



**GREEN  
CLIMATE  
FUND**

**Meeting of the Board**  
30 September – 2 October 2017  
Cairo, Arab Republic of Egypt  
Provisional agenda item 14(g)

**GCF/B.18/04/Add.04**

**11 September 2017**

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# Consideration of funding proposals – Addendum IV

## Funding proposal package for FP049

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### **Summary**

This addendum contains the following three parts:

- a) A funding proposal summary titled “Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)”;
- b) No-objection letters issued by the national designated authority(ies) or focal point(s); and
- c) Environmental and social report(s) disclosure;



GREEN  
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# Funding Proposal

Version 1.1

**The Green Climate Fund (GCF) is seeking high-quality funding proposals.**

Accredited entities are expected to develop their funding proposals, in close consultation with the relevant national designated authority, with due consideration of the GCF's Investment Framework and Results Management Framework. The funding proposals should demonstrate how the proposed projects or programmes will perform against the investment criteria and achieve part or all of the strategic impact results.

Project/Programme Title: Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)

Country/Region: Senegal, West Africa

Accredited Entity: United Nations World Food Programme (WFP)

Date of Submission: 2 June 2017

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### *Note to accredited entities on the use of the funding proposal template*

- Sections **A, B, D, E** and **H** of the funding proposal require detailed inputs from the accredited entity. For all other sections, including the Appraisal Summary in section F, accredited entities have discretion in how they wish to present the information. Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other project documents such as project appraisal document.
- The total number of pages for the funding proposal (excluding annexes) is expected not to exceed 50.

**Please submit the completed form to:**

[fundingproposal@gcfund.org](mailto:fundingproposal@gcfund.org)

Please use the following name convention for the file name:

“FP-WFPSenegal-02062017”

<b>A.1. Brief Project / Programme Information</b>		
<b>A.1.1. Project / programme title</b>	Building the climate resilience of food insecure smallholder farmers through integrated management of climate risks (the R4 Rural Resilience Initiative)	
A.1.2. Project or programme	Project	
<b>A.1.3. Country (ies) / region</b>	Senegal/West Africa	
<b>A.1.4. National designated authority (ies)</b>	Ministry of the Environment of Senegal	
<b>A.1.5. Accredited entity</b>	United Nations World Food Programme (WFP)	
A.1.5.a. Access modality	<input type="checkbox"/> Direct <input checked="" type="checkbox"/> International	
A.1.6. Executing entity / beneficiary	Executing Entity: WFP and SE/CNSA (Secrétariat Exécutif du Conseil National de Sécurité Alimentaire) of the Government of Senegal Beneficiary: (direct) 405,000 people from vulnerable smallholder households in 5 regions (Kaffrine, Kolda, Tambacounda, Fatick, Kaolack) of Senegal; (indirect <sup>1</sup> ) 526,500 people in the 5 regions.	
A.1.7. Project size category (Total investment, million USD)	<input checked="" type="checkbox"/> Micro ( $\leq 10$ ) <input type="checkbox"/> Small ( $10 < x \leq 50$ ) <input type="checkbox"/> Medium ( $50 < x \leq 250$ ) <input type="checkbox"/> Large ( $> 250$ )	
A.1.8. Mitigation / adaptation focus	<input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> Adaptation <input type="checkbox"/> Cross-cutting	
A.1.9. Date of submission	2 June 2017	
A.1.10. Project contact details	Contact person, position	<ul style="list-style-type: none"> <li>Azzurra Massimino, Programme Policy Officer, Climate and Disaster Risk Reduction Programmes</li> <li>Carla De Gregorio, R4 Coordinator, Senegal Country Office</li> <li>Shirin Merola, Programme Officer, Climate and Disaster Risk Reduction Programmes</li> </ul>
	Organization	World Food Programme
	Email address	<a href="mailto:Azzurra.Massimino@wfp.org">Azzurra.Massimino@wfp.org</a> <a href="mailto:Carla.degregorio@wfp.org">Carla.degregorio@wfp.org</a> <a href="mailto:Shirin.Merola@wfp.org">Shirin.Merola@wfp.org</a>
	Telephone number	+39 06 6513 3610
	Mailing address	Via Cesare Giulio Viola 68, Rome Italy

<b>A.1.11. Results areas</b> <i>(mark all that apply)</i>	
<b>Reduced emissions from:</b>	
<input type="checkbox"/>	<b>Energy access and power generation</b> (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.)
<input type="checkbox"/>	<b>Low emission transport</b> (E.g. high-speed rail, rapid bus system, etc.)
<input type="checkbox"/>	<b>Buildings, cities and industries and appliances</b>

<sup>1</sup> Based on the recommendation from the GCF Secretariat, the calculation was performed by extending to the project the existing corporate guidance for FFA with the assumption of full compliance of all underpinning methodological procedures.

(E.g. new and retrofitted energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.)

- Forestry and land use  
(E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc.)

**Increased resilience of:**

- Most vulnerable people and communities  
(E.g. mitigation of operational risk associated with climate change – diversification of supply sources and supply chain management, relocation of manufacturing facilities and warehouses, etc.)
- Health and well-being, and food and water security  
(E.g. climate-resilient crops, efficient irrigation systems, etc.)
- Infrastructure and built environment  
(E.g. sea walls, resilient road networks, etc.)
- Ecosystem and ecosystem services  
(E.g. ecosystem conservation and management, ecotourism, etc.)

**A.2. Project / Programme Executive Summary (max 300 words)**

Please provide a brief description of the proposed project/programme, including the objectives and primary measurable benefits (see [investment criteria in section E](#)). The detailed description can be elaborated in [section C](#).

The project “Building the climate resilience of food insecure smallholder farmers through integrated management of climate risks (the R4 Rural Resilience Initiative)” (henceforth ‘the *project*’) builds on the success of the R4 Rural Resilience Initiative to scale up and mainstream an integrated risk management approach for vulnerable smallholder farmers in Senegal. The objective is to build the climate resilience of 45,000 households (or 405,000 people from vulnerable smallholder households) through the provision of four keytools:

1. Risk reduction interventions encompassing the creation of climate adaptation assets such as community-based water and soil conservation measures and small-scale community infrastructures as well as the provision of climate services with the aim to reduce the risk and impacts deriving from climate change.
2. Risk transfer through weather index insurance (WII), to transfer the risk to the international market and provide farmers with compensation in case of climate shocks to avoid the sale of productive assets such as livestock or tools.
3. Risk reserves, aimed at providing farmers with the ability to save, use their savings as buffer or to invest in income generating activities (IGAs), but also build a sustainability path transitioning them to the commercial insurance market.
4. Prudent risk taking encompassing interventions such as the *warrantage*, allowing farmers to use their surplus production as collateral for loans, the aim being to unlock credit for investments in agricultural inputs or other IGAs.

According to an independent impact evaluation, WFP farmers engaged in the project so far were able to maintain their food security level during the 2013-2015 period and to improve it during the 2015-2016 period, compared to farmers living in the same area and exposed to the same shocks. They also increased their rice production ten times more than non-participants. Thanks to the Initiative, social cohesion was enhanced as well as women’s decision making capacity.

**A.3. Project/Programme Milestone**

Expected approval from accredited entity’s Board (if applicable)	NA
Expected financial close (if applicable)	NA

Estimated implementation start and end date	Start: <u>01/09/2017</u> End: <u>01/09/2021</u>
Project/programme lifespan	<u>4</u> years <u>      </u> months

## B.1. Description of Financial Elements of the Project / Programme

Please provide:

- an integrated financial model in [Section I \(Annexes\)](#) that includes a projection covering the period from financial closing through final maturity of the proposed GCF financing with detailed assumptions and rationale; and a sensitivity analysis of critical elements of the project/programme

**Please see Annex 17**

### Narrative

Given the project's objective of public goods development, an economic cost benefit analysis was conducted to evaluate its financial viability from the perspective of the state in both the project timeframe (four years) and longer (ten year) terms. Details of the analysis are summarized below:

**Cost structure:** The cost structure for the first four years is exclusively derived from the budgeted costs of the project which include component implementation, government engagement, capacity building, personnel and equipment. Year five onwards, a steady state in the unit investment and ongoing costs is assumed with annual change by the projected inflation rate. The sources of fund for this period are assumed to be derived from both GoS' investments in their safety nets, as well as private and other international and national public agents.

**Project benefits:** In line with the theory of change (Annex 10) of the project, all benefits are assumed to occur at the beneficiary household level through the means of increased income generation and asset base creation. Risk reduction activities such as soil and water conservation contribute the most to this increase in household income through increased agricultural yield of main crops such as rice, beans, millet, groundnuts, maize and sorghum and vegetables. In drought years, the weather index insurance ensures that the household income from agricultural activities is stabilized. The prudent risk taking tool enables participants to make the necessary investments for increased agricultural yield while the risk reserve component contributes to increase and diversify households' income through income generating activities (IGA). A secondary benefit of the project occurs through an increase in the household asset base, which is mainly in the form of livestock. Taking a very conservative approach, benefits per unit are assumed to remain constant throughout the ten year horizon, with an annual increase by the projected inflation rate. It is to be noted that the estimated benefits provide a lower bound of the total benefits, as the true value of tools such as insurance becomes tangible only during adverse climatic events, and potential multiplier effects and other positive externalities of the proposed interventions have not been considered in the model. It should also be noted that many benefits, whose dollar value is hard to identify have not been included in this analysis, but are broadly described across the proposal. These include for example the increase in confidence brought about by the decrease in risk, the increased confidence to make investments, the increased solidarity in the community, the increased importance of women's role in the household and others.

**Scale:** The increase in number of participants for the first four years is in line with the project proposal, and year five onwards a modest annual increase of fifteen percent is assumed.

**Viability:** Assuming a standard discount rate of ten percent, the project has a positive net present value across the projected ten year period. A ten year internal rate of return of seventeen percent is generated which is higher than the discount rate, thus, making the project economically viable. The project returns cumulative net positive benefit in the seventh year of its operation.

- a description of how the choice of financial instrument(s) will overcome barriers and achieve project objectives, and leverage public and/or private finance

A grant-financing instrument is used for this *project* with WFP seeking maximum concessionality to undertake the proposed adaptation investments. Without grant resources, the proposed interventions would not be financially sustainable in the long term:

- First, as a Least Developed Country and a Low Income Economy, there is limited capacity in the country for concessional debt financing for its adaptation investments.
- Second, the *project* targets highly vulnerable, food insecure rural populations, more than half of whom are women, living in disaster prone and food insecure districts dependent on climate sensitive and marginal livelihoods. This segment of the population is significantly cash constrained, and therefore not yet interesting for more commercial initiatives (such as commercial insurance)<sup>2</sup>.
- Finally, the public good nature of the solution to address the current deficiencies in integrated risk management approaches to climate change entails zero cost recovery from the proposed measures to save lives and livelihoods of vulnerable populations in the country.

The *project* includes the set up and maintenance of a weather index insurance scheme as well as the provision of climate services and climate disaster risk reduction (DRR) assets. As such it is very demanding in terms of human resources, technical skills and supporting infrastructure. The public goods nature of these investments means that public financing is required to overcome several barriers that constrain Senegal's ability to scale up the use of climate risk management.

These barriers include limited availability of financial, technical and human capacity for insurance index design, improvement and pricing; lack of a basis risk strategy; limited distribution strategy to allow insurance and financial services to reach the desired volume of participants; lack of access to financial markets and awareness of use of micro-insurance, microcredit and climate information by vulnerable populations, limited awareness of climate change impacts, limited accessibility to early warnings and low capacity at community level to prepare for and respond to climate-related disasters.

Current financing gaps in domestic financing are hampering Senegal's ability to implement adaptation measures and overcome these barriers. Without GCF resources, Senegal will continue to experience loss of lives and assets due to climate-related disasters. The grant resources will help remove barriers to support investments that due to the public good nature of the *project*, do not entail revenue generation and therefore prevent private investments. In addition to this, the *project* will build on existing arrangements and networks through other climate risk management initiatives in the country which will allow implementation and institutional capacity building to be cost-effective. Strengthening of local public and private capacity and climate/weather information systems along with WFP's contribution to creating rural financial markets, may incentivize future investments.

In terms of financial viability, the objective of the *project* is primarily to improve the effectiveness and efficiency of the Government's public sector expenditure, and improving the quality and financial sustainability of its current safety net. At the same time we are gradually reducing the costs of the program and hence the need of grant financing in the future by:

- a. Developing insurance products that are more cost effective
- b. Using more cost-effective insurance distribution mechanisms
- c. Testing conditional transfer mechanisms for insurance (IFA) to create a market for low income farmers
- d. Bundling insurance with a range of complementary services (including climate services)
- e. Increasing the number of clients to reduce unit costs.

<sup>2</sup> It should be noted that the sale of insurance products does not generate income: WFP pays premiums on behalf of participants (who participate to the Insurance for Assets scheme + a small contribution in cash in case they are returning participants) to CNAAS (a parastatal company) which in turn provides a 50% subsidy for each premium. There is no risk of crowding out public and private financing, since CNAAS is currently the only entity (private or public) allowed to provide crop insurance in the country – hence the access to the crop insurance market and available alternatives is rather limited.

- a breakdown of cost estimates for total project costs and GCF financing by sub-component in local and foreign currency and a currency hedging mechanism:

For example, under the component of drilling activity for a geothermal exploration project, sub-components would include civil engineering works, drilling services, drilling equipment and inspection test.

All figures are in US\$

Objective	Output	Financing Source	Budget Account Category	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)
Objective 1	Intervention 1.1	GCF	Staff	116,538	117,937	105,560	94,390	434,425
			Consultant	1,283	523	700	708	3,214
			Travel	8,995	9,023	9,051	9,080	36,149
			Programming	1,026,000	1,015,000	1,000,000	950,000	3,991,000
			Equipment	14,558	860	871	881	17,170
	Intervention 1.2	GCF	Staff	62,538	63,289	62,546	63,297	251,670
			Consultant	1,283	523	700	708	3,214
			Travel	8,995	9,023	9,051	9,080	36,149
			Programming	72,000	90,000	120,000	150,000	432,000
			Equipment	39,783	8,678	6,222	1,114	55,797
<b>Total Objective 1</b>				<b>1,351,975</b>	<b>1,314,855</b>	<b>1,314,701</b>	<b>1,279,258</b>	<b>5,260,789</b>
Objective 2	Intervention 2.1	GCF	Staff	78,938	77,119	73,743	74,628	304,430
			Consultant	21,283	19,144	17,086	15,633	73,146
			Travel	8,995	9,023	9,051	9,080	36,149
			Programming	464,000	462,000	526,500	532,500	1,985,000
			Equipment	39,783	8,678	6,222	1,114	55,797
	<b>Total Objective 2</b>				<b>613,000</b>	<b>575,964</b>	<b>632,603</b>	<b>632,955</b>
Objective 3	Intervention 3.1	GCF	Staff	60,938	58,903	55,309	55,973	231,123
			Consultant	1,283	523	700	708	3,214
			Travel	8,995	9,023	9,051	9,080	36,149
			Programming	114,500	140,000	172,500	200,000	627,000
			Equipment	14,558	860	871	881	17,170
	Intervention 3.2	GCF	Staff	60,938	58,903	55,309	55,973	231,123
			Consultant	1,283	523	700	708	3,214
			Travel	8,995	9,023	9,051	9,080	36,149
			Programming	114,500	140,000	172,500	200,000	627,000
			Equipment	14,558	860	871	881	17,170
<b>Total Objective 3</b>				<b>400,550</b>	<b>418,619</b>	<b>476,861</b>	<b>533,283</b>	<b>1,829,313</b>
Objective 4	Intervention 4.1	GCF	Staff	44,538	45,073	44,112	44,641	178,364
			Consultant	1,283	523	700	708	3,214
			Travel	8,995	9,023	9,051	9,080	36,149
			Programming	61,000	51,000	41,000	51,000	204,000
			Equipment	14,558	860	871	881	17,170
	<b>Total Objective 4</b>				<b>130,375</b>	<b>106,479</b>	<b>95,733</b>	<b>106,310</b>
<b>TOTAL PROJECT COST</b>				<b>2,495,900</b>	<b>2,415,917</b>	<b>2,519,897</b>	<b>2,551,806</b>	<b>9,983,521</b>

- a breakdown of cost/budget by expenditure type (project staff and consultants, travel, goods, works, services, etc.) and disbursement schedule in project/programme confirmation (term sheet) as included in section I, Annexes.

Please refer to Annex 17 which also includes AE costs.

B.2. Project Financing Information							
	Financial Instrument		Amount	Currency	Tenor	Pricing	
(a) Total project financing	(a) = (b) + (c)		9,983,521	million USD (\$)million USD (\$)			
(b) GCF financing to recipient	(i) Senior Loans	.....		Options	( ) years	( ) %	
	(ii) Subordinated Loans	.....		Options	( ) years	( ) %	
	(iii) Equity	.....		Options		( ) % IRR	
	(iv) Guarantees	.....		Options			
	(v) Reimbursable grants *	.....		Options			
	(vi) Grants *		9,983,521	million USD (\$)million USD (\$)			
<p>* Please provide economic and financial justification in <a href="#">section F.1</a> for the concessionality that GCF is expected to provide, particularly in the case of grants. Please specify difference in tenor and price between GCF financing and that of accredited entities. Please note that the level of concessionality should correspond to the level of the project/programme's expected performance against the investment criteria indicated in <a href="#">section E</a>.</p>							
	Total requested (i+ii+iii+iv+v+vi)		9,983,521	million USD (\$)million USD (\$)			
(c) Co-financing to recipient	Financial Instrument	Amount	Currency	Name of Institution	Tenor	Pricing	Seniority
	GrantGrant	...	million USD (\$)million USD (\$)		( ) years	( ) %	Options
	Options	.....		.....	( ) years	( ) %	Options
	Options	.....		.....	( ) years	( ) % IRR	Options
	Options	.....		.....			Options
	<p>The co-financing by the government of France was earmarked for the fiscal year 2016-17 (Annex 14 and 20). As the proposal development process has extended beyond the co-financer's planned calendar, the co-financing support is no longer applicable/cannot be used for planned starting date under this proposal.</p> <p>WFP is currently implementing an Integrated Road Map which strengthens its core business by allowing the organization to design and deliver coherent portfolios, instead of the current project-based approach. Under this new approach, Country Offices will be better positioned to support the countries in which WFP operates, through an increased emphasis on maximizing and measuring results within country strategic plans. In the interim country strategic plan, currently developed by the Senegal country office, resilience to shocks and adaptation to climate change represent one of the most important pillars of future interventions and as such all financial resources mobilised to fund that pillar will be considered as parallel co-financing to the project submitted to the GFC. The GCF is already helping the Senegal CO to catalyse funding to the project, for example a donation by the French Government of 200,000 euro was recently confirmed.</p>						
<p>* Please provide a confirmation letter or a letter of commitment in section I issued by the co-financing institution.</p>							

*In cases where the accredited entity (AE) deploys the GCF financing directly to the recipient, (i.e. the GCF financing passes directly from the GCF to the recipient through the AE) or if the AE is the recipient itself, in the proposed financial instrument and terms as described in part (b), this subsection can be skipped.*

*If there is a financial arrangement between the GCF and the AE, which entails a financial instrument and/or financial terms separate from the ones described in part (b), please fill out the table below to specify the proposed instrument and terms between the GCF and the AE.*

Financial instrument	Amount	Currency	Tenor	Pricing
Choose an item.	.....	<u>Options</u>	( ) years	( ) %

*Please provide a justification for the difference in the financial instrument and/or terms between what is provided by the AE to the recipient and what is requested from the GCF to the AE.*

**B.3. Financial Markets Overview (if applicable)**

*How market price or expected commercial rate return was (non-concessional) determined?*

NA

*Please provide an overview of the size of total banking assets, debt capital markets and equity capital markets which could be tapped to finance the proposed project/programme.*

NA

*Please provide an overview of market rates (i.e. 1-year T-Bill, 5-year government bond, 5-year corporate bond (specify credit rating) and 5-year syndicate loan.*

NA

*Provide examples or information on comparable transactions.*

NA

**Fee arrangements**

As per the GCF Interim policy on fees for accredited entities (Decision B.11/10), an additional 10% of the requested GCF grant will be provided to WFP to cover all costs related to project supervision (including admin costs), project evaluation (mid-term and final reports) and reporting (including APRs, financial reports and audit).

All costs related to WFP’s role as EE, including implementation of project activities, management of ‘day to day’ activities, and technical assistance, will be covered by the direct project costs.

Please fill out applicable sub-sections and provide additional information if necessary, as these requirements may vary depending on the nature of the project / programme.

### C.1. Strategic Context

*Please describe relevant national, sub-national, regional, global, political, and/or economic factors that help to contextualize the proposal, including existing national and sector policies and strategies.*

Senegal is highly vulnerable to shocks associated with climate change. Recent years have been marked by erratic rainfall patterns including a downward trend in rainfall and rising sea-levels which are increasing the rate of soil erosion and degradation, salinization in agricultural soils, and destruction of critical infrastructure. About 34% of Senegal's territory is affected by land degradation<sup>3</sup> and in 77% of the cases, soil degradation is due to water erosion. The most affected areas include the eastern part of the national territory. Moreover, due to their forest coverage, the regions of Tambacounda, Ziguinchor and Kolda - the main providers of charcoal for other regions of Senegal - are at high risk of deforestation and consequently, of soil degradation.

The country's economy is heavily dependent on climate-sensitive sectors including agriculture, fishing, tourism, which represent over 60% of employment<sup>4</sup>.

The majority of Senegalese people's livelihoods are highly climate-sensitive: subsistence agriculture, cash crops, livestock rearing, *maraîchage* (vegetable growing), and daily agricultural labor are the main sources of income. The proportion of income that comes from these climate-sensitive sources is highest in the central and eastern parts of the country where high levels of food insecurity exist<sup>5</sup>.

**The negative impacts of climate change are real and persistent. A climate risk and food security analysis carried out by WFP and partners in 2014<sup>6</sup> illustrated how increased climate variability and more erratic rainfall patterns across the country directly impact food production in Senegal because of expected lower agricultural yields and reduced availability of agricultural land. A 2009 report by the World Bank also associates crop loss to droughts, suggesting the correlation between adverse climatic events and yields loss<sup>7</sup>.**

Recent climate-related events, such as high rainfall variability and the 2011/2012 drought, highlighted the impacts of these shocks on food production, access to markets, and livelihoods leading to increased vulnerability and food insecurity. By compounding existing poverty and malnutrition, these events pose a major threat to achieving food security, and other crucial Sustainable Development Goals.

Climate shocks in the recent decades, such as droughts in 2002, 2006, 2007, and 2011 and flooding in 2009, have severely increased the vulnerability of the households and negatively impacted economic growth. The food crisis of 2012 caused by the drought in 2011 left 800,000 people food insecure, with more pronounced impacts in the regions of Ziguinchor, Kolda, Matam, Tambacounda and Kédougou. Households had to resort to negative coping strategies such as distress asset sales and reduced consumption which jeopardized their future ability to generate income.

The frequency of poor growing seasons (measured in terms of number of years out of the last 10 years), variation in the start of the rainy season (measured in terms of regularity of the start of season), and dry spell length (measured in terms of consecutive days of no rainfall) are important climatic factors that could further exacerbate food insecurity trends.

Climate variability, particularly variability in precipitation, has a strong relationship with crop yields. About 50% of variations in the total production of groundnut, millet, sorghum, rice, and maize is explained by interannual rainfall variability. The other 50% of variations in yield highlights the importance of other climatic and non-climatic variables, such as differences in farm inputs, irrigation techniques, and economic changes influencing agricultural management techniques. However, the fact that 50% of variability in yields is explained by a simple measure of variation in precipitation

<sup>3</sup> [www.fao.org/nr/lada/index.php?option=com\\_docman&task=doc...165...](http://www.fao.org/nr/lada/index.php?option=com_docman&task=doc...165...)

<sup>4</sup> [http://www.greencclimate.fund/documents/20182/93876/2112015\\_-\\_Senegal\\_Readiness\\_Proposal.pdf/9ba14a61-7d49-41ba-9347-a1b82c36b511](http://www.greencclimate.fund/documents/20182/93876/2112015_-_Senegal_Readiness_Proposal.pdf/9ba14a61-7d49-41ba-9347-a1b82c36b511)

<sup>5</sup> WFP Senegal Country Office Climate Change Adaptation Programme, unpublished document.

<sup>6</sup> Climate risk and food security in Senegal: Analysis of climate impacts on food security and livelihoods (2014) available at: <http://documents.wfp.org/stellent/groups/public/documents/newsroom/wfp269381.pdf>

<sup>7</sup> Annex 18 "Index based crop insurance in Senegal" page 25, paragraph 3.15.

suggests that climatic factors and agricultural production have a particularly high correlation in Senegal. Thus, climate change adaptation measures are critical to ensuring sustainable food production in Senegal.

Threats <sup>8</sup>	Impacts on food security <sup>9</sup>
<ul style="list-style-type: none"> <li>Rises in average temperatures of about 0.9°C since 1960, an average of 0.2° per decade</li> <li>Decrease in rainfall by 10-15 mm per decade and a shortening of the rainy season</li> <li>Increase in daily rainfall and in the frequency of short dry spells</li> <li>Loss of shoreline from erosion of 1-2 m per year along shorelines of sand beaches, and 0.1-0.7 m per year along rocky coastline areas, aggravated by sea level rise.</li> </ul>	<p><i>Food Availability (sufficient quantity of food for consumption)</i></p> <ul style="list-style-type: none"> <li>Reduced agricultural production in some areas locally</li> <li>Changes in the suitability of land for crop production</li> <li>Sustainability of rain-fed agriculture is affected</li> <li>Changes in the duration of growing seasons</li> </ul>
	<p><i>Food Access (ability to obtain food regularly through own production or purchase)</i></p> <ul style="list-style-type: none"> <li>Lower yield in some areas could lead to higher food prices</li> <li>Loss of income due to the potential decrease in agricultural yield</li> <li>Increase in negative coping mechanism for the most poor and vulnerable</li> </ul>
	<p><i>Food Stability (risk of losing access to resources required to consume food)</i></p> <ul style="list-style-type: none"> <li>Instability of food supplies due to an increase in extreme events</li> <li>Instability of incomes from agriculture can distort household and government food security strategies</li> </ul>
	<p><i>Food Utilization (quality and safety of food, including nutritional aspects)</i></p> <ul style="list-style-type: none"> <li>Calorie intake is impacted, particularly in areas where chronic food insecurity is already a significant problem</li> <li>Ability to utilize food might decrease creating a vicious cycle of hunger and disease</li> <li>Impact on food security due to changes in pests and water pollution</li> <li>Reduced nutrition due to impacts on food security, dietary diversity, care practices and health</li> </ul>

These threats have been clearly acknowledged nationally by the Ministry of the Environment, which foresees temperatures increase of 3° C, an average decrease in rainfall of 20%, and a potential decline in agricultural yields of 20% by 2050. The 2006 National Adaptation Programmes of Action (NAPAs), the 2010 Second National Communication, and the 2015 UNFCCC Intended Nationally Determined Contribution (INDC) seek to provide a road map to enhance strategic decisions for better climate change adaptation<sup>10</sup>.

The National Adaptation Plan (NAP) is currently under preparation with support from the Green Climate Fund, through UNDP, and the GiZ. The NAP will integrate climate change adaptation interventions in the sectoral policies of 7 domains (agriculture, water, fisheries, coastal areas, tourism, biodiversity, floods) that are currently under study. The analysis is looking at the vulnerability levels in each sector and is developing optimistic or pessimistic scenarios for which adaptation measures and actions will be proposed. The NAP will identify the policies and programs that are appropriate to make those sectors more resilient to climate change. The proposed *project*, built on the R4 approach, has been identified, through its different interventions and partnerships, as one of the project/programs that are to be selected in the

<sup>8</sup> USAID. 2012. "Climate Change Adaptation in Senegal."

<sup>9</sup> Adapted from World Food Programme, and Met Office Hadley Centre. 2012. "Climate Impacts on Food Security and Nutrition."

<sup>10</sup> <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx>

agriculture sector by the NAP process to respond to the challenges in adaptation to climate change as it reduces the impact of climate shocks, builds climate-resilient communities and improves their food security.

## C.2. Project / Programme Objective against Baseline

*Describe the baseline scenario (i.e. emissions baseline, climate vulnerability baseline, key barriers, challenges and/or policies) and the outcomes and the impact that the project/programme will aim to achieve in improving the baseline scenario.*

### 1. Project overarching objectives

The proposed **project aims at improving the food and income security of 405,000 people from vulnerable smallholder households, including female – headed/widowed households/girls in the regions of Kaffrine, Kolda, Tambacounda, Fatick, Kaolack of Senegal, by building their resilience to increasingly recurrent climate shocks, and adapt to the adverse impacts of climate change.** The outcomes to reach this overarching result will be the following:

**Outcome 1:** Increase adaptive capacity of food insecure smallholder farmers and their families by increasing the resilience of their environment and reducing the risk and impacts deriving from climate change.

**Outcome 2:** Protect food insecure smallholder farmers from the impact of covariate climate shocks<sup>11</sup> and provide them with the confidence to invest in agricultural inputs and diversified Income Generating Activities (IGAs).

**Outcome 3:** Increase the adaptive capacity of food insecure smallholders by gradually building savings, while improving their ability to produce and sell surpluses, and diversifying their income sources through investments in IGAs that are not climate sensitive.

**Outcome 4:** Enable the Government of Senegal (GoS) to mainstream climate change adaptation and climate risk management into its safety net and social protection programs.

The baseline scenario for the proposed project builds on the national-level analysis carried out by WFP in 2012 to support the design of the pilot phase of the R4 Rural Resilience Initiative (Annex 12 and 13). The effects of the pilot on the baseline can be found in the impact evaluation. Please see Annex 5.

### Biophysical and environmental baseline

Climate change is characterized by high rainfall variability at seasonal, inter-annual and multi-decadal scales, and is one of the key contributors to food insecurity in the key agricultural areas of the country. Historically, climate change in Senegal was linked to persistent drought in the 1970s and the 1980s. Recent observations suggest a reversal of these conditions with higher precipitation; however, this increase has resulted from increasing rainfall intensity rather than frequency. These trends highlight that rainfall patterns are highly erratic in Senegal as mentioned above, and in the Sahel, more generally, and can result in a more uncertain risk environment in the future.

Gridded station precipitation data show high intra-seasonal and inter-decadal variation in precipitation: there has been a noticeable decline in precipitation between the late 1960s and the mid-1980s, but an increase since the mid-1990s. This evolution is part and parcel of the late-20th century persistence of drought that affected the entire Sahelian belt, and more recent partial recovery. However, it is difficult to identify long term trends due to the high variability on inter-annual and inter-decadal timescales that characterizes the Sahelian rainfall. The high variability makes forecasts and agricultural planning particularly challenging. Additionally, Senegal has experienced a statistically significant decrease in wet season rainfall between 1960 and 2006, with the 500 mm isohyets regressing about 100 kilometers (km) to the south.<sup>12</sup>

<sup>11</sup> Covariate risk results from a shock that collectively impacts the community as a whole and can have massive impact by triggering one or more other shocks. E.g. floods, droughts, hurricanes

<sup>12</sup> World Bank Group. 2011. "Climate Risk and Adaptation Country Profile - Senegal."

Mean annual temperature has increased by 0.9°C since 1960, an average rate of 0.20°C per decade. Available data indicates that the average number of 'hot' nights per year increased by 27 (an additional 7.3% of nights) between 1960 and 2003.<sup>11</sup>

Soil degradation has been a major environmental issue and a crisis amplifier. This is closely linked to three trends: first, persistent drought in the 1970s and 1980s severely affected the natural and managed ecosystems of drier region; second, agricultural expansion has accelerated due to increased demand in land; and third, heavy localized grazing has been associated with an increase in livestock numbers coupled with reduction of grazing land.

### Social baseline

Senegal's population of 15 million (World Bank, 2015) is unevenly distributed, with the majority living in western areas where most major towns are located. The eastern parts of the country, particularly Kédougou, Saraya and Salémata, are less densely populated. It has one of the highest population growth rates in the world (3.1%, 17th in the world; UN-DESA, 2015). In contrast to its land-locked Sahelian neighbors, Mali, Burkina Faso and Niger, however, rapid population growth in Senegal is defined by urbanization: growth rates are driven primarily by migration from rural to urban areas. Demographic pressure is an issue of major concern: as population growth continues to outpace growth in agricultural production, the challenges of addressing poverty and food insecurity have increased.

Poverty remains high in Senegal, affecting the majority of the population. GDP growth is well below the rates necessary for significant poverty reduction, and a growing reliance on capital-intensive exports rather than labor-intensive sectors limits the creation of new jobs. Repeated shocks in recent years have further hampered progress, with poverty incidence decreasing only by 1.8 percentage points between 2006 and 2011, and the number of poor actually increasing to reach 6.3 million in 2011.<sup>13</sup>

Despite some development progress in recent years, **Senegal remains a food insecure country**: estimates suggest that one in every six Senegalese i.e. 16% of the population is food insecure, while almost half (42%) of the population just manages to meet food needs.<sup>14</sup> Geographically, food insecurity is very high in the regions of Sédhiou (58%), Kolda (42%), Ziguinchor (39%), Matam (38%) and Kédougou (33%)<sup>15</sup>. Traditionally prone to food insecurity, households in these regions are still suffering from the consequences of the 2012 food crisis and are highly vulnerable with eroded resilience.

Additionally, the situation of acute malnutrition is generally precarious and close to an alert threshold with a worrying situation in some departments where the rate exceeds the critical threshold: the departments of Matam (20.5%) Ranérour (16.3%) and Kanel (17.9%) and the department of Podor (16.7%).

Assessments by WFP have identified the causes of food insecurity in the country to be (i) low agricultural productivity due to poor use of natural resources, (ii) dependence on markets and high grain prices, and (iii) **high rainfall variability at inter-annual and inter-decadal scales, particularly in key production areas**. (For detailed info on the relation between climate and food security refer to section C.1).

Unless critical adaptation measures are put in place, vulnerability of the 40% of the total population that barely manages to meet food needs is bound to increase in the face of key climate risks.

**Against the biophysical and social baseline, the project will improve the natural resource base of targeted populations through objective 1 (Increase adaptive capacity of food insecure smallholder farmers and their families by increasing the resilience of their environment and reducing the risk and impacts deriving from climate change), specifically through the creation of DRR assets and the improvement of agricultural practices through training and the use of climate services.**

**The project will also address the increase in climate risk through objective 2 (Protect food insecure smallholder farmers from the impact of covariate climate shocks<sup>16</sup> and provide them with the confidence to invest in**

<sup>13</sup> <http://www.worldbank.org/en/country/senegal/overview>

<sup>14</sup> WFP (2014) Comprehensive Food Security and Vulnerability Analysis (CFSVA) and Nutrition Assessment – Senegal. Dakar: WFP

<sup>15</sup> <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp266799.pdf?iframe>

<sup>16</sup> Covariate risk results from a shock that collectively impacts the community as a whole and can have massive impact by triggering one or more other shocks. E.g. floods, droughts, hurricanes

agricultural inputs and diversified IGAs) by providing farmers with weather index insurance which will protect the development gains of vulnerable households in case of climate shock.

**Objective 3 (Increase the adaptive capacity of food insecure smallholders by gradually building savings, while improving their ability to produce and sell surpluses, and diversifying their income sources through investments in IGAs that are not climate sensitive) will address poverty and adaptive capacity by enabling targeted populations to access financial services such as savings and credit.**

### Institutional baseline

The Government of Senegal estimated the cost of measures for climate change adaptation to reach 14.5 billion USD by 2035 in its Intended Nationally Determined Contributions for the 2015 Paris Agreement of UNFCCC. Though a quantification of the government's total contingent liability to extreme weather events has not been undertaken, it is expected to be significant from historical records. For example, the post-disaster needs assessment undertaken in the aftermath of the 2009 floods estimated the GoS share of the total cost of disaster to be 35 percent i.e. 36 million USD for direct loss and damage.<sup>17</sup>

The GoS has made annual budgetary provision for disaster risk management through a number of mechanisms – core funding for the Directorate of Civil Protection, special funds and budget lines for aid and assistance to the needy in case of shortfalls. Some of the special contingent funds that can be accessed for disaster response, include:<sup>14</sup>

Fund	Objective	Allocation (USD) in 2009
Le Fonds de Solidarité National	A national solidarity fund for unforeseen events, used for response to the 2009 floods	0.96 million
Le Fonds Spécial de Lutte Contre les Inondations	A national fund for flood management	3.8 million
Le Fonds de Calamité de Projets Agricoles	A fund to provide post-disaster financial assistance to farmers hit by adverse events	2.9 million
Le Fonds de Garantie de Projets Agricoles	A fund to provide partial credit guarantees to farmers- helping them manage adverse events	2.9 million

In addition to the above specialized contingent funds, the GoS has also implemented a few ex ante mechanisms to expedite disaster relief for farmers through subsidization of lending rates or guaranteeing agricultural loans against default to some extent – *Fonds de Bonification*, *Fonds de Garantie* and *Fonds de Calamite*. In 2013, a sum of 6 million USD was budgeted for the three *Fonds*. Additionally, the existing social protection system accounts for a maximum 0.5% of the GDP, is fragmented, and does not provide coverage to the most vulnerable. This picture becomes more concerning in the field of disaster response and recovery, as there is only one scheme catering to such needs - *Fonds de Solidarité Nationale's Programme d'Assistance en Situation de Crise et d'Urgence*.<sup>18</sup>

In addition to the above investments made by the GoS, several international institutions and donors have been supporting disaster risk management and climate change adaptation efforts in the country:

Period	Project	Lead Organization/Donor	Amount (USD)
2015	Increasing Resilience of Ecosystems and Communities through Restoration of the Productive Bases of Salinized Lands	Centre de Suivi Ecologique, Green Climate Fund	8.2 million
2012 - 2017	Storm Water Management and Climate Change Adaptation Project	World Bank	88 million

<sup>17</sup>White, Emily, and Isabelle Kane. 2012. "Senegal - Disaster Risk Financing and Insurance Country Note." World Bank.

<sup>18</sup>World Bank Group. 2013. "Initial Market Assessment - Country Scoping Note:Senegal." Political Champions Group - Partnership for Stimulating Insurance Penetration in Lower Income Countries.

2012-2016	R4 Rural Resilience Initiative	UN World Food Programme and Oxfam America	8 million
2012-2015	Disaster Risk Management and Climate Change Adaptation	World Bank	1 million
2012	Sustainable Land Management Project	World Bank	5 million
2011	African Emergency Locust Project	World Bank	10 million
2010-2012	Integrating Climate Change Adaptation in Sustainable Development in Senegal	United Nations Development Programme	3 million
2010	Combating coastal erosion exacerbated by climate change and rising sea levels in Senegal	Centre de Suivi Ecologique, Adaptation Fund	8.6 million
2009	Spatial Analysis of Natural Hazard and Climate Variability Risks	World Bank	0.1 million

### National policies baseline

National strategies and policies relevant to climate change and food security include the following:

*Loi d'Orientation Agro-Sylvo-Pastorale (LOASP) (2004)*: The most comprehensive framework for agricultural development that aimed to reduce rural poverty, and address medium-term food security through national food self-sufficiency.

*Stratégie de Croissance Accélérée (SCA) (2011)*: Aims to operationalize the first growth-creation pillar of the Poverty Reduction Strategy Paper – the *Document de Politique Economique et Sociale (2011–2015)*. The SCA rests on two mutually reinforcing pillars: i) the establishment of a world-class business environment; and ii) the promotion of value chains at the national or international levels; this is based on several clusters (*grappes*), in which Senegal has a comparative advantage.

*Plan National d'Investment Agricole du Sénégal (PNIA) (2011–2015)*: Focuses on investment in infrastructure, particularly irrigation, and high input/high output agriculture on the Green Revolution model – mechanization, improved seeds and intensive use of fertilizers and pesticides.

*Stratégie Nationale de la Protection Sociale (2005–2015)*: Drafted with a view to promoting equity in social protection and extending the coverage of basic social services to the most vulnerable families.

*National Strategy on Food Security and Resilience (SNSAR) (2015-2035)*: it aims at strengthening rural communities' resilience and food security.

*National Adaptation Programme of Action (NAPA-2006)* defines GoS priorities for climate change adaptation – measures such as reforestation, restoration of soil fertility, improved water conservation methods and the use of alternative crops, irrigation and the halting of erosion in coastal regions.

### Political and institutional barriers

Some of the key institutional barriers for resilience building and climate change adaptation in Senegal include:

- Lack of technical capacity at local and national level on climate change science, impacts and vulnerabilities to support policy and decision making;
- Inadequate fiscal allocations for disaster risk and adaptation mechanisms;
- Need for decentralized financing structures, where appropriate for climate change adaptation measures;
- Low penetration of insurance in the domestic market, especially in non-life sectors such as agriculture and climate risks.

**Against the institutional and national policies baseline, the *project* will provide critical support to the GoS in terms of provision of technical capacity and capacity building to integrate and improve their social protection**

programs with comprehensive climate risk management schemes through objective 4 (Enable the Government of Senegal (GoS) to mainstream climate change adaptation and climate risk management into its safety net and social protection programs).

**Interactions with other funding:**

WFP has started collaborating with the ongoing regional project from the World Bank (WB) on social protection and social safety nets. WFP have already set a working group with Oxfam and the DGPSN, the primary recipient of WB support in Senegal to implement the WB project.

WFP and the DGPSN see this interaction mutually beneficial as the *project* can complement the support to the households already benefiting from the PNBF by increasing their food security and strengthening safety nets through the FFA and IFA. The R4 pilot outcome monitoring in 2016 has indeed highlighted that 30% of its sampled households receive as well the cash from the PNBF and thanks to the combined R4 interventions, those households' food security has improved when compared to the PNBF households that are not participating to R4.

### C.3. Project / Programme Description

*Describe the main activities and the planned measures of the project/programme according to each of its components. Provide information on how the activities are linked to objectives, outputs and outcomes that the project/programme intends to achieve. The objectives, outputs and outcomes should be consistent with the information reported in the logic framework in section H.*

In 2013, based on consultations with the Government of Senegal (GoS) and a series of in depth assessments of the links between food insecurity and climate risks in Senegal, WFP and Oxfam America (OA) piloted the R4 Rural Resilience Initiative in Senegal working closely with national and local partners.

The R4 Rural Resilience Initiative (R4) enables vulnerable rural households to improve their food and income security in the face of increasing climate risks from climate change. The Initiative, a global partnership between WFP and OA, is based on an innovative approach to climate resilience for food security, which combines four strategies: community-based disaster risk reduction and adaptation (**risk reduction**), micro-insurance (**risk transfer**), livelihoods diversification and microcredit (**prudent risk taking**) and savings (**risk reserves**). R4 currently operates in Ethiopia, Senegal, Malawi and Zambia. During COP 19, R4 has been recognized as a leading example of **how climate risk management can address loss and damage from climate change** through integration with social safety nets.

In 2013, the approach was piloted in one commune (Koussanar, region of Tambacounda) reaching 500 participants. By 2016, the Initiative reached over **12,000 participants and 100,000 beneficiaries** in three regions (Kaffrine, Kolda and Tambacounda), of which over 7,000 accessed climate risk insurance<sup>19</sup>. The proposed *project* would enable the GoS, and the SE/CNSA (Le Secrétariat Exécutif du Conseil National de Sécurité Alimentaire) - who will execute the project together with WFP - (see Annex 30 for the letter from the SE/CNSA) to take this pilot, scale it up, and develop a national level implementation capacity.

The pilot tested the R4 approach in Senegal. This approach proved successful, however in order to scale up, a number of barriers have to be removed. The efforts in removing barriers have already started however, through the GCF contribution, WFP aims at completing such effort and providing the country with the appropriate structures to expand the benefits of this integrated risk management scheme well beyond the current beneficiaries.

The initiative and proposed *project* are well aligned with national priorities for climate-resilient development, in particular:

1. The Senegal National Adaptation Programmes of Action (NAPAs) by supporting climate change governance structures at national and local levels (COMNACC and COMRECC);
2. Senegal's Second National Communication (2010) seeking to provide a road map to enhance strategic decisions for better climate change adaptation, and noting the need for this strategy to be later integrated to the national development strategy<sup>20</sup>.

<sup>19</sup> The pilot was funded by USAID with a budget of ~USD 8 million over 5 years.

<sup>20</sup> <http://www.adaptation-undp.org/projects/senegal-nap-process>

3. The national development strategy, *Plan Sénégal Emergent* 2014-2035 (PSE) reflecting the GoS' long-term vision to implement effective social protection, safety nets, sustainable food production and disaster risk management systems. R4 activities are linked to the PSE's three strategic pillars: structural transformation of the economy and growth; human development, social protection, and sustainable development; improved governance;
4. The Senegal National Strategy on Food Security and Resilience (SNSAR) 2015-2035 as it strengthens rural communities' resilience and food security.

**Building on the R4 pilot, the proposed *project* aims at improving the food and income security of 405,000 people from vulnerable smallholder households including female – headed/widowed households/girls in the regions of Kafrine, Kolda, Tambacounda, Fatick, Kaolack by building their resilience to increasingly recurrent climate shocks, and adapt to the adverse impacts of climate change.** The components and respective outputs to reach this overarching result will be the following (details are provided later in this section):

**Component 1 (Risk Reduction):** Increase adaptive capacity of food insecure smallholder farmers and their families by increasing the resilience of their environment and reducing the risk and impacts deriving from climate change.

**Output 1.1:** Training of farmers on innovative, climate smart agricultural practices and support of community-based disaster risk reduction assets creation, such as water and soil conservation. Based on WFP experience with the Food Assistance for Assets (FFA)<sup>21</sup> program, these interventions aim at improving the natural resource base of smallholder farming communities and increase their ability to obtain adequate yields to feed their families in the face of increasing frequency and intensity of droughts.

**Output 1.2:** Provision of climate services, enabling farmers to access reliable climate information *via* their mobile phones and radio programs, as well as advisory services to better cope with increasing climate variability and adapt their decision-making and farming practices.

**Component 2 (Risk Transfer):** Protect food insecure smallholder farmers from the impact of covariate climate shocks and provide them with the confidence to invest in agricultural inputs and diversified IGAs.

**Output 2.1:** WFP, in partnership with the local agricultural insurance company CNAAS, provides smallholders with weather index insurance (WII). WII compensates them with payouts in case of rainfall deficits, and thus prevents them from selling productive assets or enacting other negative coping strategies (such as reducing food intake or taking their children out of school), while making them feel confident to make investments in agricultural inputs and other IGAs.

**Component 3 (Risk Reserves and Prudent Risk taking):** Increase the adaptive capacity of food insecure smallholders by gradually building savings, while improving their ability to produce and sell surpluses, and diversifying their income sources through investments in IGAs that are not climate sensitive. Increase the overall sustainability of the *project* by enabling farmers to go from the subsistence level to the surplus production level, and therefore contributing to their gradual ability to access WII fully commercially.

**Output 3.1:** WFP, in partnership with OA, supports vulnerable rural populations in building up savings and accessing small loans through the Savings for Change (SfC) program, enabling them (and especially women) to rely on a buffer in case of unexpected events, while receiving credit to start new businesses. SfC also serves as a delivery channel for insurance policies through SfC Associations, as well as training in financial education, insurance and IGAs other than agriculture such as agroforestry programs.

**Output 3.2:** During good years, farmers have the opportunity to store their surplus production in WFP Village Cereal Banks and use their stocks as collateral to receive credit from local Micro Finance Institutions (MFIs). Credit allows farmers to invest in agricultural inputs such as seeds and fertilizer, as well as non-agricultural IGAs, enabling them to diversify their income sources.

<sup>21</sup> <https://www.wfp.org/food-assets>

**Component 4:** Enable the Government of Senegal to mainstream climate change adaptation and climate risk management into its safety net and social protection programs.

**Output 4.1:** By executing the *project* in collaboration with SE/CNSA (Secrétariat Exécutif du Conseil National de Sécurité Alimentaire), (see Annex 30) WFP will be able to build national capacity to scale up rural resilience and adaptation measures linked to national social protection programs, supporting the government to implement its adaptation actions and reinforce national capacities.

It should be noted that the pilot reached 99,000 beneficiaries in 2016, of which 7,563 HH (and hence 68,067) with insurance, and the rest with combinations of DRR and savings intervention (11,000 households comprising 9 people each.) They will be likely involved in all or certain components of the project in the years to come as resilience building requires long term investments and multiple years.

These objectives will be achieved by working with national partners to scale up the *project* while building the capacities and systems to mainstream the activities into national programs. More detail on how the approach works and what is included under each component in Senegal can be found below:

#### How the components are linked:

- By participating to WFP's FFA program, food insecure **farmers build DRR assets increasing their resilience and capacity to adapt to climate change** by steadily decreasing vulnerability to disaster risks over time.
- Leveraging on the DRR assets and climate services and to further increase farmers' adaptive capacity, risk is transferred to the international insurance market through the risk transfer component. Farmers access weather index insurance by participating to the **Insurance-for-Assets (IFA) scheme**. When a drought hits, compensation for weather-related losses prevents farmers from selling productive assets and stimulates faster recovery.
- By protecting farmers' investments in case of a bad season, WFP enables households to **invest** in riskier but more remunerative enterprises, as well as in seeds, fertilizers and new technologies to increase their agricultural productivity.
- **Insurance policies are delivered through Saving for Change (SfC) Associations. Through SfC, participants establish small-scale savings**, which are used to build 'risk reserves'. Savings help build a stronger financial base for investing – but also act as a buffer against short-term needs and idiosyncratic shocks, such as illness and death and could be used to pay insurance premiums in cash. Saving and credit also enable farmers to transition from the subsistence level to the surplus production level, gradually making them able to access WII commercially and contributing to the general sustainability of the *project*.
- **The integration of the different components** and activities occurs at the household level where members of the household participate to the different components of the *project*. That means that in a particular household, one member can participate to the risk reduction component and at the same time subscribe to the insurance while his wife joins a saving group and starts income generating activities, while another member deposit the households' cereal surplus in a cereal bank. Impact is measured at the household level on the basis of members' combined participation to different activities.
- To ensure **long-term sustainability**, the *project* contributes to the creation of rural financial markets, by building the capacity of farmers, local insurance companies, and micro-finance institutions and gradually transitioning farmers to pay for insurance in cash.

#### Detailed description of each output:

##### Output 1.1

Under the **risk reduction** component, participants build or recover **assets that reduce the impacts of climate shocks and help food insecure households and communities to adapt to the effects of climate change**.

Participatory planning and watershed-based approaches are key elements in the design and implementation of different soil and water conservation measures and related assets. These assets improve the management of low-lying lands for rice cultivation through the removal of sand, the construction of stone bunds, small embankments, control dams, gully

rehabilitation structures and other assets. Farmers also start vegetable gardens and fruit trees nurseries (complemented by wells and compost pits) to improve their diets' nutritional value.

Specifically, assets include:

- Soil and water conservation interventions (water harvesting, gully rehabilitation, afforestation, stone bunds): stone bunds' adaptation benefit is to restore the soil and increase water infiltration which can help restore degraded land. Medium to long term soil fertility increases can lead to higher yields.
- Assets increasing water access (water ponds, dams, micro-irrigation schemes, shallow wells) to address droughts and erratic rainfall.
- Trainings and skills enhancement that help diversifying livelihood opportunities and developing alternative income sources, such as trainings on natural resource management, storage techniques, and income generating activities (such as beekeeping and marketing fruits and other products).
- Rehabilitating and re-building assets and infrastructure damaged by climate-related disasters, including the rehabilitation of productive agricultural land, irrigation and drainage channels, roads and other community infrastructure.

In order to enable communities to engage in assets creation, farmers receive a vital transfer from WFP, either in food, cash or food vouchers based on preferences highlighted by participants during the seasonal livelihood planning sessions conducted in each region of intervention. **In the short-term, food assistance for assets supports communities during the lean season, when the food gap is most severe** (low yields, low stocks, and high prices) and helps them meet immediate food needs. Food or cash transfers are crucial to enable farmers to participate in risk reduction and adaptation as the target group is chronically food insecure. In the short term the transfers boost food security; inject vital cash into local economy and promote local production. They belong to WFP's Food Assistance for Assets (FFA) approach and as such they are integral part of intervention 1. WFP experience indicates that food assistance remains a key element to allow chronically food insecure households' participation into adaptation activities.

**In the long-term, assets will increase community adaptation against climate-related shocks and improve land productivity.** These assets can help reduce the risk and impact of climate shocks on livelihoods, strengthen resilience to natural disasters, and contribute to long-term livelihood and environmental benefits. Planned together with communities, food assistance for assets interventions also include training on natural resources development and management, reforestation, community infrastructure rehabilitation and support the restoration of agriculture potential.

**Process detail:** Over the past five years, WFP's use of cash and vouchers has grown rapidly, across crisis, geographical areas, affected populations and economies. General information about this modality can be found [here](#). The modality used by WFP in Senegal is the commodity voucher. Participants receive commodity vouchers that can be spent at local shops and retailers during the lean season. This allows them to fill the immediate food gap while investing in assets creation that increase their resilience (under the FFA and IFA scheme). Commodity vouchers can be exchanged against a set of given commodities (cereal, pulses, oil, iodize salt and soap). The local shops and retailers are selected by WFP through a thorough assessment based on corporate criteria (criteria are available upon request). Once all vouchers have been redeemed, WFP reimburses the retailers. More information on Cash and Vouchers can be found [here](#).

The implementation of the activities is designed to be respectful of the calendar of activities of women and men and their work and social schedules are taken into consideration when planning the asset creation so as to not disrupt their activities. In general, FFA and IFA activities are conducted mostly before, and partly after, the rainy season and field preparation, when the workload in villages are lower, in order to limit any disruption in participants' activities (an **operational manual is available in the form of standard operating procedures** - Annex 18, 19 and 29).

As mentioned above, this component of the *project* builds on WFP's FFA program, a cornerstone of the agency's strategy on resilience which enables rural communities to get trained on, plan and build key DRR and adaptation assets to reduce the impact of climate change and improve food security. FFA interventions are designed, and assets are chosen, through Community-based Participatory Planning<sup>22</sup> (CBPP) sessions facilitated by WFP's experts and a pool of local trainers (technical services staff) previously trained by WFP, which combine community's current priorities with a long term vision into the potential impacts of climate change.

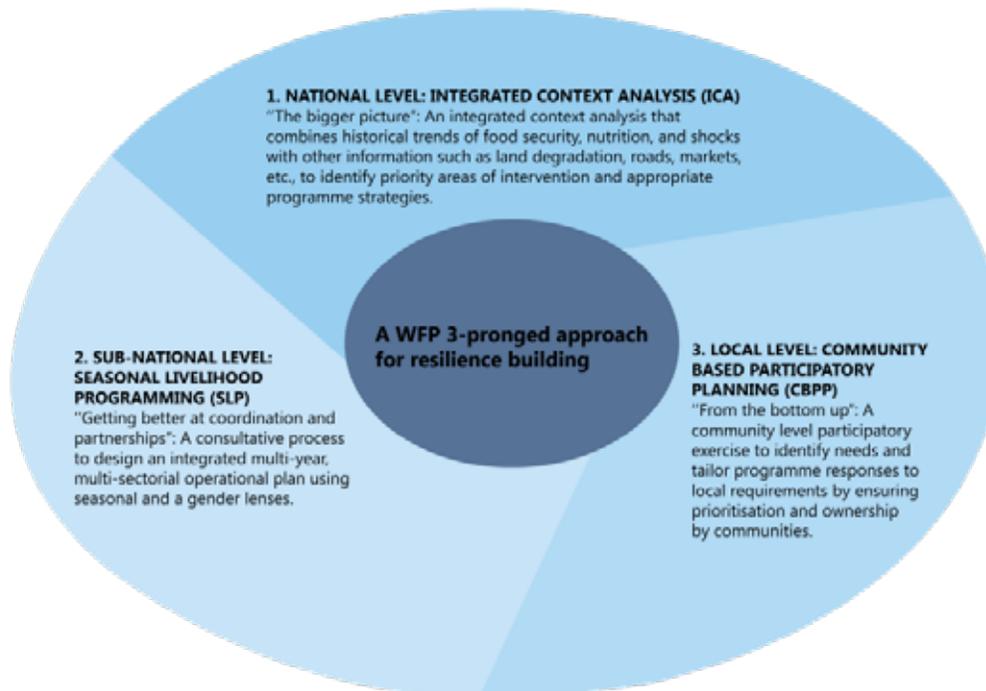
<sup>22</sup>[http://documents.wfp.org/stellent/groups/public/documents/communications/wfp264473.pdf?\\_ga=1.150016630.1731526006.1426599547](http://documents.wfp.org/stellent/groups/public/documents/communications/wfp264473.pdf?_ga=1.150016630.1731526006.1426599547)

The interventions follow a cash/food voucher transfer model in-line with WFP's corporate guidelines on cash-based transfers. The cash/food voucher transfer will meet the immediate food needs of the targeted food insecure households. This will, in turn, enable them to participate in creation of assets that will contribute to longer term climate resilience.

An **operational manual is available in the form of standard operating procedures** (Annex 18 and 19 – only available in French) detailing steps to implement the risk transfer component and the risk reduction component, based on WFP's program manual on FFA (available in Annex 29). Moreover, a detailed program guidance manual is being developed at the global level to inform and guide the operationalization of integrated climate risk management initiatives.

The beneficiary selection criteria/processes are defined in the above mentioned SOP for food assistance for assets. Geographical targeting is done by overlaying areas vulnerable to food insecurity and climate shocks, building on the collaboration of WFP with the Secretariat Executif du Conseil National de Securite' Alimentaire (SECNSA – the other executing agency for the *project*)<sup>23</sup> and on the WFP corporate 3-Pronged Approach (3PA).

The 3PA strengthens the design, planning and implementation of longer-term programs placing people at the centre of planning with innovative tools such as the [Integrated context analysis \(ICA\)](#), [Seasonal livelihood programming \(SLP\)](#), and the above mentioned [Community-based Participatory Planning \(CBPP\)](#), explained in the graphic below:



**Targeting:** Within the identified communities, the selection of participants is performed by designated village management committees, with implementing partners ensuring that fair and adequate practices for selection of participants are used. WFP and partners monitor the ability of the village management committees to adequately select participants and if necessary suggest making adjustments.

Several basic principles are taken into account in the selection of participants:

- i) The transfer distributed as part of the FFA activity responds to a food security objective. The most food insecure households vulnerable to climate variability and change are primarily targeted.

<sup>23</sup>WFP and SECNSA work together on food security and vulnerability analysis. WFP is currently supporting SECNSA to put in place a robust food security early warning monitoring system for emergency preparedness and response. With SECNSA as the government focal point for coordination of resilience activities in Senegal, WFP provided support for the elaboration of the food security and resilience strategy. WFP is also building the capacities of the SECNSA in integrated context analysis and other planning tools to help the SECNSA to effectively, coordinate and monitor the country resilience priority activities.

- ii) The assets created should be prioritized so that vulnerable households needing access to it, benefit from it and are able to use them.
- iii) Gender equality is at the center of planning, prioritization of assets to create / restore, selection of beneficiaries participants and households, and use of assets created / restored;
- iv) The CBPP brings together all vulnerable groups in the community by livelihoods, by gender, according to an inclusive and unifying approach. The CBPP is a powerful, important and useful tool for several reasons as it helps to meet the various challenges set out above, including awareness of villagers and management committee for the selection of participants and beneficiaries, prioritizing assets creations that meet the needs of vulnerable households and other groups, links with other complementary activities and initiatives, and aspects of monitoring and evaluation.

The creation of assets will be strengthened with the integration of **Climate Smart Agricultural (CSA) practices**, including: drip irrigation and use of organic fertilizer, storage and conservation techniques for vegetable production; stone bunds and certified short cycle varieties for cereals cultivation; good agricultural practices (e.g. weeding) for cereals cultivation and system of rice intensification (SRI). The latter in particular promotes the efficient use of scarce water resources, improves quality of soil and resistance to environmental stresses, as well as increases yield by maintaining optimum conditional of plant development. The proposed *project* will partner with appropriate institutions such as FAO and ISRA to introduce the most relevant and context specific practices, including attention to the indigenous solutions and practices adopted by the communities affected by the impact of climate change.

The component will also benefit from the **Climate Change Adaptation (CCA) strategies, technologies and best practices** for small farmers emerging from the field farmers' schools of the FAO in the context of the GEF-funded project "Mainstreaming ecosystem-based approaches to climate-resilient rural livelihoods in vulnerable rural areas through the Farmer Field School (FFS) methodology". The FFS are currently operating and will continue to operate in synergy with the proposed *project* in the next years. Furthermore, the proposed *project* will use and capitalize on the good practices and lessons learned for better adaptation to climate risk emerging form the FFS and will disseminate them locally in its intervention zones.

The use of the right seeds and fertilizer: The most vulnerable Senegalese farmers have always experienced quality seeds problems. Most often, after harvest, they use a portion of the production as seed for the next year. However, over time, seeds deteriorate and do not give good yields. This is why WFP has been increasingly collaborating with agricultural services (responsible for seed certification) and agricultural research services to ensure that certified seeds, better adapted to local conditions, are distributed to farmers by its partners. Certified, locally adapted seeds tend to produce better yields. In terms of fertilizers, WFP supports the use of organic fertilizer combined with compost. Farmers typically use environmentally friendly or organic fertilizers, sought from networks such as the Reseau Interface which has a long experience in providing agri-food products (facilitated by WFP). In terms of training, farmers learn about biologic agriculture and plant protection products through SFC groups. Regarding mineral fertilizers, WFP's implementing partners closely monitor their usage and provide technical training to its farmers. These fertilizers are also certified by the departments of agriculture and local agricultural research services. Some of the techniques used to mitigate any potential risk include e.g. the delimitation of plots through small bunds to better capture water management; as well as flattening land to better control water.

## Output 1.2

Under the risk reduction component, WFP has also piloted and will expand the provision of tailored **climate services**, enabling farmers to access reliable climate information *via* their mobile phones and advisory services to better cope with increasing climate variability and adapt their decision-making and farming practices. Consultation with farmers during the project formulation stage indicated that the current climate information disseminated through the radio/TV do not reach most of them. Even when information reaches farmers, it is not actionable as it is too general and does not take into account the local climate disparities within the *project* area. To enable smallholder farmers to cope with the negative impacts of climate variability on their agricultural productivity, downscaled climate information supplemented with advisories on how to use them is vital (interventions elsewhere have indicated that tailored climate information can increase productivity and reduce agricultural losses due to climate variability).

WFP is currently testing two approaches to provide climate services to its farmers. The first pilot developed in Tambacounda involves the social enterprise Ignitia (procured through WFP standard procurement process) and provides location-based weather forecasts through sms. Ignitia is a high-technology company that has recently developed the world's first accurate tropical weather forecast model. For West Africa, Ignitia provided an 84% accuracy rate over three

rainy seasons during 2013-2015, compared with global competitors that only reach 39%. Besides their accuracy, Ignitia can provide information that is specific to farmers' GPS location, therefore accounting for the existence of microclimates that is so common in Senegal, a unique feature compared to other initiatives. Ignitia can provide weather information (specifically rainfall and temperature) using clear and simple text messages in the local language, while partner NGOs and local organizations will provide extension services in terms of agro-meteorological advisories (interpretation of climate information received and the necessary action) to the farmers. Downscaled/location specific climate information complemented with agro-meteorological advisories will address diversity of farmers in terms of varied needs for climate services.

The second pilot developed in Kolda involves the local organization Manobi as well as the National Agency for Civil Aviation and Met Info (Agence Nationale de l'Aviation Civile et de la Météorologie - ANACIM), also providing farmers with sms-based weather information. In both cases, this information is complemented with trainings and agro-meteorological advisories for farmers provided by local partners already working with WFP in these areas (e.g. Bamtaare, La Lumiere). Government extension services are not sufficiently available to be used by the project.

Through the two pilots WFP is testing the feasibility to both build local capacity of national entities and support longer-term sustainability of the interventions through partnering with the private sector to support a market for climate services. The exit strategy for what concerns the climate services component is two-fold. In fact, through our two pilots we are building the path to (1) strengthen local capacity to design and implement climate services activities as a public good (Manobi and ANACIM) and (2) build the local market for commercial climate services (Ignitia).

Activities under this intervention include: customization of climate information to selected areas, training of trainers workshops, farmers awareness on climate change and weather forecast, training of farmers (advisory services) on how to use climate information received through radio or sms to make informed decisions, provision of Daily/seasonal/monthly forecast, evaluation of results.

Climate information distributed included:

**Seasonal and monthly forecast:** The forecast states whether the season will be hotter or colder and wetter or drier than normal. This arrives at the beginning of every month and gives parameters for the coming 3-6 months. All farmers receiving the forecast then receive a monthly outlook SMS. This SMS breaks the coming month into 4 weeks and again states hotter or colder, wetter or drier than normal. Normal means that rainfall amounts (or temperature) is close to what is usual at the farmers' locations at the time of year the forecast is valid for, based on averages for the past 30 years.

As mentioned, this is accompanied by advisories provided by local partners who provide additional advice to farmers receiving this information to support their planning and decision-making before the beginning of the season.

**Short-term forecasts:** Farmers receive a 48 hour weather forecast daily. The forecasts focus on a rain/no rain approach and is probabilistic, which means that every forecast of rain is followed by a risk assessment (e.g. "Today, high chance of heavy rain, morning time. Tomorrow, likely dry"). Forecasts are delivered in the morning to the farmers' predefined mobile phone number and GPS location.

The daily forecast SMS is delivered 7 days per week, during the full rainy season.

It should be noted that after the first year piloting these approaches, based on the results of the evaluation, one of the 2 approaches will be chosen (and services from local organizations/NGOs procured based on WFP corporate procurement rules). Also, WFP will intensify the collaboration with FAO to provide specific advice on crops and cropping techniques based on forecasts and actual rainfall and will enter into a partnership with ANACIM (more in sections below).

Based on the evaluation performed prior to the 2 pilots, both these organization have the capacity to scale up to the desired number of participants. The provision of climate services will keep being subsidized by WFP for the most vulnerable farmers. It is envisioned that going forward climate services could become a further service provided by WFP in collaboration with the GoS as part of the FFA approach. Better-off farmers will also be able to buy the services by paying in cash.

## Output 2.1

Under the **risk transfer** component, the *project* has broken new ground in the field of rural risk management by enabling the poorest farmers to access crop insurance through Insurance for Assets (IFA) schemes. Farmers engage in assets creation for a maximum of additional 10 days (on top of the assets created under intervention 1.1). Farmers, who would not otherwise be able to afford insurance, can in this way access to weather index **insurance** coverage. The assets built under interventions 1.1 and 2.1 are the same as insurance is considered an additional transfer modality beyond food, cash or food vouchers. When a drought hits, compensation for weather-related losses prevents farmers from selling productive assets and stimulates faster recovery.

Farmers that participate for the first time to the IFA scheme are not expected to contribute a part of the premium in cash; however, for the sustainability of the *project*, starting from the second year of participation to the insurance component, returning participants are expected to contribute to the value of the premium in cash (participants from villages that entered the system in 2014 contributed ~USD 1.6 each and those entered in 2015 contributed ~USD 0.80 each.). The idea is that a portion of returning participants will eventually pay the value of the premium 100% in cash. Being the participation to the *project* entirely voluntary, the number of participants benefiting from full or partial subsidy may change. However it is important to note that participants' renewal rate in 2016 from the previous year was 100%.

As the number of participant expand each year until 2020, only participants that join the insurance for the first time will not pay part of the premium in cash. Better off farmers in targeted communities are also able to purchase the insurance policy fully in cash. Without the project (and GCF support), weather index insurance products would not be available to farmers in this area (nor through IFA or cash).

In terms of selection of participants, as explained already, geographical targeting performed through WFP 3-PA identifies the priority areas of intervention (based on food security and climate vulnerability). In these areas, the design of the insurance index is done by aggregating villages in clusters. An additional targeting criteria for the insurance component is for participants to have parcels to insure. The household is the unit of reference according to which different members of the household participate to the different components of the *project*. That means that in a particular household, one member can participate to the risk reduction component and at the same time subscribe to the insurance while his wife joins a saving group. The impact of the *project* interventions is measured at the household level on the basis of the combined participation to different activities.

The standard operating procedures (SOP) on the implementation of the insurance component details the steps/activities to be undertaken in the implementation and targeting of insurance activities (Annex 19 Insurance SOP – only available in French).

The key principle of index insurance is that an objective parameter serves as a proxy to assess the losses experienced by the insured. WFP uses both satellite and rain gauge data to monitor the indices, but no field assessment is required to trigger a payout.

According to the contract between WFP and the *Compagnie Nationale d'Assurance Agricole* (CNAAS), CNAAS is obliged to provide payouts in case the index triggers. CNAAS has always settled the claims when the indices triggered. Since 2012, when index insurance was introduced on the Senegalese market, the claim ratio for the whole market has been on average 67%, meaning that the products are profitable, which is aligned with the experience in the region.

For the raingauge product used in Kolda, in partnership with the USAID-funded Naatal Mbay project, the price is established by the CNAAS and the reinsurer (currently Swiss Re), every year on the basis of multiple factors and therefore it changes across the market according to geographic zone and its rainfall level. Regarding the weather index insurance product (satellite based) used in Tambacounda it is the only product of that sort in Senegal, therefore no comparison is available.

It should be noted that the amount of the premium to be paid is defined according to the level of drought risk, which means that the more the target area is exposed to drought, the higher the premium. Thus, the amount of the premium is not the same throughout Senegal. Farmers who are in the same zones (radius of 10KM or pixel) have the same index and pay the same premium regardless of the partners; for example in Kolda the premium to be paid is the same for participants to the WFP project and the participants of USAID projects (Naatal Mbay). One of the key aspects that will be addressed in the next years is strengthening the capacity of CNAAS to design, quote and distribute WII products as well

as manage an increasing number of subscribers. Such effort started in 2016 with the increasing engagement of CNAAS in capacity building by WFP partner International Research Institute for Climate and Society at Columbia University (IRI). IRI is currently in charge of designing the insurance indexes. On its side, CNAAS has been investing in human and capital resources to face the increase of its insurance portfolio, both index based and conventional based. Its investments include a management and information system to digitalize monitoring and sign up process for customers, as well as opening new branches and strengthening their field teams. Nevertheless the sector stakeholders are fully aware of the challenge that CNAAS is facing with the increase in the number of index insurance projects and the increase of the clients and products portfolio. At the same time capacity building is a long term endeavor and the capacity transfer on index design started in 2016 needs to continue in the next years in order to be effective. In order provide the best support, CNAAS and WFP set up a sectorial committee (CDPAI) where all stakeholders meet regularly (technical institutions, donors & public agencies) to coordinate and plan operations and development.

It should be noted that, WFP *does not* subsidize CNAAS as such, but rather cash poor, vulnerable households willing to secure insurance coverage by working on the creation of assets. CNAAS only provides the service. CNAAS is the only existing entity currently authorized to work in this business. The Government has asked the private sector to acquire part of CNAAS' equity, *de facto* eliminating the possibility of competition. CNAAS is currently owned 48% by all the private non-life insurance companies on the market and the rest by the State and some other private partners. As a parastatal insurance company CNAAS depends from the Insurance Supervisor of the Ministry of Finance.

For this reason, it is unlikely that other insurance companies will enter the market, and this is independent of WFP or other development actors' actions. *If* other companies will be allowed in the future to enter the market by the insurance supervisor, WFP – in accordance with its procurement rules – will go through a competitive process to procure insurance services.

Regarding GCF financing additionality, the following points shall be taken into account:

- The current level of access to insurance is very low among vulnerable farmers and almost exclusively relying on development projects financed by external donors (USAID, EU, WFP, African Bank, IFAD, World Bank - GIIF).
- The barriers to investment in agricultural inputs and diversified IGAs are represented mainly by farmers' cash constrains and risk aversion due high dependency on climate related livelihoods. The project aims at removing these barriers by facilitating farmers' access to financial services (and therefore cash, through savings and loans) through interventions 3.1 and 3.2, as well as provide farmers with the confidence they need to invest by protecting them through insurance cover.
- Other structural barriers include the lack of access to credit for farming activities and the access to quality inputs and seeds. The lack of cooperatives and other aggregators also limits farmers' access to market. This is why WFP is partnering with PADAER (IFAD and Ministry of Agriculture) and Naatal Mbay (USAID project) in order to ensure that participants can benefit from such services once they have reach a certain productivity level.
- For the exit strategy and sustainability see section D.2
- The R4 pilot has not been concluded but rather it has continued so far and plan is for R4 to feed into the proposed *project*, hence the drop-out rate is not available.
- The expected behavioral change is the one explained above. Protected by insurance, farmers who are usually risk adverse will be more informed and confident (and will have access to) invest more remuneratively in their farms or other IGAs.

### Output 3.1

The **risk reserves** and (partially the) **prudent risk taking** components of the *project* build on Oxfam America's SfC methodology. This methodology is based on the traditional and widespread practice of savings mobilization in West Africa called *tontine*. *Tontine* consists in organizing communities in small solidarity groups of 20 to 25 people who meet and save regularly, with the possibility to access small loans. The tontine model is well known and trusted in West Africa by smallholders, however the SfC approach is an improvement over the tontine model, providing farmers with training on financial literacy, numeracy, recording and IGAs. Savings help build a stronger financial base for investing – but also act as a buffer against short-term needs and idiosyncratic shocks, such as illness and death. The savings groups in each

rural community are organized in formal, legally recognized, associations. These associations are also the distribution channel for the weather index insurance product.

**SfC functioning:** Women meet weekly and keep records mostly orally. Groups receive no seed capital. Loans are approved by the group and can be used for small-scale business or to cover health emergencies or household expenditures. Loan terms, conditions and interest rates are defined by each group. A savings cycle lasts between eight months and a year, after which each member collects her savings and her share of the generated interest. Groups schedule distribution for a critical time, such as the onset of the lean season, when money is scarce. A new cycle then begins. As women meet, they learn to manage their groups, and develop bonds of mutual assistance and solidarity. These groups also function as platforms for health, education, agriculture extension or business advice services for members.

The SfC methodology follows a four step process which includes preliminary studies; recruitment and training of field teams; introduction of SfC into communities; and the formation and training of savings groups. An exploratory study of potential areas is conducted to identify intervention zones and local partners based on the socio-economic and demographic characteristics and by conducting an institutional analysis of existing actors in the area. Once the intervention zones and local NGO partners have been determined, field teams are established in each zone. Field teams are typically composed of 10 animators and one coordinator. These animators are then trained to create groups, through both theoretical and practical sessions, and to select and coach replicating agents. Once the trainings are completed, the animators formally introduce SfC in the village after having presented the program to the village leaders and secured their permission.

Animators self-select groups of 15-25 members and, in the first six months, visit them weekly and guide them through establishing the group's internal rules – the management committee is established, the weekly savings amount is decided upon, and the interest rate and conditions of loans are determined. Animators also select and train replicating agents, and collect monitoring information during this period. In West Africa, members receive a malaria curriculum as part of the core training. In the next six months, animators visit the groups twice a month to ensure they are functioning well and provide assistance to group members during their first share-out. Animators also continue to coach replicating agents to form groups. After the first year of establishment, groups are considered mature. Animators visit mature groups quarterly to monitor group functioning and answer any questions.

Based on the need and request from members, groups are also trained in the SfC+programs on citizenship, small businesses, and agriculture.

This methodology has evolved over the years – specifically, the movement from a written record-keeping system to an oral one to include illiterate populations, the adoption of replication as a means to expand the methodology, and the development of broader SfC associations comprising several SfC groups.

Mature women's groups are being trained on income generating activities as part of the SfC + Business trainings. These trainings help build their skills in setting up and managing income generating activities with profits. With these trainings, women have been participating in petty trade (sugar, groundnut, baobab paste & juice), running small restaurants, bakeries, tailoring/seamstress shops, transformation of cereals, etc.

SfC groups are very efficient **social mobilization channels**. In the context of the proposed project, the Saving for Change groups will serve as a **platform for awareness raising on climate change risk and sensitization regarding natural resources management at the village level**, for example on the benefits of agroforestry to increase soil fertility and overall agricultural productivity and land restoration.

The SfC groups will work in synergy with the reforestation activities under output 1, promoting the introduction of added-value trees such as Moringa, Baobab or fruit trees, also in collaboration with ISRA and possibly the Centre National de Recherches Forestières (CNRF). These trees have a great green and economic potential in the middle to long term. Research led in Senegal has succeeded in reducing maturation time of such kind of trees, allowing quicker income generation. This would allow for reforestation gains as well as income generation.

The SfC groups are also involved in the vegetable gardens activities under output 1 and will encourage the practice of assisted natural regeneration in the garden they manage. The project will as well promote the introduction of added-

value trees into the vegetable gardens. SfC groups' collaboration with the Forestry Department will be further encouraged to create tree capital, as tree plants could be provided by the Forestry Department.

More generally, **developing savings and access to credit among SfC members is also a key to sustainability for the various project activities**, as the increase of income of SfC group members will lead, for example, to the reduction of the practice of tree-cutting for charcoal production and will enable farmers to gradually increase cash contributions towards insurance premiums benefitting the general sustainability of the *project*.

The selection process utilized for inclusion in the output 3.1 works similarly to the one for other interventions, namely once villages are identified (through the process explained above), targeted population participate to community engagement, awareness raising and education activities. They then register to the different interventions, including 3.1.

Participants to the groups are (mostly) illiterate women who, following the traditional system of the tontines, get together into informal groups to save a certain amount of money over a certain period of time. What the program does is supporting existing groups (by providing training and best practices), if they exist in the villages targeted, as well as contributing to the formation of new groups, this would therefore fall within the Specialized fiduciary criteria for project management.

This intervention uses GCF Proceeds to set up the groups through technical assistance, rather than providing the funds, hence this is not on-granting.

### Output 3.2

The **prudent risk taking component** focuses on facilitating farmers' access to financial services for productive investment. Through this component, village-level Cereal Banks are linked to Inventory credit schemes and local micro finance institutions (MFIs). Insured farmers have more confidence to invest in their farms helping to break the Low Investment-Low productivity cycle. The system, called *warrantage*, enables farmers to access loans using their cereal stocks as collateral to invest in remunerative enterprises, including improved seeds and fertilizers (rates at 1% during the first 6 months, then 6% for the whole period). Going forward, it is expected that insurance will unlock agricultural season credit opportunities for insured farmers at better rates. By supporting farmers in the transition from subsistence to surplus production, this component is a key sustainability element of the *project*, in that it allows farmers to gradually build up their income and pay increasing cash contribution towards insurance premium, eventually transitioning to the commercial market.

Under this intervention, GCF would support the following activities: i) assessment of existing village level cereal banks (as much as possible this activity will rely on banks already supported by WFP); ii) assessment of potential MFIs present in the intervention area; iii) negotiations with the management to adapt the rules of *warrantage* credit to the needs of farmers; iv) training of village-level management committees; v) stocking and destocking activities allowing participants to stock cereals after harvest, receive a loan to make investments, and later benefit from the cereals stocked in the village bank during the lean season.

### Output 4.1

Component 4 focuses on consolidating **national ownership** of the activities conducted under the R4 pilot and will be pursued through the following actions:

- a. Capacity building:** capacity building interventions will address the barriers and gaps, identified above, and repeated below for ease of reference:
- Lack of technical capacity at local and national level on climate change science, impacts and vulnerabilities to support policy and decision making;
  - Inadequate fiscal allocations for disaster risk and adaptation mechanisms;
  - Need for decentralized financing structures, where appropriate for climate change adaptation measures;
  - Low penetration of insurance in the domestic market, especially in non-life sectors such as agriculture and climate risks.

**Capacity building will be carried out at the i) local authority level as well as at ii) the community level:**

- i) The capacities of local authorities on leadership, budget and project management, transparency and governance as well as climate change adaptation and food security will be strengthened to gradually transfer the initiative to the GoS at national and local levels, in alignment with the decentralization process initiated by the GoS in recent years. In this context, the partnership with *Programme National de Développement Local* (PNDL) will allow for a greater involvement of local collectives in program monitoring and greater accountability in the performance of the project management in their territories. Through the partnership, local collectives' capacities will be built as well as their appropriation of the rural resilience integrated management approach to climate risks. The collaboration with PNDL will cover four main topics: i) climate and resilience sensitive planning; integrate the proposed *project* in local development plans; ii) resilience sensitive budgeting: integrating some of the monitoring activities in the budget of the local authorities; iii) governance of investments: building the capacities of local collectives on governance, leadership and project management; iv) monitoring: the progress on the *project* will be communicated at the national level through the ARD.
- ii) At the community level, implementing partners will be trained on climate change science, impacts and vulnerabilities and through them communities organizations such as the SfC groups will be trained and serve as channels to educate participants on climate change adaptation in collaboration with the Ministry of Environment. Similarly the managing committees of the assets created will be also involved in the awareness campaigns
- iii) Relevant Ministries and the decentralized services of the MAER will be involved in the project implementation. For example, WFP has started discussions with the DRDR and the SDDR, the decentralized services of the sectoral ministries (including MAER) to participate into the quality control of the assets built under the output 1, according to their expertise. Furthermore sectoral ministries such as Forestry, are already partners in the implementation of reforestation activities. Similarly, the relevant ministries will be invited to participate to the meetings of the Project Steering Committee and their technical units to the meetings of the Project Technical Committee.

At the national level capacity building will take the form of **transfer of capacities: technical knowledge about the design, pricing and implementation of weather index insurance** will be transferred to key public partners such as the CNAAS,<sup>24</sup> ANACIM, ISRA, CSE and Planet Guarantee. WFP is also training the ministries of Agriculture and Environment on its corporate 3-Pronged Approach as done with SECNSA and the ICA.

- b. Alignment and integration of programs:** WFP and its partners will operationalize the MoU signed in 2016 with the *Délégation Générale à la Protection Sociale et à la Solidarité Nationale* (DGPSN) aimed at making the Government safety net (**Bourse Familiale**) climate proof by introducing climate risk management tools such as weather index insurance. The recently approved National Strategy for Social Protection mentioned R4 has one on the most important project on which the next update of the strategy will build.

In Senegal, safety net programs under the DGPSN started in 2013 with the *Programme National de Bourses de Sécurité Familiale* (*Bourse*) which targets poor families (it is conditional on income), ensuring enrollment and school attendance of children to fight social injustice and inequality for better distribution of national wealth.

Building on R4's learnings, the proposed *project* will enable GoS and WFP to work together to operationalize the above mentioned MoU (Annex 4) to extend weather index insurance and the R4 resilience model to the (foreseen) 250,000 participants of the *Bourse* to address vulnerability and social exclusion of families in order to promote their access to social transfers and strengthening, among others, their education, and agricultural productive techniques.

The proposed *project* will target the households that already received the *Bourse* and will complement and improve the interventions of the *Bourse*, in several ways, by: i) offering weather index insurance through the IFA scheme; ii) adding a public works components to be implemented under the Food Assistance for Assets scheme; iii) promoting income generating activities through savings groups. By integrating climate risk management and adaptation into the GoS' safety net program, WFP, with the GCF support would bring about a critical improvement in building the country's capacity to adapt to climate change. A study on a small sample of R4 participants in 2016 shows that already 30% of them receives the *Bourse* and that the food security of the participants to the *Bourse*, who also benefit from the R4 interventions, has significantly improved.

<sup>24</sup> Please refer to Annex 1 for details about CNAAS' capacity building plans.

The DGPSN recently expressed its interest to integrate the proposed approach (and not just the insurance component) into the recent Adaptive Social Protection project, supported by the World Bank Group in the framework of the Sahel Adaptive Social Protection Trust Fund. "Adaptive social protection" is a new integrated approach that helps protect poor households from climate and other shocks before they occur by providing regular cash transfers, building community assets, and strengthening human capital. A working group comprising WFP, Oxfam and the DGPSN has been set up to work on how the integration will be concretely carried out.

Furthermore, WFP has ongoing partnership with government programs on rural development such as the PADAER program, funded by IFAD and the GoS, and the P2RS, a 20-year long program financed by the BAD and the government. The proposed *project* will aim to complement the above-mentioned programs by graduating its participants and allowing their participation into these other programs that work extensively on the development of value chains, product commercialization and access to markets.

It should be noted that the various components of the proposed project are linked and strengthen each other, but they are not inter-dependent as such and therefore they can work independently.

Compared to the R4 pilot, the proposed *project* will have an even stronger focus on climate change adaptation interventions, by including:

- **Climate smart assets** and **Climate Smart Agriculture** good practices and technologies will be prioritized under the risk reduction component, through partnerships on agroforestry<sup>25</sup>, farmer-field schools on adaptation to climate change (FAO)<sup>26</sup>, and by linking with the Ministry of Environment and Ministry of Agriculture's initiatives on climate change adaptation (such as the platform on climate change CCASA<sup>27</sup>).
- The current **climate services** pilots are currently being assessed. A Memorandum of Understanding (MoU) with the ANACIM will detail the cooperation between WFP and the National Framework on Climate Services, which is currently being developed under the Global Framework for Climate Services (GFCS). WFP will continue to exchange with the CASCAID project from the Climate Change, Agriculture and Food Security (CCAFS) research program of the CGIAR<sup>28</sup>.

#### C.4. Background Information on Project / Programme Sponsor (Executing Entity)

*Describe the quality of the management team, overall strategy and financial profile of the Sponsor (Executing Entity) and how it will support the project/programme in terms of equity investment, management, operations, production and marketing.*

The Executing Entity role will be performed by WFP and the SE/CNSA (Secrétariat Exécutif du Conseil National de Sécurité Alimentaire) (see Annex 30)

WFP has been present in Senegal since the 1960s. Besides implementing R4, WFP provides **food and nutrition assistance in all 14 regions of the country**, supporting the Government of Senegal in achieving Sustainable Development Goal 2 "End hunger, achieve food security and improved nutrition and promote sustainable agriculture". As of 31 March, **in 2016 WFP assisted 134,600 individuals** with a budget of 38 million USD.

WFP's operations adopt a twin-track approach, addressing acute food insecurity in rural communities, combined with recovery and resilience support. Besides direct food and cash transfers, WFP focuses on working with partners to rehabilitate environmental and productive infrastructures to improve household food security and assist vulnerable groups in rural areas in coping with climate shocks.

WFP also provides nutritional support to children under the age of five and pregnant and nursing mothers (PNM), as well as school meals to children in schools.

<sup>25</sup> <http://www.oxfamnovib.nl/climate-smart-agroforestry.html>

<sup>26</sup> <http://www.fao.org/3/a-i4411e.pdf>

<sup>27</sup> <http://ccasa-senegal.org/>

<sup>28</sup> <https://ccafs.cgiar.org/getting-participatory-agriculture-climate-services-out-farmers#.V0SB3PmLR1t>

Under this project, WFP will be acting as both AE and EE (in collaboration with SE/CNSA). As an Accredited Entity (AE), WFP will be responsible and accountable for managing the project, including ensuring effective use of project funds according to agreements made with the GCF, oversight and reporting (annual reporting, mid-term and final evaluations, and audit), achieving project objectives and coordinate the involved actors to implement the project components and ensure government handover. WFP Dakar Regional Bureau and HQ units will perform the AE functions including project supervision, financial oversight, reporting and auditing. The role of RB/HQ serves as an internal control mechanism to ensure transparency and segregation of duties by:

- Reviewing quarterly reports before CO disburses funds for the next tranche of activities;
- Reviewing APRs and Financial reports before submission to the GCF
- Conducting site visits for monitoring project activities and keep track of annual work plan;
- Reviewing evaluation reports as well as project audit reports.

In addition, WFP Climate and DRR unit (OSZIR), in cooperation with the CO will:

- Provide a central point of contact, coordination and reporting to service the needs of the donor as required;
- Provide specialized technical support to the CO upon request;
- Identify and document best practices and lessons learned to promote knowledge transfer and cross-fertilization of experience and success stories;

All communication with the GCF will be done via HQ (OSZIR).

As a co-Executing Entity (EE), WFP will be responsible for direct implementation of project activities and for achieving project outputs. WFP CO will be responsible for the day-to-day project execution functions ensuring that the objectives and outcomes of the projects are delivered effectively. Both WFP Senegal CO and WFP HQ staff will provide technical and operations support related to technical inputs, capacity-building efforts, procurement, logistics and other related services required for effective execution of project activities.

The SE/CNSA assists the prime minister in defining the national strategies and policies for food security and resilience and, in the context of the Early Warning System, collects, analyses and disseminates information on food security and nutrition to better prevent and manage crisis. Given its mandate on food security and resilience, and its *super-partes* nature, as a co-Executing Entity, the SE/CNSA will play a strategic and critical role in coordinating and drawing together the different ministries and national entities attached to project implementation.

It should be noted that the SE/CNSA has a coordinating role and GCF proceeds will be channeled through WFP, hence the completion of the financial management assessment of the co-executing entity is not necessary.

More details on project implementation arrangements can be found in section C.7.

Relevant Ministries and the decentralized services of the MAER will be involved in the project implementation. WFP has started discussions with the DRDR and the SDDR, the decentralized services of the sectoral ministries (including MAER) to participate into the quality control of the assets built under the output 1, according to their expertise. Furthermore sectoral ministries such as Forestry, are already partners in the implementation of reforestation activities. Similarly the relevant ministries will be invited to participate to the meetings of the Project Steering Committee.

The proposed *project* is one of the few integrated risk management approach in Senegal, introducing a set of innovative tools such as the agricultural index insurance through the insurance for assets scheme and productive social security nets. In Senegal, institutions working on these issues are often not equipped and experienced enough to directly run these kind of projects (see CNAAS and DGSPN), and therefore need support not only financially but also technically. This is the role that WFP would like to take moving forward with this *project*: after having successfully tested a resilience model in the country during the R4 pilot phase, in 2017-2020, WFP aims at building the capacity of government institutions to take on the tools tested by WFP, for supporting the integration of the insurance scheme in its social protection systems.

### C.5. Market Overview (if applicable)

*Describe the market for the product(s) or services including the historical data and forecasts.*

**Market potential:** A preliminary assessment suggests that there are **60,000 households (and therefore over 540,000 people based on an average household size of nine) that can potentially access a package of climate risk**

**management tools (note this is the total market not the targeted number of participants/beneficiaries).** This figure has been calculated based on the following criteria:

- Total population living in areas with high levels of climate risk and food insecurity;
- Poverty level and livelihood type (smallholding agriculture); and
- Out of this group, households that are not labor constrained.

*Describe the competitive environment including the list of competitors with market shares and customer base and key differentiating factors (if applicable).*

A few climate risk management projects including crop insurance are currently active in Senegal. WFP already partners with some of these e.g. with the IFAD-sponsored initiative PADAER<sup>29</sup>, and the USAID project Naatal Mbay<sup>30</sup>, avoiding duplications, enhancing synergies and improving impacts. It should be noted that the proposed *project* is quite unique and hardly comparable to other initiatives, due to its integrated risk management approach to climate resilience which takes a holistic view of many of the issues that smallholders face (usually addressed by isolated projects) in a comprehensive way. Furthermore, WFP has undertaken a social protection approach, whereas all the other initiatives are targeting commercial smallholder farmers. Thus, there is complementarity rather than competition between the proposed *project* and all the other initiatives working on climate risk management. To a certain extent, by targeting the most vulnerable communities and supporting them to improve their livelihoods, WFP prepares them to join the commercial market for the services offered by other organizations and companies.

In terms of insurance companies, as mentioned already CNAAS (WFP's partner on insurance) is the only existing entity currently authorized to work in this business. The Government has asked the private sector to acquire part of CNAAS' equity, de facto eliminating the possibility of competition. CNAAS is currently owned 48% by all the private non-life insurance companies on the market and the rest by the State and some other private partners. For this reason, it is unlikely that other insurance companies will be able to enter the market.

In terms of re-insurance companies, it is CNAAS (and not WFP) who pays the premium to the re-insurer (Swiss Re the past year). CNAAS has a reinsurance treaty with Swiss Re for their whole portfolio (of which R4 is only a part). It should be noted that every year CNAAS collects the proposals of all interested re-insurance companies in the market and chooses the best option – WFP does not interfere into this process. In terms of insurance, CNAAS signs insurance policies with delivery channels (associations of Saving for Change groups, cooperatives and farmers unions) who then collect the cash contributions (a certain percentage of the premium) and transfer it back to CNAAS. The rest of the premium is paid by WFP directly to CNAAS, following the IFA approach. More info about the process can be found in Annex 3.

*Provide pricing structures, price controls, subsidies available and government involvement (if any).*

Pricing structure of the insurance product: The weather index insurance product developed by the *project* under its risk transfer component has the following pricing structure: technical premium (used to cover the risk and priced by the reinsurer), margins and commissions (around 26.5% of commercial premium, which is standard in West Africa), and 0% taxes. Margins and commissions cover the insurance company, the insurance broker, and the delivery channel expenses and mark up. As of today, CNAAS carries 25% of the risk, the rest is transferred to international reinsurers, according to the best quotation received. For this reason, CNAAS is ensuring its capacity to settle the claims in case of payout.

The insurance product has been evolving each year since the pilot year in order to better capture the risk faced by farmers. In 2015, the burning cost (average payout over a certain period of time) was on average 11.02% of the sum insured (depending on location in order to capture risk variations), while the total premium was on average 15% before the GoS subsidy (50%). With this arrangement, farmers paid only 7.5% of sum insured on average. In 2016, the burning cost will be 10.2% of sum insured.

<sup>29</sup> <http://operations.ifad.org/documents/654016/c41b26c6-1528-4a04-88fe-441d3fcae429>

<sup>30</sup> <http://dakar.usembassy.gov/usa-id-naatal-mbay.html>

Government involvement and subsidies: The GoS subsidizes 50% of the premium of all agricultural insurance products, which allows WFP to lower the final premium or significantly increase the sum insured (official document on subsidy in Annex 28). In 2016 the government of Senegal, along with the other conventional agricultural insurance products proposed by the CNAAS, subsidized the amount of the index insurance directly to the CNAAS in the amount of approximately US\$155,000, covering R4, USAID and WB projects. In turn, WFP is working to support the GoS more effectively to use its agricultural insurance budget to enable rural development, resilience building and support climate change adaptation. The 50% subsidy to insurance premiums is one of the main interventions of the Government in support of smallholding agriculture in Senegal, and is therefore likely to be present for the years to come, however being this dependent on political decisions WFP cannot guarantee for how long the subsidy will be renewed. It should also be noted that while subsidies often alarm donors and development actors, they are largely used in developed countries to support crop insurance, as this is seen as a more efficient way of spending public finance than having to inject money in the sector after a failed season. The farmers currently targeted by the program are some of the most vulnerable populations in the country, they are not an interesting commercial segment yet for private companies. There is no question, that as of today, if WFP and the Government were to stop their support, most of these farmers would not be able to access insurance commercially. However, so far, the total volume of premium has not yet reached the max amount of approved premium subsidies, therefore there is room to grow the number of insured farmers. Being a unique example in the region, the Senegalese government will continue to support the development of agricultural insurance in the coming years for both vulnerable and commercial stakeholders.

However, one of the *project's* objectives is to put these farmers on a path of "graduation" from the safety net provided by WFP and the Government through the assets creation/food vouchers/insurance interventions. We are doing this by targeting both the demand (training farmers on financial literacy and insurance, requiring them to pay a small - but increasing over time- contribution in cash to test their willingness to pay, and supporting them to improve their livelihoods and their income levels so that they will be able to afford insurance and other financial services); and the supply (by building local capacity, building delivery channels and designing customized products, and growing the potential volume of customers). Finally, this approach has been successfully implemented in three other countries where the subsidy is not available.

It should be noted that the GoS' subsidy cannot be used as co-finance as this is part of a general policy of the Government applicable to all agriculture insurance products.

## C.6. Regulation, Taxation and Insurance (if applicable)

*Provide details of government licenses or permits required for implementing and operating the project/programme, the issuing authority, and the date of issue or expected date of issue.*

*Provide details on insurance policies related to project/programme*

Senegal belongs to the CIMA area (14 francophone countries) with a common regulation on insurance. In 2012, CIMA issued a micro-insurance regulation (book 7) with a specific status for micro-insurers. More recently, in 2016, CIMA issued a specific framework for index insurance, concerning data management and index provision. While potentially limiting the development of index insurance, this regulation is important as it gives insurance supervisors power to better protect consumers. On this regulation CIMA has been supported by the World Bank Group.

In terms of the broader micro-finance sector, in Senegal, the sector is governed by a regional law, *La loi PARMEC 95-03 (Projet d'Appui à la Réglementation des Mutuelles d'Épargne et de Crédit)*, adopted by the Council of Ministers of the West African Monetary Union (WAMU) in 1993. The fast development of microfinance has led to many failures in the sector in the last two decades. This prompted the monetary authorities to redesign the legal framework for the microfinance sector throughout the WAMU Zone to control risks and to consolidate the sector. Thus, a new Act was adopted by the Council of Ministers of the WAMU April 6, 2007. In Senegal, the Act was passed by the National Assembly of Senegal and was enacted September 3, 2008 (Act No. 2008-47). This law, after its revision, sets the maximum interest rate on loans at 24% per year.

The contractual framework or the insurance component is as follows:

1. WFP has a contract with CNAAS covering premium payment, payouts and field activities such as awareness raising about insurance and participation to payout ceremonies.
2. WFP has a contract with IRI on index design and capacity building. The second part focuses on training provision to an index design team composed of local stakeholders (CNAAS, PlaNet Guarantee, ANACIM and ISRA) and will become the core of the contractual relationship moving forward.
3. WFP has a contract with the risk reduction component's implementing partners who are in charge of planning, supporting & monitoring the asset creation activities, as well as season monitoring. They also deliver insurance vouchers, making sure that participants to the Insurance for Assets completed the planned activities.
4. The NGO La Lumière is contracted for community engagement and to support the creation of delivery channels through the Saving for Change Associations that it assists.
5. CNAAS has a brokerage contract with PlaNet Guarantee who is involved in product design, training, communication, distribution and insurance portfolio management with CNAAS.
6. Farmers are insured through different aggregators (typical of micro-insurance programs). CNAAS signs master insurance policies with these aggregators who so far have included, Saving for Change associations, and PADAER cooperatives and Unions. Each aggregator then act as last mile delivery channel, registering the end users through a membership form that is then attached to the master insurance policy.

All these contracts, except the insurance policy, are monitored and supervised by WFP.

*Describe applicable taxes and foreign exchange regulations.*

No taxes are applied to agricultural insurance products and as mentioned, the GoS subsidizes all agricultural insurance products in the country by 50%.

### C.7. Institutional / Implementation Arrangements

*Please describe in detail the governance structure of the project/programme, including but not limited to the organization structure, roles and responsibilities of the project/programme management unit, steering committee, executing entities and so on, as well as the flow of funds structure. Also describe which of these structures are already in place and which are still pending. For the pending ones, please specify the requirements to establish them.*

At the national **supervision** level, a **Project Steering Committee (PSC)** will be created at the beginning of the project implementation and will meet twice a year. It will be chaired by the co-EE SE/CNSA which being a structure attached to the office of the prime minister has an impartial role in coordinating the relevant national structures, including Ministry of Agriculture, of the Environment and of Finance, the Delegation to Social Protection (which is attached to the Office of the President of the Republic), the CNAAS and the PNDL – among others. The PSC will also include Oxfam, FAO and IFAD.

The role of the PSC will comprise:

- i) Supervision on the execution of the project;
- ii) Strategic Direction to project implementation, in line with national priorities;
- iii) Support to the Project Coordinator and the Project Management Unit (PMU) in their work.

The SE/CNSA will organize the PSC meetings and will chair the group, leading the discussions on: i) presentation and approval of annual work plan and budgets; ii) project annual achievements and constraints; iii) recommendations for improvement; iv) strategic guidance on project implementation.

Consultations are underway between the co-EEs and relevant partners.

At the national **advisory** level, a **Project Technical Committee (PTC)**, will be created to accompany the project during its life and to advise the PMU on technical issues. It will monitor the implemented activities at the technical level and ensure they respond to the standards and norms under each component. This committee, which will meet on a quarterly basis, will bring together technical experts during monitoring missions and will support the project during the mid-term

and final evaluations by reviewing ToR and recruitment of consultants. Direct agreements with the technical departments of the ministries involved will be established (consultations are already underway).

At the national **implementation** level, a **Project Management Unit (PMU)** will be established, and it will include the current team implementing the R4 Initiative.

The PMU oversees the overall implementation arrangements, prepare annual work plans and budgets in consultation with government and other partners, and coordinate and supervise directly and indirectly (through WFP's sub offices) the work of the implementing partners, through monthly and quarterly missions and implementing reports. It also reviews the output dashboard, which records the completion of deliverables against set targets, and conducts field visits. Monitoring is also ensured through a real-time data management platform called SCOPE<sup>31</sup>.

The composition of the PMU and respective roles includes:

- Project Advisor (from the SE/CNSA): Gives guidance on the alignment of the project to national priorities on resilience and food security and supervises the project coordinator.
- Project Coordinator: Responsible for overall operational implementation coordination, team management, partnership management, resource mobilization, in country communication.
- Risk Reduction (Component: Risk Reduction) Officer: Implementation of risk reduction component, assets creation, food and voucher distribution, village cereal banks, partners' coordination.
- Risk transfer (Component: Risk transfer) and climate services Officer: Implementation of the insurance and climate services component, including partners' coordination.
- Financial Inclusion Officer (Component: Risk reserves and prudent risk taking): Management of the risk reserves and prudent risk taking components, and other saving/credit interventions.
- Program Assistant: Support to the coordinator on organizational matters.
- Administrative Officer: Support on Admin matters.
- Finance Officer: Support on all finance matters.
- Field monitors: Based in WFP sub-offices, field level monitoring for risk reduction and risk transfer activities and point of contact for partners.
- M&E Consultant: Coordination of M&E activities on the ground.
- Gender Analysis consultant (if needed): Advises on gender mainstreaming into the project and M&E.

As noted above, the PMU team will include a focal point from the SE/CNSA who will give political guidance to the project and will supervise the project coordinator. The focal point will participate to: i) monthly meetings of the PMU, ii) joint monitoring missions in the field and iii) will analyze and feed - with the support of the PMU – the best practices and lessons learned from the project into the national policies on resilience and food security.

WFP HQ will provide advice to the PMU through:

- Climate risk management strategic support: Technical and strategic support to the country office; Resources mobilization; Global communication; M&E leadership; Support with procurement and legal issues.
- Insurance technical expert: Overall strategic coordination and quality control of the insurance component.
- Communication consultant

For the component on National Ownership and Capacity building: in addition, a **National Committee for the Development of Index Insurance** led by CNAAS and including all stakeholders engaged in weather index insurance will inform project implementation, playing a crucial role in coordinating with other projects on insurance and contributing to capacity building. This is a platform aimed at sharing experience and learning from each other, and to promote index insurance market in Senegal. The committee also plays a crucial role in capacity building and therefore in the long-term sustainability of the *project*.

<sup>31</sup> SCOPE is WFP corporate tool to manage interventions from beginning to end. The platform's allows to registering beneficiaries, creating distribution lists for partners and exporting invoices for retailers. In addition, SCOPE can also act as a service provider by offering transfer solutions when local providers are not available. In Senegal SCOPE was adopted in 2016 to register participants to the R4 Initiative.

At the **local implementation level for the component on National Ownership and Capacity building**, a partnership with the **Programme National de Développement Local (PNDL)** will allow for a greater involvement of local collectives in program monitoring and greater accountability in the performance of the project management in their territories. A Memorandum of Understanding (MoU) among WFP, Oxfam and the PNDL has been signed, and defines the modus operandi of this cooperation particularly in terms of building the capacities of the local collectives and their appropriation of the rural resilience integrated management approach to climate risks. The collaboration will cover four main topics: i) climate and resilience sensitive planning; integrate the proposed project in local development plans; ii) resilience sensitive budgeting: integrating some of the monitoring activities in the budget of the local authorities; iii) governance of investments: building the capacities of local collectives on governance, leadership and project management; iv) monitoring: the progress on the project will be communicated at the national level through the ARD.

In terms of **implementation at the field level**, WFP sub-office will work with implementing partners and coordinate:

- i. Planning workshops at the beginning of each calendar year to validate regional annual workplan and budgets (AWPB);
- ii. Monthly coordination meetings where all implementing partners and technical services by region, discuss progress on project implementation, address challenges and grievances and validate planning for the next month according to the output-based monthly dashboard;
- iii. Monitoring missions to which partners participate with the communities to assess partners' performance on implementation on the ground.

**\*It should be noted that the entities mentioned above do not imply any additional costs than the ones budgeted)**

**WFP will administer the GCF proceeds as executing entity and will enter into contracts with the partners listed in Annex 2.**

Since the *project* is currently being implemented, all the necessary operational and contractual agreements with implementing partners are in place and will be renewed for the coming years through multi-year contracts (field level agreements) procured through competitive processes (as per WFP Procurement rules). Legal arrangement will be amended if needed, to ensure compliance with the AMA and FAA requirements once the agreement is finalized. (A list of all legal arrangement that will be put in place is contained in Annex 22 Procurement Plan.)

Implementing partners by component:

Risk reduction: Bantaare, P2RS, PASA, in collaboration with FAO, ANACIM, ISRA, Ministry of Forestry

Risk transfer: CNAAS and PlaNet Guarantee

Risk reserves and prudent risk taking: La Lumiere, and local MFIs

National ownership: PNDL, ARD; IRI, ISRA, ANACIM, CNAAS, PG; DGPSN, MAER, MEDD

**Plan for stakeholder engagement process throughout the project cycle:**

For government stakeholders at the national level:

- i. Periodic meetings of the PSC to which the relevant ministries will be invited to discuss strategic issues,;
- ii. Quarterly meetings of the TPC which will include the technical directions of concerned ministries and that will provide advice to the PMU on technical issues;
- iii. Quarterly meetings with the NDA to inform the NDA on the project implementation progress;
- iv. Quarterly meetings with the DGPSN to continue the work on the integration of R4 model into the ongoing social protection programs and monitor progress.

For government stakeholders at the local level:

- i. *Comite regional de developpement (CRD)*: created during the pilot R4 phase, will meet twice a year at the regional level with the regions' governors, headed by the governors, and prefects (which represent the government)

to discuss together with technical services concerned, local authorities, communities and partners working on the project, the activities, their results and main challenges;

ii. Local authorities: will monitor implementation of the project in their areas through quarterly monitoring meetings at commune level headed by local authorities to monitor implementation of the project.

For the communities:

i. Monthly meeting of project management committee at village level to select participants for FFA activities, to follow up on the prioritization of the assets to be built and monitor the execution of the activities and organize the maintenance of the assets already created;

ii. Annual Impact Reflection (AIR) workshop. The AIR is a participatory internal process through which WFP together with partners and community representatives, discuss the successes and failures of the program, critically examine, assess, agree on progress and act to improve.

For implementing partners:

i. Planning workshop to validate AWPB;

ii. Monthly coordinating meetings where all implementing partners and technical services by region, with WFP, meet to discuss progress on project implementation, redress challenges and grievances and validate planning for the next month;

iii. Monitoring missions by PMU and TPC to which partners participate with the communities to assess partners' performance on implementation on the ground;

iv. End of year assessment workshop.

**Grievance redress mechanism** that can be used by stakeholders: WFP manuals on cash based transfers require country offices to set up context-specific and easy-to-use complaint and feedback mechanism. WFP Senegal is implementing two sets of actions: i) WFP cooperating partners are trained on the setting of complaint and feedback mechanism such as complain registers and suggestion boxes. The country office is currently finalizing with ORANGE telecommunication an agreement to set up a hotline (free toll number) that beneficiaries and other stakeholders can call to inform the organizations on issues affecting the program. The complaints will be registered and immediate action will be taken and feedback provided to resolve the issues. A complain and feedback report will be produced, shared and discussed with all stakeholders in monthly consultations meetings. The system will be operational in 2017.

Beneficiaries will be informed on how to access the hotline and its functions in the following ways:

- During preparation activities: during the inception meeting of the project and the community –based participatory planning, beneficiaries will get a chance to learn about the availability and use of the redress mechanism.
- At project launch: by contract, implementing partners will have to conduct info sessions to inform beneficiaries about the availability and use of the mechanism.
- During project activities: during its routine monitoring missions the WFP sub-office will reinforce the information to villages committees and verify awareness about availability, usage, and methodology of the mechanism. To make sure all participant can access, each WFP beneficiary card will carry the toll free number to be called.
- The performance of the mechanism will be assessed at the end of the first year through focus group discussions.

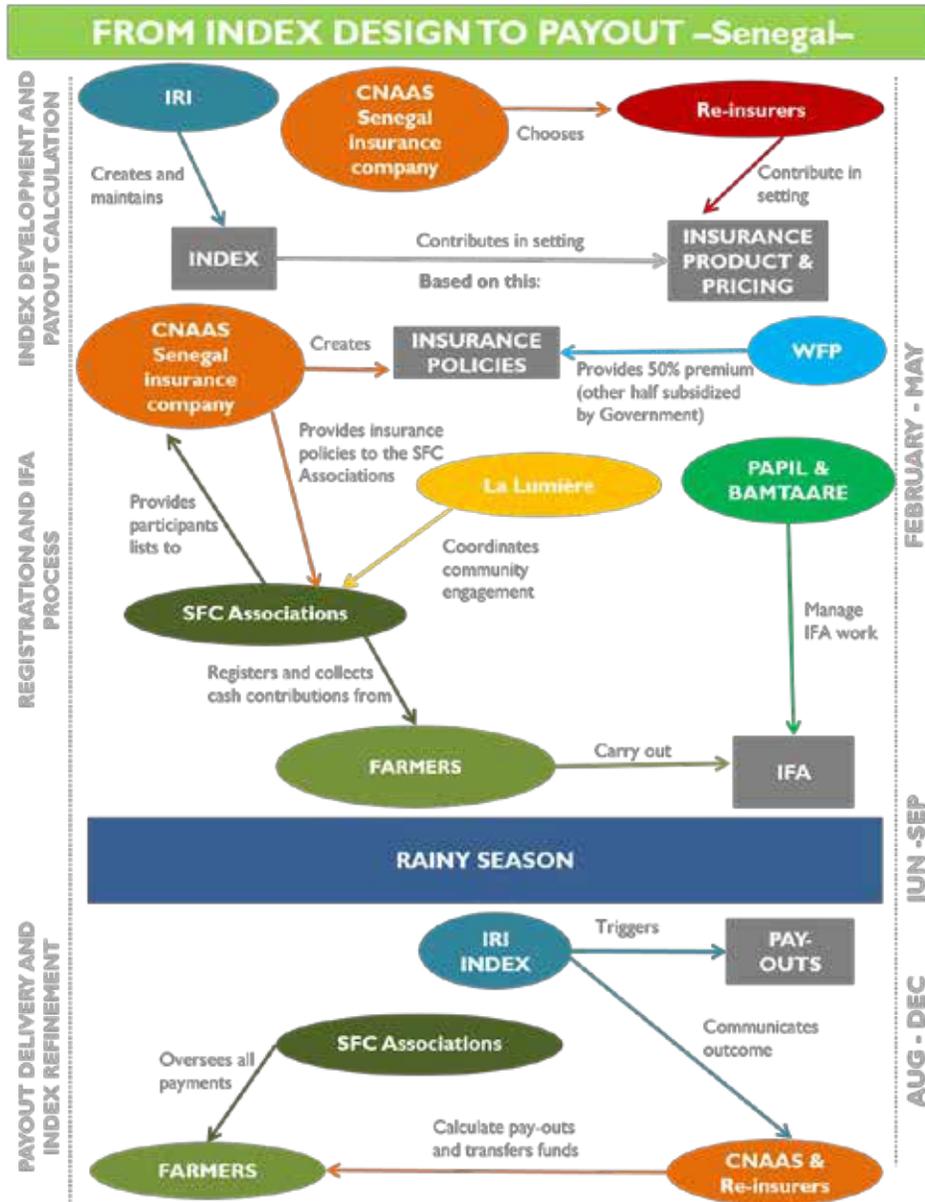
The system will be operational for the first time in July 2017. In general, WFP has wide experience with redress mechanisms from other countries e.g. Kenya under their Cash for Assets program.

Furthermore, post distribution monitoring surveys (PDM), which usually takes place within 30 days from the distribution of vouchers, also collect and analyze feedback from beneficiaries concerning their level satisfaction with the activity. The project-level grievance redress mechanism will be communicated to the project beneficiaries and other stakeholders, including details of how it can be accessed

Describe construction and supervision methodology with key contractual agreements.

See Annex 2

Figure 1. Operational arrangements for the risk transfer component (also attached Annex 3)



NB: WFP pays 50% of the premium to CNAAS *minus* a small contribution (1,000 CFA for farmers insured since 2014, 500 CFA for those insured since 2015) required for farmers who enroll for the second or third time (the other 50% being subsidized). Farmers “pay” the premium through their work using the Insurance for Assets scheme, meaning they work a defined number of days on risk reduction assets (the number of days depend on the premium cost and is based on WFP’s work norms). This is basically a conditional safety net. Once farmers have worked on the assets and paid the cash contribution, WFP actually pays the premium to CNAAS to activate the insurance policy. This structure is used in three different regions of Senegal already and we do not see any limitations in applying to additional regions. This structure is also used in other R4 countries.

*Describe operational arrangements with key contractual agreements following the completion of construction. If applicable, provide the credit analysis of key counterparties of key contractual agreements and/or structural mitigants to cover the counterparty risks.*

NA



## D.1. Value Added for GCF Involvement

*Please specify why the GCF involvement is critical for the project/programme, in consideration of other alternatives.*

During 2012-2015, WFP piloted the R4 approach in Senegal through a test-learn-iterate approach. Today, with a strong set of lessons learned through this process, the GCF contribution will enable WFP and the GoS to take these lessons and build a pathway to mainstreaming and sustainability for the *project*.

In order to mainstream this approach a series of challenges have to be addressed, such as partners' capacity building, basis risk, lack of distribution channels. In order to create a pathway of sustainability, Government ownership and strengthening of a rural financial markets will be key.

As of present, no alternative financing options are available in the immediate timeline for the project and thus, the GCF contribution would come at a crucial time, when the *project* is ready to be mainstreamed within GoS' safety net through the preliminary WFP-DGPSN's MoU, and obstacles are gradually being removed e.g. through partners' capacity building and the finalization of a basis risk strategy. Without grant resources, the proposed intervention would remain a pilot and would not be financially sustainable until its mainstreaming within the GoS' safety net is initiated:

- First, as a Least Developed Country and a Low Income Economy, there is limited capacity in the country for concessional debt financing for its adaptation investments.
- Second, the *project* targets highly vulnerable rural populations, cash constrained, more than half of whom are women, living in disaster prone and food insecure districts dependent on climate sensitive and marginal livelihoods. This is a segment that does not typically appeal to the private sector.
- Finally, the public good nature of the solution to address the current deficiencies in integrated risk management approaches to climate change entails zero cost recovery from the proposed measures to save lives and livelihoods of vulnerable populations in the country.

Additionally, GCF contribution will assist GoS in crowding in additional funds towards its efforts in climate change adaptation from both, public (South-south cooperation) and private (insurance and reinsurance firms) sources. Besides, the process of preparation of the proposal has triggered a catalytic effect bringing together different partners and initiatives (as mentioned in section E.5.3) to reach greater impact and sustainability and avoid duplications.

## D.2. Exit Strategy

*Please explain how the project/programme sustainability will be ensured in the long run, after the project/programme is implemented with support from the GCF and other sources, taking into consideration the long-term financial viability demonstrated in [E.6.3](#). This should include a description of strategies for longer term maintenance of physical assets (if applicable).*

### Output 1.1 – Risk reduction assets creation

Communities engaged in assets creation not only focus on the construction of assets but also on the creation of management structures at village level (e.g. village committee) which are in charge of managing the use and maintenance of the assets, as well as resolving potential conflicts. Such structures are fundamental to ensure the sustainability of the assets creation intervention. For output 1.1, WFP's exit strategy relies on four main elements, i) as mentioned above, village ownership of the assets built and management through established structures; ii) achievement of a certain level of 'scale' within the communities or cluster of communities involved, as well as sufficient integration of assets with other components able to generate sufficient sustained benefits in terms of production, water harvesting, and other benefits; iii) securing land use rights to groups and particularly vulnerable groups through *conventions locales* and certification via state law and customary endorsements; iv) potential integration of this intervention into the local development plans and, at the higher level, the GoS social protection strategy. The process of engagement with the government includes the establishment of a tripartite working group (WFP-Oxfam-DGPSN) that support the creation of the Adaptive Social Protection (ASP) for Senegal based on the experience of R4. Specific assessments on the results of the program will be made to evaluate appropriateness,

corrective measures and integration into government's social protection approach following an evidence-based process.

The elements of this exit strategy for output 1.1 are sufficient to ensure the maintenance of the assets created and hence an operations and maintenance plan is not required.

In the table below detail of HHs per region, old and new, per year is shown. The table also shows a decreasing value of vouchers for both new and old regions, although with different levels and trends: in the new regions, farmers build assets and receive training for the first time, hence decreasing trend is slower than in the old regions where the decrease in voucher value and working days is more dramatic, reflecting the accumulated training and experience on building and maintaining assets.

	Regions	Year 1				Year 2				Year 3				Year 4			
		HHs	VOUCHER VALUE	Days of work	TOTAL VOUCHER	HHs	VOUCHER VALUE	Days of work	TOTAL VOUCHER	HHs	VOUCHER VALUE	Days of work	TOTAL VOUCHER	HHs	VOUCHER VALUE	Days of work	TOTAL VOUCHER
new	Fatick	-	-		-	2,000	42	17	84,000	3,500	41	16	143,500	5,000	36	14	180,000
new	Kaolack	-	-		-	1,000	42	17	42,000	1,500	41	16	61,500	2,000	36	14	72,000
old	Koungheul	4,000	50	20	200,000	4,000	37	15	148,000	5,000	21	8	105,000	6,000	11	4	66,000
old	Kolda	2,000	50	20	100,000	2,000	37	15	74,000	3,000	21	8	63,000	4,000	11	4	44,000
old	Tambacounda	6,000	50	20	300,000	6,000	37	15	222,000	7,000	21	8	147,000	8,000	11	4	88,000
	<b>TOTAL</b>	<b>12,000</b>			<b>600,000</b>	<b>15,000</b>			<b>570,000</b>	<b>20,000</b>			<b>520,000</b>	<b>25,000</b>			<b>450,000</b>

There are three key aspects of the graduation strategy: (a) over the project time, there will be a gradual decrease in food assistance for all HHs as the impact of DRR assets in the medium term will enable production increases and improvements in livelihoods; (b) returning participants will be building additional assets while focusing on the maintenance of the old ones, benefiting from training received – however multi-year participation is needed to consolidate knowledge, ownership and community management skills; (c) the food security and livelihoods of returning HHs is expected to improve over time and their food gaps decrease as a result of the different interventions of the project hence the transfer will gradually phase out.

In terms of the rationale for having the same HHs supported over a number of years: transfers are an essential part of WFP resilience model whereby much needed assets that rehabilitate and protect land, and increase production are created by chronically food insecure farmers. Through FFA, WFP is able (compared to other organizations) to work in some of the most fragile and degraded ecosystems, allowing the most vulnerable farmers to improve their income and food security, their livelihoods and their capacity to adapt to climate change over time. Assets built under FFA increase productivity and build resilience in the medium run but this is not a linear economic process. Progress during good years will suffer setbacks during drought years. Insurance will only partly cushion households from the shock and help them recover faster, but continued support on DRR and assets creation will ultimately be essential to build long term resilience. In fact, based on WFP experience, consolidated improvements in the livelihoods of the smallholders farmers targeted by FFA usually can be noticed after a 3-5 year investment, hence the need for continued (although decreasing) support over time.

#### Output 1.2 – Climate services

Several options are being considered to offer the service in a sustainable way, while reaching some of the most vulnerable (and typically cash-poor) populations.

- Integrating climate services into WFP conditional safety net, in the same fashion as insurance. This would imply that farmers access the service by working on risk reduction activities under WFP Food Assistance for Assets scheme, therefore creating a 'Climate Services for Assets' scheme (in alternative or addition to the FFA and IFA).
- Enabling farmers to access the service through small cash contributions, wherever possible –testing their interest in the service and willingness to pay.
- Integrating climate services into other resilience programs already partnering with WFP, e.g. PADAER, an IFAD funded agricultural development initiative providing farmers with agricultural inputs and through WFP, insurance.

According to evidence provided by climate services partners such intervention stands to be sustainable even without the ability to fund farmers beyond a single year.

- Reliable and useful content experienced by the farmer over a period of time creates trust and proves to the farmer the value of the information. A study conducted by Masara N'Arziki on Ignitia in 2013 found that 95% of the farmers were willing to pay if an NGO partner was not providing the service for them.
- A review of ICT in agriculture in Africa, concluded that the #1 top priority for smallholders is weather, and they are willing to pay at least \$1/month for such information (IFC 2012). This equals less than 1% of an average household income for a smallholder farmer.

#### Output 2.1 – Risk transfer

Based on experience in the past two years during which WFP asked returning farmers to pay a small cash contribution towards premiums, it is expected that a percentage of participants will fully graduate from the proposed *project*, transitioning to the commercial market for insurance and financial services.

WFP is preparing the ground for such process by (1) building local capacity, in particular at the level of CNAAS, PlaNet Guarantee, national government and local communities and (2) designing and testing insurance products and processes (i.e. SCOPE, IFA, delivery channels) that could then be transferred to national actors (public and private).

WFP, working with the GoS and local partners, will continue supporting resilience building and access to financial services for vulnerable communities that are not yet ready to access the proposed services commercially. The assumption is indeed that there will be continued government investment in these activities. For this segment, it is expected that in the long term the GoS will provide such services through its safety net program. It should be noted that the GoS is building a national social safety net system to provide poor and vulnerable households with cash transfers. The Social Protection and National Solidarity Delegation (*Délégation Générale à la Protection Sociale et la Solidarité Nationale* or DGPSN) has recently expressed its willingness to integrate the comprehensive risk management model proposed by the *project* into the new World Bank-funded regional program on Adaptive Social Protection. The latter aims at strengthening social protection measures that aim to mitigate the impact of climate change and other shocks on the poorest households, in the framework of the Sahel Adaptive Social Protection Trust Fund.

#### Output 3.1 and 3.2 – Saving for Change (SfC) and *warrantage*

SfC groups are trained to graduate in their first year, typically once they have gone through an entire cycle, including the share out at the end. The graduation means that they can function on their own with limited external support, which is a factor of sustainability. Dropout rates are usually around 2% and mostly due to economic migration. Women enrolled in SfC groups have no other option than those groups to save regularly and access credit. Animators visit mature groups quarterly to monitor group functioning and answer any questions.

SfC also has a strong organic replication model: When expanding SfC to new villages, animators focus on creating one group per village and identify one woman who shows leadership capacity. She will be receiving a training to become a volunteer replicator. These trained replicators then create new groups within their village. Some replicators have created as many as another 9 groups in one village, dramatically lowering the cost of scaling SfC. Finally, to broaden their reach in the communities they work with, groups are brought together in Associations which allows them to become an integral part of the community landscape, and initiate dialogue with authorities and give women a voice for their economic needs constrained by social norms.

Based on the need and request from members and on funding availability, groups are further trained in the "SfC+" programs on citizenship, small business training, and agriculture, reproductive health.

*Warrantage* was initiated by R4 to facilitate prudent risk taking among smallholder farmers who typically do not have access to credit from formal financial institutions, in part because of their lack of collateral. It offers a simple mechanism: farmers store their harvests in a safe place and use it as collateral to access loans instead of selling soon after harvest at a low price.

The *project* serves as a broker to negotiate preferred terms with MFIs on behalf of farmers to facilitate credit against their stored grain as collateral. It also serves as a facilitator in building awareness among communities on warrantage, forming cereal bank management committees and training them on warrantage and stock management. The members are organized into savings groups based on the SfC methodology to enable them to cover the storage related costs including purchase of grain bags, insecticide and fees for opening an account with the MFI. They also contribute labor in rehabilitating an old building into a concrete warehouse for safe storage.

Thus with minimal cost, this initiative creates an avenue for MFIs to tap into the rural market for secure lending, and for farmers to have access to credit using their grains as collateral. The hypothesis is that with success of such a pilot, more MFIs will be willing to engage in warrantage and farmers would have access to formal financial services.

Furthermore, it should be noted that all these interventions acting together represent a mechanism for the sustainable progression of the project. The cumulative efforts from this package of interventions are expected to amplify not only project performance but also its sustainability.

In this section, the accredited entity is expected to provide a brief description of the expected performance of the proposed project/programme against each of the Fund's six investment criteria. Activity-specific sub-criteria and indicative assessment factors, which can be found in the Fund's [Investment Framework](#), should be addressed where relevant and applicable. This section should tie into any request for concessionality made in [section B.2](#).

## E.1. Impact Potential

Potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas

### E.1.1. Mitigation / adaptation impact potential

*Specify the mitigation and/or adaptation impact, taking into account the relevant and applicable sub-criteria and assessment factors in the Fund's [investment framework](#).*

The *project* directly contributes to the GCF's strategic results areas for adaptation, namely: increased resilience of health, water and food security and; increased resilience of livelihoods of people and communities. The proposed *project* will reach **405,000 direct beneficiaries** (from vulnerable smallholder households)<sup>32</sup> and **121,500 indirect beneficiaries**<sup>33</sup> for a total of 526,500 **beneficiaries, about 3.48% of Senegal's total population**<sup>34</sup>, who by the 4<sup>th</sup> year of implementation are expected to have enhanced their resilience to climate shocks.

(The current pilot reaches 99,000 people).

Of these 405,000 it is expected that by Year 4, 225,000 will access insurance through the Insurance for Assets mechanism and climate services (25,000 households, 9 members per HH), while other 180,000 will access insurance by paying premiums in cash (20,000 households, 9 member per HH). This is in line with the sustainability strategy of the project whereby vulnerable participants build their resilience to climate risks and transition to more sustainable livelihoods, enabling them to afford paying for insurance premiums in cash.

These are the estimates in terms of outreach per component:

1. Assets creation, Insurance for Assets and food vouchers: 225,000 farmers (women and men) will participate to assets creation to improve the natural resource base of their land, receiving food vouchers for their entire

<sup>32</sup> Based on an average household size of 9, direct beneficiaries = 45,000\*9

<sup>33</sup> The calculation was performed by extending to the project the existing "T2B" corporate guidance for FFA with the assumption of full compliance of all underpinning methodological procedures. The "T2B Approximation" is based on WFP's experience in building different types of assets, and consists in applying a standard multiplier of 1.3 to the number of direct (T1B) beneficiaries of FFA activities. It is based on estimates suggesting that the actual multipliers per asset type typically range from 1 to 2, with a recommended average of 1.3. Note that this is acknowledged as a rough and conservative approximation, which has not undergone robust validation and is only expected to be used as a transitory measurement (until more context-specific multipliers can be used).

<sup>34</sup> Population of Senegal for 2015 = 15,129,273 (World Bank Database)

household (nine people) to cover food needs during lean season. In addition, through participation in the asset creation activities, they will receive weather index insurance coverage. This means 1.5% of Senegal's total population will benefit from this component.

2. Climate services: the same 225,000 farmers reached by assets creation.
3. Insurance for cash: 180,000 farmers (1.1% of Senegal's total population) reached by insurance for cash, in addition to the 225,000 farmers reached by asset creation, in line with the sustainability strategy of the project. This is a separate group because it usually includes slightly better off farmers who are less cash constrained than the ones who access insurance through IFA.
4. Risk reserves and prudent risk taking: the same 225,000 farmers reached by assets creation.

**In total 405,000 farmers (225,000 from point 1/2/4 + 180,000 from point 3), will benefit from the program directly, while 121,500 will benefit indirectly.**

The indirect participants were calculated based on a 1.3 multiplier.

Based on WFP's experience with R4 in the past three years, **more than 50% the participants are expected to be women** who participate in all components. Women are traditionally involved in rain-fed rice cultivation and in vegetable gardening (and therefore interested in engaging in the low-lands assets construction) as well as significantly in the saving groups (reaching over 80% of participants for that output). This means that they are the group that's mainly involved in 3 out of 4 interventions. Moreover in 2016, for the first time more women than men subscribed to R4 insurance product. An indicative target of 50% female participants will be set for the proposed *project*.

Thanks to the *project* interventions, participants and their families will be better equipped to cope both with the short term effects of climate change (e.g. food insecurity caused by climate shocks) through insurance and food assistance, as well as with the long-term consequences of climate change through the transfer of climate-smart agricultural practices, climate services, and the construction of DRR assets.

*When applicable, specify the degree to which the project/programme avoids lock-in of long-lived, high emission or climate-vulnerable infrastructure.*

#### E.1.2. Key impact potential indicator

*Provide specific numerical values for the indicators below.*

GCF core indicators	<i>Expected tonnes of carbon dioxide equivalent (t CO<sub>2</sub> eq) to be reduced or avoided (Mitigation only)</i>	<i>Annual</i>	NA
		<i>Lifetime</i>	NA
	<ul style="list-style-type: none"> <li>• <i>Expected total number of direct and indirect beneficiaries, disaggregated by gender (reduced vulnerability or increased resilience);</i></li> <li>• <i>Number of beneficiaries relative to total population, disaggregated by gender (adaptation only)</i></li> </ul>	<i>Total</i>	The proposed <i>project</i> will directly reach <b>405,000 direct participants and further (405,000 people from vulnerable smallholder households) 121,500 indirect beneficiaries<sup>35</sup></b> . Based on R4 experience in the past three years, <b>more than half of the participants are expected to be women.</b>

<sup>35</sup> See note 33.

		Percentage (%)	3.48% of Senegal's total population <sup>36</sup> .
Other relevant indicators	<p><i>Examples include:</i></p> <ul style="list-style-type: none"> <li>• <i>Expected increase in the number of households with access to low-emission energy</i></li> <li>• <i>Expected increase in the number of small, medium and large low-emission power suppliers, and installed effective capacity</i></li> <li>• <i>Expected increase in generation and use of climate information in decision-making</i></li> <li>• <i>Expected strengthening of adaptive capacity and reduced exposure to climate risks</i></li> <li>• <i>Others</i></li> </ul>		
<p><i>Describe the detailed methodology used for calculating the indicators above.</i></p> <ol style="list-style-type: none"> <li>1. <i>Expected total number of direct and indirect beneficiaries, disaggregated by gender (reduced vulnerability or increased resilience); and</i></li> <li>2. <i>Number of beneficiaries relative to total population, disaggregated by gender (adaptation only)</i></li> </ol> <p>The targeting for the proposed <i>project</i> has been made based on the following criteria:</p> <p><b>Needs-based (geographical targeting):</b> WFP uses the corporate <a href="#">three-pronged approach</a> (3PA) to program for resilience building in each country. Through this system, project areas are selected based on their food security status. In the case of the proposed <i>project</i> this tool was customized to identify areas where food insecurity was a direct effect of vulnerability to climate factors. Targeting therefore crossed food insecurity indicators with vulnerability to climate change indicators to select the communes of interventions.</p> <p><b>Market potential:</b> A preliminary assessment of the potential for the proposed <i>project</i> suggests that there are <b>60,000 households (and therefore over 540,000 beneficiaries based on an average household size of nine, 3.6% of Senegal's total population) that can potentially access a package of climate risk management tools</b><sup>37</sup>. This figure has been calculated based on the following criteria:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Total population living in areas with high levels of climate risks and food insecurity;</li> <li><input type="checkbox"/> Poverty level and livelihood type (smallholding agriculture); and</li> <li><input type="checkbox"/> Out of this group, households that are not labor constrained.</li> </ul> <p>Out of this group (total market), WFP calculated the total number of participants that could be reached by the <i>project</i>.</p> <p>The <i>project</i> interventions are focused onto activities that are typically performed by women in the community, such as rice cultivation and the participation to saving groups. Based on this and on WFP's previous experience, it is expected that over 50% of the expected participants will be women for the proposed project.</p> <ol style="list-style-type: none"> <li>5. <i>Expected increase in generation and use of climate information in decision-making</i></li> </ol> <p>WFP expects that the subscribers to the IFA scheme will also receive climate services during the four years of the <i>project</i> through communal radio and individual sms. This increase in the generation of climate information will be measured through the number of radio broadcasts and the number of sms sent to the individual farmers during the agricultural season. The use of climate information in decision-making will be ensured through the dedicated advisory services provided by the <i>project</i> through the national extension services. The annual outcome monitoring surveys</p>			

<sup>36</sup> Population of Senegal for 2015 = 15,129,273 (World Bank Database)

<sup>37</sup> This is the size of the market and not the targeted number of beneficiaries.

organized by WFP to measure the changes on participants' behaviors and key food security indicators will measure the use of the climate information in decisions making by farmers through a dedicated set of questions. The household surveys will be completed by focus group discussions with a sample of participants in the villages sampled for the surveys.

6. *Expected strengthening of adaptive capacity and reduced exposure to climate risks*

The overarching indicator being measured by the *project* is the climate resilience of vulnerable households exemplified in the following criteria:

- Food is available and accessible in adequate quantities and quality to participating households (HH) / all HH throughout the year and it is utilized appropriately (obtained without depleting assets in a way that compromises future production / income);
- HH are able to cope with climate change (number of direct and indirect beneficiaries disaggregated by gender);
- Adequate health and nutrition of all individuals in participating / allHH;
- People have secure livelihoods, sustained presence and adequate capital (including human, technological/physical, financial, social, natural, political capital) all year round.

More information on indicators used is available in section H.1.1

*Describe how the project/programme's indicator values compare to the appropriate benchmarks (i.e. the indicator values for a similar project/programme in a comparable context).*

NA

## E.2. Paradigm Shift Potential

Degree to which the proposed activity can catalyze impact beyond a one-off project/programme investment

### E.2.1. Potential for scaling up and replication (Provide a numerical multiple and supporting rationale)

*Describe how the proposed project/programme's expected contributions to global low-carbon and/or climate-resilient development pathways could be scaled-up and replicated including a description of the steps necessary to accomplish it.*

The R4 approach has shown significant potential through a track record of scale up and replication. Since its inception in 2011, it has grown from providing climate risk management and food security assistance to 200 farmers in one village of Ethiopia to over 200,000 people (40,000 households) across 4 countries in Sub-Saharan Africa. In Senegal, the program has been scaled-up from 500 participants in one rural community in one region in 2013, to more than 12,000 direct participants and their families (72,000 people) in 22 communities in three regions in 2015.

By building on safety nets, R4 and the proposed *project* combine a comprehensive risk management approach with the potential for large scale. For example, more than 12.7 million food insecure and vulnerable people in 52 countries benefited from WFP's FFA programs (including Senegal) in the last year only. Even more people are benefitting from the assets created by these projects. R4's focus on working with governments to integrate the approach into national safety nets is at the core of the strategy for the initiative, in order to reach millions of farmers.

As mentioned previously, in Senegal, safety net programs under the *Délégation Générale à la Protection Sociale et à la Solidarité Nationale* (DGPSN) started in 2013 with the *Programme National de Bourses de Sécurité Familiale* (*Bourse*) which targets poor families (it is conditional on income), ensuring enrollment and school attendance of children to fight social injustice and inequality for better distribution of national wealth.

Building on R4's learnings, the proposed *project* will enable GoS and WFP to work together to operationalize the Memorandum of Understanding signed in 2016 (Annex 4) to extend weather index insurance to the (foreseen) 250,000 participants of the *Bourse* (a conditional cash transfer program) to address vulnerability and social exclusion of families through integrated social protection in order to promote their access to social transfers and strengthening, among others, their educational capacity, and agricultural productive techniques.

The proposed *project* can complement the Bourses, in several ways by: i) offering a weather index insurance through the IFA scheme; ii) adding community assets building components to be implemented under the Food Assistance for Assets scheme; iii) promoting income generating activities through savings groups. By integrating climate risk management and adaptation into the GoS' safety net program, WFP, with the GCF support would bring about a critical improvement in building the country's capacity to adapt to climate change.

The DGPSN recently expressed an interest to integrate the proposed approach (and not just the insurance component) into the recent Adaptive Social Protection project, supported by the World Bank Group in the framework of the Sahel Adaptive Social Protection Trust Fund. "Adaptive social protection" is a new integrated approach that helps protect poor households from climate and other shocks before they occur by providing regular cash transfers, building community assets, and strengthening human capital. A working group comprising WFP, Oxfam and the DGPSN has been set up to work on how the integration will be concretely carried out.

### E.2.2. Potential for knowledge and learning

*Describe how the project/programme contributes to the creation or strengthening of knowledge, collective learning processes, or institutions.*

WFP places a strong emphasis on evaluation and learning through an approach that is (a) operational such that the results of the analysis feed directly into the *project's* strategic planning; and (b) independent, with outcomes and impacts evaluated by external stakeholders (such as academia, international research institute and consulting companies). Two independent impact evaluations were carried out in 2015 and 2016 Senegal (some of the results are summarized in section E.3) and Annex 5.

The organization strives to create a learning culture in which both success and failure actively inform the development of future work. While some challenges and related lessons are context specific, WFP seeks to continuously consolidate and use its experience to improve programming in existing countries and inform expansion in new countries.

Internally, all partners participate to the Annual Impact Reflection (AIR) workshop. The AIR is a participatory internal process through which WFP and OA, together with partners and community representatives, discuss the successes and failures of the program, critically examine, assess, agree on progress and act to improve.

Externally, WFP's work on R4 is seen as a leading example of how climate risk management can address climate-related loss and damage by being integrated into safety nets. In recognition of these efforts, the initiative won a UNFCCC Lighthouse Award and a Climate Change Business Journal (CCBJ) Business Achievement Award in 2016.

At the national and local level, WFP supports learning and knowledge transfer opportunities by: i) providing training to local authorities and collectives on leadership, budget and project management, transparency, governance and the impact of climate change; ii) transferring project monitoring to local authorities and collectives; iii), transferring skills and knowledge for insurance index design and pricing at the national level; iv) engaging the relevant national institutions for adopting and mainstreaming an improved community-level planning process to climate adaptation<sup>38</sup>.

### E.2.3. Contribution to the creation of an enabling environment

*Describe how proposed measures will create conditions that are conducive to effective and sustained participation of private and public sector actors in low-carbon and/or resilient development that go beyond the program.*

Senegal is facing a number of institutional, technical and regulatory barriers in the context of climate change adaptation at different national, local and community level that the *project* will address:

Lack of access to weather and agricultural information: Despite some progress in the delivery of climate services through radio, efforts are needed to better understand and serve the needs of smallholders in terms of climate services. WFP is implementing two pilots with its partners Manobi and Ignitia to integrate climate services into WFP's toolbox by providing access to sms-based climate services to participants. The use of sms and mobile phones has been identified as the best way to reach both men and women farmers, through the development of clear and simple

<sup>38</sup> <http://www.wfp.org/content/building-resilience-through-asset-creation>

messages translated in local languages. This information is complemented with agro-meteorological advisories for farmers provided by local NGOs already partnering with WFP.

Lack of technical skills on weather index insurance: Building the enabling environment for WII is a crucial objective of WFP. In 2015, the *project* started to strengthen its knowledge transfer activities by initiating trainings on weather index insurance design and pricing for key stakeholders, such as the CNAAS, Planet Guarantee and the national institutions involved in climatology such as ANACIM, ISRA and CSE (all affiliated with the GoS). The training was performed by the International Research Institute for Climate and Society (IRI), coordinated by WFP, to improve local skills and gradually transition the weather index insurance activities including data collection, index design and pricing to local stakeholders.

Lack of rural delivery channels: WFP is constantly exploring ways to deliver some of its services (e.g. food vouchers, insurance policies, climate services) through mobile platforms, partnering with the main mobile phone network operators in order to address the lack of last mile delivery channels.

As the *project's* long term objective and exit strategy is to integrate climate risk management tools (such as DRR, climate services, and WII) into national safety nets and develop a rural market for financial services, the abovementioned adaptation measures are conducive to a sustained participation of the public and the private sector in resilient development.

*Describe how the proposal contributes to innovation, market development and transformation. Examples include:*

- Introducing and demonstrating a new market or a new technology in a country or a region*
- Using innovative funding scheme such as initial public offerings and/or bond markets for projects/programme*

WFP has supported the introduction of two main innovations in Senegal:

- Weather index insurance (more information in section E.6.4);
- Sms-based, location specific climate services, through the partnership with Ignitia (more information in section C.3).

#### E.2.4. Contribution to regulatory framework and policies

*Describe how the project/programme strengthens the national / local regulatory or legal frameworks to systematically drive investment in low-emission technologies or activities, promote development of additional low-emission policies, and/or improve climate-responsive planning and development.*

In May 2016, WFP signed a MoU (Annex 4) with GoS' DGPSN (Social Protection and National Solidarity - *Délégation Générale à la Protection Sociale et à la Solidarité Nationale*) with aim to strengthen Senegal's social safety net in the rural areas through insurance. This document is the first step of a growing collaboration between WFP and the GoS to complement the national social protection interventions with adequate risk management tools, adapting such interventions to the growing impact of climate change. The document has been followed upon by the setting up of a working groups made of WFP, Oxfam and the DGPSN that is working on the mechanisms to carry out the integration of these tools in the programs of the DGPSN.

WFP also works with the GoS to adapt and mainstream its three-pronged approach (3PA) (mentioned in section E.1.2.) to strengthening the design, planning and implementation of asset creation and resilience building programs. This approach includes Community-Based Participatory Planning (CBPP) exercises, which are key participatory planning tools to work with rural communities on their priorities in terms of disaster risk reduction and climate adaptation. In 2014 and again in early 2017, government representatives and local technical services participated to a training of trainers to roll out CBPPs at village-level. In 2017, the SE/CNSA was trained by WFP on the ICA. WFP will therefore continue its efforts to propose the 3PA as a contribution to the planning and programming efforts of MAER and rural development in general, aimed at finding context specific solutions and improving overall government planning and coordination.

WFP also contributes to the national adaptation policies articulated in the National Adaptation Programmes of Action (NAPAs) by supporting climate change governance structures at national and local levels (COMNACC and COMRECC). WFP will provide technical assistance to the GoS to build a coherent and enabling policy environment for the implementation of climate-smart agriculture.

WFP will contribute to the national development strategy, the Plan Sénégal Emergent (PSE 2014-2035) reflecting the Government's long-term vision to implement effective social protection, safety nets, sustainable food production and disaster risk management systems. *Project's* activities are linked to the PSE's three strategic pillars: structural transformation of the economy and growth; human development, social protection, and sustainable development; improved governance.

WFP also contributes to the Accelerated Programme for Agriculture in Senegal (PRACAS), which outlines the Government's agricultural policy, which aims at achieving self-sufficiency in rice by 2017.

R4 is already aligned with the National Strategy on Food Security and Resilience (SNSAR) 2015-2035 as it aims at strengthening rural communities' resilience and food security.

R4's asset creation interventions also contribute to the national Global Alliance for Resilience Initiative (AGIR).

### E.3. Sustainable Development Potential

#### Wider benefits and priorities

##### E.3.1. Environmental, social and economic co-benefits, including gender-sensitive development impact

In 2015, WFP commissioned Dalberg Global Advisors to undertake an impact evaluation of the R4 Senegal which the proposed *project* is based on (based on R4 M&E Logframe – in Annex 6). The consultants used a quantitative (difference-in-differences) and qualitative (desk-based research and focus group discussion) methodology, analysing impacts on a sample of 1,776 households across two regions, Tambacounda and Kolda, with particular attention to the rural community of Koussanar in Tambacounda, where R4 was first piloted in 2013. In 2016, a final data collection and assessment was done to reinforce the results of the first impact evaluation.

The economic, social and environmental co-benefits of the proposed *project* will build on the impact assessments conducted in 2015 and 2016 for the pilot project. The expected co-benefits identified are:

**1. Economic co-benefits of the proposed project:**

**1.1. Livelihood strengthening of beneficiaries**

**1.1.1. Expected increase in agricultural income due to crop diversification and improved yields**

The 2015 impact evaluation reported a significant increase in rice production for R4 households (230 kg) compared to the control group households (20 kg). This was mainly attributed to the better management of low-lying land due to creation of water and soil conservation assets under the risk reduction component. These results were further confirmed by the 2016 impact evaluation where WFP's interventions in developing lowland rice fields and implementing improved water management techniques under its first component enabled program participants to achieve higher yields compared to non-participants for rice and other staple crops, including millet, maize, beans, sorghum, and groundnut. Across all three locations (Koussanar, Kolda, and Tambacounda), the average volume of rice produced per participant household increased by 160kg or 91.4% from 2015 to 2016, compared to 35kg or 42.2% for non-participant households.

The proposed project is expected to build on the impact achieved during the pilot phase to increase agricultural income by increasing yields and diversifying crops planted by the smallholders. It is expected that the increase in agricultural yields (for details, please refer to the financial model) will be continued in the proposed *project* timeline. Yields improvements are the outcome of an increase in the production areas thanks to land rehabilitation, as well as adoption of better soil management techniques and access to inputs by farmers.

**1.1.2. Expected smoothening of household income**

As the underlying principle at play for an integrated risk management strategy, it is expected that all three financial instruments – insurance, savings and credit help participant households in smoothening their income in the face of both, idiosyncratic<sup>39</sup> and covariate<sup>40</sup> weather related shocks (Figure 2).

The proposed *project* is expected to reduce variability in income profiles of participant households, both at inter and intra year levels.

<sup>39</sup> Idiosyncratic risk relates to household or individual level shocks such as illness, death and theft that tend to increase variability in household consumption patterns.

<sup>40</sup> Covariate risk results from a shock that collectively impacts the community as a whole and can have massive impact by triggering one or more other shocks. E.g. floods, droughts, hurricanes

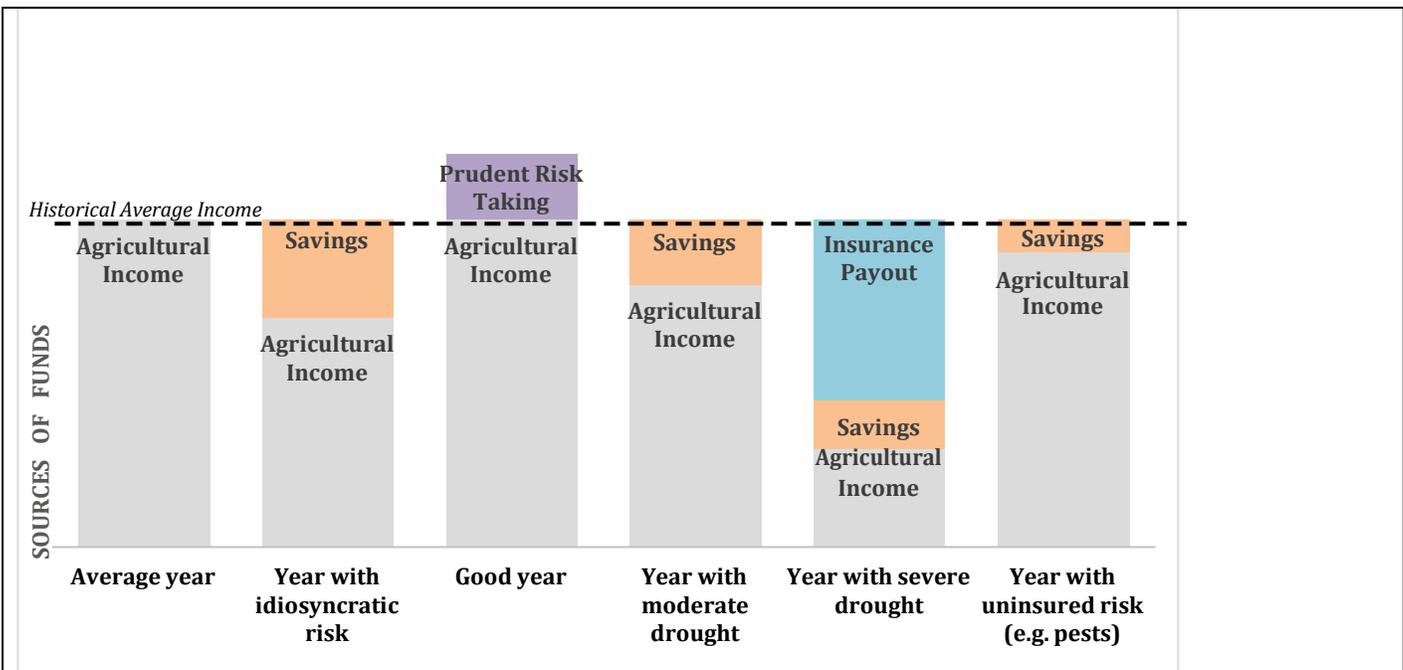


Figure 1: Example scenarios under the R4 Rural Resilience Initiative – Integrated Risk Management Approach

## 1.2. Expected efficient management of local and national fiscal resources

Case studies in Ethiopia and Malawi suggest that the economic cost of delayed response per household in the aftermath of droughts increases significantly with time i.e. from 50 USD (4-5 months post drought) to 1,294 USD (6 months after drought) due to irreversible impacts on children and distress sales of assets, especially livestock.<sup>41</sup> With early interventions such as the proposed *project*, GoS can potentially prevent economic losses amounting to 58 million<sup>42</sup> in the aftermath of droughts. This is also expected to free up valuable fiscal resources for GoS and encourage it to take a more prudent approach to fiscal management.

## 2. Social co-benefits of the proposed project

### 2.1. Expected maintenance of food security of project beneficiaries, 2.7% of total Senegalese population

The 2015 evaluation revealed that the pilot area of Koussanar experienced declining agricultural and livestock production as well as food consumption rates between 2013 and 2015, due to particularly dry conditions. The Food Consumption Score (FCS)<sup>43</sup> worsened over the two years for both participants and non-participants of R4. R4 farmers, however, were able to maintain their food security level compared to farmers living in the same area and exposed to the same shocks. Participants' FCS dropped by 8.1% as opposed to non-participants who witnessed a decrease of 49.1%. Thus, while non-participants went from an 'acceptable' to a 'limited/borderline' food security situation, R4 participants managed to remain in the 'acceptable' range in spite of experiencing a drop in their FCS.

<sup>41</sup> Clarke, D.J., Hill, R.V. (2013). Cost-benefit analysis of the African Risk Capacity facility (Vol. 1292). International Food Policy Research Institute.

<sup>42</sup> Target households of the proposed project\*economic cost of intervention post 6-months i.e. 45,000\*1,294 = 58 million USD

<sup>43</sup> The Food Consumption Score (FCS) – a WFP corporate tool – is a proxy indicator of household food security based on the weighted frequency (number of days in a week) of intake of eight different food groups. It is measured as follows:  $FCS = a_1 \times 1 + a_2 \times 2 + \dots + a_8 \times 8$ , Where  $i$ =food group,  $x$ =frequency,  $a$ = weight. FCS captures both quality (different food groups/dietary diversity) and quantity (food frequency) elements of food security. The FCS categorizes households into Food Consumption Groups (FCG). In Senegal, cut-off points are: Poor food consumption: 0-28, Limited/Borderline food consumption: 28.5 – 42, Acceptable food consumption: >42.

These results were echoed by the 2016 impact evaluation in which participants saw a three-fold increase in their FCS from 2015 to 2016 compared to non-participants. Across all three locations, participants' FCS increased from 41.1 in 2015 to 49.2 in 2016, an increase of 8.1. On the other hand, non-participants' FCS increased from 34.3 in 2015 to 36.3 in 2016, an increase of 2. Driven by their increases in food availability brought about by the program, 61% of program participants now have an acceptable FCS based on WFP's categorization, compared to 36% of non-participants. Furthermore, while both groups experienced a reduction in their Coping Strategy Index (CSI) from 2015 to 2016, the reduction was much greater for program participants (-7) compared to non-participants (-2.1). This indicated that participants were less likely to resort to negative coping measures such as consuming cheaper but less preferable foods, borrowing food, decreasing the amount of food consumed, or buying more food on credit than usual to cope with food shortages.

It is expected that the proposed *project* will carry over these impacts to ensure that food security of target households is improved or maintained in the face of climatic risks. As macronutrient and micronutrient deficiencies cause global losses in economic productivity at the scale of 2-3% of the Gross Domestic Product<sup>44</sup>, increased food security in proposed project locations is also expected to contribute to the economic growth of the country.

## 2.2. Expected increase in awareness on nutrition

Thanks to the renewed focus on nutrition and education, through the link with nutrition sensitive gardens under the risk reduction component that promotes cultivation of high nutrient varieties of vegetables and fruits, it is expected that participants will increase the nutrition value of their diets and their dietary diversity, especially for children under the age of five, and pregnant and lactating women.

It has been estimated that each child under two years of age who received reduced nutrition will lose 14 percent of lifetime earnings.<sup>45</sup> When translated to household level, this value amounts to USD 49 per household on average.<sup>46</sup> With increase in awareness on nutrition and improvement in dietary diversity of the participant households, it is expected that the proposed *project* will result in potential economic benefits of 2.2 million USD.<sup>47</sup>

## 2.3. Expected improvement in agriculture related decision making

As most of the targeted participants use non-recommended agricultural practices, it is expected that through the risk reduction, climate services and insurance interventions of the proposed project, participants will be empowered to take informed decisions on land preparation, planting dates, input usage and post-harvest storage activities.

For example, a downscaled climate information services developed by the Senegalese National Meteorological Agency (ANACIM) in collaboration with CGIAR Research Program on Climate Change, Agriculture and Food Security helped Senegalese farmers to substitute maize which requires much rainfall, with soya bean and sesame, because of a low to normal rainfall forecast. Access to climate information also helped them to streamline spending and labour e.g. farmers avoided wasting fertilizer in response to an announced rain as well as time on weeding and tilling, which could lead to erosion. Some farmers were also able to assess their debt capacity for the crop year based on the seasonal forecasts.

This expected improved in agricultural decision making will in turn add to the climate resilience of the beneficiaries.

## 3. Environmental co-benefits of the proposed project

### 3.1. Expected increase in groundwater recharge and soil quality

<sup>44</sup> Global Hunger Index 2014

<sup>45</sup> Alderman, H., J. Hoddinott, and B. Kinsey. 2006. "Long Term Consequences of Early Childhood Malnutrition." Oxford Economic Papers 58 (3): 450–474.

<sup>46</sup> Clarke, D.J., Hill, R.V. (2013). Cost-benefit analysis of the African Risk Capacity facility (Vol. 1292). International Food Policy Research Institute.

<sup>47</sup> Economic benefit per household\*Targeted households i.e. 49\*45,000

It is expected that assets created under the risk reduction component of the proposed project will prevent further decrease in soil fertility and deterioration of ecosystems in the project locations. The proposed project will promote the development of water regulation works and soil defence mechanisms such as small dikes, stone bunds and compost making to promote effective soil and water conservation techniques. These efforts also have the potential to aid groundwater recharge as well as growth of local fruit trees. It is also expected that the establishment of tree nurseries and reforestation contribute to the biodiversity in the region in the longer term as tree cover expands.

### 3.2. Expected increase in awareness of weather-related risks

Risk-based insurance premiums often provide a first-time monetary estimate of the insured risk, especially in lower income countries, and can be effective in signaling economic consequences of climate change to both, private and public agents, through price differentials offered to policyholders. Such a price signal can be very effective in increasing public awareness of weather-related risks. For example, as part of an integrated approach to provide innovative financing to build community resilience to climate change in coastal Vietnam, five communes developed and used participatory land use plans and climate change scenario maps to assess the potential impact of climate change, thereby enhancing their risk awareness and adaptive capacity to climate change.<sup>48</sup>

It is expected that the proposed *project* will contribute to an increase in awareness of weather-related risks amongst the beneficiaries in an informed manner through the price signal of insurance premiums as well as climate services and climate-sensitive community based participatory planning.

### 4. Gender sensitive development impact of the proposed project

In 2015, a study conducted by the Institute of Development Studies (IDS) found that R4 benefits women farmers by contributing to their access to productive assets, as well as supporting women's savings groups through the 'Savings for Change' (SfC) program, a cornerstone of the R4 initiative in Senegal.

Women claimed that they felt empowered through their participation in financial literacy and entrepreneurship trainings, as well as gains in time to dedicate to their children or small businesses as they no longer had to travel far to fetch water.

Similarly, the 2016 impact evaluation saw an increase in decision-making responsibility among women in participant households. In 11% of participant households, women were involved in making decisions on the use of farmland compared to 6% of non-participant households. The SfC component also provided an avenue for women to save and acquire small loans to engage in income-generating activities such as rice farming, peanut farming, vegetable cultivation, and small trade.

It is expected that the proposed *project* will continue to contribute to this gender sensitive development impact by making the female participants more confident about their ability contribute to household economies and improving their psychological well-being.

## E.4. Needs of the Recipient

Vulnerability and financing needs of the beneficiary country and population

### E.4.1. Vulnerability of country and beneficiary groups (Adaptation only)

*Describe the scale and intensity of vulnerability of the country and beneficiary groups, and elaborate how the project/programme addresses the issue (e.g. the level of exposure to climate risks for beneficiary country and groups, overall income level, etc).*

<sup>48</sup> "Innovative Financing to Build Community Resilience to Climate Change in Coastal Vietnam." n.d. SNV. <http://www.snv.org/project/innovative-financing-build-community-resilience-climate-change-coastal-vietnam>.

**Level of exposure to climate risks for beneficiary country and groups**

Although politically stable in a region affected by multiple challenges, Senegal is a least developed country and faces many challenges in socio-economic terms. The country is also affected by recurrent climatic shocks, food production deficits, and price volatility like most other countries in the Sahel. According to WFP and GoS data, 58% of rural households are below the poverty threshold<sup>49</sup>. According to WFP recent estimates<sup>50</sup>, over 2.3 million people will be food insecure during the 2016 lean season (June to August) in the country.

This figure is expected to increase over the years due to variability in rainfall and rising temperatures. These climate risk trends can be visualized by combining the observed 1960–2009 changes with predicted 2010–2039 changes, based on persistence of the observed trends (fig. 1, top panels). Rainfall decreases range from -150 to -50 mm across much of the country, while the western and eastern regions such as Thies, Diourbel, Kaolack and Tambacounda remain substantially below the 1960–1989 average. Smoothed time series (fig. 1, lower panel, 10-year running means) of 1900–2009 rainfall, extracted for these crop growing regions in Senegal, show that rainfall recovered since the mid-1980s but has not increased over the past decade, and 2000–2009 rainfall remains substantially (15%) below the 1920–1969 mean.<sup>27</sup>

Additionally, since 1975, temperatures have increased by almost 0.9° Celsius (°C) across much of Senegal. This transition to an even warmer climate could reduce crop harvests and pasture availability, amplifying the impact of droughts. Time series of air temperature data (fig. 1, lower panel) show that the magnitude of recent (post-1975) warming is large and unprecedented within the past 110 years. Given that the standard deviation of annual air temperatures in these regions is low (0.4°C), an increase in warming of 0.7°C from 1975 to 2009 represent a very large (+1.2 standard deviations) change from the climatic norm.<sup>27</sup> Such warming, in regions with very high average air temperatures, can intensify the magnitude and frequency of droughts.

These factors are compounded by the fact that population growth has not been matched by agricultural development. Analysis of crop statistics from the Food and Agriculture Organization of the United Nations suggests that increases in crop yields have not kept pace with the population growth rate of 2.5%. Between the 1960s and 2000s, the amount of farmland per person declined by 300% (from ~0.3 hectares per person to ~0.1 hectares per person), while yields have only increased by ~70%. Projections for 2025 based on these trends suggest that Senegal will produce 30% less cereal crops per person, thus, giving rise to unfavourable conditions for national food security.<sup>51</sup>

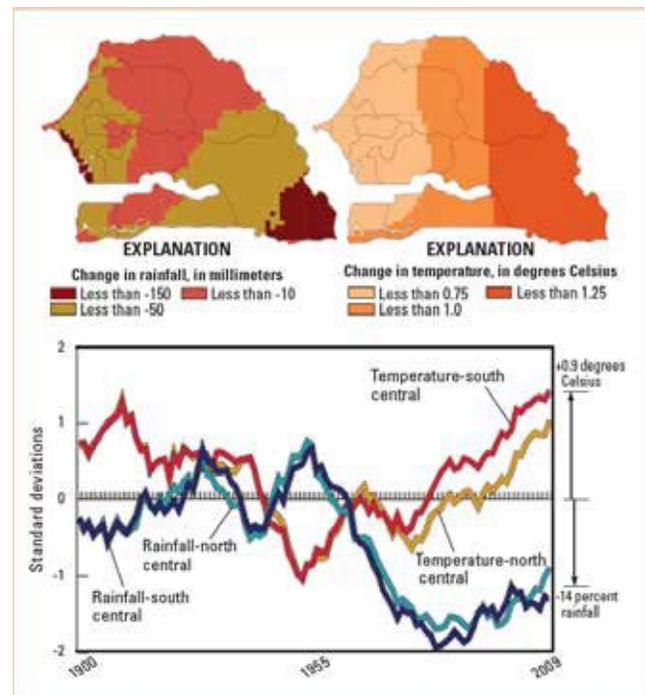


Figure 2: Observed and projected change in June-September rainfall and temperature for 1960-2039 (top), together with smoothed rainfall and air temperature time series for June-September (bottom). Mean rainfall and temperature are based on the 1920-1969 time period.<sup>27</sup>

In addition to erratic rainfall and rising temperatures, other factors such as degradation of natural resources due to overexploitation of land, lack of infrastructure, and lack of extension services available to farmers, contribute to low agricultural productivity among smallholders. Senegalese soils have been cultivated for decades using inappropriate mineral and organic fertilizers. As a consequence, fertility has worsened over time, soil mineralization is commonplace, and in many regions of the country, soils have lost valuable organic matter. If current warming trends continue, the performance of agriculture in Senegal will be further eroded as higher temperatures (combined with the expected

<sup>49</sup> Climate risk and food security in Senegal: Analysis of climate impacts on food security and livelihoods (2014) available at: <http://documents.wfp.org/stellent/groups/public/documents/newsroom/wfp269381.pdf>

<sup>50</sup> WFP Senegal Country Brief available at: <http://documents.wfp.org/stellent/groups/public/documents/ep/wfp273885.pdf>

<sup>51</sup> USGS and FEWS NET. 2012. "A Climate Trend Analysis of Senegal." Famine Early Warning Systems Network—Informing Climate Change Adaptation Series.

decrease in rainfall) will aggravate the country's water deficit. This will adversely affect both cultivated and natural vegetation growth and biomass production, which will lead to greater vulnerability and degradation.<sup>52</sup>

To address these risks, WFP has identified areas of intervention in Tambacounda, Kolda and Kaffrine in Senegal by overlaying areas that are particularly vulnerable to recurrent climatic shocks with special focus on rainfall (rainfall deficit, dry spells, late starting and early halt of rainfall), with those highly food insecure. Participant targeting is conducted at the community level and includes households who are vulnerable but not labor constrained, so that they can engage in asset building activities. Gender balance is ensured in participants' targeting.

Climate risk reduction through land rehabilitation has proven to be a cost-effective solution to manage risks deriving from increasing climate variability. If integrated with other risk management tools such as micro-insurance, climate services and financial services, this innovative approach can greatly increase the resilience of the most vulnerable farmers in the face of growing climate risks and support adaptation by protecting and improving people's livelihoods.

Senegal has proposed a number of mitigation and adaptation measures under the UNFCCC Intended Nationally Determined Contribution (INDC)<sup>53</sup> that will be implemented both through national resources and with the support of the international community. An estimated 1.6 billion USD (including 400 million USD from national resources and 1.2 billion USD from external financing) are required to implement adaptation measures in Senegal's agricultural sector. The proposed project's objectives in terms of climate change adaptation activities respond to the priorities for climate change adaptation in the agricultural sector highlighted by the INDC, namely:

- Promotion of Sustainable Management of Land Technology (GDT);
- Improvement and adaptation of plant and forest production;
- Promotion of agricultural insurance;
- Promotion of climate information;
- Scaling of the joint management of natural resources.

#### E.4.2. Financial, economic, social and institutional needs

*Describe how the project/programme addresses the following needs:*

- *Economic and social development level of the country and the affected population*
- *Absence of alternative sources of financing (e.g. fiscal or balance of payment gap that prevents from addressing the needs of the country; and lack of depth and history in the local capital market)*
- *Need for strengthening institutions and implementation capacity.*

#### ***Economic and social development level of the country and the affected population***

Progress towards poverty reduction in Senegal has been mixed in the first decade of the 21st century. Between 2001 and 2005 the national poverty rate fell by 6.9 percentage points (from 55.2 to 48.3%) but stalled between 2005 and 2011. Poverty remains high, affecting 46.7% of the population. The country is ranked 170th out of 188 on the 2015 Human Development Index and 113 out of 188 in the gender inequality index. Acute malnutrition remains a problem, mostly in the North and East areas (where WFP operates), where global acute malnutrition rates exceed 15%. The completion rate of primary education stands at 66.7%; well below the target value of 90%.

WFP's action focuses on food security and poverty alleviation by providing food insecure households in the identified regions with its comprehensive risk management package. As mentioned already, the *project* aims at addressing both their short term needs (by providing households with food assistance during the lean season and weather index insurance to protect them from the effects of climate shocks) and medium-long term needs through the improvements in agricultural production (through the rehabilitation of their land, the climate adaption assets, the provision of climate services and training) and the support provided through financial services to initiate new IGAs.

<sup>52</sup> World Bank Group - Global Facility for Disaster Reduction and Recovery. 2011. "Climate Risk and Adaptation Country Profile - Senegal."

<sup>53</sup> <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx>

### ***Needs for strengthening institutions and implementation capacity***

Local capacity on climate change adaptation and disaster risk reduction (DRR) needs to be strengthened, with a particular focus at the following sectors:

- **Agricultural insurance and weather index insurance:** WFP is already working with CNAAS and PG and other national organizations (see next section for partners description) to strengthen their capacity on index insurance design and product development and delivery.
- **Climate change adaptation:** WFP started a collaboration with the FAO-led GEF project on “Integration of climate resilience in agro-pastoral production for food security in vulnerable rural areas through the farmers’ field-school approach“. WFP will support the scaling-up of farmers’ field-schools on climate change adaptation, will capitalize on and disseminate the emerging good practices on climate change adaptation through the risk reduction component.
- **Government leadership:** Together with FAO and the MOE, WFP will participate in the debate to strengthen the National and Regional Committees on Climate change (COMNACC and COMRACC) established to create a platform for cooperation on climate change. The COMNACC is National Committee on Climate Change (COMNACC) responsible for coordinating, consulting, training and monitoring of international and national activities on climate change. Furthermore, the *project* will introduce training on adaptation for local collectives and at village level.
- **DRR - Design, planning and implementation of asset creation and resilience building programs (3-PA):** the proposed *project* will build the capacity of two key Ministries (Agriculture and Environment) to improve their capacities to identify, plan and implement concrete climate change adaptation and risk reduction activities at the community level.
- **Rural financial services:** WFP, through its partner OA, will build the capacity of community development workers (ASCOM) on the Savings for Change (SfC) methodology to replicate its self-insurance mechanism against idiosyncratic shocks and as a mean to manage households’ incomes and invest in adaptation measures.

## **E.5. Country Ownership**

Beneficiary country (ies) ownership of, and capacity to implement, a funded project or programme

E.5.1. Existence of a national climate strategy and coherence with existing plans and policies, including NAMAs, NAPAs and NAPs

*Please describe how the project/programme contributes to country's identified priorities for low-emission and climate-resilient development, and the degree to which the activity is supported by a country's enabling policy and institutional framework, or includes policy or institutional changes.*

The consolidation of **national ownership** is a major objective of this *project*, and includes:

- Capacity building:** The capacities of local authorities on leadership, budget and project management, transparency and governance as well as climate change adaption and food security will be strengthened to gradually transfer the initiative to the GoS at national and local level, also through the collaboration with the PNDL. From a technical capacity perspective, **technical knowledge about the design and implementation of weather index insurance** will be transferred to key public partners such as the Senegal National Agriculture Insurance Company (CNAAS). Building the capacity of CNAAS has been a critical objective for WFP. Attached please find the content of the training provided by R4's partner IRI to CNAAS to transfer the capacity of index design and marketing (Annex 1).
- Alignment and integration of programs:** Both WFP and its partner in R4, Oxfam America, signed Memoranda of Understanding (MoUs) with the *Délégation Générale à la Protection Sociale et à la Solidarité Nationale* (DGPSN)

aimed at making the Government safety net (*Bourse*) climate inclusive through tools such as weather index insurance and climate services. In the framework of these MoUs, the *project* will pursue the gradual transfer of some climate risk management tool to the GoS and local authorities as part of the national safety net. This is going to concern specifically the climate adaptation and DRR interventions, supporting government's institutions at the national and local level through capacity building and transfer of competencies, including climate change governance structures at national and local levels (COMNACC and COMRECC).

**The proposed *project* aligns with the priorities of the GoS and several stakeholders active on the ground**, in particular with the National Strategy on Food Security and Resilience (SNSAR), 2015-2035 and the programs financed by IFAD, GAFSP (World Bank), Islamic Development Bank and African Development Bank. These programs share the objective of strengthening the resilience of rural communities and their food security.

The *project* is also aligned with national priorities for climate change adaptation (see: Senegal's National Adaptation Programme of Action, NAPA 2006), which identified three priority areas for climate change adaptation: agriculture, water management and coastal prevention. Under agriculture, soil restoration is a crucial focus area: the assets built through the initiative focus on soil defence and restoration through low-capital technologies such as stone and earth bunds and bund frames, reinforced by vetiver plantation to prevent silting and increase reforestation. The National Adaptation Plan is currently under preparation, and as mentioned, the proposed *project*, built on the R4 approach, has been identified, through its different interventions and partnerships, as one of the project/programs that are to be selected in the agriculture sector by the NAP process to respond to the challenges in adaptation to climate change as it allows to reduce the impact of climate shocks, build climate-resilient communities and improve their food security

Agriculture micro-insurance and provision of climate services, successfully extended to smallholder farmers by WFP, will also be expanded as risk management and climate adaptation tools. The promotion of agricultural insurance and climate information are in line with the sectoral objectives of climate change adaptation in Senegal as outlined in the Intended Nationally Determined Contribution (INDC), by the Ministry of Environment's in September 2015<sup>54</sup>.

During the *project* design, Senegalese institutions (besides the SE/CNSA) have been closely consulted. In particular a working group between the WFP /Oxfam team and the DGPSN has been established to meet on a monthly basis starting in October 2016 in order to operationalize the way in which the *project's* components will be integrated in the adaptive social protection project through its operation manual.

In 2017, the *project* is supposed to target the same beneficiaries of the *Bourse* programme of the DGPSN and it is foreseen that once the resilience model is fully integrated in the social protection system, WFP proposed *project* will become part of the government interventions.

The proposed project contributes to the Plan Sénégal Emergent 2014-2035 (PSE) and is in synergy with the UNDAF 2017-2021 as follows:

WFP is working with the GoS to reach Sustainable Development Goals (SDG) 2 and 17. The PSE represents the framework for the attainment of the 17 SDGs. The PSE has three main strategic pillars for the inclusive economic and social development of Senegal:

- Pillar 1: « Economic structural transformation and growth » has as objective the creation of wealth and eradication of poverty in all its forms and addresses SDGs 1,2,7,8 and 9);
- Pillar 2: «Human capital, social protection and sustainable development » aims to provide and improve basic social services. It addresses 9 SDGs (SDG 3, 4, 5, 6, 11, 12, 13, 14, 15);
- Pillar 3: « Governance, Institutions, Peace and Security » aims at improving good governance, promotion of peace and security, and African integration. It addresses SDGs 10, 16 and 17).

<sup>54</sup> Ministère de l'Environnement et du Développement Durable, CONTRIBUTION PREVUE DETERMINEE AU NIVEAU NATIONAL (CPDN), Septembre 2015, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Senegal/1/CPDN%20-%20S%C3%A9n%C3%A9gal.pdf>

WFP's activities are linked to two out of three strategic pillars: structural transformation of the economy and growth (pillar 1) and human development, social protection, and sustainable development (pillar 2). WFP activities are also in line with the United Nations Development Assistance Framework (UNDAF 2012-2018), in particular with UNDAF objectives i) create opportunities for economic development in rural areas; and ii) ensure access to basic social services. In particular the R4 Initiative has strongly contributed to UNDAF Pillar 2: Improving people's equitable access to basic social rights and services, social protection and sustainable development. This pillar contributes to the strategic pillar 2 of the PSE: Human capital, social protection and sustainable development. Under this pillar, the contribution of the Initiative is noted under Impact 7: By 2018, climate change adaptation and mitigation initiatives are strengthened through the following outputs:

Output 7.1: Planning instruments integrating adaptation and mitigation to climate change are developed and adapted at the local level;

Output 7.2: Pilot vulnerable sites are protected from the effects of climate change;

Output 7.3: National and / or local early warning systems on disaster risk management are operational.

Key activities mentioned in 2016 UNDAF included:

- the construction of salt-land reclamation works, the development of valleys and market gardening and rice-growing areas;
- strengthening the capacities of local elected representatives and other actors on climate change;
- the implementation of initiatives for the sustainable management of the environment;
- the establishment of a disaster risk management framework: meteorological equipment, database.

#### E.5.2. Capacity of accredited entities and executing entities to deliver

*Please describe experience and track record of the accredited entity and executing entities with respect to the activities that they are expected to undertake in the proposed project/programme.*

WFP has been successfully implementing the R4 initiative in partnership with Oxfam America for the past four years in Senegal. During this time the initiative has expanded from 500 household in the rural community of Koussanar to over 12,000 in three different regions. As previously mentioned, WFP has been present in Senegal since the 1960s. Besides implementing R4, WFP provides **food and nutrition assistance in all 14 regions of the country**, supporting the Government of Senegal in achieving Sustainable Development Goal 2 "End hunger, achieve food security and improved nutrition and promote sustainable agriculture". As of 31 March, **in 2016 WFP assisted 134,600 individuals** with a budget of 38 million USD.

The SE/CNSA assists the prime minister in defining the national strategies and policies for food security and resilience and, in the context of the Early Warning System, collects, analyses and disseminates information on food security and nutrition to better prevent and manage crisis. Given its mandate on food security and resilience, the SE/CNSA has a strategic role to play as co-executing agency of the project and, as a *super partes* organization, has a critical role in coordinating and drawing together the different ministries and national entities attached to project implementation (Annex 30).

#### E.5.3. Engagement with NDAs, civil society organizations and other relevant stakeholders

*Please provide a full description of the steps taken to ensure country ownership, including the engagement with NDAs on the funding proposal and the no-objection letter.*

WFP has been implementing the R4 pilot in Senegal since 2013 working in coordination with all local, regional and global efforts. WFP is the coordinator of the CDPAI (Committee for the Development and the Promotion of Weather Index Insurance or *Comité pour le Développement et la Promotion de l'Assurance Indicielle*) which includes all local stakeholders working on WII in the country. Stakeholder engagement has been ongoing since the beginning of the *project* and involves:

- **Local communities:** communities have been engaged since the inception of the program through the above-mentioned community-based participatory planning exercises (CBPP), a tool used by WFP with government and civil society partners to design and plan resilience and other interventions together with members of the communities. The CBPP is a two-to five day field exercise to develop a three-year program plan. During the CBPP, the most vulnerable, and women in particular, are empowered through their equal representation in the identification of main constraints, decision making and the selection of activities.  
  
The engagement of local communities continues during the project life cycle through: i) implementation of projects activities: apart from their active participation to the realization of project activities, local communities are engaged in village assets' management and monitoring committees which meet on a periodic basis in cooperation with implementing partners and WFP's sub-offices staff; ii) local collectives and communities receive training in program monitoring as well as leadership, management, governance and impact of climate change; iii) local authorities are engaged in project activities through quarterly and biannual meetings at the commune and regional levels respectively.
- **GoS:** WFP and the SE/CNSA have been collaborating over the years on food security and vulnerability analysis. WFP is currently supporting SE/CNSA to put in place a robust food security early warning monitoring system for emergency preparedness and response. With SE/CNSA as the government focal point for coordination of resilience activities in Senegal, WFP provided support for the elaboration of the food security and resilience strategy. WFP is also building the capacities of the SE/CNSA in integrated context analysis and other planning tools to help the SECNSA to effectively, coordinate and monitor the country resilience priority activities. In addition, WFP Senegal has signed a MoU with the DGPSN outlining the shared objectives in terms of food security and rural development. Climate risk management tools developed during the R4 pilot are a crucial part of the safety net envisioned by the GoS.
- **Local GoS representatives:** WFP and its partners work with local representatives of the Ministry of Agriculture who are involved in the risk reduction component of the program. They are engaged in project activities through quarterly and biannual meetings at the commune and regional levels respectively.
- **Commercial insurance sector:** CNAAS, the only agricultural insurance company in the country is one of WFP's main partners. Though a private entity is not directly involved in the local insurance process, re-insurance services are mainly provided by private sector players. For example, for the 2016/17 season Swiss Re has been appointed as the re-insurer for the R4 initiative's insurance scheme in Senegal. Private sector will also be engaged in the near future primarily to act as distribution channel for insurance: the plan is in fact to switch from distributing insurance and payouts through local partners to using mobile platforms.
- **Farmers organizations:** Through WFP partner's PADAER, the *project* distributes insurance to farmers who are part of the farmers organizations supported by PADAER
- **Other UN agencies:** WFP and IFAD are already partners in R4, as well as FAO through GEF-funded project "Mainstreaming ecosystem-based approaches to climate-resilient rural livelihoods in vulnerable rural areas through the Farmer Field School methodology".
- **International NGOs:** R4 is a strategic partnership between WFP and the international NGO Oxfam America.
- **GIIF:** WFP already partners with GIIF specifically on coordination of WII interventions (also through the CDPAI) and capacity building of government and other partners.
- **UNFCCC Loss and Damage:** WFP has been actively engaging with the L&D committee over the years, and in fact R4 is seen as a leading example of how climate risk management approaches that are integrated into safety nets can address loss and damage and protect the most vulnerable. The Senegal Gov. Representative on the L&D Committee has been a supporter of R4 in multiple international fora.

**Engagement with the NDA:** In March 2016, a preliminary meeting was conducted with the GCF National Designated Authority (NDA) in Senegal, the Ministry of Environment, to present the proposed *project* and explore potential areas of collaboration. As a follow up, in April 2016 the MOE, MOA, FAO, IFAD and other key stakeholders were invited to a joint discussion on synergies and collaboration. Discussions with the NDA continued in June and early September 2016 when WFP presented the GCF concept note to the inter-ministerial steering and technical committees, the institutional framework put in place by the NDA to examine the GFC concept note related to Senegal. In September the NDA has provided its endorsement after completion of an internal consultation process (No-objection letter attached as Annex 00). The NDA has been regularly consulted during the preparation and revisions of the funding proposal in response to the GFC SEC's comments and has advised WFP regarding the national executing agency.

Bilateral discussions to delineate each partner's roles and responsibilities have continued with:

- PNDL (National Programme on Local Development): upon suggestion from the MOE, discussions have started in April 2016 to involve the PNDL and through it, the regional agencies of development and local collectives in the planning, implementation and management of the second phase of R4. A MoU between WFP, Oxfam and PNDL was signed in January 2017.
- FAO: FAO and WFP have already set up two farmer field schools to build capacities on climate change adaptation in two R4 villages in Koussanar in 2016, with the intention to expand the collaboration during 2017-2020.
- IFAD: a MoU has been signed in August 2016 to formalize the current collaboration between R4 and PADAER in Tambacounda and Kolda on FFA and insurance. Discussions are currently ongoing with IFAD for WFP to contribute to the design and implementing of the insurance component of the second phase of the PADAER.

During the review of the GCF pipeline projects in September 2016, the NDA found no duplications between the present project and other approved and pipelined projects. Moreover, from the consultations WFP had with the NDA since the development of the concept note in April 2016, it has emerged that the project fits with the national priorities on agriculture and climate change, as also highlighted in the Intended Nationally Determined Contribution (INDC). The NDA has recognized that the project responds to the adaptation objectives identified in the INDC in regards to Promotion of Sustainable Land Management (SLM) technologies; Improvement and adaptation of plant and forest products; Promotion of agricultural insurance; Promotion of climate information; Scaling up collaborative management of natural resources. As indicated in the FP, it is because of this fit that the NDA has invited WFP to be involved in the PAS-PNA project under which GiZ supports the preparation of the national adaptation plan.

The project rests open to collaborate and build synergies with future projects that could have similar targets population and areas.

**Stakeholder engagement process:** All partners have been selected through an initial stakeholder engagement process done at the beginning of the *project* by mapping institutional capacity, reliability, financial stability and presence on the ground. R4 was launched in 2013 just as the Senegalese Government was starting to formulate a country-wide rural resilience strategy, driven by the Prime Minister office (See Annex 7). Since then, and particularly during the design phase, WFP has worked with the Prime Ministers' Special Advisor on Food Security to design and implement R4 in alignment with the GoS action. Since the end of 2014, the Advisor has been in charge of the National Strategy on Resilience in Senegal, to which WFP and Oxfam have provided key practical insights based on the experience with the R4 Initiative.

At the community level, CBPP exercises were instrumental to identify community needs, prioritize interventions and engage communities through participatory planning exercises.

Ministry of Environment, FAO, local collectives through the PNDL and Ministry of Agriculture have been engaged in the development of this concept note.

Please also specify the multi-stakeholder engagement plan and the consultations that were conducted when this proposal was developed.

**Key partners in the implementation of the project will include** (Most of the partners - and all of the ones with whom there's some financial transaction are sought through competitive procurement processes):

Cooperating/implementing partners and their roles:

**Component 1 - Risk reduction component:**

- BAMTAARE: A public limited company with board of directors, subsidiary of SODEFITEX, with offices in Tambacounda, in charge of lowland rehabilitation and agricultural production activities under the risk reduction component in Tambacounda.
- Institut National de Pédologie (INP) - National Institute for Pedology: Technical agency affiliated with the Ministry of Agriculture, in charge of soil conservation and restoration projects, including building stone bunds and check dams, and composting, working with Bamtaare in Tambacounda as implementing partner for the risk reduction component.
- PASA: Government programme funded by the World Bank's GAFP, and implementing partner under the risk reduction component in charge of lowland rehabilitation and agricultural production activities in Kaffrine.
- P2RS: multinational program to build resilience to food and nutrition insecurity in the Sahel - Senegal Component (P2RS SENEGAL): funded by the African Development Bank, in charge of lowland rehabilitation and agricultural production activities under the risk reduction component in Kolda.
- Caritas Kolda: organization carrying out DRR projects and leading voucher distribution and participants' registration in Kolda for R4.
- FAO: The Food and Agriculture Organization of the United Nations is an agency of the United Nations that leads international efforts to defeat hunger. In Senegal, R4 is building a partnership with FAO on climate change adaptation (CCA) to expand the farmers' field school approach linking explicit CCA interventions to the R4 sites.
- ISRA - *Institut Senegalais de Recherches Agricoles*: the Senegalese institute for agricultural research, its mandate includes the design and implementation of research programs on plant, forestry, animal and fisheries production. It will accompany the proposed *project* in **Outputs 1 and 2** and will be also consulted regarding the agroforestry activities conducted by women's groups.

**Component 2 - Risk Transfer component:**

- The International Research Institute for Climate and Society (IRI): Member of Columbia University's Earth Institute offering research and technical expertise in climate data and weather index design for rural farmers.
- *Compagnie Nationale d'Assurance Agricole du Senegal* (CNAAS): National Agricultural Insurance Company of Senegal. Senegal's only agricultural insurance company (public-private company founded in 2008 by the government). It is the insurance provider for the product(s) offered under the risk transfer component and its main implementing partner.
- PlaNet Guarantee: Insurance broker specializing in micro-insurance for development and poverty reduction. It supports CNAAS commercialize R4's insurance product(s) by conducting awareness-raising and marketing activities among clients.
- *Agence Nationale pour l'Aviation Civile et de la Météorologie* (ANACIM): National Meteorological and Civil Aviation Agency. ANACIM is the civil aviation agency of Senegal, responsible for collecting meteorological data and providing forecasts and models for climate change. ANACIM helps with the design of insurance product(s) by providing historical and current climate data, and installing and maintaining weather stations. It will be a partner in the implementation of the climate services activities (this latter under output 1)..

**Component 3 Risk - reserves and prudent risk taking components:**

- Oxfam America (OA): OA will continue to manage the risk reserves and prudent risk taking components of the initiative through their work on Savings for Change and access to credit.
- La Lumière: A grass-root Senegalese NGO which provides financial services to low-income rural households. It is the current implementation partner for the risk reserves component. It is also in charge of the overall R4 participants' awareness and mobilization.
- *Union des Institutions de Mutualiste d'Épargne et de Crédit* (U-IMCEC): a microfinance institution with which we are currently implementing the risk taking component particularly the *warrantage* and other financial products tailored to

the needs of rural women. It is a growing institution seeking to expand its network in rural areas especially.

**Component 4 National Ownership and Capacity building:**

- The Participatory Local Development Program Project for Senegal (PNDL): PNDL is a community-driven development project managed at the community level. R4 will work with the PNDL to ensure the local ownership during the new phase.

Other Government partners

- The *Agence Regionale de Developpement (ARD)*: the Regional Development Agency has the status of local public institution of administrative nature. It provides the framework to ensure consistency in the regional development actions, The ARD technically coordinates the implementation of the PNDL (mentioned above) and has overall responsibility supporting the coordination and harmonization of interventions and initiatives of local communities for local development.
- *The Délégation Générale à la Protection Sociale et à la Solidarité Nationale (DGPSN)* manages the Government safety net programs (*Programme National de Bourses de Sécurité Familiale*) since 2013 with the which targets poor families (it is conditional on income), ensuring enrollment and school attendance of children to fight social injustice and inequality for better distribution of national wealth. WFP will work with the DGPSN to make the Government safety net climate proof by introducing climate risk management tools such as weather index insurance and climate sensitive safety nets such as FFA to the DGPSN's social protection programs.
- The Ministry of Agriculture (*MAER*): WFP has started discussions with the DRDR and the SDDR, the decentralized services) to participate into the quality control of the assets built under the component 1, according to their expertise.

Complementary partners

- The International Fund for Agricultural Development (IFAD): A specialized agency of the UN focused on rural poverty reduction, hunger and malnutrition, with whom R4 has been partnering since 2015 to support the integration of index insurance in the package of agricultural inputs offered by PADAER to farmers' organizations.
- Naatal Mbaye: a global Feed the Future initiative funded by USAID. The four year project is the successor to the Economic Growth Project (USAID/PCE), which worked since 2009 to improve agricultural performance by small producers. R4 will renew the synergy with Naatal Mbaye in the region of Kolda on insurance.

**E.6. Efficiency and Effectiveness**

Economic and, if appropriate, financial soundness of the project/programme

**E.6.1. Cost-effectiveness and efficiency**

*Describe how the financial structure is adequate and reasonable in order to achieve the proposal's objectives, including addressing existing bottlenecks and/or barriers; providing the least concessionality; and without crowding out private and other public investment.*

A grant-financing instrument is used for this *project* with WFP seeking maximum concessionality to undertake the proposed adaptation investments. Without grant resources, the proposed interventions would not be financially sustainable in the long term:

- First, as a Least Developed Country and a Low Income Economy, there is limited capacity in the country for concessional debt financing for its adaptation investments.
- Second, the *project* targets highly vulnerable, food insecure rural populations, more than half of whom are women, living in disaster prone and food insecure districts dependent on climate sensitive and marginal livelihoods. This

segment of the population is significantly cash constrained, and therefore not yet interesting for more commercial initiatives (such as commercial insurance)<sup>55</sup>.

- Finally, the public good nature of the solution to address the current deficiencies in integrated risk management approaches to climate change entails zero cost recovery from the proposed measures to save lives and livelihoods of vulnerable populations in the country.

The *project* includes the set up and maintenance of a weather index insurance scheme as well as the provision of climate services and climate disaster risk reduction (DRR) assets. As such it is very demanding in terms of human resources, technical skills and supporting infrastructure. The public goods nature of these investments means that public financing is required to overcome several barriers that constrain Senegal's ability to scale up the use of climate risk management.

These barriers include limited availability of financial, technical and human capacity for index design, improvement and pricing; lack of a basis risk strategy; limited distribution strategy to allow insurance and financial services to reach the desired volume of participants; lack of access to financial markets and awareness of use of micro-insurance, microcredit and climate information by vulnerable populations, limited awareness of climate change impacts, limited accessibility to early warnings and low capacity at community level to prepare for and respond to climate-related disasters.

Current financing gaps in domestic financing are hampering Senegal's ability to implement adaptation measures and overcome these barriers. Without GCF resources, Senegal will continue to experience loss of lives and assets due to climate-related disasters. The grant resources will help remove barriers to support investments that due to the public good nature of the *project*, do not entail revenue generation and therefore prevent private investments. In addition to this, the *project* will build on existing arrangements and networks through other climate risk management initiatives in the country which will allow implementation and institutional capacity building to be cost-effective. Strengthening of local public and private capacity and climate/weather information systems along with WFP's contribution to creating rural financial markets, may incentivize future investments.

In terms of financial viability, the objective of the *project* is primarily to improve the effectiveness and efficiency of the Government's public sector expenditure, and improving the quality and financial sustainability of its current safety net. At the same time we are gradually reducing the costs of the program and hence the need of grant financing in the future by:

- Developing insurance products that are more cost effective
- Using more cost-effective insurance distribution mechanisms
- Testing conditional transfer mechanisms for insurance (IFA) to create a market for low income farmers
- Bundling insurance with a range of complementary services (including climate services)
- Increasing the numbers of clients to reduce unit costs.

*Please describe the efficiency and effectiveness, taking into account the total project financing and the mitigation/adaptation impact that the project/programme aims to achieve, and explain how this compares to an appropriate benchmark. For mitigation, please make a reference to [E.6.5 \(core indicator for the cost per tCO2eq\)](#).*

One of the objectives of the proposed *project* is to gradually reduce the need for emergency assistance triggered by climate shocks.

<sup>55</sup> It should be noted that the sale of insurance products does not generate income: WFP pays premiums on behalf of participants (who participate to the Insurance for Assets scheme + a small contribution in cash in case they are returning participants) to CNAAS (a parastatal company) which in turn provides a 50% subsidy for each premium. There is no risk of crowding out public and private financing, since CNAAS is currently the only entity (private or public) allowed to provide crop insurance in the country – hence the access to the crop insurance market and available alternatives is rather limited.

According to recent studies<sup>56</sup>, early response and resilience building are far more cost-effective than late humanitarian response. Modelling of household level data for Wajir grasslands in Kenya suggests that early response could save between USD 107 million and USD 167 million for a population of 367k in a single event alone. In southern Ethiopia, with a beneficiary population of 2.8 million, household level data suggest that early response could save between USD 662 million and USD 1.3 billion in a single event.

There is a great deal of uncertainty around the cost of building resilience. Nonetheless, while the cost of resilience is comparatively high, the wider benefits of building resilience can significantly outweigh the costs, leading to the conclusion that investment in resilience is the best value for money. According to this same study, the cost of resilience would have to approach USD 200 per capita per year for 10 years before the costs begin to approach the cost of humanitarian response.

### **Cost effectiveness of component 1 - Risk Reduction:**

#### Output 1.1 Disaster Risk Reduction Activities:

A study on the Cost Benefit Analysis (CBA) of Disaster Risk Reduction activities<sup>57</sup> evaluated a programme operational for four years across 53 villages in Malawi and targeting 5,000 farmers with a diverse range of disaster risk and food security interventions, including crop diversification, soil and water conservation (SWC) practices, and a goat dissemination programme. This analysis documented gains of USD 24 for every USD 1 spent, as a result of increased crop production, increased livestock production, as well as avoided losses to education and labour income in severe droughts.

The study was based on increased crop and livestock production data due to some very simple and short term DRR activities that could reasonably be assumed to be part of component 1 of the proposed project. Due to differences in the context of the two projects, outcomes of the proposed project will be carefully documented to validate this cost efficiency.

According to the CBA:

- The Tearfund programme cost USD 95 per person to implement.
- The agricultural interventions resulted in crop yields increasing by 100% in normal years, equivalent to a gain of USD 144 per farmer per year. This increase was even larger in erratic rainfall years, where soil and water conservation and other practices allowed farmers to maintain their yields, resulting in a near tripling of production, equivalent to a gain of USD 320 per farmer per year.
- Livestock pass-on programming resulted in an increase of 4 goats per household per year, with a value of USD 171 per household per year.

These findings are echoed in other studies. For example, an International Food Policy Research Institute (IFPRI) study on agricultural losses due to drought and flood also looked at the potential for using drought resistant seed varieties in anticipation of an extreme event. The study found that drought resistant maize varieties produce yields on average 2 times that of traditional maize varieties, even in drought years.<sup>58</sup>

#### Output 1.2 Climate Services:

A project on dissemination of downscaled climate prediction products to farmers for adaptation to climate variability and change in Kenya under the Global Framework for Climate Services successfully demonstrated that community-based climate services can undoubtedly improve agricultural productivity if properly utilized in planning, decision-making and management of all farming operations. Some of the major benefits recorded include average yield increment of 3-4 times

<sup>56</sup> Cabot et al, The economics of early response and disaster resilience, June 2012.

<sup>57</sup> Cabot Venton, C and J Siedenburg (2010). "Investing in Communities: The benefits and costs of building resilience for food security in Malawi." Tearfund, UK.

<sup>58</sup> Pauw, K., J. Thurlow and D. van Seventer (2010). "Droughts and Floods in Malawi: Assessing the economywide effects." International Food Policy Research Institute.

(sorghum and maize) compared to baselines, higher multiplier effect (over 1:120 for sorghum), food and nutrient diversification through various crops (maize, sorghum, beans, green grams, groundnuts, orange-fleshed sweet potatoes and sweet cassava), and increased awareness amongst farmers to enable them to plan and make choices based on the anticipated weather.<sup>59</sup>

**Cost effectiveness of component 2 - Risk Transfer:**

When it comes specifically to the effectiveness and efficiency of insurance, another key aspect is the choice of weather-index insurance as risk transfer mechanism in R4, as opposed to conventional crop insurance. The latter relies on direct measurement of the loss or damage suffered by the farmer. However, field loss assessment is normally costly or not feasible, particularly where there are a large number of small-scale farmers or where insurance markets are undeveloped. The advantages of weather-index insurance, compared to conventional crop insurance, are well documented. From a cost-efficiency and effectiveness point of view, the key ones are:

- (i) Low operational and transaction costs: weather-index insurance requires limited individual underwriting (client assessment). Since the insurance payouts are triggered by pre-defined parameters, insurance can be distributed, and claims can be settled, at relatively lower cost, because there is no need for in-field assessment of losses.
- (ii) Rapid payout: Measurement of weather station data, with no field loss adjustment, allows rapid payouts.

**Cost effectiveness of component 3 - Risk Reserves and Prudent Risk Taking:**

A study conducted in Mali by Innovations for Poverty Action and the University of Arizona examined the impacts of Saving for Change program using a randomized control trial with 500 villages over a three year period between 2009 and 2012. The study concluded that the program led to positive and statistically significant economic effects when compared to control villages including increases in savings, loans and household livestock holdings, as well as improvements in food security and malaria knowledge. The implementation cost per household was estimated to be USD 16.72 taking into account only costs incurred by the NGOs that were subcontracted and not the costs for management by the implementing organizations. A cost benefit analysis of the program resulted in a return on investment of 243% (using assets to measure program benefits) and 107% (using consumption-based measures for benefits). This cost-benefit analysis highlighted clearly that the modest impacts stemming from savings for change were achieved through a very inexpensive program.<sup>60</sup>

**E.6.2. Co-financing, leveraging and mobilized long-term investments (mitigation only)**

*Please provide the co-financing ratio (total amount of co-financing divided by the Fund's investment in the project/programme) and/or the potential to catalyze indirect/long-term low emission investment.*

NA  
Please make a reference to [E.6.5 \(core indicator for the expected volume of finance to be leveraged\)](#).

**E.6.3. Financial viability**

*Please specify the expected economic and financial rate of return with and without the Fund's support, based on the analysis conducted in [F.1](#).*

Please refer to Section B.1  
Please describe the GCF's financial exit strategy in case of private sector operations (e.g. IPOs, trade sales, etc.).

<sup>59</sup> "Dissemination of Downscaled Climate Prediction Products to Farmers for Adaptation to Climate Variability and Change." n.d. Global Framework for Climate Services. <http://www.wmo.int/gfcs/node/651>.

<sup>60</sup> "Final Impact Evaluation Of The Saving For Change Program In Mali, 2009-2012." 2013. Bureau of Applied Research in Anthropology, University of Arizona and Innovations for Poverty Action.

NA

#### E.6.4. Application of best practices

*Please explain how best available technologies and practices are considered and applied. If applicable, specify the innovations/modifications/adjustments that are made based on industry best practices.*

Best available technologies and practices are applied throughout the project.

For component 1 - Risk Reduction, as mentioned already, WFP uses its corporate 3 Pronged Approach, comprising of three key tools to assess, design, implement and evaluate assets creation interventions – ([Integrated context analysis \(ICA\)](#), [Seasonal livelihood programming \(SLP\)](#), and [Community-based Participatory Planning \(CBPP\)](#)) This approach has been developed based on the best practices developed worldwide by WFP and its partners on assets creation over the course of the last decade. The *project* will also consider and apply the best available technologies and practices on CSA and adaptation practices that will be produced by the FAO GEF project in cooperation with the Centre de Suivi Ecologique (CSE).

For component 2 - Risk Transfer, WFP also applies the best available technology and practices. Conventional crop or livestock insurance relies on direct measurement of the loss or damage suffered by the farmer. However, field loss assessment is normally costly or not feasible, particularly where there are a large number of small-scale farmers or where insurance markets are undeveloped. This is why WFP uses *weather-index insurance (WII)* for its climate risk management approach.

The essential feature of WII is that the insurance contract responds to an objective parameter (e.g. measurement of rainfall or temperature through satellite data) during an agreed time period. The parameters of the contract are set so as to correlate, as accurately as possible, with the loss of a specific crop type suffered by the policyholder. All policyholders within a defined area receive payouts based on the same contract and measurement at the same station, eliminating the need for in-field assessment.

Compared to traditional crop insurance, WII has the following advantages:

- **Transparency.** Index insurance contracts usually allow the policyholder direct access to the information on which the payouts will be calculated. Trust is strengthened by transparency.
- **No on-farm loss adjustment.** This is a primary advantage of index insurance, as on-farm loss adjustment is quite complex and costly and may not be credible in many low-income countries.
- **Lack of adverse selection.** Adverse selection occurs when potential insured parties have hidden information about their risk exposure that is not available to the insurer, who then becomes more likely to erroneously assess the risk of the insured. Traditional insurance encourages high-risk producers to insure, while risk and premium are calculated on the average producer. Index insurance requires that all insured farmers within the defined area have the same insurance payout conditions, regardless of their specific risk exposure. Hence, insurers and clients benefit from reduced adverse selection.
- **Lack of moral hazard.** Moral hazard occurs when individuals engage in hidden activities that increase their exposure to risk as a result of purchasing insurance, or attempt to influence the claims outcome. These hidden activities can leave the insurer exposed to higher levels of risk than had been anticipated when premium rates were established. With WII, there is no benefit in individual producers trying to influence claims. All producers in the defined area are treated equally.
- **Addresses correlated risks.** Index products work best where there are correlated risks. With traditional products, perils such as drought are challenging to insure.
- **Low operational and transaction costs.** Index insurance requires limited individual underwriting (client assessment). It can be distributed, and claims can be settled, at relatively lower cost. Education on the product remains important, both prior to product launch and as an ongoing process.
- **Rapid payout.** Measurement of weather station data, with no field loss adjustment, allows rapid payouts.



Other relevant indicators (e.g. estimated cost per co-benefit generated as a result of the project/programme)

*\* The information can be drawn from the project/programme appraisal document.*

## F.1. Economic and Financial Analysis

*Please provide the narrative and rationale for the detailed economic and financial analysis (including the financial model, taking into consideration the information provided in [section E.6.3](#)).*

[This has been addressed in Section B.1 but reporting here for easy reference:](#)

**Please refer to Annex 17 (Budget and financial model)**

### Narrative

Given the project's objective of public goods development, an economic cost benefit analysis was conducted to evaluate its financial viability from the perspective of the state in both the project timeframe (four years) and longer (ten year) terms. Details of the analysis are summarized below:

**Cost structure:** The cost structure for the first four years is exclusively derived from the budgeted costs of the project which include component implementation, government engagement, capacity building, personnel and equipment. Year five onwards, a steady state in the unit investment and ongoing costs is assumed with annual change by the projected inflation rate. The sources of fund for this period are assumed to be derived from both GoS' investments in their safety nets, as well as private and other international and national public agents.

**Project benefits:** In line with the theory of change (Annex 10) of the project, all benefits are assumed to occur at the beneficiary household level through the means of increased income generation and asset base creation. Risk reduction activities such as soil and water conservation contribute the most to this increase in household income through increased agricultural yield of main crops such as rice, beans, millet, groundnuts, maize and sorghum. In drought years, the weather index insurance ensures that the household income from agricultural activities is stabilized. The prudent risk taking tool enables the participants to make the necessary investments for increased agricultural yield. A secondary benefit of the project occurs through an increase in the household asset base, which is mainly in the form of livestock. Taking a very conservative approach, benefits per unit are assumed to remain constant throughout the ten year horizon, with an annual increase by the projected inflation rate. It is to be noted that the estimated benefits provide a lower bound of the total benefits, as the true value of tools such as insurance becomes tangible only during adverse climatic events, and potential multiplier effects and other positive externalities of the proposed interventions have not been considered in the model. It should also be noted that many benefits, whose dollar value is hard to identify have not been included in this analysis, but are broadly described across the proposal. These include for example the increase in confidence brought about by the decrease in risk, the increased confidence to make investments, the increased solidarity in the community, the increased importance of women's role in the household and others.

**Scale:** The increase in number of participants for the first four years is in line with the project proposal, and year five onwards a modest annual increase of fifteen percent is assumed.

**Viability:** Assuming a standard discount rate of ten percent, the project has a positive net present value across the projected ten year period. A ten year expected internal rate of return of seventeen percent is generated which is higher than the discount rate, thus, making the project economically viable. The project returns cumulative net positive benefit in the seventh year of its operation.

*Based on the above analysis, please provide economic and financial justification (both qualitative and quantitative) for the concessionality that GCF provides, with a reference to the financial structure proposed in section B.2.*

Please refer to Section B.1 and B.2

## F.2. Technical Evaluation

*Please provide an assessment from the technical perspective. If a particular technological solution has been chosen, describe why it is the most appropriate for this project/programme.*

Best available technologies and practices are applied throughout the project.

**For component 1 - Risk Reduction**, as mentioned already, WFP uses its corporate 3 Pronged Approach, comprising of three key tools to assess, design, implement and evaluate assets creation interventions – ([Integrated context analysis \(ICA\)](#), [Seasonal livelihood programming \(SLP\)](#), and [Community-based Participatory Planning \(CBPP\)](#)) This approach has been developed based on the best practices developed worldwide by WFP and its partners on assets creation over the course of the last decade.

**For component 2 - Risk Transfer**, WFP also applies the best available technology and practices. Conventional crop or livestock insurance relies on direct measurement of the loss or damage suffered by the farmer. However, field loss assessment is normally costly or not feasible, particularly where there are a large number of small-scale farmers or where insurance markets are undeveloped. This is why WFP uses *weather-index insurance (WII)* for its climate risk management approach.

The essential feature of WII is that the insurance contract responds to an objective parameter (e.g. measurement of rainfall or temperature through satellite data) during an agreed time period. The parameters of the contract are set so as to correlate, as accurately as possible, with the loss of a specific crop type suffered by the policyholder. All policyholders within a defined area receive payouts based on the same contract and measurement at the same station, eliminating the need for in-field assessment.

Compared to traditional crop insurance, WII has the following advantages:

- **Transparency.** Index insurance contracts usually allow the policyholder direct access to the information on which the payouts will be calculated. Trust is strengthened by transparency.
- **No on-farm loss adjustment.** This is a primary advantage of index insurance, as on-farm loss adjustment is quite complex and costly and may not be credible in many low-income countries.
- **Lack of adverse selection.** Adverse selection occurs when potential insured parties have hidden information about their risk exposure that is not available to the insurer, who then becomes more likely to erroneously assess the risk of the insured. Traditional insurance encourages high-risk producers to insure, while risk and premium are calculated on the average producer. Index insurance requires that all insured farmers within the defined area have the same insurance payout conditions, regardless of their specific risk exposure. Hence, insurers and clients benefit from reduced adverse selection.
- **Lack of moral hazard.** Moral hazard occurs when individuals engage in hidden activities that increase their exposure to risk as a result of purchasing insurance, or attempt to influence the claims outcome. These hidden activities can leave the insurer exposed to higher levels of risk than had been anticipated when premium rates were established. With WII, there is no benefit in individual producers trying to influence claims. All producers in the defined area are treated equally.
- **Addresses correlated risks.** Index products work best where there are correlated risks. With traditional products, perils such as drought are challenging to insure.
- **Low operational and transaction costs.** Index insurance requires limited individual underwriting (client assessment). It can be distributed, and claims can be settled, at relatively lower cost. Education on the product remains important, both prior to product launch and as an ongoing process.
- **Rapid payout.** Measurement of weather station data, with no field loss adjustment, allows rapid payouts.

For the design of the product, WFP partners with the International Research Institute at Columbia University which has a long history and strong experience in cutting-edge research in this sector. The design of the product will be gradually transferred to the CNAAS and other national actors.

**For component 3** - Risk reserves and Prudent risk taking, WFP, in collaboration with Oxfam America applies the Saving for Change model which is an improved version of the traditional *tontines* model in that e.g. it went from a written record-keeping system to an oral one to include illiterate populations, it improved the ability of the groups to replicate as a means to expand the methodology, and it added specific features to groups such as the SfC+business for more advanced groups.

### F.3. Environmental, Social Assessment, including Gender Considerations

*Describe the main outcome of the environment and social impact assessment. Specify the Environmental and Social Management Plan, and how the project/programme will avoid or mitigate negative impacts at each stage (e.g. preparation, implementation and operation), in accordance with the Fund's Environmental and Social Safeguard (ESS) standard. Also describe how the gender aspect is considered in accordance with the Fund's Gender Policy and Action Plan.*

Because of the scale of activities and their design which integrates environmental considerations and measures to avoid any environmental risk, the project is categorized as low/no risk level – category C.

In accordance with WFP's environment policy<sup>61</sup>, an Environmental Management and Monitoring (EMM) Plan for the *project* has been finalized and is attached (Annex 8). Environmental Management and Monitoring will be done according to the attached EMMP. The document will be updated to reflect recent developments in terms of geographic coverage and number of beneficiaries. The EMMP sets the framework, procedures and tools for the environmental management of R4, which includes the environmental screening of *project* activities, the monitoring of environmental mitigation measures, the overall monitoring of environmental and social parameters and the environmental evaluation. The process for monitoring environmental mitigation measures is aligned with the output monitoring system. Its aim is to: i) ensure that mitigation measures are implemented as planned; ii) ensure that mitigation measures reduce the adverse environmental impacts as expected; and iii) adapt and modify mitigation measures if their effect is different from what was expected. Cooperating Partners are responsible for reporting on the application of mitigation measures and reporting formats will need to be designed for this purpose. WFP monitors the application of the measures during their routine monitoring activities.

In terms of gender considerations, these are taken into account from design to M&E. Women are at the center of both the risk reduction and the risk reserves interventions. The risk reduction/asset creation interventions focus on the improved management of low-lying lands for rice cultivation, an activity typically performed by women in Senegal. Similarly the risk reserves component builds on the Savings for Change program (SfC), which is mainly aimed at women. As a result and as previously mentioned, in 2015, a study conducted by the Institute of Development Studies (IDS – Annex 9) found that R4 benefits women farmers by contributing to their access to productive assets, as well as by supporting women's savings groups through the SfC program.

Women claimed that they felt empowered. In addition to having increased access to land, seeds and water for irrigation and drinking, women benefit from training in numeracy, literacy and business. Having more food and water available also means that they no longer have to travel far from home to fetch water, with consequent gains in terms of time to dedicate to their children or small business. The study found a reduction in stress as women are more confident about their ability to feed their family, as well as pay school fees and other expenses through small financial gains from selling their surplus crops.

Furthermore, as stated in section E.3, the 2016 impact evaluation remarked that while formal household leadership continues to be dominated by men in both participant and non-participant households, we see evidence of increased decision-making responsibility among women in participant households. For example, women are involved in making decisions on the use of farmland in 11% of participant households compared to 6% of non-participant households. The SfC component also provides an avenue for women to save and acquire small loans to engage in income-generating activities such as rice farming, peanut farming, vegetable cultivation, and small trade.

<sup>61</sup> WFP, WFP and the Environment: Issues and Priorities. Policy paper WFP/EB.3/98/3, 1998. It should be noted that WFP's new Environmental policy being finalized and will be submitted to the Executive Board for approval at its first session in February 2017.

A gender analysis is provided in Annex 21 and a Gender Action Plan in Annex 31.

#### F.4. Financial Management and Procurement

*Describe the project/programme's financial management and procurement, including financial accounting, disbursement methods and auditing.*

The project will utilize WFP financial management and procurement systems in-line with its accreditation. All financial management and procurement, including financial accounting, disbursement methods and auditing will be specified under the Funded Activity Agreement (FAA) and will be aligned with the process and method agreed in the accreditation master agreement (AMA).

The GCF will transfer funds to WFP on the basis of a disbursement schedule (annually) as outlined in the project proposal and relevant agreements. WFP will create a Trust Fund or Grant Specific fund to receive the GCF fund at the country office level. All relevant expenditures will be charged directly to the Trust Fund or Grant Specific fund. WFP's Finance and Treasury Division at Head Quarters level certifies annual financial statements of relevant expenditures. WFP will be responsible for ensuring that project funds are spent according to the funding project proposal and the above mentioned agreements that will be entered with the GCF.

WFP shall be responsible for all project procurement of goods and/or services in accordance with WFP Regulations and Rules. WFP follows a competitive and transparent process when procuring goods and services from suppliers.

Internal reviews or audits will take place at the end of project implementation in accordance with established WFP guidelines. WFP's financial accounting, disbursement methods and auditing are compliant with UN rules and regulation as well as with the requirements of all major donor agencies worldwide.

### G.1. Risk Assessment Summary

Please provide a summary of main risk factors. Detailed description of risk factors and mitigation measures can be elaborated in G.2.

As elaborated below, the main risk factors include:

- Operational risks, such as the difficulty in identifying and working effectively with a number of different partners.
- Technical risks, such as the difficulty in incentivizing private sector actors to work in high risk zones (especially financial services companies).
- Financial risks, such as the long-term sustainability of certain components of the project which will not be profitable and should thus be taken up by Government as part of their safety nets.
- Social risk, such as the risk to exclude certain segment of the population e.g. the elderly, women and labour constrained people.

### G.2. Risk Factors and Mitigation Measures

Please describe financial, technical and operational, social and environmental and other risks that might prevent the project/programme objectives from being achieved. Also describe the proposed risk mitigation measures.

#### Selected Risk Factor 1

Description	Risk category	Level of impact	Probability of risk occurring
<ul style="list-style-type: none"> <li>Obstacles in identifying adequate partners</li> </ul>	Technical and operational Technical and operational	Medium (5.1-20% of project value) Medium (5.1-20% of project value)	Low Low

#### Mitigation Measure(s)

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?

- Inventory and due diligence of potential partners, with strict selection criteria.

#### Selected Risk Factor 2

Description	Risk category	Level of impact	Probability of risk occurring
<ul style="list-style-type: none"> <li>Long-term financial sustainability</li> </ul>	Financial Financial	High (>20% of project value) High (>20% of project value)	Low Low

#### Mitigation Measure(s)

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?

<ul style="list-style-type: none"> <li>R4 Team will continuously align public and private funding for the project until financial sustainability is reached.</li> </ul>			
Selected Risk Factor 3			
Description	Risk category	Level of impact	Probability of risk occurring
<ul style="list-style-type: none"> <li>Exclusion from assets creation activities of specific vulnerable households unable to participate in activities</li> <li>Participants to assets creation get injured during the building of assets</li> </ul>	Social and environmental	Low (<5% of project value)	LowLow
Mitigation Measure(s)			
<p><i>Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?</i></p> <ul style="list-style-type: none"> <li>Implementing partners have to ensure that safe working conditions are in place at the project site and that first aid kit is available.</li> <li>Ensure that the construction of assets is carried out during a period favourable to women and ensure children's care at the village and/or project site.</li> <li>Set hours that are respectful of chores, roles and obligations of women and men.</li> </ul>			
Selected Risk Factor 4			
Description	Risk category	Level of impact	Probability of risk occurring
<ul style="list-style-type: none"> <li>Lack of risk diversification and operating in high risk zones could discourage insurance partners.</li> </ul>	Technical and operational Technical and operational	Medium (5.1-20% of project value) Medium (5.1-20% of project value)	MediumMedium
Mitigation Measure(s)			
<p><i>Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?</i></p> <ul style="list-style-type: none"> <li>Insurance is offered to different segments of participants in different locations in the long run. Design and implement careful participatory education workshops on cover provided by weather-index insurance and expected payout frequency, to minimize reputational risk for insurers.</li> </ul>			
Selected Risk Factor 5			
Description	Risk category	Level of impact	Probability of risk occurring
<ul style="list-style-type: none"> <li>Financial literacy</li> </ul>	Technical and operational Technical and operational	Medium (5.1-20% of project value) Medium (5.1-20% of project value)	LowLow
Mitigation Measure(s)			

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?

- Farmers engage in participatory index insurance design activity and financial literacy games.

**Selected Risk Factor 6**

Description	Risk category	Level of impact	Probability of risk occurring
<ul style="list-style-type: none"> <li>• High number of government institutions with a stake in strategic and operational matters related resilience makes coordination across institutions at times problematic.</li> </ul>	<p>Technical and operational</p>	<p>Medium (5.1-20% of project value)</p>	<p>Low</p>

**Mitigation Measure(s)**

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?

- Partners mapping, in-depth analysis of partners and clear implementation structures, engagement strategies identified.

**Other Potential Risks in the Horizon**

Please describe other potential issues which will be monitored as “emerging risks” during the life of the projects (i.e., issues that have not yet raised to the level of “risk factor” but which will need monitoring). This could include issues related to external stakeholders such as project beneficiaries or the pool of potential contractors.

**Regarding the issues identified in the Safeguard Review**

- Experience and lessons learned in the context of safeguards: According to the process evaluation and EMMPA conducted in late 2015, R4’s FFA interventions have negligible impact on the environment. Given the small size of the interventions and the limited use of machinery some of the impact identified (all positive) included for example the recharge of underground waters feeding village wells, and benefitting fruit trees in the community. Before the beginning of the GCF phase a new EMMPA will be conducted.
- Potential land/resource use rights and tenure conflicts related to rural infrastructure: FFA interventions use a watershed approach, creating assets on a watershed that is used by multiple villages participating to the R4 initiative. In Senegal, the land belongs to the community who then makes single plots available to each household with size and number of plots depending on HH size and the potential presence of multiple families within the same household due to polygamy.
- Presence of IP: Indigenous people are not present in the areas targeted by the project.

\* Please expand this sub-section when needed to address all potential material and relevant risks.

## H.1. Logic Framework.

Please specify the logic framework in accordance with the GCF's [Performance Measurement Framework](#) under the [Results Management Framework](#).

### H.1.1. Paradigm Shift Objectives and Impacts at the Fund level<sup>62</sup>

#### Paradigm shift objectives

<p><i>Increased climate-resilient sustainable development/Increased climate-resilient sustainable development</i></p>	<p>The proposed <i>project</i> contributes to increasing climate resilience of rural communities in Senegal through its sustainable comprehensive risk management approach.</p> <p>The <i>project</i> will directly benefit vulnerable smallholder farmers and their households. It will build their resilience to increasingly recurrent climate shocks, and their capacity to adapt to the adverse impacts of climate change. Furthermore, it will protect food insecure smallholder farmers from the impact of covariate climate shocks and provide them with the confidence to invest in agricultural inputs and diversified IGAs</p> <p>Overall, the <i>project</i> will contribute to strengthening the adaptive capacity and resilience of vulnerable farmers, a key priority for the GoS.</p>
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Expected Result	Indicators	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (if applicable) Year 2	Final <sup>63</sup>	

#### Fund-level impacts (Impacts and outcomes include participants registering for the program each year – also, figures refer to direct participants.)

	<p>Number of direct and indirect beneficiaries;</p> <p>Number of beneficiaries relative to total population.</p>	<p>SCOPE-WFP data management platform</p> <p>ANSD-National Agency of Statistics and Demographics</p>	<p>63,000 (7,000 HHs)</p>	<p>243,000 (27,000 HHs)</p>	<p>Direct: 405,000 (45,000 HH)</p> <p>Indirect: 121,500 (3.48% of total population)</p>	<p>Participants are interested and motivated to participate to project activities.</p>
<p>A1.0 Increased resilience and enhanced livelihoods of the most</p>	<p>A.1.1 Number of male and females benefiting from the adoption of diversified, climate resilient livelihood options.</p>	<p>Project baseline</p> <p>Surveys</p> <p>SCOPE</p>	<p>63,000 (7,000 HHs)</p>	<p>243,000 (27,000 HHs)</p>	<p>405,000 (45,000 HH)</p>	<p>Participants are interested and motivated to participate to project activities.</p>

<sup>62</sup> Information on the Fund's expected results and indicators can be found in its Performance Measurement Frameworks available at the following link (Please note that some indicators are under refinement): [http://www.gcfund.org/fileadmin/00\\_customer/documents/Operations/5.3\\_Initial\\_PMF.pdf](http://www.gcfund.org/fileadmin/00_customer/documents/Operations/5.3_Initial_PMF.pdf)

<sup>63</sup> Since there are multiple indicators and not enough space, one or few sample indicators are chosen to provide an example of final target.

<i>vulnerable people, communities and regions</i>			(50% at least are women)	(50% at least are women)	(50% at least are women)	
<p><b>A2.0</b> <i>Increased resilience of health and well-being, and food and water security</i></p>	<p>A.2.1 Number of food-secure households (in areas/periods at risk of climate change impacts) as measured by the FCS (% of participants passing from “poor” or “borderline” FCS groups to “acceptable” FCS group)</p>	<p>Analysis of vulnerability, food security and nutrition of national HH survey</p> <p>WFP food consumption score<sup>64</sup></p> <p>Project baseline</p> <p>Impact evaluation of R4 in Senegal</p>	<p>0 HHs have “acceptable” FCS</p>		<p>31,500 HHs (70% of participant HHs) have “acceptable” FCS</p>	<p>HH use WFP food assistance as expected.</p> <p>HH’s cereals and vegetables production increases as a result of risk reduction activities.</p> <p>HH use payouts received in case of rainfall deficit as advised.</p> <p>Cash paying farmers buy insurance.</p>
<p><b>A3.0</b> <i>Increased resilience of infrastructure and the built environment to climate change</i></p>	<p>A.3.1 Number of physical assets made more resilient to climate variability and change, considering human benefits.</p>	<p>Mid-term and final evaluation on quality of assets and their resilience vis-a vis climate change</p>	<p>Stone bunds created ml (0)</p> <p># Small dams built (0)</p> <p>Water ponds (0)</p> <p>Ha of vegetable gardens (0)</p> <p># trees planted (0)</p>	<p>Stone bunds created ml (25;000)</p> <p># Small dams built (15)</p> <p>Water ponds (8)</p> <p>Ha of vegetable gardens (25)</p>	<p>Stone bunds created ml (42,000)</p> <p># Small dams built (25)</p> <p>Water ponds (13)</p> <p>Ha of vegetable gardens (45)</p>	<p>Beneficiaries participate actively to the building of assets.</p>

<sup>64</sup> The food consumption score (FCS) is an indicator of food security that combines the elements of ‘quantity’ and ‘quality’ of food. It measures food diversity (the types of food consumed), food frequency (the number of days each food group is consumed) and the relative nutritional importance of different food groups. In Senegal, households with an FCS of at least 42.5 are classified as “acceptable” while those with an FCS of between 28.5 and 42 are classified as “limited.” Food Consumption Score below 28 is considered “poor”. FCS data in Senegal are accessible [here](#)

				# trees planted (19,000)	# trees planted (32,000)	
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### H.1.2. Outcomes, Outputs, Activities and Inputs at Project/Programme level<sup>65</sup>

Expected Result	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (if applicable)	Final	
<b>Project/programme outcomes</b>	<b>Outcomes that contribute to Fund-level impacts</b>					
A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development	A.5.1. Number and level of effective coordination mechanisms	WFP and partners' assessment  ARD (Agence Régionale de Développement) data base  DGPSN data	0 Local COMRECC reinforced  0 Local development plans include climate responsive planning and development  20% of beneficiaries of the PNBf reached by climate risk management tools	3 Local COMRECC reinforced  22 Local development plans include climate responsive planning and development  30% of beneficiaries of the PNBf reached by climate risk management tools	5 Local COMRECC reinforce  31 Local development plans include climate responsive planning and development  50% of beneficiaries of the PNBf reached by climate risk management tools	GoS's safety net is reliably reaching vulnerable rural households  COMRECC and ARD put in place resources to benefit from WFP capacity building and ensure sustainability despite internal turnover.
A6.0 Increased generation and use of climate information in decision-making A6.0	A.6.1 Use of climate information products/ser	WFP and partners assessment	0 participants trained in climate	15,000 participants trained in climate	25,000 participants trained in climate	Local organizations are willing to invest to

<sup>65</sup> More information can be found in the R4 MEL Plan attached

<p>Increased generation and use of climate information in decision-making</p>	<p>changes in decision-making in climate-sensitive sectors</p>		<p>change adaptation and the use of climate services</p> <p>0 agents trained on advisory services for climate information</p> <p>0 contracts signed with implementing partners on advisory services</p>	<p>change adaptation and the use of climate services</p> <p>26 agents trained on advisory services for climate information</p>	<p>change adaptation and the use of climate services</p> <p>31 agents trained on advisory services for climate services</p> <p>5 contracts signed with 5 implementing partners on advisory services</p>	<p>provide climate services to the required standards and number of people</p> <p>Beneficiaries are interested in climate services</p>
<p>A7.0 Strengthened adaptive capacity and reduced exposure to climate risks A7.0 Strengthened adaptive capacity and reduced exposure to climate risks</p>	<p>A.7.1 Use by vulnerable households, communities, businesses and public-sector services of Fund supported tools, instruments, strategies and activities to respond to climate change and variability</p>	<p>Partners' records on village level discussions</p> <p>CBPP reports</p>	<p>0 Radio community programs developed on climate change</p> <p>0 Village level discussions on climate change adaptation</p> <p>0 Climate sensitive CBPP implemented</p>	<p>105 Radio community programs developed on climate change</p> <p>3,000 Village level discussions on climate change adaptation</p> <p>60 Climate sensitive CBPP implemented</p>	<p>105 Radio community programs developed on climate change</p> <p>3,000 Village level discussions on climate change adaptation</p> <p>60 Climate sensitive CBPP implemented</p>	<p>Beneficiaries participate to village level discussions</p> <p>Beneficiaries integrate adaptation measures in their activities.</p>

A8.0 Strengthened awareness of climate threats and risk-reduction processes A8.0 Strengthened awareness of climate threats and risk-reduction processes	A.8.1 Number of males and females made aware of climate threats and related appropriate responses	WFP and CNAAS data	7,000 farmer HHs insured (50% of beneficiaries are women)	27,000 farmer HHs insured (50% of beneficiaries are women)	45,000 farmer HH insured (50% of beneficiaries are women)	Farmers voluntarily access WII, and undertake risk reduction activities.
<b>Expected Result</b>	<b>Indicator</b>	<b>Means of Verification (MoV)</b>	<b>Baseline</b>	<b>Mid term</b>	<b>Final</b>	<b>Assumptions</b>
<b>Project/programme outputs</b>	<b>Outputs that contribute to outcomes</b>					
<b>Output 1.1:</b> Training of farmers on innovative, climate smart agricultural practices and support of community-based disaster risk reduction assets creation, such as water and soil conservation.	Number of people benefitting from DRR community-based assets (# beneficiaries) and food assistance (USD value)	WFP and partners records	63,000 beneficiaries - USD 600,000	135,000 beneficiaries - USD 1,140,000	225,000 beneficiaries - USD 1,340,000	Farmers voluntarily participate to assets creation and complete the construction of assets.
<b>Output 1.2:</b> Provision of climate services, enabling farmers to access reliable climate information via their mobile phones and radio programs, as well as advisory services.	Number of people reached by climate services	WFP and partners records	0	15,000	25,000	Farmers sign up to receive climate information and participate to training on advisory services.
<b>Output 2.1:</b> WFP, in partnership with the local agricultural insurance company CNAAS, provides smallholders with weather index insurance (WII).	Number of people insured	WFP and partners records	7,000	27,000	45,000	Farmers understand the importance of insuring the risk deriving from climate variability.
<b>Output 3.1:</b> WFP, in partnership with Oxfam America (OA), supports vulnerable rural populations in building up savings and accessing small loans through the Savings for Change (SfC) program.	Number of savings group and members	WFP and partners records	414 savings groups (9,814 members)	660 savings groups (15,180 members)	1,090 savings groups (25,070 members)	Farmers are able to save enough to start saving groups.

<b>Output 3.2:</b> During good years, farmers have the opportunity to store their surplus production in WFP Village Cereal Banks (VCB) and use their stocks as collateral to receive credit from local Micro Finance Institutions (MFIs).	Number of Village Cereal banks	WFP and partners records	63 Tons / 9 VCB Credit: USD 8,000	81 Tons / 9 VCB Credit: USD 10,700	135 Tons / 9 VCB Credit: USD 17,000	Assets creation, climate services, investments in their land and favorable climate allow farmers to produce surpluses.
<b>Output 4.1:</b> Build national capacity to scale up rural resilience and adaptation measures linked to national social protection programs, supporting the government to implement its adaptation actions and reinforce national capacities.	Number of institutions reached by capacity building	WFP and partners records	2 ARD 22 mayors 2 COMMREC	5 ARD 27 mayors 4 COMMRECC	5 ARD 31 mayors 6 COMMRECC	ARD, COMRECC and local authorities agree on a training program and calendar
<b>Activities</b>	<b>Description</b>		<b>Sub-Activities</b>		<b>Description</b>	
1.1.1 Training on assets creation and CSA	Training is conducted through a "learning by doing" method in local languages at the village level, focusing on technical assets creation and maintenance, agricultural practices and leadership.		Development of training material; participants mobilisation			
1.1.2 Dissemination of CCA good practices	The aim is to disseminate the good practices developed by FAO's farmers' field school on climate change					
1.1.3 Vegetable gardens and fruit/value added trees nurseries	Women farmers plant vegetable gardens to diversify crop production as a source of additional income and to improve their families' diet.		Compost making, fencing, wells digging, vegetable planting. Training on vegetable productions; distribution of seeds and small utensils (water cans, etc.)			
1.1.4 Low-lying lands management and water conservation activities	Low-lying lands are improved through the construction of small infrastructures to preserve soil fertility and increase water conservation in order to improve rice productivity.		Sand removal, creation of stone bunds to avoid silting and small dams		All these interventions are aimed at fighting soil erosion and conserve water.	
1.1.5 Water ponds creation	Water ponds collecting and storing of rain water serve livestock activities (livestock watering, fish, etc.) and agriculture.		Sand removal, redesign of the shape of the pond ; stone bunds built around the pond;			
1.1.6 Tree planting	Trees are planted as fencing or windbreaks, but also to improve crop yields, limit the risk of erosion and soil		Production of nursery plants; Transport of plants to the sites;			

	<p>degradation and protect vegetable gardens from animal's divagation.</p> <p>Fruit trees and value added trees will be planted in house gardens to improve diets and add to existing IGAs</p>	<p>Planting early in the rainy season. Monitoring of tree development</p>	
1.1.7 Delivery of food assistance	<p>Food and food vouchers are delivered to farmers who completed the assets/day of work.</p>	<p>Participants' record keeping; printing food vouchers; transport of food to distribution sites; contracts with retailers established; distribution point set up.</p>	
1.2.1 Training on climate services	<p>Lead farmers and participants are trained about climate information and advisory services.</p>	<p>Training of trainers, general training</p>	
1.2.2 Delivery of climate information	<p>Climate information is delivered through SMS or radio programs.</p>	<p>Identify radio stations; Develop contents of radio programmes; set up sms platforms for delivery of messages; provision of advisory services</p>	
2.1.1 Index design	<p>Design of rainfall deficit index based on satellite database (IRI)</p>	<p>Field analysis (topographic, demographic, socio-economic) for new intervention area</p> <p>Satellite and rain fall index are developed for all areas covered</p>	<p>The rainfall deficit has been identified and selected as the main risk to be covered to secure agricultural investments and incomes of beneficiaries.</p>
2.1.2 Insurance policies delivery and enrollment	<p>Farmers who completed the IFA activities or paid in cash receive insurance vouchers.</p>	<p>Participants' record keeping; distributions of IFA coupons; signature of insurance contracts</p>	
2.1.1 End of the season assessment and payouts	<p>WFP in collaboration with IRI and local partners assessed the performance of the season and the index results to detect potential basis risk events.</p>	<p>Monitoring of season; Assessment field mission; elaboration of the end of season report.</p>	
3.1.1 Recruitment and training of field teams for SfC	<p>Field level teams are selected and trained on the SFC methodology</p>	<p>Selection and recruitment of animators.</p>	
3.1.2 Formation and training of savings groups	<p>Women and men saving groups are formed through community engagement and trained on the methodology.</p>	<p>Constitution of village level savings groups; training of women during weekly meetings.</p>	
3.2.1 Assessment of existing VCBs and establishment of new ones	<p>The 11 VCBs of Tambacounda region are assessed. Readjustments within the management committee are made if necessary. New VCBs are built or existing VCBs are reactivated.</p>	<p>Identification of the strengths and weaknesses of the existing VCBs.</p>	

3.2.1 Negotiations of rates with MFIs	The potential MFIs present in the intervention area will be identified. Negotiations with the management are led to adapt the rules of warrantage credit to the needs of farmers.	Meetings with MFIs management. Signature of agreements.	Several meetings are necessary to influence, define and agree new warrantage credit modalities.
4.1.1 Capacity building of national and local government structures	Support of national and local government structures are organized to integrate and improve social protection (including comprehensive climate risk management schemes) into existing or new government programs.	Identification of specific gaps and needs.  Development of a capacity building/support plan.	
4.1.2 Policy advocacy	Advocacy and influencing takes place towards the competent national and local authorities to integrate social protection programs within comprehensive climate risk management strategies.	Advocacy to ensure that climate change related actions are included into Local Development Plans.  Signature of MOUs.	

## H.2. Arrangements for Monitoring, Reporting and Evaluation

*Besides the arrangements (e.g. semi-annual performance reports) laid out in AMA, please provide project/programme specific institutional setting and implementation arrangements for monitoring and reporting and evaluation. Please indicate how the interim/mid-term and final evaluations will be organized, including the timing.*

*Please provide methodologies for monitoring and reporting of the key outcomes of the project/programme.*

WFP will compile the relevant information, including inputs from participative monitoring (questionnaires, surveys and group discussions) in annual performance reports (APRs) to be submitted to the GCF Secretariat at the end of each implementation year, for a total of 4 APRs. The first APR will be submitted 1 year after funds disbursement date, with the last report submitted six months after the end of project implementation. APRs will include:

- a narrative report on implementation progress based on the logical framework presented above, including gender-disaggregated indicators (aligned to the GCF RMF and PMF for adaptation);
- a financial management report specifying dates and amounts disbursed for each project activity.

In addition to this, WFP will also submit an independent mid-term evaluation report six months after the end of the second year of project implementation and an independent final evaluation no later than nine months after the completion of the project. These reports will assess progress towards the project's outcomes and impacts defined in the logical framework as well as the overall project performance against the six GCF investment criteria. Final evaluations will include information on challenges and lessons learnt.

The project also has its specific Monitor, Evaluation and Learning (MEL) system, whose results will be shared with the GCF.

In terms of methodology, three basic MEL tools guide the overall of the *project*.

### 1. Theory of Change

The Theory of Change (TOC) allows the project team to translate theories about what needs to change and why into a 'causal pathway'. The TOC serves as a basis for designing the Logical Framework Matrix (Logframe or LFM), by identifying the short and long-term outcomes and outlining the assumptions made at design stage. The TOC is attached (Annex 10).

## 2. MEL Logframe

The Logframe is a project management tool that connects expected results (in terms of both impact and outcome) to practical indicators, specifying measurement unit, frequency of collection, source methodology and responsibility. The Logframe is a key instrument to create outcome and impact assessment surveys and organize data collection. The Logframe is attached (Annex 6).

## 3. MEL Calendar: The calendar outlines what to perform when at the output, outcome and impact level.

The effects of R4's operations are assessed at three different levels:

**Outputs:** Outputs are 'goods and services delivered by R4 partners through the intervention'. Reporting on the outputs is the task of the partner who has delivered them. Reporting on outputs by Cooperating Partners will take place on a quarterly basis using a standard dashboard. A completed dashboard is sent by partners prior to quarterly meetings of the Technical Committee which take place at the sub-office with the aim to discuss potential issues and verify data. Every month, the R4 coordinator sends a monthly update to the Global team.

**Outcomes:** The outcome monitoring (OM) is a crucial component of the monitoring and evaluation strategy, as it helps to understand if the intervention is having the desired effects on the target group, while allowing for adjustments and improvements while the project is still running.

By monitoring outcomes, we mean measuring the short to medium-term changes on the participants that can be attributed to the intervention. Besides measuring the achievement of outcomes, this exercise also looks at "attribution" by understanding if the *project's* outputs are leading to the desired outcomes, and what are the pathways. The OM strategy will involve two main components, a baseline carried out before the start of the new year of operations (November) and an endline carried out at the end of the year of operations (August).

The OM is based on the outcomes identified in the R4 Logframe (see Section I), hence the baseline and endline questionnaire is built using those indicators, and surveying a panel of participants and a control group.

### Expected outputs

- **Analysis Plan:** A framework detailing indicators, metrics, and sources created and used by all involved stakeholders (available in Section I).
- **Questionnaire:** A questionnaire to serve for baseline and endline survey.
- **A sample methodology.**
- **Detailed process schedule:** A timeline should be created to identify deadlines and responsibilities across the outcome monitoring process. Once the baseline is conducted, each outcome should be monitored according to their ideal timeline during project implementation.

### Methodology

- **Quantitative data collection through a panel survey:** This method identifies the changes over time on a set group of individuals, which serves as a reliable reference for gradual changes occurred over subsequent periods of time.
- **Focus group discussion** is a useful method to collect qualitative data for which it is hard to rely solely on questionnaires as there can be complex information needing to be interpreted and codified into useful data.
- **Case studies** provide multiple benefits. They can firstly and foremost serve as a source of detailed information and learning illustrating the dynamics of change, and secondly as a potential communication and marketing tool.

**Impacts:** Impact can be defined as the *‘positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended’*<sup>66</sup>. It is important that the evaluation of the impacts of the initiative is conducted by an independent institution, to assess whether the integrated risk management approach promoted by R4 is yielding the expected results, and what are the potential improvements to be done. So far, the methodology in Senegal has been a difference-in-differences approach, but other methodologies could be applied (e.g. randomized control trials). The first baseline data collection should be performed (based on the indicators identified in the MEL Logframe) before the start of the R4 activities, so that it can be used as a reference along the whole duration of the *project*. Subsequent data collection should be performed depending on the indicators once every year (at the same time as the baseline). When expanding to different areas, baseline data collections are conducted before the start of the activities for each new region. More information on the methodology used can be found in the Dalberg Report.

Further spot assessments and evaluations can be planned, such as process evaluations or thematic evaluations.

Process evaluations are typically carried out by an external consultant to evaluate specific aspects of the *project* in terms of results, process, and management. The consultant will provide potential solutions to improve the results, as well as increase efficiency and effectiveness of the team. In 2014, a process evaluation was carried out to analyze the quality of product and processes of the FFA program in Senegal.

### Post Distribution Monitoring and Satisfaction surveys

There are at least two important assumptions underlying the causal path that leads from the delivery of outputs to expected changes in the target population:

- The first, is that the targeted population (such as individuals, households or institutions) is the one that receives the outputs. Access is determined by the design of the intervention, i.e. what are the mechanisms to deliver the outputs and often by the process to design these mechanisms;
- The second is whether the targeted population actually uses the products and services delivered in the expected way.

A food or cash transfer is often made with the implicit assumption that people will eat the food or will use the money to buy food of the right quality and in sufficient quantity. However, in the real world people have a range of different objectives and circumstances in which they live. Thus, depending also who controls the resource in the household, they may decide to sell the food and/or use the money to purchase something other than food.

The same may occur when assets are built, or when financial services are delivered. For instance, upgrading an irrigation system assumes that farmers will be able to exploit improved water control to increase their crop production. However, a farmer without resources may not be in a position to intensify production and may actually decide to rent out his/her plot to a better off farmer.

Financial institutions assume that clients will invest the money they have on loan rather than using it for consumption. However as farmers may have more pressing needs, they may divert the loan to purchasing food or paying for medical expenditures, thus reducing the likelihood of repaying that loan and risking to be trapped in a cycle of indebtedness.

Assessing whether the targeted people access the goods and services delivered and whether they use them in the expected way is thus crucial to understand whether the intervention is going in the right direction to achieve the long-term outcomes. This information can directly feed into the design of services and processes for delivering these services.

A light questionnaire should be developed as follows, based on existing WFP’s Post Distribution Monitoring (PDM) tools:

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<sup>66</sup> OECD-DAC Glossary (2002)

- Access: a number of indicators allowing to describe the profile of households and detect those households that are food insecure must be defined. In Senegal, these indicators typically include human assets (e.g. the education level of the household head, the number of adults in the household) and physical assets (e.g. size of land cultivated, number of draught animals, family size);
- Use: a few questions on how participants are using the services, avoiding lead questions that may be biasing their perceptions about the appropriateness of the answer. Questions on the services would include food/cash transfers, assets, and financial services.

Another element that should feed into the design of services is the opinion of participants or clients about the quality of the services. Thus, 'satisfaction' about how the services are conceived and delivered should complement 'access' and 'use' and be assessed simultaneously. An example of a satisfaction survey is the insurance survey carried out in 2015 on the insurance component of R4 Senegal.

## I. Supporting Documents for Funding Proposal

- NDA No-objection Letter ([Annex 00](#))
- Feasibility Study ([Annex 24, 12 and 13](#))
- Integrated Financial Model that provides sensitivity analysis of critical elements ([Annex 17](#))
- Confirmation letter or letter of commitment for co-financing commitment (If applicable)
- Project/Programme Confirmation/Term Sheet (including cost/budget breakdown, disbursement schedule, etc.) – see *the Accreditation Master Agreement, Annex I* ([Annex 26](#))
- Environmental and Social Impact Assessment (ESIA) or Environmental and Social Management Plan (If applicable) ([Annex 8](#))
- Appraisal Report or Due Diligence Report with recommendations (If applicable) ([Annex 27](#))
- Evaluation Report of the baseline project (If applicable) ([Annex 5 and 15](#))
- Map indicating the location of the project/programme ([Annex 16](#))
- Timetable of project/programme implementation ([embedded in the text](#))
- Gender Analysis ([Annex 21](#))
- Procurement plan ([Annex 22 and 23](#))
- Project operation/administration manual ([Annex 18, 19, 29](#))

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

Republique du Senegal  
Une Peuple - Un But - Une Foi

**MINISTERE DE L'ENVIRONNEMENT  
DU DEVELOPPEMENT DURABLE**

**DIRECTION DE L'ENVIRONNEMENT ET  
DES ETABLISSEMENTS CLASSES**

To: The Green Climate Fund ("GCF")

Dakar, 15th September 2016

Reference: Funding proposal for the GCF by the World Food Programme (WFP) "Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)"

**Dear Madam, Sir,**

We refer to the project "**Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)**" as included in the funding proposal submitted by the World Food Programme on 30<sup>th</sup> August 2016.

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 "**Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)**" 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 "**Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)**" as included in the funding proposal;
- (b) "**Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)**" 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, "**Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)**" 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 "**Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)**" 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 "**Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)**".

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

**Kind regards,**

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Name: **Madeleine Diouf SARR**

Title: **Green Climate Fund DNA/Senegal**



## Environmental and social report(s) disclosure

Basic project/programme information	
<b>Project/programme title</b>	Building the climate resilience of food insecure smallholder farmers through integrated management of climate risk (R4)
<b>Accredited entity</b>	World Food Programme (WFP)
<b>Environmental and social safeguards (ESS) category</b>	Category C
	<i>Note: Environmental and social report disclosure not required for Category C and Intermediation 3 projects and programmes.</i>
Environmental and social report disclosure information	
Description of report/disclosure	N/A