation is worsening in the seven countries targeted by the programme. They figured among the bottom of the global list on the Human Development Index: Mauritania occupies the 157th position; Senegal, 162nd; The Gambia, 173rd; Mali, 175th; Burkina Faso, 185th; Chad, 186th, and Niger, 187th.

Table 1: Human development report or the 7 countries

Country	Human Development Index	Overall Gender Equality Index		Economic Opportunities		Human Development		Laws and Institutions	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Burkina Faso	185	56.6	22	63.3	23rd	60.1	31st	46.4	22nd
The Gambia	173	54.7	24	77.5	2nd	66.1	25th	20.5	44th
Senegal	162	51.9	30	50.9	39th	64.6	28th	40.3	28th
Chad	186	42.2	44	70.7	11th	24.2	51st	31.7	34th
Niger	187	42.2	45	50.5	40th	41.5	45th	34.5	32nd
Mauritania	157	41.9	46	53.2	35th	58.6	33rd	13.9	47th
Mali	175	33.4	50	32.2	50th	46.7	42nd	21.3	43rd

Source: Adapted from the Human Development Index, Africa Gender Equality Index 2015

9. A more in-depth gender analysis for each of the seven countries of this programme is presented below.

Burkina Faso

Demographics and social norms

10. The population of Burkina Faso is estimated at 17.9 million people in 2014, of which around 51 percent are women. Nearly half (46.2 percent) of all households are headed by women. According to the 2016 Human Development Report, Burkina Faso ranked 185th out of 188 countries surveyed on the Gender Equality Index. This situation is the result of inequalities based on perceptions and social practices particularly in rural areas that restrict women's rights and reduce their access to economic and social opportunities in relation to men, such as financial inclusion or political commitment (Yeleen Rural Electrification Project in Burkina Faso, AfDB, 2019).
11. The patriarchal system perpetuates social norms that favour men, which have important consequences for gender equality in all areas of life. Gender bias in resource allocation and under-investment by households in girls' health and nutrition has negative consequences for their health and for society as a whole. In practice, the burden of housework and caregiving falls mainly on women: girls in Burkina Faso spend four hours a day on these tasks, compared to four hours a week for boys, a time that increases over the course of their lives and goes up to six and a half hours a day for women. Women and girls spend precious time fetching drinking water and fodder for fuel – time that could be saved through improvements to access to water infrastructure and alternative and sustainable energy sources in agriculture. In addition to their housework, women also dedicate an average of two and a half hours a day volunteering on plots or in family businesses, leaving very little time for the pursuit of income-generating activities, education or technical training to improve their knowledge and skills in adaptation and mitigation

12. This inequality can also be seen in their access to services, information particularly climate information for decision-making and technology to select the right solutions and equipment's/ cropping and harvesting periods. Two-thirds of those with an account at a bank or other financial institution are men and many are not covered when it comes weather index insurance; a certain sector of the population believes that men and women should not have the same decision-making power with regard to financial services. Ownership of a mobile phone is more common among men (79 percent) than among women (52 percent) (Yeelen Rural Electrification Project in Burkina Faso, AfDB, 2019).
13. Another consequence of discriminatory social norms is that in half of the households, the father alone, which 40 percent of the population considers justified, makes decisions about the education or health of children. In terms of inheritance: 25 percent of the population considers that the restriction of inheritance rights of widows is acceptable. Two thirds of widows have inherited the majority of the property of their deceased husbands (with their children).

Development and poverty

14. According to the 2014 Multisectoral Continuous Survey, 40 percent of the population lives below the income poverty line. The National Institute of Statistics and Demography (INSD) reveals that poverty is mainly rural in Burkina Faso (more than 92 percent of the poor live in rural areas). Individuals living in households headed by women under 45 years of age and the ones headed by polygamists are generally poorer than others are. The poverty rate for female-headed households is 11 percent higher than for the ones headed by men.
15. In 2018, Burkina Faso ranked 182 out of 189 countries and territories. Its GII value for that year was 0.612, positioning it 147 out of 162 countries. In Burkina Faso, women hold 11.0 percent of parliamentary seats and 6.0 percent of adult women have reached at least a secondary level of education compared to 12.1 percent of their male counterparts. For every 100,000 live births, 371.0 women die from pregnancy related causes; and the adolescent birth rate is 104.3 births per 1,000 women of ages 15-19. Female participation in the labour market is 58.5 percent compared to 75.1 for men (Human Development Report, 2019).

Women and agriculture

16. The agro-forestry-pastoral sector employs nearly 90 percent of the population and accounts for 33.7 percent of GDP in 2016 (ADB, OECD, UNDP, 2017). Women account for 52 percent of household farm workers and work several hours on family land before attending to their own fields, whose crops are for home consumption or sale. The General Agricultural Census (GAM) indicates that small ruminant breeding is practiced by 42.2 percent of women. As for fishing activities, women are present in the processing and marketing of fish (Yeelen Rural Electrification Project in Burkina Faso, AfDB, 2019).
17. Access to land ownership remains a challenge for women in Burkina Faso. Even though they represent over half of the agricultural labour force, they account for less than 40 percent of landowners. When they are landowners, their decision-making power remains limited. Only 14 percent of female landowners have a say in the sale of their land, compared to 32 percent of men, because of customary law and community land management practices. Female-headed households have less access to more advanced agricultural equipment: 96 percent of such household use traditional tools (hoes and dabas, among others), while 21.5 percent of male-headed households in a comparable situation use ploughs. Moreover, women's access to agricultural extension services remains low (Yeelen Rural Electrification Project in Burkina Faso, AfDB, 2019).

Education

18. While the enrolment rates for boys and girls are almost equal at the primary education level, this is not the case at the secondary and university levels: in the latter, the average enrolment rate for boys is 35 percent and 32 percent for girls. Literacy rates for children aged 15 to 24 are higher for boys (56.8 percent) than for girls (43.8 percent).

Employment

19. Unequal access to education limits women's opportunities in the area of skilled employment while they are highly integrated in the informal sector. Women are responsible for all the production, processing and marketing of their agricultural products. The number of hours of work per week in rural Burkina Faso is 96 hours for women while that of men is 56 hours.

Energy

20. Because of their role in families and communities in energy supply, women are the first to be exposed when these essential resources are absent, difficult to access or dangerous to use. Statistical data from 2013 revealed that male-headed households have a wider access to energy (85.2 percent) compared to 82.4 percent for female-headed households. More than 90 percent of Burkina Faso's population do not have access to modern cooking fuels. The rate of household access to butane gas is 4.8 percent nationally and about 12.2 percent of households use improved cooking stoves. The coverage rate for electrification is 28.6 percent and shows strong disparities between urban and rural areas. As a result, the energy availability crisis forces millions of people to resort to traditional biomass, resulting in a health crisis with high levels of deaths resulting from pneumonia, chronic obstructive pulmonary disease and lung cancer, not to mention deforestation and land degradation.

Policy framework

21. The main gender-related policies in the country are:
- Constitution of Burkina Faso of 1991: establishes that all individuals are equal, regardless of gender
 - Law No. 043/96 / ADP of November 1996 on the Prevention and Punishment of FGM
 - National Gender Policy (2009)
 - Gender Quota Act (2009): stipulates that 30 percent of candidates on electoral lists must be women. However, as a result of the 2015 elections, only 11 percent of parliamentarians are women (compared to 19 percent in 2012).
 - Law No. 034-2009 / AN of 16 June 2009 on rural land tenure: establishes that managed land shall be granted to women.
 - Law n °034-2012 / AN of 02 July 2012 on agrarian and land reorganization.
22. The government's action revolves primarily around the implementation of the National Gender Policy, adopted in 2009, and the 2017-2019 Operational Action Plan. In addition, the 2016-2020 National Plan for Economic and Social Development (PNDES) aims to reduce gender inequalities, promote decent employment and social protection for all, including young people and women. This includes increasing the number of female business owners from 21 percent in 2015 to 50 percent in 2019, promoting decent jobs opportunities for women and increasing their access to technical and vocational training, etc. (Yeelen Rural Electrification Project in Burkina Faso, AfDB, 2019).
23. The Ministry for the Promotion of Women and Gender is responsible for the implementation and monitoring of the government's Policy on the Socio-Economic Promotion of Women. At the institutional level, the gender mainstreaming initiatives undertaken since the creation of the Ministry have not produced the expected results. The Ministry is underfunded. There is a lack of mechanisms for consultation and coordination between the key players, which are: 1) the national, regional and municipal councils for the promotion of gender, 2) the gender groups established in each ministry to promote

gender mainstreaming; 3) the consultation framework of the PTFs (including Swiss Cooperation, World Bank, UNDP and UNFPA, among others) and the TFP Common Gender Fund. The main reasons are the low level of ownership of gender issues by policymakers, the lack of technical and institutional capacity and the lack of allocations to drive the implementation process. Women's civil society organizations suffer from their weak structure and the absence of a national coordinating umbrella structure.

24. The government has put in place reforms to combat violence against women. For instance, prison sentence for rape were explicitly introduced into the penal code in 2015 and began to be applied in 2016. However, in general, sectoral policies do not integrate the gender dimension sufficiently, which is reflected in the planning of activities and the results. There is a scarcity of up-to-date disaggregated statistics by gender in the different development sectors (Yeelen Rural Electrification Project in Burkina Faso, AfDB, 2019).
25. The law allows girls to be married at 17 years of age, against a legal minimum of 20 years for men. The widespread practice of early marriage discriminates against girls and largely explains the large demographic growth of the country.
26. In Burkina Faso, the law prohibits all forms of violence against women and girls, however domestic violence is not criminalized. More than one in three women (37 percent) have been victims of domestic violence in their lifetime, compared with one in five men (16 percent). Social norms perpetuate the idea that a man can beat his wife for one reason or another, while only 4 percent believe that a woman can beat her husband. Despite its prohibition, the practice of female genital mutilation is also common. Two-thirds (63 percent) of women aged 15 to 45 are circumcised.

Chad

Demographics

27. In 2009, the population of Chad was estimated at 11.04 million inhabitants, of which 50.6 percent were women; 78.1 percent live in rural areas and 50.6 percent are youth under 15 years of age. There are still large gender disparities in the country: it ranked 158th out of 160 on the Gender Inequality Index in 2017. Gender-based violence and sexual violence are pervasive and are aggravated by conflict and displacement. Chad is also affected by internal and external population displacements driven largely by insecurity in the region. The country hosts 450,000 refugees, of whom 55.5 percent are female and 24.3 percent are of school age (WFP, Chad country strategic plan 2019-2023).

Development and poverty

28. Chad is the world's second most food-insecure country (118th of 119 countries on the Global Hunger Index). The regions most affected by food insecurity and with the greatest vulnerability are overwhelmingly concentrated in the Sahelian belt, which is the region hit worst during the yearly lean season (from June to September). From 2016 to 2017, national food insecurity levels rose from 18.5 to 23.7 percent, reaching 50.2 percent among female-headed households. In 2017, food insecurity prevalence was particularly high among refugees (60 percent), IDPs (35 percent) and people adversely affected by the lean season (40 percent). Over 3 million people are food-insecure or at risk of food insecurity, and over 500,000 children are at risk of becoming malnourished during the lean season every year (WFP, Chad country strategic plan 2019-2023).
29. Chad ranked 187th out of 189 countries and territories on the 2018 Human Development Index. Women and 54 percent of these head Twenty-three percent of Chad's households live on less than US\$1 a day. Most women lack access to fertile land and live off minor

food-processing activities, the sale of firewood, and informal sector jobs (Landlinks, USAID).

Women and agriculture

30. In Chad, the percentage of the female labour force that works in agriculture is 92.4 percent versus 82.9 percent for working men. Women have restricted access to productive assets, credit, land ownership and the opportunity to rent land. Land inheritance customs often discriminate against women, and men decide on the use of harvested crops and income. Only 22.3 percent of women take part in decision-making about income-generating activities, 22.6 percent have access to credit and 26 percent have a bank account.
31. The division of household responsibility is still highly gender-biased: women are expected to take care of children and domestic chores (including those needed to ensure their family's water supply). Furthermore, in terms of access to land and property, customary practices are still rife and male oriented. These realities mean that women have fewer opportunities to participate in income generating activities. For instance, while they participate in agricultural activities and often farm plots (owned by their families), their yield is usually for subsistence purposes rather than for sale. This situation is particularly visible in rural areas, and as rural women constitute up to 40 percent of the country's population, this leaves a large portion of the population underserved and underrepresented.

Education

32. On average, girls receive less education than boys and are more likely to leave school early, as they are often forced into early marriage. Chad has the third highest rate of child marriage in the world: 68 percent of girls are married as children. Education enrolment is higher for boys than for girls, from primary (62 percent vs 40.7 percent) all the way through secondary (11 percent to 3.5 percent) and tertiary (1.4 percent to 0.3 percent). Literacy rates for girls is less than half that of men (23.2 percent versus 55.7 percent). This prevents women from accessing better climate information, when available and generated by existing CIEWS.

Employment

33. Unemployment is higher among women – 24.7 percent compared to 18.7 percent for men – and among people with a university diploma or higher qualification. The female labour force participation rate is 65 percent, remaining largely stable even during the economic crisis, while the male rate steadily decreased from 80.5 percent in 2002 to 77.4 percent in 2016. Women are often overburdened with household chores, childcare and - in rural areas- agricultural activities.

Energy

34. The 2009 EVST report demonstrated that wood is still the main source of fuel for cooking purposes for over 90 percent of households. This proportion is slightly higher for rural areas (93 percent) compared to 75 percent for urban areas. In rural areas, the burden of ensuring the household supply of wood for energy falls on the shoulders of women and girls. Natural resource degradation increases the distance that women have to walk to find wood and thus, the time they spent on this chore. Using wood for cooking exposes women to risks of injury and respiratory and other health problems (République de Tchad, Document de Politique Nationale Genre de Tchad).

Policy framework

35. The Ministry of Social Affairs, National Solidarity and Family oversees the implementation of gender policies at the national level. The main policies in this area are:
- Constitution of 1996, revised in 2005: recognizes gender equality
 - 1996 Labour Code

- National Population Policy and the 1995 Policy for the Integration of Women in Development
 - Law n° 38/PR/98 recognizes that men and women should be granted equal employment opportunities
 - Law N°16/PR/2006 promotes the education of girls
 - National Gender Policy (PNG) 2007
 - The national development plan for 2017–2021 emphasizes social protection, the prevention of gender-based violence, economic empowerment and livelihood and capacity strengthening, as well as the formulation of a national gender strategy (WFP, Chad country strategic plan).
36. The 2007 National Gender Policy outlines the government’s strategy to ensure that gender inequality, violence will be eradicated by 2030, and that women are included in decision-making processes and natural resource management. The strategic orientations of this policy are:
- systematically integrate the gender dimension at all levels: planning, budgeting, implementation, monitoring and evaluation of development strategies, policies and programmes;
 - develop a communication strategy for changing mentalities and behaviours;
 - promote equal and equitable access to basic social services and decision-making spheres.
37. The Chad Constitution and laws clearly outlaw gender discrimination. However, traditional and religious practices are often contrary to government regulations and laws. Customary law coexists with the civil code and the French code of 1958. This prevents women from enjoying all their rights. The problem lies primarily in the lack of enforcement of the laws and provisions that aim to end discrimination against women, women and men’s lack of knowledge of these laws but also high illiteracy rates and the persistence of traditional practices that prevent women from claiming their rights. Women often do not have the information they need to defend their rights, that is when they are aware that they exist (République de Tchad)

Mali

Demographics

38. The country of Mali is an agro-sylvo-pastoral land with about 15.8 million inhabitants, of which 51 percent are women. The vast majority of the population (80 percent) lives in rural areas where the national electrification rate in 2016 was 19.39 percent (39 percent national, 86 percent in urban areas). Statistics on total energy consumption in the country in 2016 show that women account for 77 percent of all biomass use.

Development and poverty

39. Mali’s HDI value for 2018 is 0.427, positioning it at 184 out of 189 countries and territories. The 2018 female HDI value is 0.380, significantly lower than the 0.471 for males, resulting in a Gender Development Index (GDI) value of 0.807. In terms of gender inequality, it is one of the most unequal countries in the world: Mali has a GII value of 0.676, ranking it 158 out of 162 countries in the 2018 index. In Mali, 8.8 percent of parliamentary seats are held by women. For every 100,000 live births, 587.0 women die from pregnancy related causes; and the adolescent birth rate is 169.1 births per 1,000 women of ages 15-19. (Human Development Report, 2019). The practice of early marriage is still highly prevalent in Mali, especially among the poorest households.
40. Mali ranks 90th of 119 countries on the Global Hunger Index. Over the past five years an average of 3.6 million people (18 percent of the total population) were food-insecure, of

which 600,000 were severely food insecure. Food insecurity is more than 50 percent higher among households headed by women than those headed by men. Diversification of food consumption is low. Access to nutritious food is constrained by low incomes and fluctuating food prices, with a nutritious diet being up to twice as expensive as one that covers energy needs only (WFP, Mali country strategic plan).

Women and agriculture

41. Malian women play a major role in agricultural production and are responsible for subsistence farming, while men participate in both subsistence and commercial agriculture. In terms of the provision of labour, women and men work side-by-side in almost all the agricultural tasks on the land, while men are responsible for marketing the agricultural products. Men (either fathers or husbands) mediate and control Malian women's access to resources and their contribution to agriculture goes largely unrecognized. Even women who have access to assets rarely have control over them.
42. Women, 78 percent of whom live in rural areas, are at a disadvantage regarding access to land, financial services, training and markets. They account for 70 percent of food production but hold only 10 percent of land use rights and 8 percent of land ownership titles. Women are also heavily involved in unpaid household work. According to the Ministry of Women, women's access to agricultural sector credit stood at 12 percent of total credit allocated.
43. A major determinant of gender disparity is lack of access to land. Most of the land is owned by the government and in the traditional system of land use, men are more likely to have access to land than women. Traditionally, women cannot own land in Mali. They can cultivate or use land temporarily, but land can be taken back from them at any time. This discourages women from investing in land improvements. The President of Mali had recently promised that 10 percent of state-improved (irrigated) lands would be allocated to women and youth (ARD Inc., Mali Land Tenure Assessment Report, 2011) and the *Profil Genre de la Republique du Mali* affirms that the situation is improving because in 2008-2009 about 20 percent of rural women had access to land, an increase of 1.3 percent from 2007 (AfDB, Profil Genre de la Republique du Mali). Women often form associations and request that community land or land owned by a specific owner be allocated to them for their collective use. Although this is a good strategy, it does not assure them that the land will remain in their possession (FAO).
44. Mali is currently facing significant environmental problems such as desertification, floods and rapid deforestation. Women are more victims of the adverse effects of climate change, but certain women's activities, such as the artisanal transformations of agricultural products, the sale of wood and coal have negative impacts on the environment. So, concrete measures should accompany the ongoing awareness-raising campaigns, such as the development of collection pits for processing dyeing wastewater, development of soaps workshops, etc. The national priority is to strengthen efforts to promote the adoption of appropriate technologies that are less costly and less energy-consuming for all men and women in rural areas (Mali, BOAD).

Education

45. Similar to other countries in the region, women and girls in Mali have less access to education than men and boys. The adult literacy rate for women is 25.7 percent, whereas the rate for men is 46.2 percent. The proportion of adult women who have reached at least a secondary level of education (7.3 percent) is less than half than the percentage for their male counterparts (16.4 percent). While 78.2 percent of school-age boys and 66.1 percent of girls are enrolled in primary schools, only 48.3 percent complete the primary school cycle. In some areas of the country less than 36 percent of enrolled children are girls, one of the widest gender gaps in the world. This is unlikely to improve in the short term, as

insecurity has resulted in the closure of a large number of schools, particularly in Central Mali (WFP, Draft Mali country strategic plan 2020-2024). The country has limited CIEWS and climate information is often not available; when it is available, women have limited access to guide their decisions and choices on adaptation/mitigation and climate risk transfer.

Employment

46. Women make up 38.4 percent of the economic active population (EAP) in Mali, and of these, 74 percent are in the agriculture sector (FAO). However, these figures are misleading because the definition of EAP includes paid labour, and a study by the African Development Bank found that 77 percent of rural women working in agriculture declared that they have never received any remuneration (AfDB, *Profil Genre*).

Energy

47. The national rate of access to electricity in Mali is 41% (17% in rural areas) and the electrification rate remains low with around 19% of households connected to the electricity network. The country has enormous potential for renewable energy sources, but these are poorly exploited, which accentuates the energy deficit as the country is totally dependent on imported petroleum products and wood combustible from its natural forests. This situation has a considerable impact on the country's environmental situation. Indeed, Mali's energy sector remains very vulnerable to climate change due to its high dependence on hydropower, the entire energy system is under the threat of climate change. This situation requires a prioritisation and a more rapid deployment of renewable energy technologies such as solar energy and biomass. The burden of securing the household's energy supply falls disproportionately on women.

Policy framework

48. In 1997, the Ministry for the Promotion of Women, Children and the Family (MPFEF) was created as the main government institution responsible for women's empowerment and gender equality. It is responsible for monitoring the implementation of the National Policy for Gender Equality, adopted in 2010. This national policy sets the country's vision, strategy and priorities for strengthening gender equality and equity. It promotes equal rights for men and women, active and participatory citizenship and equitable access to resources. One important component is to improve women's access to appropriate technologies that are less costly and less reliant on wood energy use. The "Gender and Development Thematic Group" (GT/GED) was established to facilitate dialogue between the government, development agencies and civil society to support the policy's implementation.

49. In 2009, the government attempted to adopt a new Family Code which was to introduce improvements for women's rights (inheritance, property and marriage, among others). However, opposition from conservative groups forced the government to withdraw the code. Two years later, a new code was introduced, resulting in several setbacks in terms of women's rights (World Bank, Mali Gender Assessment).

50. The Agricultural Orientation Law of 2006 (Loi d'Orientation Agricole) takes a strong approach to gender equity, food sovereignty and support for small-scale farming. But enforcement appears to be quite weak and in one study, the majority of the communities surveyed were not even aware of its existence (Minimart and Ta, 2011). The National Plan of Priority Investment in the Sector of Agriculture (PNIP-SA) emphasizes certain value chains such as milk and fish where women dominate all stages of production. Through the value chain approach, it emphasizes the improvement of productivity of non-agricultural activities such as retail trade and processing where women are strongly involved (National Plan of Priority Investment in the Sector of Agriculture of Mali (PNIP-SA) 2011-2015, 2011).

51. In November 2015, the Malian National Assembly adopted a gender quota bill that requires that at least 30 percent of elected or appointed officials be women.

Mauritania

Demographics

52. Mauritania is a lower-middle-income and largely arid country with an area of 1.03 million km² and a rapidly growing population of 4.4 million, of which 50.4 percent are male, 49.6 percent are female; 57 percent are under 20; half live in urban areas; fewer than 2 percent still lead nomadic lives and 32 percent of households are headed by women. Despite significant recent reductions in poverty, child undernutrition and mortality, Mauritania ranked 161st out of 189 countries on the Human Development Index in 2018; its GII value for the same year was 0.620, which led it to be ranked 150th out of 162 countries. Gender inequality is therefore still very high. In spite of relative security and political stability since 2012, Mauritania is affected by regional volatility. As of March 2018, violence in northern Mali caused an influx of 55,263 refugees – 16,225 girls, 15,729 boys, 13,719 women and 9,590 men – who registered at the Mberra camp in the department of Bassikounou.

Development and poverty

53. Mauritania is a food-deficit country: cereal production meets only 30 percent of national demand. Availability is generally not an issue, but markets are vulnerable to global food price fluctuations, and access can be challenging because the population is scattered and roads are occasionally cut off in rainy seasons. As a result, food security is a concern. On average, 959,400 Mauritians (20.4 percent of which are men; 27.9 percent, women; 24.3 percent, girls, and 27.4 percent boys) are recurrently food insecure. In August 2017, 28 percent of the population as a whole, 31 percent of female-headed households and 26 percent of male-headed households were food insecure. Sixty percent of food-insecure people lived in rural areas. Rural women are disproportionately affected because they have few employment opportunities, own few productive assets and have limited coping capabilities (WFP,2018).
54. Poverty levels fell from 42 percent in 2008 to 31 percent in 2014, but there are major disparities from region to region in terms of gender, age and occupational status; 74 percent of the poor – largely farmers, pastoralists and landless or unpaid women and young people – live in rural areas.
55. Data on gender-based violence is scarce, but an estimated 55 percent of girls have been subjected to female genital mutilation and the rate is much higher among girls without education (69 percent), girls in the poorest quintile (84 percent) and girls in rural areas (69 percent). Force-feeding is still inflicted upon 24 percent of women and girls in rural areas, but the practice is declining.

Women and agriculture

56. Most of the country's population relies on agriculture: 60 percent are smallholder agropastoralists and 20 percent are landless seasonal workers. Smallholder farmers, seasonal labourers and unpaid workers, who are mostly women, are among the most food insecure. Farming is the main activity carried out by rural women, but productivity is still low. Structural challenges include land degradation; climate-related shocks; unequal access to and control of land, especially among women and young people; unequal parcelling out of agricultural plots; high post-harvest losses; weak processing and storage capacity; inadequate agricultural practices; and limited access to financing.

57. Women's activity in rural areas is notably concentrated in the low-productivity agricultural sub-sector. They are particularly involved in soil post-preparation (sowing, weeding, harvesting, transportation, storage, processing and harvest conservation) and other tasks (weeding, thinning out, bird hunt, etc.), besides childcare, for which they are exclusively responsible. Market gardening, which has intensified over the past decades following long periods of drought, is an activity traditionally reserved for women who practise it within the framework of cooperatives. This has helped to significantly improve feeding and the living conditions of the population. Livestock farming accounts for 14 percent of GDP and women are heavily present in the sub-sector where they milk and water cattle and small ruminants, provide them with veterinary care, and process and market dairy products. They still practise small livestock breeding and poultry farming, which provide them with a modest source of income that they can personally control (AfDB, Country Strategy Paper 2016-2020).
58. Access to land is a major obstacle to women's participation in agriculture: 56 percent need the guarantee of a third party to conduct a land ownership transaction; 31 percent are familiar with land allotment procedures and only 18.7 percent of them own land (AfDB, Country Strategy Paper 2016-2020).
59. Although the Constitution and the Land Reform Act guarantee equal rights to own property and land (Constitution, Art. 15; Land Reform Act, 1983), under Sharia law, women and girls inherit half of what can be inherited by men or boys. In the case of family with only daughters and no sons, part of the inheritance of the deceased father is first distributed among his brothers and other members of the family and the remainder to his daughters and his wife. Women face additional challenges in retaining property (both land and non-land assets) in divorce and widowhood (Salamata, Baro and O'Sullivan, 2015), where their right to ownership of assets is often limited to objects related to women's work and daily life such as cooking and cleaning utensils (Personal Code, Art. 73-74). It may also be the case that the family of the deceased father is granted full custody of the child (rather than to the living mother), allowing his family sole rights over the child's inheritance. Furthermore, under civil law, women cannot purchase or transfer land without the authorization of a third party, generally her guardian or a male family member (CEDAW, 2014). Women's access to land ownership is particularly limited in rural areas where land is key source of income. In some places, women are excluded from land ownership altogether for fear of losing ancestral land to people outside of their tribal or ethnic group (GI-ESCR, 2014). Social status and ethnicity also play a role in land ownership, making it more difficult for Haratine or Sub-Saharan African women, those traditionally associated as former slaves or descendants of slaves, to access land (Minority Rights Group International, 2015) (OECD, Gender Index).
60. Women, regardless of marital status, have equal rights as men to open a bank account, access a line of credit, or register a business (World Bank, 2015). The government developed a National Plan of Action for Rural Women 2009 - 2012, in which it laid out specific actions to promote savings in rural communities, strengthen and develop microfinance structures and establish financial tools and financial management training programmes for rural women (UNECA, 2016). Still, women face challenges in accessing formal financial services, including the traditional roles of men as the head of the household and decision-makers in the family, women's limited access to land and livestock or other assets that they could use as collateral and their low levels of literacy and education (OECD, Gender Index). Recent statistics show that only 15.5 percent of women 15 and older with an account at a financial institution or mobile-money-service provider; the percentage is slightly higher for men, at 26.3 percent (UN Women).

Education

61. Net enrolment in primary education – 73 percent for girls and 69 percent for boys – has not changed in the past decade. Of the children enrolled, only 35 percent of boys and 39 percent of girls complete the primary cycle. Attendance at school averages 8.3 years among boys and girls; 99,600 boys and 84,700 girls are out of school. The literacy rate is 35 percent among women and 57 percent among men. Additionally, women have limited access to climate information services to make decisions regarding the best adaptation/mitigation technologies and solutions and options for effective risk transfer (climate insurance).

Employment

62. Women are particularly disadvantaged as a result of discrimination in access to land, financial services and markets, an unequal burden of unpaid labour, household work and higher unemployment. Historically underprivileged population groups find it difficult to obtain remunerative work, particularly in rural areas. An estimated 12.5 percent of children aged 5-14 work – primarily in agriculture – and are hence at risk of the worst forms of child labour.

63. Female participation in the labour market is 29.2 percent compared to 63.2 for men (Human Development Report 2019). Even though the labour code prohibits gender discrimination in employment and mandates equal pay for work of equal value, there are several legal restrictions and social norms that limit their access to employment outside the home. Married women may pursue a profession outside of the marital home, but only those professions that are considered appropriate under Sharia law. Traditional interpretations of Islam require a woman to obtain the consent of her husband to leave the house and pursue employment (Mir-Hosseini, 2009). As a result, women's participation in the formal labour market is low and they face discrimination in the workplace (gender pay gap, sexual harassment and limited access to senior or decision-making positions in the public and private sectors) (CEDAW, 2014). Traditionally, the role of women in society is limited to household duties and childcare, discouraging many of them to seek educational or employment opportunities (Human Rights Council, 2015) (OECD, Gender Index).

Energy

64. Very few households in rural areas has access to electricity and therefore, women and girls must still bear the burden of gathering wood for fuel. This in turn impact negatively on the very fragile ecosystems .

Policy framework

65. The country is signatory to many conventions on respect for human and women's rights. These include the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) which was ratified, except for some articles that run counter to the prescriptions of Islam, precisely Articles 13 and 16. Nationally, Mauritania's Constitution of 20 July 1991 considers women as citizens in their own right and recognizes gender equality in all areas. The Code on Personal Status adopted in 2001 is the centrepiece of the national legal mechanism based on Islamic law principles, which are the source of legislation in Mauritania. It governs all issues relating to the private sphere (family, marriage, divorce, guardianship of children, succession, etc.). However, despite its progressive character and some advances (marriage age set at 18 years for boys and girls, marriage contract with the possibility for the wife to refuse polygamy, authorization for women to continue studies or carry on professional activities, etc.), it is quite revelatory of the powerful patriarchal, ideological and cultural trends that continue to perpetuate the idea of women being perpetual "minors". For instance, the Personal Status Code establishes the husband as the legal authority of the household who may make decisions on behalf of the family without the consent of the wife (OECD, Gender Index).

66. In 2005, Mauritania ratified the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol), committing to the promotion of women's rights and the elimination of violence against women. At the national level, there is no law to date that comprehensively addresses violence against women. The lack of a comprehensive legal framework to protect women and combat violence, combined with a cultural acceptance of practices that are harmful to women, have both enabled the perpetuation of violence against women in the country (CEDAW, 2014). Government measures instituted to prevent domestic abuse include a National Action Plan on Gender Based Violence (2014-2018) and a National Strategy for the Promotion of Women (2015-2019), both of which address violence against women; the organization of community-based awareness campaigns in cooperation with civil society; and established family dispute units in all regional capitals of the country. However, women rarely seek legal redress for domestic violence, and there is limited police intervention in reported cases. Instead, women rely on family members, community leaders and local NGOs to resolve domestic violence cases (OECD, Gender Index).
67. The other national policies and strategies include the National Women's Empowerment Strategy adopted in 1995 and updated in 2005, aimed at defining and promoting a coherent national women's empowerment approach; the 2009-2012 National Action Plan for Rural Women designed to take into account the specific needs of rural women in the country's economic and social development; the National Gender Institutionalization Strategy (SNIG) adopted in March 2015 with the aim of ensuring gender mainstreaming in all the development sectors in order to guarantee women's empowerment and gender equality; and lastly, the National Microfinance and Micro-enterprise Strategy adopted in 2003. All these commitments bespeak the extent of the measures taken by the Government to mainstream gender in national policies and strategies. However, the results recorded in the area of gender mainstreaming in sector ministries are insufficient.
68. The Ministry of Women, Children and the Family (which became a full-fledged ministry in 2007) is responsible for developing and upholding legislation and designing programmes on women and children's rights; combating all forms of violence in the family; implementing the national gender strategy and promoting gender mainstreaming in national development strategies; promoting female entrepreneurship and promoting women's inclusion in decision-making and contribution to development.

Niger

Demographics

69. As of July 2018, Niger's population was estimated at 21.4 million inhabitants; it is expected to reach 34.5 million in 2030 and more than triple in 2050 to 69 million. Women account for more than half of the population (52.4 percent), and this share has actually increased in the last seven years according to data from the National Statistical Institute. Female-headed households made up 16 percent of the households in Niger according to data from the Demographic and Health Survey in 2012. Women's fertility rate is one of the highest in Africa: 7.6 children per woman and can reach nine per woman in regions such as Maradi and Zinder. The high fertility trends, combined with a rapid decline in child mortality, contribute significantly to the very high rate of population growth of 3.9 percent. The maternal mortality rate is 520 per 100,000 live births in 2015 and the adolescent birth rate is 192.0 births per 1,000 women of ages 15-19. Preference is given to male children, which stems from religious interpretations, income risks in the face of poverty and gender discrimination. High fertility rates have negative impacts on the time women have to devote to tasks other than caregiving to improve their own well-being (better education, health and nutritional status, employment and income generation).

70. Gender inequality is high in Niger: the country ranked 151 out of 160 countries on the gender inequality index in 2017, with a GII value of 0.649. Its ranking on the OECD Development Centre's Social Institutions and Gender Index (SIGI), which is a cross-country measure of discrimination against women in social institutions (formal and informal laws, social norms, and practices) across 180 countries, is similar: Niger ranks 153rd out of 159 with a SIGI value of 0.4415 which is very high. Niger is on a list of 13 Sub-Saharan African countries with a high level of gender discrimination based on the SIGI.

Development and poverty

71. Niger was ranked 189 out of 189 countries on the 2017 Human Development Index (HDI), with a value of 0.354. During the 1990-2017 period, Niger's HDI value went from 0.210 to 0.354, corresponding to an increase of 68.5 percent. As for the Gender Development Index (GDI), in 2017, the female HDI was 0.317 in Niger while the value for male was 0.391, leading therefore to a GDI value of 0.812 (UNDP, 2018 Statistical Update: Niger). These disparities present a challenge for development, particularly in areas of illiteracy, mortality, morbidity, access to assets, sexual violence and early marriage. Women, especially in rural areas, face higher unemployment levels and carry a heavy burden of work such as collecting water and firewood, agricultural work, preparing meals or caring for children.

72. Gender inequalities contribute to poverty which disproportionately affects women, girls and children. Niger is one of the poorest countries in the world with a poverty rate of 44.1 percent. Poverty is more widespread in rural than urban areas, and regions like Maradi, Dosso and Zinder are the most affected ones. This is also reflected by the Multidimensional Poverty Index (MPI): in 2012, Niger had a value of 0.605 and about 89.3 percent of the population is considered poor¹. The MPI results indicate strong disparities between urban and rural areas: the poverty rate in rural areas (0.669) is more than double the rate in urban areas (0.276). Regions with highest MPI are Maradi (0.664), Tahoua (0.646), Zinder (0.641) and Dosso (0.620). High poverty in rural areas and its effects on people's vulnerability confirm the need to create an enabling environment for financing climate resilient agriculture.

73. In relation to political participation, 28 out of 171 seats in government are held by women, which represents an increase from 1.2 percent in 199 to or 16.9 percent following the 2016 elections. Only 18 percent of cabinet ministers are women (or 8 out of 44), which is far below the target of 25 percent. For local communities, 588 out of 3,752 local elected officials are women, corresponding to a participation rate of 16 percent; the rate is much lower in Zinder, Tahoua and Maradi.

Women and agriculture

74. Women make up more than 70 percent of the Niger's workforce in the agricultural sector. Gender inequalities affect productivity levels: Backiny-Yetna and McGee (2015) found that plots managed by women in Niger produce 19 percent less per hectare than plots managed by men. The main determinants contributing to gender productivity gap in Niger are (a) access to farm labour; (b) the quantity and quality of inputs; and (c) land ownership and characteristics, with men owning more land and enjoying higher returns to ownership than women. Women's relatively lower participation in leadership outside the household, as measured by group membership and public speaking, is also considered as a key element that affects their agricultural productivity. Their low productivity levels are also likely to impact their resilience. A study on resilience in Niger found that female-headed households are less resilient than male-headed households. Furthermore, approximately one out of three women (36.2 percent) owns land compared to more than half of men (55.3 percent). Due to inequalities in access to productive resources, such as land and financing,

¹ <http://www.stat-niger.org/statistique/file/DSEDS/Rapport-analyse-situation-enfants-femmes-selon-equiteNiger.pdf>

female-headed households have been found to be poorer and more vulnerable to food and nutrition security.

75. Inheritance of agricultural land in Niger is subject to three categories of law: Islamic, modern and customary law. Not all categories consider women equally. Islamic law recognizes that women may inherit land, but gives one share of land to female heirs against two shares to male heirs. As a consequence, only 3,041 ha (4 percent) out of the 73,345 ha of irrigated land identified in Niger in 2004 are operated by women (Niger and The Gambia GAP, AfDB).
76. In Niger, women, especially widows, are the main victims of agricultural related property-grabbing including land, farm implements and inputs, discriminatory attitudes and practices that favour male-dominated land tenure system and reinforce existing gender disparities (UN Women, 2018).

Education

77. The literacy rate of women aged 15 years old and higher is very low, particularly in rural areas where it was 11 percent in 2014. Long-standing traditions attach less value to educating girls than boys, as demonstrated by a high propensity of illiterate women compared to men, with respective percentages of 75.5 and 67.8. The gender gaps are also reflected in inequalities in enrolment and completion of education: the primary Gross Enrolment Rate (GER) was 77.8 percent in 2017, with 83.3 percent for boys and 72.1 percent for girls. The percentage for girls had increased over the last four years, from 64.8 percent in 2013 to 72.1 percent in 2017. Similar percentages are found for primary school completion rates: 83.3 percent for boys and 72.1 percent for girls; the national average is 80.3 percent. These gaps are higher in rural areas compared to urban areas, especially in the regions of Zinder and Tahoua. This is compounded by the custom of marrying girls young, particularly in situations of financial distress and preferably to well-to-do (hence older) men from a different climatic zone. Only 4.3 percent of adult women have reached at least a secondary level of education compared to 8.9 percent of their male counterparts. Currently, the low level of education limits women's access to and understanding of the importance of climate information in integrated climate risk management.

Employment

78. 67.5 percent of women participate in the labour market, compared to 90.7 percent of men. On average active women are employed for fewer hours compared to men (28 for women and 43 for men) and receive lower wages. Gross income is estimated at US\$ 481 per year for women, while men earn more than double the amount: US\$1,292. Women who are paid a salary are only 16 percent in the private sector and 17 percent in the public sector; and the proportion of companies led by women is very low (5.14 percent). The unemployment rate is estimated at 8.9 percent, with 9.2 percent for men against 8.1 percent for women.
79. There is only a limited amount of small and medium-sized enterprises (SMEs) owned by women. When they do own businesses, they have unmet financial needs and face various barriers to access to assets and financing. Existing financial services intended for rural communities rarely benefit rural women. At the same time, financial institutions also face constraints when extending services to rural women, partly due to a lack of general understanding of the rural and agricultural sector, the gender dynamics in rural areas, high transaction costs when dealing with frequent small loans, and unclear and unfavourable land tenure and property rights (GCF, Niger).

Energy

80. The gendered division of labour within households generates different energy needs. In rural areas, women and girls traditionally bear the main burden of collecting biomass such

as charcoal, wood and agricultural waste for fuel. Fuelwood is the main energy source for about 97 percent of households, which has negative effects on women's health and well-being. In 2016, 65.4 percent of urban population has access to energy, while only 4.7 percent of the rural population does. In this context, promoting renewable energy through solar systems will contribute significantly to lower the gap between urban and rural, while helping women and girls by reducing the time spent on collecting heavy fuelwood.

Policy framework

81. The Constitution of Niger guarantees all citizens equal rights regardless of gender and prohibits sex-based discrimination. Despite these guarantees, the reality in rural areas is quite different. Family law, which regulates access to resources such as water and land, is governed by a combination of customary and Islamic law (or local interpretations thereof). This, together with other sociocultural, economic/legal and educational barriers affect women's access to services.
82. Niger ratified the CEDAW in 1999 and signed the Optional Protocol on Violence against Women (2004). The quota law, enacted in 2002, define a minimal threshold for the participation to the management of public affairs. The law 2004-50, the commercial code and the civil code also include provisions that should contribute to more gender equality.
83. A National Gender Policy was adopted in 2008, along with a decade-long plan (2009-2018) for its implementation. Some sectoral policies have also integrated the promotion of gender equality into their orientations.
84. There are additional legal barriers for women trying to conduct business. For instance, the Civil Code provides the male as the head of the household with 'marital authority' over his wife and explicitly limits her legal capacity in marriage, including with respect to exercising a profession and opening a bank account.
85. Addressing some of the governance challenges in the public and private sector will bring particular benefits to women. Efforts to generate a more enabling business environment will be particularly important for women, who tend to have less access to the money, time, literacy and social networks needed to overcome complex and financially costly/time consuming regulations. Proxy representation funded by development partners could be considered. Efforts to enable the informal sector will also benefit women who are even more likely than men to operate informally.

Senegal

Demographics

86. Senegal has a population of about 14 million, of which 51 percent is female. More than half of households live in rural areas. The heads of households are mostly men; only 15 percent of households are headed by women. Children, women and the elderly are the most vulnerable to climate shocks and to their harmful consequences. Nevertheless, climate shocks affect all Senegalese, who are vulnerable to the exhaustion of their food reserves and the decline in their agricultural production over time. Facing shocks and their negative effects on their lives and livelihoods, poor households struggle to satisfy their food, education and health needs and expenses.

Development and poverty

87. Although Senegal enjoys relative political stability, it faces several development challenges. The country's HDI value for 2018 is 0.514, which places it in the low human development category and 166th position out of 189 countries. Between 1990 and 2018, Senegal's HDI value increased from 0.377 to 0.514, an increase of 36.5 percent. During

this period, life expectancy at birth increased by 10.5 years, mean years of schooling increased by 0.9 years and expected years of schooling increased by 4.5 years. Senegal's GNI per capita increased by about 43.9 percent between 1990 and 2018 (Human Development Report 2019). Despite these improvements, some 39 percent of the population lives below the poverty line and 75 percent of households suffer from chronic poverty.

88. In 2018, Senegal had a Gender Inequality Index score of 0.523, slightly above the average for sub-Saharan Africa. It ranked 125th out of 162 countries. In Senegal, 41.8 percent of parliamentary seats are held by women, and 11.1 percent of adult women have reached at least a secondary level of education compared to 21.4 percent of their male counterparts. For every 100,000 live births, 315.0 women die from pregnancy related causes; and the adolescent birth rate is 72.7 births per 1,000 women of ages 15-19. Female participation in the labour market is 35.2 percent compared to 58.6 for men (Human Development Report 2019).
89. Chronic malnutrition affects 17 percent of the population, with much higher rates in some regions. Among women of childbearing-age, 31.6 percent are malnourished and 22 percent suffer from chronic energy deficit. Micronutrient deficiencies (iron, iodine, vitamin A and zinc) are widespread. Anaemia affects 57.5 percent of women and 66 percent of children under five (WFP, Senegal country strategic plan 2019-2023).

Women and agriculture

90. Women in rural areas constitute most of the labour force; 70 percent are active in subsistence agriculture, compared with 30 percent of men. Most men farmers produce cash crops such as peanuts and cotton, fish or raise livestock. Migration by men to urban areas to seek employment means that women take over men's food production and other responsibilities as well as marketing, household purchases and social and community duties (WFP).
91. At the level of the crop production sub-sector, in 2015, the majority of women own small areas of about 0.4 ha, while men own areas of about 1.3 ha. Men own 93.6 percent of the cultivated areas, compared to 6.4 percent for women, with the exception of rainfed rice crops in the regions of Kolda, Sédhiou and Ziguinchor, where women farmed 62.7 percent of the plots in 2014. The same year, the percentage of women who owned their plots was 3.8 percent compared to 86.2 percent for men; 23.2 percent of women rented land (76.8 percent of men), 40.7 percent of women borrowed the land (59.3 percent of men) and 14.3 percent of women engaged in tenant farming, compared to 85.7 percent of men in 2014 (FAO).
92. With regard to livestock farming, men mainly look after cattle, sheep and goats, while women are more present in traditional poultry and small ruminant farming. Women are also involved in watering and feeding livestock, and are responsible for the collection, processing and marketing of milk. As for the leather industry, which is an important generate of income and jobs, women are mainly involved as tanners. Women are also involved in the processing and conservation of fish products.
93. Under the Constitution, women and men have equal property rights for land ownership. Women are legally entitled to acquire and own land independently of their husband or male relatives and to retain ownership and control over their own property after marriage. Yet, as men are legally the head of the household, they have greater access to agricultural inputs and, more generally, land and other resources. In addition, where the dowry system of marriage applies, any property and assets given to the woman upon marriage are to be handed over to her husband who is tasked with managing them during marriage. More generally, land is allocated through local administrative processes in Senegal that do not

officially recognize land sales or bequests. Instead, land belongs to the national domain, and local land committees grant land use rights. Until the 2001 Constitution, women were not allowed to own land in Senegal, nor to be members of the land committees, and as such rarely received land through this allocation mechanism.

94. Moreover, despite legislation, bequests – including land inheritance – are common, and ownership is primarily obtained through paternal lineage. Several inheritance laws coexist in Senegal. While the French-inspired system of inheritance grants greater equality in the division of wealth among surviving spouses and children than the Islamic inheritance system, the latter prevails and very few women (approximately 4 percent) have any land to transfer to their heirs upon death (compared to more than a third of men). Customary practices relating to land ownership that discriminate against women are specifically banned under the Constitution and yet, they continue to limit women's access to land. In some rural areas, village chiefs assign land under customary law, and women rarely benefit from this process. In other areas, husbands are obliged to give their wives a portion of land for their own use, but in polygamous marriages, this may result in each wife receiving only a small amount of land. Studies by DAPSA found that only 10 percent of the total ownership titles belong to women.
95. In many cases, women are beneficiaries of only a small portion of land. Institutions such as rural councils for land attribution grant women a very small portion of exploitable land – usually a maximum of three hectares – compared to male heads of households. Lack of access to and control of exploitable land means that women resort to strategies and alternatives such as tenant farming which limits their productivity. Moreover, the activities reserved to small-scale women farmers such as rice cultivation, vegetable gardens and petty trade usually do not produce substantial income. Limited access to land combined with little financial knowledge and difficulty in building credit exclude women from accessing credit (WFP, GCF).

Education

96. The percentages of women with some secondary education and employed women are below the regional average. Literacy rates are 66 percent for men and 40 percent for women. In urban areas laws protecting women are generally respected, but in rural areas, traditional and religious practices such as early and forced marriage prevail, leading to girls dropping out of school, reduced economic productivity and continued gender inequality, which contribute to widening the hunger gap (WFP, Senegal country strategic plan 2019-2023).
97. Although gender parity has been achieved in favour of girls in primary education (for every 100 boys enrolled, there are approximately 104 girls), as the level of education increases girls' enrolment rates decrease. Dropping out of school is significantly common not only in the transition from primary to secondary, but also within secondary education. In 2009, girls' enrolment in secondary education was 27 percent and gender parity was still far from being achieved, where for every 100 boys there were approximately 79 girls (UNESCO Global Partnership for Girls' and Women's Education – One Year On, Senegal).

Employment

98. The share of female labour force in total labour force has been increasing over the past two decades at a faster pace in Senegal than in the rest of sub-Saharan Africa. The growth was particularly notable between 2006 to 2011, when women's share in the total labour force participation rate jumped from 35 percent to 38 percent, and the female-to-male employment increased by 14 percentage points. Despite this progress, women's participation rates in the Senegalese labour force remains below sub-Saharan Africa's average (Malta, Martinez and Tavares, IMF WP/19/241, 2019).

Energy

99. While Senegal has one of the highest national electricity rates in the region, access in rural areas is still limited to around 40 percent of households. This means that though access to alternative energy sources are improving, the majority of rural communities rely on energy sources such as wood-burning fires for cooking, lighting, warmth and other needs. The burden of gathering wood for fuel traditionally falls on women and girls.

Policy framework

100. Senegal ratified CEDAW in 1985, and the Optional Protocol on violence against women in 2000. Yet, the country has not reported to the CEDAW committee since 1994. Senegal ratified the Protocol to the African Charter on Human and Peoples' Rights and the Rights of Women in Africa in 2005. The government also adopted a National Gender Equity and Equality Strategy for the 2005-2015 period (SNEEG 1), which was updated in 2016 (SNEEG 2) to cover the period 2016-2026. SNEEG 2 is the 4th reference framework for the promotion of women and gender equality in Senegal.

101. The Ministry of Women, Family and Gender, through its Gender Equity and Equality Directorate, is to support the ministries in charge of vegetable, livestock, fish and forest production by providing capacity-building and coordinating participation in the development and monitoring of the implementation of the SNEEGs. It is also to support the institutionalisation of gender (setting up of gender units, audits and gender action plans).

102. In terms of results, there have been improvements at the institutional level on macro and sectoral indicators and the Government of Senegal has made advances in mainstreaming gender into several policy areas in Senegal.

103. Article 7 of the 2001 Constitution guarantees equality between men and women. However, despite a legal framework that protects women, discriminatory practices especially in the domains of the family and inheritance persist, particularly in rural areas. Commonly held beliefs and sociocultural barriers lead to different perceptions concerning gender, with men considered as holders of authority of the family and responsible for the household, whereas women are considered responsible for their children's education and domestic chores.

The Gambia

Demographics

104. The population of The Gambia is estimated at 1.9 million, with an annual growth rate of 3.3 percent (GBoS, 2013) and an average household size of 8.3. About 50 percent of the population lives in rural areas and women constitute 51 percent. One in five households is headed by a female, mainly because of the migration of males to urban areas and overseas. Women's poverty is closely linked to their high illiteracy level (73 percent), the absence of economic opportunities, inadequate access to economic resources, including credit, land ownership, skills and support services. About 67 percent of the population is aged below 25 years (2009 National Youth Policy). The factors that make women vulnerable, such as poverty, power relations, lack of economic power, low level of education and lack of or limited technical knowledge, are also key issues affecting youths.

Development and poverty

105. In 2018, Gambia's value on the Human Development Index was 0.466, positioning it at 174 out of 189 countries and territories. Gambia had a GII value of 0.620 and thus ranked 150th out of 162 countries in the 2018 index. In Gambia, 10.3 percent of parliamentary seats are held by women. For every 100,000 live births, 706.0 women die from pregnancy related causes; and the adolescent birth rate is 78.2 births per 1,000 women of ages 15-

19. Female participation in the labour market is 51.7 percent compared to 67.7 for men (Human Development Report, 2019).

Women and agriculture

106. Women comprise 78 percent of the economically active population who work in agriculture compared to only 57 percent of men. The majority of women farmers are unskilled agrarian wage earners and are responsible for about 40 percent of the total agricultural production in the country. Even though there are more women in agricultural production than men and they make a massive contribution, it does not award them the improved social status they may desire. Most are involved in the production of non-cash crops for subsistence and thus operate at low levels of productivity owing to limited control and ownership of productive resources such as land, inputs, credit and technology, as well as markets. While women are active in horticultural production, an activity that generates relatively good revenues, this income is often invested in sustaining the household. Their limited capacity and skills to embark on viable agro-based and entrepreneurial activities, lack of ownership and control over resources such as land and modern agricultural equipment, coupled with the triple roles of women, impede all efforts for rural women to graduate into the mainstream livelihood economy (FAO, National gender profile of agriculture and rural livelihoods – The Gambia).

107. In The Gambia, crops are grown according to gendered division of labour: men primarily grow sorghum, millet, maize and groundnuts in the high lands using mechanized methods. Women primarily grow lowland rice, the main staple food in the country and one of the most labour-intensive crops, on a subsistence basis to feed their families. Similarly, horticultural production is mainly practised by women on a small scale, partly for consumption and for sale at local markets as primary products to earn little income to supplement their subsistence earnings with cash income. Women farmers also raise and manage most of the small ruminants and rural poultry for the same purpose, while men deal with cattle for reasons of prestige. In the fisheries sector, men are responsible for the actual fishing, while women are engaged in landing the fish, processing and trading it, both fresh and smoked or dried. This applies to both the artisanal and the industrial sector. This gender division is slowly breaking down with women moving into groundnut production and men being engaged in growing improved rice, with the introduction of NERICA rice varieties to a point of dominance in upland farming systems. However, the bulk of rainfed rice production, the main source of the country's domestic rice supply, is owned and managed by women. Women also provide labour on male-controlled irrigated rice (FAO, National Gender Profile).

108. A study commissioned by Action Aid found that in all the communities studied, land is controlled by men with women having limited access in most cases, except for land that women use for rice cultivation. The majority of women do not have primary rights to land, though some do inherit land and others are beginning to purchase it outright in West Coast Region. Their landownership is very reduced: only 4 percent own land alone, 15 percent own land jointly, the rest do not own any land. Women generally operate smaller farms, have fewer livestock and a greater overall workload that includes fetching water and fuel wood. Women also have less access to education, agricultural information and extension services, technology and financial services. Access to market, storage and processing technology remain poor and hamper value chain development (FAO, National Gender Profile).

109. Conflicts sometimes arise when men have attempted to recall the secondary right after women have already invested in infrastructure (wells, fencing) and/or planted trees. It will be crucial for the programme to take measures to ensure that women keep control of assets and production through consistent and sustainable capacity development support.

One way of doing this is through Functional Literacy Programmes, Farmer Field Schools and tailored entrepreneurship training.

110. It has also been observed when the economic value of women-dominant agricultural commodities increases; men tend to be attracted in producing them and eventually compete or even dominate them in producing such commodities. This trend is noticeable in the cultivation of rice and horticultural products in The Gambia as men are gradually expanding into their production (FAO, National Gender Profile).

Education

111. Gambian young women lag behind the young men with an illiteracy rate that hovers around 20-30 percent. According to the Human Development Report 2019, 30.7 percent of adult women have reached at least a secondary level of education compared to 43.6 percent of their male counterparts. Access to climate information to orient the choices of adaptation techniques and technologies is very limited. The country still lacks reliable CIEWS.

Employment

112. Women account for around 50 percent of the total labour force in the country and 70 percent of unskilled labourers. 42 percent of female employment is in agriculture against 22 percent of male employment. 84.6 percent of women are considered in vulnerable employment against 71 percent of males, and only 14 percent as wage- and salary-workers against 29 percent of male. However, The Gambia has achieved important progress with regard to women's education with primary completion rising from 63 in 1999 to 73 percent in 2016, higher than 80 percent males in 1999 dropping to 68 percent in 2016 (FAO, National Gender Profile).

Energy

113. In 2018, 76 percent of the urban population had access to electricity, whereas only 35.4 percent of the rural population had such access. This means that rural households rely on other energy sources, such as fuel wood. Rural women still spend a significant amount of time gathering fodder.

Policy framework

114. The Government has taken concrete policy decisions and actions related to gender and women in the past two decades. In order to better manage the affairs of women and gender, the Government established the Women's Bureau and NWC in 1980, established the Ministry of Women's Affairs in 1996 and created the Federation of Gambian Women in 2010. The Government also ratified a number of international conventions and developed and implemented a number of national policies to address gender issues in the country. It ratified the CEDAW in 1992. The country developed its first national policy on women, which is the 1999–2009 National Women's Policy (NPAGW). Currently, the 2010–2020 Gender and Women Empowerment Policy (GWEP) is being implemented together with the Gender Mainstreaming and Women Empowerment Strategic Plan (2010–2015). The GWEP was developed through a consultative process informed by a series of consultations at national, provincial and district levels spearheaded by the national Women's Bureau. Furthermore, to put gender equality and women empowerment on a sound legal footing the government enacted the Sexual Offences Act 2013, Domestic Violence Act of 2013 and Women's Amendment Act 2012. These laws have domesticated international best practices instruments such as the CEDAW (FAO, National Gender Profile).

115. A Ministry for Women's Affairs responsible for providing policy guidance to the Government and stakeholders on gender issues and women was created in 1996 under the OVP, who is the Minister. Gender focal points (GFPs) have been established in all line

ministries and departments, UN and international agencies, NGOs and the private sector with the objective of ensuring effective mainstreaming of gender perspectives at all levels and processes.

116. Even though the 2010 Women's Act stipulates that every woman should have the "right to acquire and own moveable and immovable property and to administer, manage and dispose of the property freely without restrictions", land ownership in The Gambia still traditionally favours men. Customary biases often mean that women do not exercise their land rights, nor do they have the financial resources, knowledge and capacity to go against social norms. Management systems are weak, resources to address gender bias are extremely limited and there remains significant community antagonism to equal rights for women. A shift is needed in the thinking, attitudes and understanding of men and women, as well as among officials, decentralised government structures and traditional authorities.
117. The Gambian National Agricultural Investment Plan (GNAIP), the Gambia Sustainable Land Management Investment Framework 2016-2020 (GAMSIF) and the National Rice Development Strategy (NRDS) all note the concern that a "feminization" of poverty is underway, exemplified by higher levels of poverty among female-headed households. It is estimated that such households represent 18 percent of those in rural areas; 63 percent of them fall below the poverty line, compared to 48 percent of male-headed households. Most women are subjected to the general insecurity that is associated with secondary rights. They are not able to develop borrowed land for long-term economic benefits and they risk losing borrowed land. This is a particular problem for multi-year investments.

Stakeholder consultations

118. It should be noted that **stakeholder consultations** for this programme were conducted during the field missions of IFAD baseline projects between 2018 and 2019 in the 7 countries targeted locations for this programme (see annex list). The design of these program acts as an entry point for gender mainstreaming throughout design and implementation. All stakeholders including women were met during the meetings with sectors ministries and field visits (surveys, focus groups). The information obtained through these consultations in each country and the targeted sites provided important input for identifying priorities for interventions and for the design of programme activities. While some specific location were not visited and will be identified at the implementation stage, the analysis was complimented by stakeholder consultations from in the identified project regions , to bring more specificity to the recommendations and provide information for the development of the Gender Action Plan. Consultations will be conducted through the same IFAD targeting approach using focus groups and qualitative studies to understand the different roles, interests and priorities of women and men in the implementation areas, and tailor the programme and its gender action plan accordingly. This analysis will include the names of the people including women consulted. **It will be submitted to the GCF no later than 6 months after the startup of the program .**

117. For each country, a detailed gender analyses informed by stakeholder consultations and engagement will be conducted through the same IFAD targeting approach using focus groups and qualitative studies to identify the specific needs and priorities of women and other traditionally marginalized groups in relation to the objectives of the program. This analysis will include the names of the people including women consulted. **It will be completed no later than 6 months after the startup of the program** and submitted to the GCF 6 months after the start up. This analysis will include the names of the people consulted including women.

118. The gender analyses informed by stakeholder consultations and engagement to identify the needs and priorities of women and other traditionally marginalized groups will be a preliminary action that will be carried out in each of the program's intervention countries. The results obtained will be translated into an action plan that will be submitted to the GCF for approval 6 months before implementation. This evaluation will be carried out as indicated above in the first 6 months of the program's start-up, subject to the identification of the sites.. Project gender specific action plans which integrate the programme level action plan will be prepared and submitted to the CF within the proposed timeline

119. Each country gender analysis should also question religious and customary social norms that are not favourable to the issue of gender equality and equity. Indeed, in the different countries of the programme, there are legislative frameworks for the promotion of gender as well as, points of resistance need to be clearly identified to be addressed in the action plan that will be revised. Some UN agencies (e.g. UN-Women) will be called upon to help implement the actions that will be proposed.

Table 2: Targeted areas per country and gender analyses informed by stakeholder consultations and engagement

Burkina	PAFA	Boucle du Mohoun, Haut Bassin, Cascades	Detailed gender analyses and action plans informed by stakeholder consultations and engagement	Timeline submission of final detailed gender analyses and action to the GCF
The Gambia	ROOTS	Central River Region (CRR); (ii) North Bank Region (NBR); (iii) Lower River Region (LRR); (iv) West Coast Region (WCR); and (v) Upper River Region (URR).	Upon the selection of the final sites, country specific detailed gender analyses and actions plans will be prepared 3 months after the start up . They will be aligned with the programme level action plan provided	4 months after the Start up meeting
Chad	Re-PEr	Guera, Baguirmo, Mongo, Ati, Adjer Lamis		
Mauritania	PROGRES	Brakna, KAedi, Kiffa, Hod El gharbi		

Mali	MERIT	Kayes, Segou, Koulikoro, Sikasso		
Niger	PRECIS	Dosso, Tahoua, Maradi et Zinder		
Senegal	Agri- Jeunes	Louga, Thiès, Diourbel, Fatick, Kaolack, Kaffrine, Sédhiou et Ziguinchor		

120. Each country detailed gender analysis and actions plans will be aligned on the programme level analysis and action plan for the 7 countries while taking into account the specific gender realities in each locations to be selected. Once the detailed gender analysis and action plan is finalised, the PMUs/ and the RCUs will update the gender action plan and cascade down the budget from the Programme level analysis and action plan to each country specific action plan in order to implement activities particularly related to climate information systems and micro insurance within the resources allocated. In the situation where extra budget is required, IFAD baseline investment gender plan and budget to complement and address any potential gap. Specific partnerships will be also build with other organizations such as UN women, UNICEF, WFP and any other relevant partners on gender issues in the same areas

117. Some of the main issues and recommendations collected and reported by the IFAD team and that need to be addressed in the design of this GCF programme are:

- **All countries: Rural communities including women recognised the lack of** quantitative and qualitative climate information which could help in informing and improving adaptation practices and mitigation measures on forestry, land use and energy access; insurance products and Forecast-Based Action/Financing (FBA/FBF) as examples of innovative disaster risk finance mechanisms. Currently, women particularly don't have access to climate information to guide them on the selection and adoption the most appropriate adaptation and mitigation practices/technologies to respond to climate variability (cropping calendar, timing for marketing and processing; choice of the most suitable agro forestry practices and technologies as well as energy access). Hence, their understanding of climate risks to better manage climate shocks and meteorological services to provide impact-based forecasting (i.e. enhancing climate equipment available in the countries and providing trainings to climate and meteorologists is very limited.
- **Burkina Faso, Mali, Chad, Mauritania, Niger, Senegal and The Gambia:** the IFAD team identified women's need to produce their own compost for market gardening, which is widely practiced in the targeted programme area. They also recommended including women as the main beneficiaries of the promotion of bioenergy, as it will help reduce the time they devote to the collection of wood, help improve sanitary conditions and create opportunities for them to participate in various training sessions (functional literacy, nutritional education).

- **Mauritania and Niger:** observations from the consultations including the discussion with women and women groups highlighted the lack of funding for infrastructure for access to drinking water. Improving their access by providing villages with boreholes will considerably reduce the burden of fetching water on women and was identified as a priority. Component 2 of this GCF programme addresses this issue by providing activities that focus on “sustainable water management and use through climate-smart irrigation schemes, drip technologies powered by renewable energy to cope with the consequences of drought and extreme heat events”. Furthermore, 175 water points will be constructed or rehabilitated throughout the region, which also was planned according to the issues raised during the stakeholder consultations. Other important recommendations including providing vulnerable women farmers technical assistance on herd rebuilding to contribute to improve soil fertility through organic manure and help increase farmers’ incomes; promoting the development of market gardening activities around ponds and supporting producers with improved seeds for produce.
- **The Gambia:** observations from the consultations with women associations and women, which coincide with current IFAD experience in the countries and its field missions, led to recommendations on a number of measures and mechanisms to support women's involvement, including:
 - The selection of service providers with proven capacity in working with women, including the use of female facilitators, if required;
 - During awareness-raising in the initial stages of the project and in subsequent village meetings, separate sessions should be held with women to ascertain their opinions and needs;
 - On a demand-driven basis, women should be given preferential access to appropriate project activities;
 - Gender mainstreaming responsibilities should be integrated into the terms of reference of all project staff as a principle to be respected; and
 - The programme’s M&E and knowledge management systems should be gender- and age-disaggregated to facilitate the identification of lessons learnt on how to support women's social and economic empowerment.

118. These recommendations were all taken in full consideration while developing the concept of this GCF programme and will be addressed in its activities throughout all components, as reflected in the Gender Action Plan below.

These consultations have led to the Targeting of women and youth in IFAD Baseline projects presented below.

Table 3: Targeting of women and youth

Countries	Baseline	Women	Youth		Women	Youth
Burkina	PAFA	50%	30%	G5 Sahel +1	50%	40%
Chad	Re-PER	40%	30%		50%	40%
Mali	MERIT	50%	30%		50%	40%
Mauritania	PROGRES	40%	30%		50%	40%
Niger	PRECIS	50%	30%		50%	40%
Senegal	Agri-Jeunes	50%	100%		50%	40%
The Gambia	ROOTS	80%	25%		-	-

119. Building of the targets and quota set in IFAD already approved projects; the design of this regional program set at least 40% of the intervention to be allocated to women . During the design of each country gender analysis and action plan, constraints related conflicting tripartite legal systems and patriarchal systems deeply rooted in religious and customary social standards will be taken into account. At country level, the program will use local same channels (community and customary) being currently used by IFAD projects and partners to implement the gender activities. The aim will not be to challenge social norms, but to gain acceptance of the programme's principles of intervention and specifically address the needs and priorities of women and minority/marginalised groups in each of the selected countries and regions.

120. Concerning polygamous households, the entry point will be husband and all the wives and children to ensure equity as compared to single households. During the country specific gender analysis, a more specific gender action plan will be developed in which polygamous households will be clearly identified and targeted

121. Special attention will be given to women led MSMEs, Farmers organizations with women memberships defined as :

Women led MSMEs:

- A formally registered agribusiness enterprise of which more than 51% of the firm's assets or shares are owned by women. This will be assessed and validated based on firm registration information and women's share of profits
- Women represent at least 30% of the Board of Directors or in senior management positions
- Minimum firm size of three employees, of which 60% are women
- Activities are mainly carried out along the agricultural value chain • Track record of loan repayments
- Operational bank account open for more than two years
- Records and bookkeeping up to date
- Agriculture land holding of between two and ten ha
- Any other characteristics deemed necessary by the Financial Institutions

Farmer Organizations (FOs)

These organizations shall have a (a) defined membership; (b) purpose for assembling; and (c) organizational structure established to support members in pursuing individual and collective interests.

They may differ in their: (i) scale characters of memberships (e.g. national federations to local associations); (ii) function policy advocacy (e.g. policy, advocacy, economic, technical, local development); and (iii) legal designation (e.g. registered cooperatives and registered clubs, groups, associations); among others. In the Host Country and the targeted regions in general, they combine their forces for improving bargaining and negotiation power particularly price, achieving economies of scale in operations, improving quality control and better access to finance and market.

Definition of cooperative

An autonomous association of people who come together voluntarily to meet common economic, social and cultural aspirations and needs within a collective enterprise where power is exercised democratically. For this project, it is an enterprise which seeks a fair balance between profit and meeting the needs and interests of its members and their communities. Agricultural cooperatives allow their members to seize new economic opportunities by offering them a whole range of services in the agricultural sector

The criteria for selecting farmer-based organizations, MSMEs, cooperative will be mainly based on the number of women into these groups and memberships as well as their participation in the board of directors.

Key barriers common to all target countries identified during field missions:

122. The country assessments above indicate a series of common factors that must be taken into account in the programme's design and implementation to ensure that it is effective in building women smallholder farmers' resilience to climate change. Many are important barriers to women's access to micro insurance and financial services:

- **Gendered division of labour.** Cultural beliefs and norms govern daily life in the rural areas. Women are expected to assume full responsibility for housework and care for the family, which is unpaid, and certain norms limit their engagement in economic activities outside the home. Only a small percentage of women have paying jobs or their own small businesses. They lack financial resources to invest in machinery, male family labour, technologies and crops that bring higher returns.
- **Property rights and control over assets.** Due to cultural beliefs and practices, only a small minority of women own land and few have adequate and stable access to land and agricultural inputs. The lack of assets in their names is an important impediment to developing viable business and obtaining loans, as they have nothing to offer as collateral. This remains a major challenge and prevents financial institutions from providing loans.
- **Lack or no awareness of financing opportunities and new instruments like agricultural insurance schemes.** Rural women generally lack knowledge on the financial options available to them with the financial institutions and men control resources. This is mainly due to lack of financial education and prevailing social and cultural norms. Women have no understanding of climate risk transfer (agricultural insurance) which could strengthen their resilience to climate shocks depending on the intensity and magnitude.
- **Lack of access to knowledge particularly reliable climate information's:** when available from CIEWS. Climate Information Services are critical for the creation of relevant, science-based information to inform decision making, enabling EWS and creating new business opportunities, but women still do not have access to climate information's for decision making processes in agriculture.
- **Lack of education:** Women in rural areas in the Sahel have lower educational, literacy levels than men, and natality rates are high. They also lack access to knowledge and information to develop projects for the banks and MFIs.
- **Biased perception of the financial sector:** banks and MFIs consider smallholder agriculture as a high-risk sector and women are not attractive to banking. In situations where they do have access, interest rates are high and put them into a debt circle.
- Many women are subjected to various forms of gender-based violence: domestic violence, female genital mutilation, child marriage and force-feeding.

123. IFAD is recognized for addressing gender inequalities in rural areas. A recent [report](#) by our Independent Office of Evaluation showed that IFAD has been successful in addressing the root causes of gender inequality and women's powerlessness, including in the countries where this initiative will be implemented. The programme will build on this solid experience. It starts with a rigorous analysis of the socio-economic context on which the gender strategy is based. The strategy to address these barriers includes, amongst others, multiple and complementary activities promoting gender equality and women's empowerment, concrete measures to reduce women's workloads, support to women's organizations, working with men is critical as

they are often the gatekeepers of customary practices that limit women's access to resources or public spaces, highly participatory approaches and cultural sensitivity.

124. In terms of political and insecurity risks, countries facing conflicts are Mali, Niger, Burkina and coup (Mali). The sites selected for the programme are secured sites in the countries concerned. However, each country will propose a plan of action for the safety of the intervention sites that will be taken into account during the evaluation mission. Additionally in IFAD projects, gender is systematically addressed. Community awareness will be a key leverage for the social acceptability of gender issues in the program. The program will build on existing frameworks, drawing on the approaches that have proven to be successful in previous IFAD-supported projects in the area and those of other UN agencies, such as UN Women. This approach will be coupled with the involvement of community leaders in order to create synergies between men and women and avoid opposing them. In each of the program countries, experiences already exist and will serve as a model for program interventions

Programme Interventions to address the key barriers

125. **The programme's main overall objective** is to increase resilience and enhance the livelihoods and food and water security of poor smallholder farmers and rural communities particularly women and youth (50 percent) through integrated climate risk management of natural resources (water, soil, ecosystems) in seven countries of the Green Great Wall (GGW). It also seeks to enable these countries and local communities including women to adopt low emission, climate resilient pathways for agricultural development by promoting, upgrading and scaling up risk management measures in agriculture while delivering various adaptation and mitigation co-benefits, including the avoidance of 21 466 499 **tCO₂e GHG** emissions
126. The main targeted products are key staple crops (millet, maize, sorghum and groundnuts), livestock (dairy and beef, sheep, goats and chicken) and non-timber forest products (NTFPs, forestry).The programme will directly benefit 817,922 households and indirectly over 5,332,754 beneficiaries (see table 6 for disaggregated numbers) of which 50 percent will be women and 45 percent, men. It will focus particularly on women and youth, as they are the most vulnerable people to climate change.
127. The programme will contribute to address these barriers by : (i) strengthening women's economic empowerment by improving their access to resources and opportunities (e.g. promoting women's access to rural finance, markets, technical training and income generating activities); (ii) strengthening women's voice and influence (increasing their representation and voice in producers' organisations and local governance, financial literacy and leadership training); and (iii) promoting more balanced workloads (promoting labour and time-saving technologies and practices, infrastructure work to improve access to markets and water). . These are :
128. For gendered division of labour, various interventions proposed will strengthen and scale up innovative rural electrification models through solar energy. Women typically carry the brunt of unpaid work which involves water and fuel collection; food processing, preparation and cooking; travelling and transporting; and caregiving. This is particularly true in rural context with limited basic services and labour saving technologies. Small-scale affordable power supplies, using renewable energy sources could benefit women and girls in many ways. It would decrease their

cooking on traditional open fires with traditional biomass or charcoal as fuel and their manual processing or preparation of food. Ideally the innovative technologies promoted would be locally produce creating employment opportunities for the women themselves. New technologies would also require upgrading the skills of the participating women. Overtime, it is likely that such investment will increase their well-being and value in their household, and community.

129. To ensure the adoption of the proposed innovations some key considerations will be taken into account: (1) they need to be perceived as effective, that is being reliable and generating measurable benefits of value to the women and their households. Issues of safety and convenience are also important.; (2) The technology needs to be appropriate for daily life and should be designed in collaboration with the women intended to use the technology.; (3) the technology will need to be understood and accepted; (4) linking the technology to potential income-generating activities could increase the likelihood of adoption With labor saving technologies, the time burden of fuelwood collection should decrease for women and girls, leading to positive outcomes in terms of environmental management, carbon sequestration, health and well-being. Women can reallocate their time to leisure or economic opportunities by developing micro and small enterprises, diversifying their incomes. The same benefits in time use is expected for girls who will be able to go to school and improve their education.
130. In addition to targeting unpaid domestic work, the programme will also target local women's agricultural group to adopt labour-saving and cost-competitive technologies for developing vegetable gardens. This can make critical differences in a context where women have low agricultural productivity compared to men and are struggling to access land with good soil quality and close to water sources. Within these vegetable gardens, the programme interventions will promote public sanitation facilities, as well as childcare facilities powered though the solar system. Therefore empowering agricultural women's groups in adopting solar labour-saving technologies is essential to help improve crop yields, increase vegetable intake and nutritional outcomes of households, and freeing up women's time in other productive and economically remunerative activities. As a result, the adaptation capacities of women to climate change will be improved. Facilitating women's participation – in design, planning, siting, construction, operation, maintenance, management and monitoring, in as far as is locally acceptable – is essential to ensure that they have real choices and that technologies and services are successfully adopted and sustained. Training sessions or other forms of knowledge transfer (such as informal peer training, learning routes, and south-south exchange visits) should be held at times and locations that are convenient for women so that their participation is not restricted.
131. The programme will also strengthen agro forestry planning, conservation measures and incorporate adaptation measures along value agricultural value chains, the programme interventions are likely to contribute to women's empowerment. In fact, agroforestry and forestry projects/programs can better protect women's access rights by allowing for multiple uses of specific spaces and resources by multiple users, and by prioritizing renewable uses, such as the gathering of fruits or harvesting of fallen wood, pruning, coppiced wood, and leaf fodder, which do not preclude most other uses².
132. The evidence has shown that secure land rights can increase a woman's economic independence and bargaining power and reduce vulnerability to Gender Based Violence (GBV)– particularly in low-income, agriculture-based economies. As

² Rocheleau, Dianne, and David Edmunds. 1997. "Women, Men and Trees: Gender, Power and Property in Forest and Agrarian Landscapes." *World Development* 25 (8): 1351–71.

IFAD targeted regions are characterized by these factors, the programme will be implemented in such regions and therefore the proposed activities will also address GBV. The use of household methodology to address the underlying causes of discriminatory practices against women will be explored to involve both men at household and community level. Consultation involving both men and women during the design phase could help minimize the negative attitudes men have in realizing that the project intervention is increasing women's economic independence and their bargaining power as well. The various form of violence are : Domestic violence/Intimate partner violence, Other harmful practices, Female Genital Mutilation/Cutting (FGM/C), Child, early and forced marriage, Domestic violence/Intimate partner violence, Sexual harassment, Sexual violence, Stalking, Trafficking, Violence against women and girls. It lies on the Cultural beliefs, norms and households set up.

133. Furthermore, within women groups involved in vegetable gardens and sustainable forest management, one key activity is the launching of a domestic violence training program to better empower women within their communities. For a greater impact, this training will be combined with sensitization programs at the community level (through conferences, TV panel discussion, film projections, etc.) involving grassroots associations with the implication of men and women in the design of such programs. Partnership with NGOs and other stockholders to address these sensitive issues will be explored. .
134. Female lead households may be subject to less access to resources such as land, credit, to information on technologies and reduced engagement within women's groups at the community level. Therefore, at the early stage of the programme it will be important to strengthen the understanding of issues related to female headed households in target intervention areas in order to have a better understanding of their situation and needs related to renewable energy and climate resilient adaptation measures. This will inform on the best ways the programme could involve female led households in the activities proposed
135. With regard to property rights and control over assets, the interventions will focused on the establishment of modern communal poultry farms for youth and women, model of community vegetables gardens, the establishment of Agro-Pastoral/Farmer Field Schools (AP/FFS) and nurseries proposed under component 2 which 50% will be targeting women owned . With capacity building and awareness, the programme will promote the dialogue and empower women to have control over these community lands and assets under the program with clear titles.
136. Concerning the lack of awareness of financing opportunities and new instruments like agricultural insurance schemes, the programme has a series of activities presented under the gender action plan which aims at improving awareness raising on financial instruments in agriculture such as agricultural insurance linked to climate informations; and indirectly better access to credit. Activities planned are awareness-raising, capacity-building and institutional development on integrated climate risk management of which 40% women, Increased access to micro climate insurance for both men and women using the digressive premiums payment for smallholders, targets women and include Gender dimension in the formulation of national disaster risk financing (DRF) strategies for all countries and their local contingencies plans for the macro insurance . To facilitate this work, the programme will support the inclusion of women as part of each of the country PMUs and the RCU.

137. To address the access to knowledge particularly reliable climate information's: various training will be organised under this programme. To overcome the lack of education and illiteracy, information and awareness-raising activities will be carried out in local languages and pictorial materials will be used to facilitate access to climate information and services. Additionally extension agents will provide training and technical support to overcome this illiteracy which is a reality and various projects adress through the proposed approach. The programme foresees will develop and deliver modules on financial literacy, which will especially target women. Though a better understanding of the financial sectors and instruments particularly insurance products and links to credit products, the biased perception of women seen as risky will be improved
138. A gender and youth analysis will be carried to assess the effectiveness of the gender strategy and how it improve the lives of rural women (economic empowerment, voice, workload) and youth participation in all locations during the lifecycle of the project. Based on the programme performance, necessary adjustment will be provided during the regular IFAD supervisions mission and during the mid term review.
139. The Gender Action Plan below outlines the concrete measures that will be taken to address these barriers in order to close the gender gap in agriculture and modernize the sector under this programme.

Gender Action Plan

140. In the seven (7) Sahelian countries in this programme, women play a fundamental role in agriculture and therefore, any effort to strengthen the climate resilience in this sector must take measures to ensure that the support and benefits offered reach women and that they actively engage in the process. This gender action plan for the **Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW)**” programme has been designed precisely to do that. It aims to achieve the following: (i) Equal opportunities to access to climate information systems and services which guide adaptation/mitigation techniques and choice of technologies as well as the design of insurance products to build their resilience to climate shocks.; (ii) Equal opportunity for women and men smallholder farmers to adopt diversified, climate-resilient livelihood options; (iii) Better understanding and access to risk transfer insurance schemes (micro insurance and macro insurance), and (iv) Gender responsive and equal participation of women in coordination mechanisms, programme management and decision-making spaces.
141. To achieve these results, the programme has set a quota of 40% of the activities under each of the components to be allocated to women. As women play a major role in environmental and climate change issues such as household solid waste treatment, use of forest resources, etc., they are more directly affected by the lack of access to basic services. The programme’s interventions will help reduce the time that women devote to domestic tasks, thus freeing up time for the pursuit of income-generating activities, education and employment. It will also contribute to inclusive employment strategies, increase women's opportunities in the labour market and raise the living standards of vulnerable groups, including women. Finally, and most importantly, it will increase their access to climate information and climate insurance and build their capacity to use climate resilient agricultural techniques and technologies.
142. The Gender action plan summarizes the programme interventions identified to address the gender gap in each of the selected country.

Objective/Impact: Build and scale up the resilience and adaptive capacity of smallholder farmers and rural communities in seven Sahelian Least Developed Countries (LDCs) (Burkina Faso, Chad, Mali, Mauritania, Niger, Senegal and The Gambia) to climate change using an **Integrated Climate Risk Management Approach**.

Outcome: Women smallholder farmers' resilience and adaptive capacity to climate change is strengthened.

Means of Verification: Project Programme M&E reports; Progress reports; Mid-term and final project programme evaluations.

Activity	Indicator and target	Timeline	Responsibility	Cost (USD)
Component 1 : Climate Risk Preparedness				
Output 1.1 Increased access to agro-climatic information services and early warning infrastructure to support integrated climate risks management with a focus on 40% women				
1.1.1. A preliminary study, mapping of locations of the small hydraulic infrastructure across and ESS studies (including additional gender specific studies)	At least 50% of women (including female-headed households), are targeted following the additional gender analysis (focused on needs and priorities of women and other traditionally marginalized groups) during the mapping of unknown locations and gender related activities defined Number of project-specific gender analyses and gender action plans prepared prior to commencing implementation of activities Baseline :0	3 first months	PMUs- RCU	148,050
1.1.3 Training for 525 meteorological experts and 2,100 local government officials on impact-based forecasting methodologies, data collection and interpretation	At least 525 national Met experts and 2,100 local government officials - of which 40% are women (including female-headed households),- report that they have used climate information to address climate risks. At least 100% of direct and indirect beneficiaries, of which at least 40% are women (including female-headed households), use climate information services generated by the programme	Y2-Y4	AfDB- PMUs- RCU	245,000

<p>1.1.8. Coordination and knowledge sharing with ACMAD and other regional institutions (e.g. AGRHYMET, Climate Outlook Forum) on best practice, complementarities and consistencies with regional products and warnings.</p>	<p>At least 40% of women (including female-headed households), are participants in events organised and knowledge share through women existing platforms on the outcome of the programme</p> <p>Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan</p>	<p>Y1-Y6</p>	<p>ARC-PMUs- RCU</p>	<p>150,000</p>
<p>Output 1.2 Awareness-raising, capacity-building and institutional development on integrated climate risk management of which 40% women.</p>				
<p>1.2.1. Training for 50,000 smallholder farmers on the timely use of early warning products (including agro-climatic information).</p>	<p>At least 90% of direct beneficiaries and 90% indirect beneficiaries – of which 50% are women (including female-headed households), - trained on the timely use of early warning products (including agro-climatic information)</p> <p>Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan</p>	<p>Y2,Y4,Y6</p>	<p>AfDB-PMUs-RCU</p>	<p>735,000</p>
<p>1.2.2 Raising awareness among 1,500,000 smallholder farmers/pastoralists on the best climate adaptation/mitigation practices/technologies; weather index insurance</p>	<p>1,500,000 smallholder farmers – of which 40% are women (including female-headed households), – more aware of the best climate adaptation/mitigation practices and technologies and weather index insurance</p> <p>Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan</p>	<p>Y1, Y3, Y5</p>	<p>AfDB-PMUs-RCU</p>	<p>735,000</p>
<p>1.2.4. Conduct gender and youth impact analyses</p>	<p>A gender and youth impact analyses report produced</p> <p>Baseline : 0 but for each country, baseline to be confirmed after the start up and during the</p>	<p>Y3, Y5, Y5</p>	<p>AfDB-PMUs-RCU</p>	<p>117,300</p>

	design of the detailed gender analysis and country action plan			
1.2.8. Training for 1400 local government officials; 20,000 farmers and local financial institutions on climate information and use	1400 local government officials, 20,000 farmers and local financial institutions – of which 50% are women (including female-headed households), - trained on climate information and use Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y1, Y3, Y5	AfDB-PMUs-RCU	735,000
Component 2: Climate Reduction Measures (adaptation/ mitigation)				
Output 2.1: Best available technologies, adaptation/mitigation practices adopted and implemented with agricultural insurance schemes				
2.1.1. Establish 500 Agro-Pastoral/Farmer Field Schools (AP/FFS).	500 Agro-Pastoral/Farmer Field Schools (AP/FFS) across the 7 countries constructed and functional (training for at least 50% women provided) Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y2,Y3,Y4	PMUs, RCU	4,500,000
2.1.2 Build 1,000 nurseries for climate-adapted varieties (e.g. heat-tolerant, submergence, drought and salinity tolerant, pest resistant)	1000 nurseries for the selection climate-adapted varieties established and functioning, (45% Men 50% women) Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y2,Y3,Y4,Y5	PMUs, RCU	4,000,000
2.1.9. Construction and rehabilitation of 175 water points (reservoirs, ponds, wells, boreholes) for farming and 100,000 of transhumance pathways.	175 water points constructed / rehabilitated (reservoirs, ponds, wells, boreholes) for farming and 100,000 of transhumance pathways. At least 100% of direct beneficiaries, of which 50%	Y2,Y3,Y4,Y5	PMUs, RCU	3,600,000

	are women, obtain water from water points on a regular basis Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan			
2.1.10 Installation of 392 mini-grids to power agricultural –livestock value chains and improve access to energy to households	At least 80% of direct beneficiaries, of which 40% are women, use renewable energy through their access to the 392 minigrids installed Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y2,Y3,Y4	PMUs, RCU	3,528,000
2.1.11 Training for 50,000 farmers on sustainable agriculture, community maintenance of infrastructures and watershed management	50,000 farmers trained on CSA and use of renewable energy along value chains across the 7 countries, of which 50% are women Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y2,Y4,	PMUs, RCU	980,000
Output 2.2 Diversified livelihood through the promotion of income generating activities				
2.2.1 Establishment of modern communal poultry farms for youth and women.	200 modern communal poultry farms for youth and women established and operational (training and technical support provided by other IFAD projects) Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y1 to Y6	PMUs, RCU	1,000,000
2.2.2. Construction of 200 earth dams for fish farming activities	At least 80% of direct beneficiaries, of which 50% are women, with access to 200 fish farming ponds (training and technical support provided by other IFAD projects)	Y1 to Y6	PMUs, RCU	4,000,000

2.2.3 Community model of integrated vegetable garden for women and youth on at least 4 to 5 ha of land (solar pumps, compost systems, daycare facilities for women, agroforestry and rotation of crops; transport systems).	100-community model of integrated vegetable gardens for women and youth established, with daycare facilities Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y1 to Y6	PMUs, RCU	1,200,000
2.2.6. Develop and deliver modules on financial literacy, marketing and business management for 2500 farmer's organizations, 1500, MSMEs, 2000 cooperatives.	2500 farmer's organizations, 1500, MSMEs, 2000 cooperatives trained on financial literacy, marketing and business management (Women represent 40% of participants in training programmes or are women-led organizations) . Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y1 to Y6	PMUs, RCU	700,000
Component 3 : Climate Risk Transfer				
Output 3.1 Increased access to micro climate insurance				
Digressive premiums payment for smallholders including women	At least 90% direct and 90% indirect beneficiaries, of which 50% are women, have access to micro insurance Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y1 to y6	WFP, RCU	7,559,100
Output 3.2. Sovereign risk transfer supported and promoted				
3.2.1. Gender dimension included in the formulation of national disaster risk financing (DRF) strategies for 7 countries and 4 local contingencies plans for the 7 countries	Gender mainstreamed into national disaster risk financing (DRF) strategies and 4 local contingencies plans Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y1-Y2	ARC, PMUs, RCU	294,000

3.2.2. Training for additional 420 government officials on the use of ARC view and other sector ministries	At least 50% of the participants are women Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y1, Y4	ARC, PMUs, RCU	980,000
3.2.3. Capacity-building for 1,000 farmers organizations and cooperatives on identifying thresholds triggering; assess the best options	At least 50% of the participants are women Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y1,Y3,Y5	ARC, PMUs, RCU	1, 890,000
3.2.6. Technical support to 7 countries in sustaining premiums payments from their own national budget to ARC through eco tax reallocation, climate budget tagging (CBT) or from national climate/contingency funds;	7 countries institutionalize premium payments into their budget which cover at least 50% women	Y1,Y2,Y3,Y4	ARC, PMUs, RCU	603,200
3.2.8. Enhance the institutional and coordination mechanisms for an effective use of the payouts to reach the end users with citizen engagement (shadow report from the civil society) and alignment/linkages with the micro insurance	At least 40% women are represented in the institutional and coordination mechanisms for an effective use of the payouts to reach the end users with citizen engagement Baseline : 0 but for each country, baseline to be confirmed after the start up and during the design of the detailed gender analysis and country action plan	Y2,Y3	ARC, PMUs, RCU	20,000
3.2.12. Organize 4 high level events on this integrated approach with the Africa.	At least 50% of the participants are women Baseline : 0	Y1,Y2, Y5,Y6	ARC, PMUs, RCU	360,000
Women are well represented in each of the country project PMU for the 7 countries (gender specialist under IFAD investment) and at regional level RCU (NOCs and P3) for the coordination of the programme	ToRs , Positions targets women Baseline : 0	Y1-Y6	RCU, PMUs	1, 528,000
Women are well represented in the SSTC and have access to KM	Number of women participating in the SSTC Number of Women that have access to KM	Y1-Y6	RCU, PMUs	4,000

	Baseline : 0			
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Appendix: Employment data for women in seven participating countries

		<i>Women who worked in the last 12 months and are currently</i>	<i>Women who worked in the last 12 months, but not currently</i>	<i>Women who did no paid work in the last 12 months</i>
Country	Survey	Total 15-49	Total 15-49	Total 15-49
Burkina Faso	2010 DHS	74.8	4.4	20.8
Chad	2014-15 DHS	42.9	8.1	48.9
Gambia	2013 DHS	42.6	7.4	49.9
Mali	2018 DHS	54.6	3.5	41.8
Mauritania	2000-01 DHS	29.5	2.9	67.5
Niger	2012 DHS	24.5	4.7	70.8
Senegal	2018 DHS	49.3	9.4	41.3

Source : <http://dhsprogram.com/>

Women's occupations

		<i>Professional, managerial</i>	<i>technical,</i>	<i>Clerical</i>	<i>Sales, services</i>	<i>Skilled manual</i>
Country	Survey	Total 15-49	Total 15-49	Total 15-49	Total 15-49	Total 15-49
Burkina Faso	2010 DHS	1.5	1.0	26.6	8.6	
Chad	2014-15 DHS	1.5	0.5	62.4	2.3	
Gambia	2013 DHS	5.4	0.9	43.9	2.5	
Mali	2018 DHS	3.7	0.5	50.1	0.0	
Mauritania	2000-01 DHS	6.0	4.0	42.6	13.9	
Niger	2012 DHS	5.4	4.3	67.0	9.6	
Senegal	2018 DHS	3.9	0.5	45.9	7.3	

Ref : <http://dhsprogram.com/>

Women's occupations

		<i>Unskilled manual</i>	<i>Household & domestic</i>	<i>Agriculture</i>	<i>Other</i>
Country	Survey	Total 15-49	Total 15-49	Total 15-49	Total 15-49
Burkina Faso	2010 DHS	0.3	1.7	57.3	
Chad	2014-15 DHS	0.0	1.7	29.0	1.2
Gambia	2013 DHS	1.1	3.3	41.3	1.2
Mali	2018 DHS	2.2		41.8	0.5
Mauritania	2000-01 DHS	0.1	7.0	21.8	1.6
Niger	2012 DHS		1.8	10.9	
Senegal	2018 DHS	0.3	11.8	27.2	2.5

Ref : <http://dhsprogram.com/>

Earning of married persons

		<i>Women who worked for cash only</i>	<i>Women who worked for cash and in-kind payment</i>	<i>Women who worked for in-kind payment only</i>	<i>Women who worked unpaid</i>
Country	Survey	Total	Total	Total	Total
Burkina Faso	2010 DHS	36.1	10.3	8.8	44.7
Chad	2014-15 DHS	57.5	15.0	2.9	23.7
Gambia	2013 DHS	64.9	26.2	2.8	5.6
Mali	2018 DHS	62.3	8.4	2.6	26.8
Mauritania	2000-01 DHS				
Niger	2012 DHS	79.8	9.6	2.6	7.6
Senegal	2018 DHS	66.4	7.0	1.7	24.9

Ref : <http://dhsprogram.com/>

Type of employment

		<i>Women employed by family member</i>	<i>Women employed by non-family member</i>	<i>Women self-employed</i>	<i>Women who worked all year</i>	<i>Women who worked seasonally</i>	<i>Women who worked occasionally</i>
Country	Survey	Total	Total	Total	Total	Total	Total
Burkina Faso	2010 DHS	43.7	6.1	50.2	24.9	65.6	9.4
Chad	2014-15 DHS	24.1	1.4	74.1	27.3	37.0	35.1
Gambia	2013 DHS	13.5	20.4	65.7	60.7	35.6	3.3
Mali	2018 DHS	16.7	4.4	79.0	43.9	45.7	10.4
Mauritania	2000-01 DHS	12.8	23.2	63.5	39.0	33.1	27.4
Niger	2012 DHS	6.6	6.2	86.7	41.4	26.4	32.0
Senegal	2018 DHS	23.7	18.2	58.1	57.7	35.1	7.3

Ref : <http://dhsprogram.com/>

Control over women's cash earning

		<i>Women who decide themselves how their earnings are used</i>	<i>Women who decide jointly with partner how their earnings are used</i>	<i>Women whose partner decides how their earnings are used</i>	<i>Women for whom 'other' decides how their earnings are used</i>
Country	Survey	Total	Total	Total	Total
Burkina Faso	2010 DHS	87.6	5.1	6.6	0.1
Chad	2014-15 DHS	71.0	11.8	15.0	0.0
Gambia	2013 DHS	80.1	11.4	7.6	0.2
Mali	2018 DHS	82.5	5.8	11.3	0.4
Mauritania	2000-01 DHS				
Niger	2012 DHS	85.4	7.1	6.8	0.2
Senegal	2018 DHS	89.7	5.0	4.7	0.6

Ref : <http://dhsprogram.com/>

Annex 9 – Baseline Stakeholder Consultations conducted in all countries between 2018 and 2019**Burkina Faso**

1. Among the IFAD design team, the mission was composed of : Mr. Abdoul Barry, IFAD Portfolio Officer for Côte d'Ivoire and Burkina Faso, Head of Mission; Mr. Samir Bejaoui, Program Officer, IFAD / WCA; Mr. Ludovic Conditamdé, Program Support Officer, IFAD / WCA; Ms. Karine Nikiema Téwendé Karine, Program / Gender Support Assistant; Mr. Frans Goossens, Chief of Technical Mission, FAO / TCIA; Ms. Sonia Andrianarivelo, Targeting, Gender and Monitoring & Evaluation Specialist, FAO / TCIA; Mr. Mathieu Faujas, Expert in value chains, FAO / TCIA consultant; Ms. Garance Kafondo, Agronomist, specialist in environmental and social assessment, FAO / TCIA consultant; Mr. Jean-Charles Heyd, Agronomist, FAO / TCIA consultant; Ms. Cécile Bangui, Expert in agricultural institutions and professional organizations, FAO / TCIA; Mr. Jean-Pascal Kabore, Institutional Specialist, FIDA / WCA; Mr. Maladho Barry, Rural Infrastructure Expert, FAO / TCIA Consultant; Ms. Rachida Ouro Gbele, COSTAB Economist, Financial and Economic Analysis, FAO / TCIA Consultant; Ms. Anne-Christelle Ott, FIDA / WCA Financial and Economic Analysis Economist; Ms. Christa Ketting, Public-Private Partnerships Specialist, IFAD / PTA; Ms. Mylene Kherallah, Lead advisor, FIDA / PTA. The Government was represented by Mr. Touré Adama, Director of Policy Formulation at the

General Directorate of Sector Studies and Statistics (DGESS) of the MAAH, assisted by his close collaborators; and Ms. Dao Compaoré Agnès, Program Officer at the General Directorate of Cooperation (DGCOOP), Ministry of the Economy, Finance and Development. The consultations which spent 3 weeks in the field raised the issues that the incidence of poverty in Burkina Faso is high. Indeed, in 2014, the proportion of the poor in the population at the national level, was estimated at 40.1 percent with a depth of poverty of 9.7 percent and a severity of poverty of 3.3 percent. There are also huge social including gender disparities where 92 percent of the poor live in rural areas with an incidence of poverty of 47.5 percent against 13.7 percent in urban areas. On the other hand, the disparities between the thirteen regions are considerable (Boucle du Mouhoun is one of the regions with the most poor with a poverty incidence of 59.7 percent; the Hauts-Bassins and the Cascades are moderately poor with incidences of poverty of 34 percent and 22 percent respectively). These regions are also exposed to climatic hazards, drought, rainfall deficit, bush fires) and agricultural risks (damage caused by animals or birds, livestock mortality, plant diseases). Local communities including community leaders in the targeted regions were met around focus groups and meetings during 3 weeks missions. All stakeholders including women were met during the meetings with sectors ministries and field visits (surveys, focus groups). The information obtained on gender issues and equalities through these consultations in each country and the targeted sites provided important input for identifying priorities for interventions and for the design of programme activities.

Mali

2. The IFAD design team in the mission was composed of : Jean Pascal Kaboré, Representative of IFAD, Head of the IFAD Mali Portfolio and Head of Mission; Antonio Rota - Senior Technical Advisor IFAD; Karim Sissoko - Head of IFAD Country Office in Mali; Alban Bellinguez - Expert in breeding and institutional aspects; Valeria Casavola - Targeting and Gender Officer; Amadou Coulibaly - National renewable energy expert; Abdelkader Djenepo - Monitoring and evaluation specialist; Hassane Issa - Expert in social engineering and integrated land management; Olivier Lasbouygues - Environment and climate expert- Amath Pathe SENE, lead Environment and Climate provided a remote technical backup; Anne-Christelle Ott, Economist; Johan Pasquet - Expert in agroecology; Karan Sehgal - IFAD Renewable Energy Expert and Mariama Walet, Financial Management Specialist. The entire formulation process was coordinated by Maëlle Peltier, Consultant at IFAD. The government national party was composed of representatives of the National Direction for Agriculture (DNA); the National Direction for Animal Productions and Industries (DNPIA) of the Livestock Ministry; agencies related to the Ministry of Energy (AMADER, ANADEB, AER); the Environment and Sustainable Development Agency (AEDD), etc. and representatives of the Ministry of Finance, representing the Borrower. The mission met local communities including community leaders in the targeted regions around focus groups and meetings to discuss needs. The consultations with local communities including with women for 3 weeks raised a certain number of issues particularly related to gender issues that access to agricultural supplies remains limited in Mali, and the promotion of climate-resilient farming practices is still on an ad hoc basis, resulting in a decrease in agricultural productivity. Smallholder family farms are more vulnerable given that women face difficulties such as the increase in relative costs of fertilizer inputs concerning the prices of agricultural commodities, as well as a limited access to land, in a context of declining soil fertility. The virtual lack of access to energy impedes the transformation of agriculture and the modernization of Malian family farms: only

15 percent of Mali's rural population has access to electricity. Rural women are the first to be affected by this situation. The consultation also raised the issue of the presence of armed groups in the circle of Banamba, which was reported in early November 2018. While the project sites are in areas that are secured, development of the security situation will be closely monitored.

Chad

3. Among the IFAD team, the mission was composed of : Composition of the mission: Valantine Achancho, Portfolio Officer, Head of Mission, IFAD; Mr. Pascal Sanginga, Technical Coordinator of the mission, TCIA / FAO; Mr. Jean-Philippe Audinet, Principal Technical Advisor, IFAD; Ms. Edi Bruni, Agronomist, specialist in Sahelian agro-pastoral systems, gender and TCIA / FAO targeting; Mr. Philippe Ankers, Livestock Specialist, TCIA / FAO; Mr. Youssef Brahim, specialist in natural resources management, environment and climate, IFAD consultant; Mr. Ibro Manomi, Economist, TCIA / FAO; Mr. Alain Traoré, specialist in agribusiness, value chain and farmers' organizations, TCIA / FAO; Ms. Giorgia Nicolo, specialist in nutrition and transversal aspects of support, FAO; Mr. Jacques Boka Etien, Irrigation and Rural Infrastructure Specialist, Consultant, IFAD; Mr. Arcadius Denis Domingo, microfinance specialist, IFAD consultant; Mr. Alou Albdoukarim, Financial Management Specialist, IFAD Consultant; Mr. Mamadou Dioulde Sow, Procurement Specialist, IFAD Consultant; Mr. Marcelin Norvilus, IFAD Program Officer, specialist in monitoring and evaluation. The multidisciplinary national team was composed of Mr. Koko Wakdet from the MPIEA, Mr. Kampété Abdoulaye from the MPIEA, Mr. Rakidjim Nanatengar from the MPIEA, Ms. Gongnet Gnifienet from the MEPD, Ms. Reinta Natebaye from the MEP, Mr. Abakar Ramadan from the MEA, Mr. Ahmed Mohamed Nadif from MEPA, Mr. Soumaine Albachar from CNCPR and Ms. Mariam Titimbaye from CELIAF. The consultations with local communities particularly women raised the issues that Chad is a fragile country marked by great economic and financial vulnerability following the prolonged fall in oil prices. In addition, the country is faced on the one hand with environmental and climatic risks following recurrent droughts, combined with inefficient traditional agricultural practices and less resilient to climate change and, on the other hand, security risks linked to conflicts. Women have limited access to land, credit, knowledge and do not participate to decision-making processes. The information obtained on gender issues and equalities through these consultations in the targeted sites provided important input for identifying priorities for interventions and for the design of programme activities.
- 4.

Mauritania

5. Among the IFAD team, the mission was composed of: Haoua Sienta, IFAD Portfolio Officer for Mauritania, Head of Mission; Lazare Hoton, Head of Technical Mission, Fao-Tcia; Patrick Habamenshi, Institutional Specialist, IFAD; Issaka Oumarou, Specialist in social engineering and integrated land management, Consultant; Monique Trudel, Territorial approach and decentralization specialist, Tcia Consultant; Sonia Andrianarivélo, Targeting, Gender, and monitoring and evaluation, Consultant Tcia; Gabriel Boc, Economist, Fao-Tcia; Olivier Lasbouygues, Expert in Environment, Management of natural resources and climate change, Consultant; Amath Pathe SENE, lead Environment and Climate

provided a remote technical backup, Mariama Walet Mohamed Aly, Specialist in financial management and procurement, Consultant. The Mauritanian national party was represented by Sylli Gandega, IFAD focal point in Mauritania; Coquein Mejdoub, Deputy Director of Resource Mobilization and Coordination of External Aid / Ministry of Economy and Finance (DA / DMBRCR / DGIPCE / MEF); Mohamed Saleck Ould Hmeida, Deputy Director of strategies, cooperation and monitoring-evaluation / Ministry of Agriculture (DA / DSCSE / MA); Isselmou Ould Abdatt, Deputy Director of Planning, Cooperation and Monitoring-Evaluation / Ministry of Livestock (DA / DPCSE / ME); the PASK II and PRODEFI Coordination Units represented by Ahmed Ould Amar, PASK II Coordinator; and Abdelkader Mohamed Saleck, Coordinator of PRODEFI as well as their respective teams. The consultations that happened in the selected regions raised the issues that Mauritania is a vulnerable country highly exposed to the adverse effects of climate change. The mission met local communities, women including community leaders in the targeted regions around focus groups and meetings to discuss needs and challenges faced by women. These issues have been included in the gender action

Niger

6. Among the IFAD team, the mission was composed of : For the IFAD team: Mr. Achancho Valantine, Country Director, IFAD Head of Mission; Mr. Lawan Cherif, Program Officer, IFAD; Radu Damianov, Principal Finance Officer, IFAD; Ms. Claudia Savarese, Associate Program Officer, IFAD; Mr. Patrick Habamenshi, Rural Development Specialist, Principal Consultant; Mr. Abdoulaye Dicko, rural infrastructure specialist, Consultant; Mr. Ahmed oumarou, specialist in environment and climate change, consultant; Mr. Guy Raoul SANON, specialist in economic and financial analysis, consultant; Mr. Alain TRAORE, specialist in youth entrepreneurship, Consultant; Mr. El Hadj Issa YAHAYA, specialist in financial management, consultant. The government part was composed of: Mr. Abdou Chaibou, Director of Studies and Programming, MAG / EL, Head of Government Mission; Mr. Assadeck Mohamed, Senior National Technical Assistant in political dialogue, CENAT / ProDAF; Mr. Chaibou Magagi, Senior National Technical Assistant in Financial Consolidation, CENAT / ProDAF,, Mr. Yacouba Seybou Director, Sustainable Land Management Department, Mr. Amadou Bachir Head of Division / HC3N, Mr. Moussa Mai Moussa Head of Division DP / DGPD / MP, Mr. Issa Mano DGA / DPPV / MAG / EL, Mr. Alyou Abdou Ali Head of Division DSI / MP, Mr. Salifou Maman Bassirou DEP / MESUD, Mr. Boukari Chouidi DGPIA, Ms. Ali Rahila DGGR / MAG / EL, M. Oumarou Ibrahim Monitoring and evaluation / RECA. The mission met local communities including community leaders in the targeted regions around focus groups and meetings to discuss needs. The consultations which last 3 week on the field raised the issues that Niger's population is dependent upon small-scale farming and livestock that are highly dependent on the weather. However, climate change is having negative effects on agriculture due to degradation of natural resources. The country has therefore untapped resources that could significantly boost agriculture production and productivity, The result is a poor performance in terms of production and productivity, and a situation of almost permanent food insecurity. The mission also raised the political climate of the country that is relatively stable; however, the country is challenged on the security front by repeated attacks by terrorist groups operating in the Diffa region (Lake Chad Zone), Tillabery and northern parts of Tahoua, which keeps those areas in a near constant state of emergency. The areas selected in the project are the secured regions and also where work with women can be promoted

Senegal

7. The mission was composed of: Benoit Thierry, Director and Portfolio Manager Senegal; Semou Diouf, CPO - IFAD Senegal; Jean-Philippe Audinet, PMI-PTL, FIDA; Lazare Hoton, Team Leader, DPIA, FAO , Annick Huyghe Mauro, Training Specialist - Integration, Consultant DPIA-FAO, Edi Bruni, Agronomist, Consultant, IFAD; Sonia Andrianarivelo, Agroeconomist , DPIA-FAO; Gabriel Boc, Economist, DPIA-FAO; Samba-Diom BA, Financial Management Specialist, Consultant, IFAD . Amath Pathe SENE, lead Environment and Climate provided a remote technical backup. The national project preparation team consisted of the following members: Cheikh Ndiaye Anpej; Tanor Meissa Dieng, MAER and Saliou Fall, MAER Agriculture Branch; Mouhamadou Sene, Ministry of Youth, Employment and Citizen Construction; Métaké Sagna, National Planning Directorate / DGPPE; Boubacar Diallo, Budget Programming Branch; Abdoulaye Diouf & Seyni Dio , Directorate for Cooperation and External Financing; Babacar Ndiaye, ANIDA, Khady Drama, DAPSA; Alioune Babacar Dion gue , Youth Council / CNCR; Dr. Abba Leye, Livestock Directorate. During 3 weeks field missions, the joint IFAD and the government mission met local communities including community leaders in the targeted regions around focus groups and meetings to discuss needs. The consultations raised the issues that the Senegal records: (i) a high prevalence of poverty particularly in rural areas (57 per cent) that affects the resilience of family farms and low income cohorts; (ii) a very low youth employment rate (38 per cent) with an annual level of new entrants of roughly 160,000; (iii) particularly high underemployment in rural areas (31 per cent), which has led to significant international migration from the rural areas to the cities and abroad.

The Gambia

8. Among the IFAD team, the project design mission included : Ms. Haoua Sienta, Mission Leader, Country Director, IFAD WCA; M. Amath Pathe Sene, Lead Regional Climate and Environment Specialist, Project Technical Leader (PTL), IFAD WCA; M. Julien Vallet, Technical Mission Leader and Economist, FAO-DPI; M. Brent Simpson, Senior Natural Resources Management Officer, FAO-DPI; M. Yesuf Abdella, Irrigation Engineer, FAO-DPI; M. Gabriel Boc, Economist, FAO-DPI; M. Claude Side, Economist, FAO-DPI; M. Frédéric Ponsot, Remittances and Financial Inclusion Specialist, Consultant, IFAD; Ms. Claire Bilksi, Gender, youth inclusion and targeting Specialist, Consultant, IFAD; Ms. Mame Awa Mbaye, Finance Officer, IFAD-FMD; Ms. Itziar Garcia Villanueva, Legal Officer, IFAD-LEG; M. Tété Abdoulaye Bakayoko, Financial Management Specialist, Consultant, IFAD. M. Benoit Thierry, Director of West Africa Hub, IFAD WCA, joined the mission from

February 5-8. M. Jonathan Agwe, Lead Regional Technical Specialist for Rural Finance, Markets, Enterprises and Value Chains, IFAD WCA, joined the mission from 27 January- February. A national project preparation team comprised M. Momodou L. Gassama, Coordinator of NEMA, M. Abdoulie Touray, M&E Officer, CPCU, M. Bakary Jammeh, Knowledge Management Officer, NEMA; M. Kebba Manka, Water Management Specialist, NEMA; M. Saikou Sanyang, Director General, DoA. The mission met local communities including community leaders in the targeted regions around focus groups and meetings to discuss needs. The consultations raised the issues that the country is one of the most vulnerable countries to climate change because of its geographical location, characterised by high dependence on rain-fed agriculture and severe salt-water intrusion in the lowlands floodplain. Consultations were organized with women organizations and key gender issues were compiled and used to inform the gender analysis and action plan.
