Meeting of the Board
9 – 13 November 2020
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Provisional agenda item 11

GCF/B.27/02/Add.16

21 October 2020

Consideration of funding proposals - Addendum XVI

Funding proposal package for SAP019

Summary

This addendum contains the following six parts:

a) A funding proposal titled "Gums for Adaptation and Mitigation in Sudan (GAMS): Enhancing adaptive capacity of local communities and restoring carbon sink potential of the Gum Arabic belt, expanding Africa's Great Green Wall";
b) No-objection letter issued by the national designated authority(ies) or focal point(s);
c) Secretariat's assessment;
d) Independent Technical Advisory Panel's assessment;
e) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
f) Gender documentation.

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Simplified Approval Process
Funding Proposal

Project/Programme title:	**Gums for Adaptation and Mitigation in Sudan (GAMS):** Enhancing adaptive capacity of local communities and restoring carbon sink potential of the Gum Arabic belt, expanding Africa's Great Green Wall
Country(ies):	Republic of the Sudan
National Designated Authority(ies):	The Higher Council for Environment and Natural Resources, Sudan
Accredited Entity:	Food and Agricultural Organization of the United Nations, FAO
Date of first submission:	[2020-04-28] [V.1]
Date of current submission/ version number	[2020-09-25] [V.8]
If available, indicate GCF code:	iPMS #17010

GREEN CLIMATE FUND

Contents

Note to accredited entities on the use of the SAP funding proposal template

- The Simplified Approval Process Pilot Scheme (SAP) supports projects and programmes with a GCF contribution of up to USD 10 million with minimal to no environmental and social risks. Projects and programmes are eligible for SAP if they are ready for scaling up and have the potential for transformation, promoting a paradigm shift to low-emission and climate-resilient development.
- This template is for the SAP funding proposals and is different from the funding proposal template under the standard project and programme cycle. Distinctive features of the SAP funding proposal template are:
  - *Simpler documents*: key documents have been simplified, and presented in a single, up-front list;
  - *Fewer pages*: A shorter form with significantly fewer pages. The total length of funding proposals should **not exceed 20 pages**;
  - *Easier form-filling*: fewer questions and clearer guidance allows more concise and succinct responses for each sub-section, avoiding duplication of information.
- Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other funding proposal documents such as project appraisal document, pre-feasibility studies, term sheet, legal due diligence report, etc.
- Submitted SAP Pilot Scheme funding proposals will be disclosed simultaneously with submission to the Board, subject to the redaction of any information which may not be disclosed pursuant to the GCF Information Disclosure Policy.

Please submit the completed form to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

"SAP-FP-[Accredited Entity Short Name]-[yymmdd]"

A. PROJECT/PROGRAMME SUMMARY

A.1. Has this FP been submitted as a SAP CN before?			Yes ☒ No ☐		
A.2. Is the Environmental and Social Safeguards Category C or I-3?			Yes ☒ No ☐		
A.3. Project or programme	*Indicate whether this FP refers to a combination of several projects (programme) or one project.* ☒ Project ☐ Programme	**A.4. Public or private sector**	☒ Public sector ☐ Private sector	**A.5. RFP**	Not applicable Not applicable

A.6. Result area(s)[1]

Check the applicable GCF result area(s) that the proposed project/programme targets. Indicate for each checked result area(s) the estimated percentage of GCF budget devoted to it. The summed up percentage should be equal to 100%.

Mitigation: Reduced emissions from:

☐ Energy access and power generation: Enter number %
☐ Low emission transport: Enter number %
☐ Buildings, cities and industries and appliances: Enter number %
☒ Forestry and land use: 55.4 %

Adaptation: Increased resilience of:

☒ Most vulnerable people and communities: 31.0 %
☐ Health and well-being, and food and water security: Enter number %
☐ Infrastructure and built environment: Enter number %
☒ Ecosystem and ecosystem services: 13.6 %

***A.a.*[2] Total investment (GCF + co-finance)**	Amount: _9.975 million[3]__ USD	***A.a.1* Total GCF funding requested**	Amount:__9.975 million__ USD
***A.b.* Type of financial instrument requested for the GCF funding**	*Mark all that apply.* ☒ Grant ☐ Loan[4] ☐ Equity ☐ Guarantees ☐ Others:		
A.7. Implementation period	60 months		
A.8. Total project/ programme lifespan	240 months	**A.9. Expected date of internal approval**	*4/23/2020*
A.10. Executing Entity information	Forest National Corporation (FNC) and FAO.		

A.11. Scalability and potential for transformation (Eligibility for SAP, max. 100 words)

Based on the results of two successful pilot projects, the project will support climate resilient gum agroforestry and rangeland restoration and address the main causes of landscape degradation at scale by improving livestock mobility and cross-sectoral coordination. By building capacities and establishing remunerative relationships between smallholder gum producer groups (GAPAs) and gum exporting companies, the project will mobilize private sector financing (USD 14.72 million of leveraged financing already committed, see engagement letters from Comats and Ebda'a Bank) to transform GAPAs' access to markets and formal financial services – thus improving smallholders' ability to cope with climate change stresses while sequestering 9.23 million tonnes of CO2 over the 20-year investment lifespan. The sequestration objective will be reached through agroforestry restoration/reforestation (125,000 ha) and rangeland restoration (151,000 ha). This approach can be scaled up over millions of hectares in Sudan's 9 other gum belt States and in other countries in the Sahel region, through the planned GCF-UNCCD Great Green Wall umbrella programme, which will link ecosystem restoration with locally appropriate smallholder non-timber forest product value chain improvements in other countries in the Sahel to achieve both climate change mitigation and adaptation objectives.

A.12. Project/Programme rationale, objectives and approach (max. 300 words)

[1] For calculations of percentages of funds allocated to the three Outcomes, see Annex 3.

Sudan is one of the most vulnerable countries in the world to climate change (CC).[5] The country faces rising temperatures, severe and increasing moisture stress. Over 80% of the labour force is employed in agriculture and livestock herding; the vast majority are smallholder producers, food insecure and poor. In the Kordofan States, where the project is located, 98% of agriculture is rainfed and greatly exposed to weather and climate threats. Gum Arabic, harvested from Acacia trees, provides smallholder farmers with up to 38% of their income. Gum trees are grown in association with annual food crops increasing crop yields by enhancing soil fertility, improving water infiltration and lowering evaporation by reducing temperature and wind speed, thus reducing farmers' exposure to climate change impacts. The yield loss from gum trees due to moisture stress is 50 percent that of annual crops. Gum-based agroforestry associations thus both significantly boost crop yields and reduce household vulnerability to climate change stresses. Past policies and violent conflict have led to the degradation of gum-based farming systems, contributing to land use/land use change and forestry emissions that account for 47% of all GHG emissions. The project will support smallholders in restoring their CC resilient gum agroforestry systems and reforesting degraded lands, thus contributing to the implementation of the national REDD+ strategy, and fund rehabilitation of livestock corridors and associated rangelands (based on a successful IFAD project) to restore herd mobility needed for pastoral CC adaptation and to protect the restored gum tree stands from livestock damage. The project will scale-up a successful AFD pilot, building the capacity of smallholder producer groups to produce high-quality gum, establish relationships with formal financial services (which will be essential for scaling up smallholder gum production) and facilitate contract agreements with gum exporters (the respective purchase guarantees will function as collateral for the small-holders to access finance). These actions will establish a virtuous, self-reinforcing cycle of profitable risk reducing investment facilitating climate change adaptation of the livelihoods of 371,528 direct beneficiaries and an estimated 1.21 million indirect beneficiaries, while sequestering 9.23 million tCO2e over the 20-year investment lifespan.

[2] This fields will be automatically calculated in the OSS system.

[3] Excluding 14.72 million USD of leveraged private sector financing from Elemats gum company and EBDAA Bank (see project annexes) and a 2.3 million USD in-kind contribution from the government (staff salaries, office space for PMU)

[4] Senior loans and subordinated loans.

[5] Sudan is ranked 175 out of 181 on the index of the Notre Dame Global Adaptation Index, see https://gain.nd.edu/our-work/country-index/rankings/

B. PROJECT/PROGRAMME DETAILS

B.1. Context and baseline (max. 500 words)

1. Sudan is the third largest country in Sub-Saharan Africa, with a land area of approximately 188 million hectares, all located in dryland areas. Situated at the desert margin, the country is particularly vulnerable to rising temperatures and associated moisture stress. In the Kordofan States, targeted by this project, average temperatures increased by 1.95 °C from 1989 to 2016, more than double the global average, and while average precipitation increased by 78 mm, evapotranspiration rose by 136 mm, resulting in a net drying of the environment (Annex 13, PFS para. 25 and 27). Climate projections to 2050 under RCP 8.5 predict near constant precipitation, with temperatures expected to increase by a further 2.8 °C, leading to an additional loss of 291 mm of soil moisture through elevated evapotranspiration (para. 28 PFS). A recent national assessment of climate change impacts on food security[6] identified temperature-driven moisture loss, exacerbated by natural resource degradation, as the primary threats, with smallholder farmers and pastoralists the most vulnerable groups within the population.
2. The vulnerability to moisture stress is especially acute in North, West and South Kordofan States targeted by the project. [7] These States are home to nearly one-fifth of the country's population and produce 47 percent of the country's cereals, virtually all under rainfed conditions. While average national poverty rates are 58% in rural areas, the populations in Kordofan are among the poorest and most food insecure. Between 78% to 89% of households in Kordofan spend more than 65 percent of their income on food, with poorer households, female-headed households and those with highest levels of food insecurity most dependent on agriculture for their income (para. 32 PFS). For the without-project scenario, analysis of climate change impacts on key crops under RCP 8.5 through the lifetime of the project show a decline of 7 to 12 percent for millet and groundnuts respectively, with a 24 to 62 percent decline for millet and 49 to 71 percent decline for sorghum projected by 2060 (para. 35-36 PFS).
3. Against this backdrop, years of internal armed conflict and decentivizing governmental policies contributed to widespread environmental degradation, resulting from the internal displacement of millions of households and a breakdown of traditional resource management systems. The current levels of vulnerability from these combined forces underscore the urgent need for investments in re-establishing sustainable natural resource management practices and preparing the farming populations in Kordofan to become more resilient to anticipated climate change stresses. In doing so, this proposal supports implementation of the new government's revised livestock policy and new Gum Arabic strategy, by scaling up the lessons from successful pilot projects. The proposal is closely aligned with Sudan's climate change adaptation priorities and mitigation investments included in the NAP, the national REDD+ strategy and NDC (para. 39 PFS). The key pilot projects include: (i) a USD 2 million project funded by AFD (2014-2018) that built the organizational and technical capacity of gum producer groups and facilitated partnerships with gum exporters who paid premium prices for high-quality, clean and dry gum (para. 71-77 PFS); and (ii) a USD 119.2 million IFAD Livestock Marketing and Resilience project (2015-2021) that renegotiates and rehabilitates livestock corridors in North and West Kordofan, based on institutional innovations successfully introduced under IFAD's Western Sudan Resources Management Project, WSRMP (para. 88-93 PFS). The GAMS project will extend these corridors in South Kordofan to ensure their continuity and restore full livestock mobility, which is essential both for increasing the resilience of smallholder pastoralists against climate shocks (by allowing the migration of livestock to water and fodder and thus adapt more easily to extreme weather) and for reducing emissions from land degradation. The GAMS project also has important synergies with the proposed UNDP GCF project in Sudan (paras. 15 and 178, PFS).
4. FAO assisted the Government of Sudan in completing its Great Green Wall (GGW) action plan, which has an overall budget of USD 228,600,000, in 2015.[8] Since then, the Government of Sudan has implemented one GGW project, BRIDGES, financed by the Turkish Government and with technical assistance from FAO, in Kassala State in Eastern Sudan. The GAMS project will contribute to all four substantive components of Sudan's GGW Action Plan: (i) rehabilitation of degraded lands; (ii) forest and rangeland sustainable management and restoration; (iii) support to livelihoods and resilience of local communities; and (iv) capacity development through research and knowledge management and dissemination of best practices.
5. In order to ensure the practical feasibity of the carbon impact target, three highly conservative assumptions were introduced in the Ex-ACT model, reducing the original result from 17.7 million tCO2e to the current 9.2 million tCO2e. The most important of these assumptions in quantitative terms, are that the model assumes that restoration takes place on sandy soils (whereas one third will take place on clay soils where sequestration rates are much higher) and that the emissions baseline for the 276,000 ha targeted for agroforestry restoration, reforestation and rangeland restoration has been set at zero, though it is more likely to be positive, with ongoing

[6] World Food Programme/UK Meteorological Office 2016, see https://www.metoffice.gov.uk/binaries/content/assets/mohippo/pdf/international/food_security_climate_change_assessment_sudan.pdf

[7] See the vulnerability analysis for the three Kordofan States in Sudan's First National Communication to the UNFCCC (2003). FAO and FNC held local stakeholder consultations in all three States.

[8] RoS and FAO 2015. National Action Plan for the Implementation of the GGW for the Sahel and Sahara initiative. MENR, Khartoum

degradation causing GHG emissions in the without project scenario.[9] The three above-mentioned restoration activities funded by the project will sequester a total of 9.23 million tCO2eq over the 20-year investment lifespan (see detailed Ex-ACT assessment in PFS Chapter 8, Carbon impact assessment, and Ex-ACT spreadsheet in Annex 14).

6. The main barriers the project will address[10] are: (a) institutional: poor policy coordination across land use sectors; b) policy, regulatory and fiscal, e.g. limited legal protection for livestock corridors; (c) limited access of smallholder farmers to productive resources and markets; (d) lack of affordable financial services for smallholders; and (e) gender, with women suffering disproportionately from barriers c and d especially. While the above-mentioned projects have helped the government to make some progress in addressing these barriers, a more transformative approach such as proposed by the GAMS project will be needed to resolve them. The main innovation of the GAMS project is that it leverages private sector finance to consolidate improvements in the smallholder gum value chain as a direct economic incentive for local communities to invest in clmate resilient landscape restoration and management – thus contributing to both climate change adaptation and mitigation.

B.2. Project/programme description (max. 1,000 words)

7. The paradigm shift objective is to enhance climate resilience of livelihoods and agro-sylvo-pastoral ecosystem services, while reducing greenhouse gas emissions from land use in Kordofan, Sudan.[11] The restoration of agroforestry systems with gum arabic trees will protect the annual crops against increased moisture stress, improving the resilience of the livelihoods of poor smallholder farmers (Component 1). By building the capacity of 500 smallholder gum arabic producer associations (GAPAs) to produce larger quantities of clean, dry gum and facilitating contract farming arrangements (Component 1), the project will mobilize private sector financing for these GAPAs.[12] Gum companies such as Elemats[13], confident that GAPAs will be able to deliver on their high-quality gum delivery commitments, will provide GAPAs with pre-financing and key inputs (such as jute bags) to increase quantity and quality of gum production and will pay them a price premium for clean, dry gum.[14] Once smallholder groups will have “graduated” from the project’s capacity building efforts, they will be able to continue to leverage the purchase guarantees of the gum exporters mobilized by the project to obtain formal financial services from microfinance institutions – including from Ebda’a Microfinance Bank, which has already committed to provide additional credit for smallholder gum producers in partnership with the project (using the exporting companies’ purchase guarantees as collateral) .[15] GAPAs will also be able to invest in their own storage facilities, allowing them to sell some of the gum later in the season, when the prices are higher, through the newly established higher grade and standard for quality gum at the public auction. These economic benefits will provide a strong incentive, inducing beneficiaries to continue to invest in and maintain the restored landscapes producing these benefits, thereby establishing a reinforcing and virtuous cycle of climate change adaptation and carbon sequestration through poverty reduction. Component 2 invests in livestock mobility and rangeland restoration, which improves the resilience of pastoralists to climate shocks and takes the pressure off the gum agroforestry systems supported under Component 1 – and thereby generates further land use emissions reductions. Under component 2, the project will engage with local stakeholder groups to negotiate the exact location of the livestock corridor. The project will also invest in the rehabilitation of watering points along the livestock corridors, increasing water supply from the current 2,712,000 m3 to 3,112,000 m3, the latter accounting for 1.5% of the total annual water yield of the area, 207,720,000 m3.[16] Livestock corridors with associated rangelands and watering points will be co-managed by mobile stock route co-management teams including representatives of farming and pastoral communities, and by local water management committees that were successfully piloted under the IFAD WSRMP project, to guarantee their long-term sustainability, as detailed in paras 88-93, Annex 13, PFS.

Component 1. Restoration of smallholder gum agroforestry systems and improvement of gum value chain

[9] This highly conservative assumption, in combination with two others detailed in Chapter 10 of Annex 13, PFS, has reduced the initial Ex-ACT carbon result from 17.7 to the current 9.2 million tCO2.

[10] These barriers and GAMS activities to overcome them are discussed in more detail in Chapter 3 of Annex 13, PFS (para 71-77 and 93).

[11] See Chapter 4, The theory of change, in Annex 13, PFS

[12] For the robustness of gum Arabic export market prospects, see PFS paragraph 66.

[13] See COMATS/Elemats letter dated 13 June 2020, committing a total of USD 13.5 million of leveraged financing over 5 years.

[14] GAPAs working with Elemats under the pilot project doubled their gum producer prices. See Chapter 3, paragraph 69 of Annex 13, PFS, and Annex 10, EFA

[15] See Ebda’a Bank’s letter dated 13 June 2020, committing a to.tal of USD 1.24 million of leveraged financing over 3 years.

[16] Current total water demand along the livestock corridor is estimated at 2,970,000 m3. Total annual water yield is based on Sudanese government hydrological model.Impact of project on regional water balance will be minimal: 400,000 m3 equals 0.2% of total water yield.

Intervention[17]	Mitigation benefits	Adaptation benefits
Output 1.1: 75,000 ha of gum agroforestry systems restored (40,000 ha in West Kordofan and 35,000 ha in North Kordofan) by local communities supported by the project, see detailed description of this Output and related Activities in paragraphs 9-14 below.	• 6.59 M tCO2e sequestered over 20 years.	Enhanced ecosystem services for smallholder rural producers to reduce their vulnerability to climate change, including: • Direct protection provided by gum trees to annual crops grown in agroforestry systems, such as increased shade and lower windspeed reducing evapotranspiration (in the face of increased moisture stress due to expected climate change). • Improved water infiltration and reduced surface run-off and damage from wind and water erosion will improve water balance in restored areas (also in the face of projected higher frequency of extreme rainfall events). • Increased nitrogen fixation and soil organic matter and water-holding capacity of farm and pasture land (in the face of increased moisture stress due to expected climate change). • Increased production of gum Arabic (Acacia senegal only given sandy soils in NK/WK, livestock fodder and other NTFPs[18] (to diversify livelihoods to reduce climate risks).
Output 1.2: 50,000 ha of degraded land reforested (40,000 ha in South Kordofan, 5,000 ha in North Kordofan, 5,000 ha in West Kordofan) by local communities supported by the project. (NB most of the area will be planted with Acacia senegal and Acacia seyal, but stream buffers will be planted with baobab, tamarind and other NTFPs, see detailed description of this Output and related Activities in paragraphs 15-21 below.	• 1.05 M tCO2e sequestered over 20 years.	• Direct protection provided by gum trees to annual crops grown in agroforestry systems (NB reforestation method is taungya, where annual crops are intercropped until the tree canopy closes), such as increased shade and lower windspeed reducing evapotranspiration (in the face of increased moisture stress due to expected climate change). • Improved water infiltration and reduced surface run-off and damage from wind and water erosion will improve water balance in restored areas (also in the face of projected higher frequency of extreme rainfall events). • Increased nitrogen fixation and soil organic matter and water-holding capacity of forest land (in the face of increased moisture stress due to expected climate change). • Increased production of gum and from other NTFPs grown in the stream buffers, such as baobab and tamarind (to diversify livelihoods to reduce climate change risks).
Output 1.3: Technical, organizational and commercial capacity strengthening program for gum value chain actors implemented (focusing on 500 smallholder Gum Arabic Producer Associations), see detailed description of this Output and related Activities in paragraphs 22-24 below.		• Increased sustainability of and returns to the least drought-prone production activity (gum arabic) in rain-fed farming systems increases smallholders' ability to cope with climate change. • Increased access of smallholder producers to financial services increases their ability to cope with climate change.
Output 1.4 280 Smallholder gum producer groups linked up with gum exporters paying premium price for clean dry gum, see detailed description of this Output and related Activities in paragraphs 25-26 below.		• Increased sustainability of and returns to the least drought-prone production activity (gum arabic) in rain-fed farming systems increases smallholders' ability to cope with climate change.
Output 1.5 120 Smallholder gum producers groups selling clean dry gum in standardized auction markets, see detailed description of this Output and related Activities in paragraphs 27-29 below.		• Increased sustainability of and returns to the least drought-prone production activity (gum arabic) in rain-fed farming systems increases smallholders' ability to cope with climate change

[17] The description of the project's outputs is provided in the table below. The 26 activities are described in paras 8-48 below the table.

[18] For NTFP potential see Chapter 3, paragraphs 57-59 of Annex 13, PFS

Output 1.6 180 Smallholder gum producer groups linked up with micro-finance institutions (MFI), see detailed description of this Output and related Activities in paragraphs 30-31 below.		• .Increased access of smallholder producers to financial services increases their ability to cope with climate change.

Sustainability of adaptation and mitigation benefits, and replicability

- Mobilization of private sector partners to finance smallholder gum arabic producer associations (GAPAs) directly (see private sector contribution letters in the project annexes) provides exit strategy for the project and guarantees sustainability of project's results.
- Recognition of clean, dry gum as a new standard in crop auction markets will empower GAPAs, including those not engaged in contract farming arrangements with gum exporters.
- Once GAPAs will have "graduated" from the project's capacity building efforts, they will be able to continue to leverage the purchase guarantees of the gum exporters mobilized by the project to obtain formal financial services from microfinance institutions
- Capable smallholder producer organizations deriving higher revenues from gum will have a strong economic incentive to maintain the gum agroforestry systems and degraded lands restored under Outputs 1.1.1 and 1.1.2 above, and to invest in additional restoration efforts.
- Increased opportunities for women and youth to improve resilience of their livelihoods.
- Replicability of the project in 10 other gum-producing States in Sudan and elsewhere in the Sahel Region, through GCF-UNCCD Great Green Wall (GGW) umbrella programme, which will link ecosystem restoration with locally appropriate smallholder non-timber forest product value chain improvements in other countries in the Sahel to achieve both climate change mitigation and adaptation objectives.

Component 2. Climate change adaptation at landscape level through establishment of livestock routes, restoration of rangelands and enhancement of policy/institutional environment

Intervention	Mitigation benefits	Adaptation benefits
Output 2.1: Climate-resilient Village Cluster Plans (CRVCP) completed and adaptation interventions (land restoration and revegetation, water conservation & management) prioritized and implemented in 125 village clusters,see detailed description of this Output and related Activities in paragraphs 33-36 below.	• Key adaptation interventions such as land restoration and revegetation also generate considerable mitigation benefits (see component 1 outputs above)	• Increased awareness of smallholder farmers and pastoralists about climate change impacts and adaptation options, and enhanced capacity for collective action to implement key adaptation interventions.
Output 2.2: Four hundred (400) km of stock routes renegotiated with local government, farming communities and pastoralists, demarcated on the ground and equipped (watering points) and arbitration mechanisms established to resolve conflicts among different user groups. As part of this ouput, 60 km of potential conflict hotspots will be demarcated with concrete markers on the ground to avoid conflict, and mobile stock route co-management teams established to help customary authorities prevent and manage conflicts between different user groups. (See detailed description of this Output and related Activities in paragraphs 37-41 below).	• Better distribution of livestock pressure will enhance natural regeneration of pasture and trees, thus increasing carbon sequestration.	• Increased livestock mobility will enable pastoralists to move livestock towards remote pasture and water resources in the face of increased moisture stress due to expected climate change. • Better distribution of livestock manure on farmland will increase soil organic matter and water-holding capacity of soils
Output 2.3: 151,000 ha of rangelands associated with stock routes restored by local and transhumant communities supported by the project (121,000 ha in South Kordofan, 15,000 ha each in North and West Kordofan), see detailed description of this Output and related Activities in paragraphs 42-45 below.	• 1.59 M tCO2e sequestered over 20 years.	Enhanced ecosystem services for smallholder rural producers (pastoralists and agropastoralists) to reduce their vulnerability to climate change, including: • Improved water infiltration and reduced surface run-off and damage from wind and water erosion (in the face of projected higher frequency of extreme rainfall evenets). • Increased soil organic matter and water-holding capacity of pasture land (in the face of increased moisture stress due to expected climate change).
Output 2.4: State-level cross-sectoral policy dialogue and adoption of climate-responsive natural resource management regulations (including protection of livestock corridors), see detailed description of this Output and related Activities in paragraphs 46-48 below.	• Once adopted, the regulations will help to perpetuate the sustainability of the other adaptation and mitigation outcomes and outputs under Components 1 and 2	

Sustainability of adaptation and mitigation benefits, and replicability

- Long-term sustainability of the livestock corridors and associated rangelands restored with project support is guaranteed by the project's investment in building institutions especially mobile stock route co-management teams to reduce conflicts between farmers and herders, and tripartite agreements on rights and responsibilities among local water management committees, State Water Ministries and local government, including a water fee sharing mechanism to fund long-term maintenance of the watering points. Increase in current water supply of 2,712,000 by 400,000 m3 to 3,112,000 m3 will satisfy water demand along the livestock corridor of 2,970,000 m3, with minimal impact on regional water balance (additional water capture accounts for 0.2% of total annual water yield of 207,720,000 m3).
- Long-term sustainability of the component results is also enhanced by new State-level regulatory support for livestock mobility and rangeland restoration and through improved cross-sectoral coordination among land use agencies at State level.
- Replicability of the project in other States in Sudan and elsewhere in the Sahel Region, through the GCF-UNCCD Great Green Wall (GGW) umbrella programme, which will link ecosystem restoration with locally appropriate smallholder non-timber forest product value chain improvements in other countries in the Sahel to achieve both climate change mitigation and adaptation objectives.

8. **Component 1 outputs and activities:** Component 1 is "Restoration of smallholder gum agroforestry systems, reforestation of degraded land and improvement of smallholder gum value chains". This component has two outputs (1.1 and 1.2) that generate direct greenhouse gas mitigation benefits through gum agroforestry restoration and reforestation activities, and four outputs (1.3 to 1.6) that focus on adaptation. Under the adaptation outputs, the project will build the capacity of 500 smallholder gum Arabic producer groups (GAPAs) to produce sizable quantities of clean, dry gum – as gum trees are by far the most resilient crop with regards to tolerating increasing moisture stress in the project area – and reposition them in the value chain and link them up with financial services providers. The doubling of gum producer prices, achieved under the AFD-funded pilot project that GAMS will scale-up, not only immediately improves farm household resilience to climate change shocks, but also promotes longer-term adaptation as the promoted gum agroforestry systems are more resilient to the projected climate change stresses, and creates incentives for smallholders to maintain carbon sequestration (mitigation) results over time. The GAPAs to benefit from component 1 would be selected by the project on the basis of the following two criteria: (i) Willingness to engage actively in gum agroforestry restoration (output 1.1) or reforestation (output 1.2) activities, which is essential as the GAPA members would need to devote significant labour (and farm land for output 1.1)[19]; and (ii) willingness to apply the accountability and transparency tools developed under the AFD-funded pilot project (see appendix c of Chapter 6 of Annex 13, PFS) that GAMS aims to scale up, in order to guarantee that benefits accruing to GAPAs are shared equitably with the GAPA members. This component has six outputs and 14 associated activities, as follows:

9. **Output 1.1 and associated activities:** Output 1.1 is "75,000 hectares of gum agroforestry systems (40,000 ha in West Kordofan; 35,000 ha in North Kordofan) restored by local communities supported by the project". While the restoration targets are large numbers, they will be achieved through bottom-up planning and a Community-Driven Development Approach, with site selection dictated by the preferences of the GAPA members making the land available for restoration. Based on FNC's recent experience with different plantation establishment techniques in North and West Kordofan, direct seeding of tree seeds together with crop seeds will be the preferred technique.[20] This may be supported by mechanical soil preparation where necessary. To support these restoration activities, FNC will use hashab seed from its own stocks, or procure it from the National Forest Research Centre (NFRC), or locally from women's groups and farmers.[21] The National Forestry Research Centre will provide high-quality seed, sstriking a balance between gum yield and resilience to moisture stress, and thus facilitating climate change adaptation. Where necessary, it may engage local machine operators in soil preparation. Where direct seeding is not feasible, FNC may procure seedlings from local women's groups' nurseries or use seedlings from its own nurseries.

10. The project will provide technical support for women to become tree seed/seedling suppliers in the restoration process based on their effective skills (household/village tree nursery production, production of seedlings, collection of improved seeds, transportation of seedlings, and providing technical support). The achievement of

[19] All GAPAs are expected to want to engage in gum value chain activities generating direct monetary benefits, but not all GAPAs may be willing to engage in agroforestry restoration or reforestation as well. It is the link between these two categories of activities that is essential for the exit strategy of the project and the sustainability of project results.

[20] Direct seeding accounted for over 80% of hashab gum plantations established with FNC support in North Kordofan in 2015-2017. See also Ballal et al. 2018 for technical aspects of land restoration interventions.

[21] In recent years, around 50% of FNC's seed supplies have come from its own facilities, with 25% each coming from NFRC and local communities. For 2020, FNC has 225 tons of gum arabic tree seed at its disposal, sufficient for about 185,000 ha of restoration. Total gum arabic seed requirement of GAMS project for restoration of 125,000 ha over five years is only 150 tons, or 30 tons per year on average, less than 14% of total FNC seed supplies.

this output will be verified using data provided by Locality teams (LT) and state coordination units (SCU) including a georeferenced M&E Archive and reports. Changes in Land productivity dynamics (LPD) and Normalized difference vegetation index (NDVI) will be assessed against the baseline. Four activities are planned for this output: 1.1.1, 1.1.2, 1.1.3 and 1.1.4. In the generation of this output, a different implementation approach will be followed for those communities (referred to as "phase one") that already have completed Village Cluster Level Adaptation Plans (VCLAP), including restoration targets, and those that do not ("phase two communities"), as detailed below.

11. Activity 1.1.1 Stakeholder meetings at State (2) and Locality (7) levels. Stakeholder meetings at State and Locality levels will be essential for ensuring local authorities are supportive of the project objectives and planned agroforestry restoration activities, and representatives of smallholder producer organizations are aware of project activities and benefits to the targeted beneficiaries. The project will sign Letters of Agreement (LoA) with local NGOs to develop a communication strategy and facilitate meetings of the various actors involved in smallholder gum production. (**FAO responsible EE for the full Activity**)

12. Activity 1.1.2 Confirmation of preselected target communities and validation of their restoration plans. Around 80% of the local communities in the project area have already gone through a Village Cluster Level Adaptation Planning (VCLAP) exercise, facilitated by a previous IFAD-funded project, and have proposed gum agroforestry restoration investments, most of which have not yet been funded, as part of their adaptation plans. The project will hold validation workshops in the 7 project Localities in North and West Kordofan States and will conduct 120 Village Cluster Level meetings to verify the continued interest of target communities (referred to as phase one communities) to participate in restoration efforts and prioritize actions identified within their plans to be supported under the GAMS project. (**FNC responsible EE for the full Activity**).

13. Activity 1.1.3 Mobilization of communities (labour), provision of extension and procurement of restoration inputs by FNC (quality seed from Forestry Research Centre, seedlings from local nurseries and soil preparation). Once the agroforestry restoration plans of the Village Clusters have been validated (activity 1.1.2), FNC will mobilize the target communities for the execution of the restoration activities. Most of the restoration work will be done by the communities. FNC will procure external inputs, such as mechanical soil preparation on degraded lands, as necessary, and provide technical advice to local communities. The project will establish partnership agreements with the phase one communities involved to implement restoration programs for years 2 (8,000 ha), 3 (12,000 ha), 4 (20,000 ha) and 5 (20,000 ha). The project will also recruit a consultant for carrying out a livelihood and gender impact assessment at mid-term and end of project, which will also cover activities 1.1.4, 1.2.2 and 1.2.3 below**. (FNC responsible EE for sub-activities 1.1.3a, Investments in agroforestry enrichment/restoration and 1.1.3c, Supply of inputs and extension support for women-led nurseries; FAO responsible EE for sub-activity 1.1.3b, Livelihood and Gender Impact Assessment)**

14. Activity 1.1.4 Engage remaining 20% of target communities without existing gum restoration plans in participatory planning process and implement gum restoration plans. For the 20% of the local communities in the project area that have not yet gone through a Village Cluster Level Adaptation Planning (VCLAP) exercise, referred to as "phase two communities", the project will conduct this planning exercise in a participatory manner, through the signing of an LoA with a competent local NGO. The planning exercise will involve repeated site visits to the 25 Village Clusters involved, to give the communities time to reflect on new information provided and set their own priorities for lands targeted with agroforestry plantings. Once restoration investments have been prioritized and agreed, FNC will conclude partnership agreements with the phase two communities involved to implement restoration programs for years 2 (2,000 ha), 3 (3,000 ha), 4 (5,000 ha) and 5 (5,000 ha). As with the phase one communities, most of the restoration work will be done by the communities themselves and FNC will provide technical assistance and procure external inputs, such as quality seed and mechanical soil preparation on degraded lands, as necessary. (**FNC responsible EE for the full Activity**).

15. **Output 1.2 and associated activities:** Output 1.2 is "50,000 hectares of degraded lands (40,000 ha in South Kordofan; 5,000 ha in North Kordofan; 5,000 ha in West Kordofan) reforested by local communities supported by the project". 80% of the area targeted by GAMS for reforestation is in the State of South Kordofan. FNC has pre-identified potential areas for reforestation in the four project Localities in that State: Alabasya, Rashad, Abu

Karshola and Algoz. Areas pre-identified by FNC include sixteen Community Forests with a total area of 48,000 feddan of which 47,000 feddan (about 19,740 ha) are degraded, and 27 Government Forests with a total degraded area of 95,200 feddan (about 39,984 ha). In the latter, 7,993 households would be involved in taungya reforestation. Final site selection by the project of degraded community forests and government forests to be reforested would be based on local community preferences and aspirations, but support for gum value chain activities of the concerned GAPAs would be conditional on their willingness to engage in reforestation, as highlighted in paragraph 2 above. Out of the total of nearly 60,000 ha of degraded forests pre-identified in the four project Localities in South Kordofan, 40,000 ha will be reforested with assistance from the GAMS project. The main species planted or seeded will be Acacia senegal (Hashab, on sandy soils and sandy clay soils) and Acacia seyal (talha, on clay soils). While the main product of the Acacia trees is hard gum (hashab) and soft gum (Talha), they are multi-purpose trees that are also suitable for livestock fodder and nitrogen fixation. In addition, stream buffers will be planted with a variety of suitable species yielding other NTFP, such as baobab and tamarind, identified in consultation with local communities. The decision of where to reforest and over what area will be taken in a participatory manner with the communities involved, at the start of the project.

16. Reforestation activities in Government Forests will be implemented using the “modified taungya” system, which is well-known and has produced good results in Sudan, e.g. in Nabaq Forest in South Kordofan State. Under the modified taungya system, local communities are allowed to plant crops in between the gum Arabic trees planted or seeded, until the tree canopy closes after 5-6 years. This benefit is highly valued by local communities, especially among landless farmers, many of whom are women. As for Output 1.1, direct seeding of tree seeds together with crop seeds will be the preferred technique. This may be supported by mechanical soil preparation where necessary. To support these restoration activities, FNC will use Hashab and Talha seed from its own stocks or procure it locally from women’s groups and farmers. It may also obtain quality seed from the Forestry Research Centre (striking a balance between gum yield and resilience to moisture stress, and thus facilitating climate change adaptation). Where necessary, it may engage local machine operators in soil preparation Where direct seeding is not feasible, FNC may procure seedlings from local women’s groups’ nurseries or use seedlings from its own nurseries. A co-management agreement will be concluded between FNC and the communities to confirm benefit sharing arrangements for the gum production, which becomes important around five years after tree establishment. To generate this output, a slightly different approach will be followed for those communities that already collaborate with FNC on reforestation (30% of the reforestation target area) and those that don’t (70% of the reforestation target area). For the latter, an independent facilitator will be recruited to enhance trust building between local communities and FNC staff, as detailed below.

17. The achievement of this output will be verified using data provided by Locality teams (LT) and state coordination units (SCU) including a georeferenced M&E Archive and reports. Changes in Land productivity dynamics (LPD) and normalized difference vegetation index (NDVI) will be assessed against the baseline. Four activities are planned for this output: 1.2.1, 1.2.2, 1.2.3 and 1.2.4.

18. Activity 1.2.1 Confirmation of pre-identified deforested areas amenable to community reforestation. Stakeholder meetings at State and Locality levels will be essential for ensuring local authorities are supportive of the project objectives and planned reforestation activities, and representatives of village communities and smallholder producer organizations are aware of project activities, rights and responsibilities and distribution of benefits among the targeted beneficiaries. The project will sign Letters of Agreement (LoA) with local NGOs to develop a communication strategy and facilitate meetings of the various actors involved in reforestation in 11 project Localities in North, South and West Kordofan States. (**FNC responsible EE for the full Activity**).

19. Activity 1.2.2 Mobilization of community stakeholders for new reforestation areas (70% of acreage)(. The project will sign LoAs with local NGOs for facilitating the participatory planning process with 35 communities and conduct technical and leadership training for community members, including women. The project will conclude partnership agreements with the target communities, who will do most of the work involved, for the implementation of reforestation programs for year 2 (5,600 ha), 3 (8,400 ha), 4 (10,500 ha) and 5 (10,500 ha). As for the restoration activities under output 1.1, FNC will procure external inputs (seeds, seedlings, soil preparation) where necessary. **(FNC responsible EE for sub-activities 1.2.2b, Investments in agroforestry enrichment/restoration, 1.2.2c, Technical and organizational trainings for women group members and**

leaders and 1.2.2e, Direct procurement of inputs and extension support for women-led nurseries; FAO responsible EE for sub-activities 1.2.2a, independent facilitator for 35 communities and 1.2.2d, Leadership and management trainings (including women leaders)).

20. Activity 1.2.3 Mobilization of communities for scaling up of existing community forestry/co-management agreements through additional reforestation (30% of acreage). Since the communities involved in this activity are already collaborating with FNC, the project will include the conduct of the participatory planning process in the annual work plan and budget for FNC, who will facilitate a participatory planning process with 15 communities and conduct technical and leadership training for community members, including women. The project will conclude partnership agreements with the target communities, who will do most of the work involved, for the implementation of reforestation programs for years 2 (2,400 ha), 3 (3,600 ha), 4 (4,500 ha) and 5 (4,500 ha). As with the restoration output 1.1.1, direct seeding will be the preferred establishment technique. FNC will use hashab seed from its own stocks or procure it locally from women's groups and farmers. It may also obtain quality seed from the Forestry Research Centre (striking a balance between gum yield and resilience to moisture stress, and thus facilitating climate change adaptation). Where necessary, it may engage local machine operators in soil preparation. Where direct seeding is not feasible, FNC may procure seedlings from local women's groups' nurseries or use seedlings from its own nurseries. (**FNC responsible EE for the full Activity**).

21. Activity 1.2.4 Facilitate negotiations between communities and FNC on new co-management agreements for additional reforestation). For those communities that do not have ongoing co-management agreements with FNC, new agreements will need to be negotiated to agree on FNC's and the communities' rights and responsibilities and confirm benefit sharing arrangements for the gum produced. The project will sign LoAs with one or more experienced local NGOs to act as independent facilitator for the negotiation of these co-management agreements. The project will also recruit consultants to help implement the Environmental and Social Management Framework (ESMF) and operationalize the Grievance Redress Mechanism (GRM). **(FNC responsible EE for sub-activity 1.2.4b, Venue and travel provision for participants; FAO responsible EE for sub-activities 1.2.4a, LoA for NGO to act as independent facilitator and 1.2.4c, Environmental and Social Management Framework and Grievance Redress Mechanism consultancy)**.

22. **Output 1.3 and associated activities:** Output 1.3 is "Technical, organizational and commercial capacity strengthening program for value chain actors implemented". The main beneficiaries of this output are the 500 smallholder Gum Arabic Producer Associations (GAPAs) in North, South and West Kordofan targeted by the project, including mixed gender groups and women only groups. The targeting of 500 GAPAs, to be selected according to the criteria laid out in paragraph 8 above, across the three States represents a major scaling up vis-à-vis the FNC pilot project funded by AFD[22] that the GAMS project is replicating, which strengthened the capacity of 30 GAPAs in one Locality North Kordofan State only. Under this output, gender plan activities and targets at State Level will be validated to adjust the project gender mainstreaming activities. Through negotiating direct purchase agreements between buyers and the GAPAs, specifying terms of quality and delivery, the pilot project succeeded in doubling GAPA producer prices for gum arabic. Secondary beneficiaries include gum buyers and market authorities. Two activities are planned for this output: 1.3.1 and 1.3.2.

23. Activity 1.3.1 Organize meetings and exchange visits among GAPAs and gum buyers. At the start of the implementation of the AFD-funded pilot project, it became clear that there was such mistrust among smallholder gum producer groups (GAPAs) and gum buyers – because of a long history of exploitation – that sensitization meetings and exchange visits were needed to build trust between these actors. The project will use the basic management (including accounting) tools guaranteeing equity and transparency among all parties that were introduced by the AFD-funded pilot project implemented by FNC, in consultation with the gum companies.[23] The fact that the gum price that exporters pay to the GAPAs is based on the published daily gum auction market price, which is shared with all gum producers through a simple text messaging system, considerably reduces the risk of GAPAs not receiving a fair price from the gum exporters. The fact that 14 out of 15 GAPAs have

[22] The AFD-funded pilot project "Support in Structuring the Gum Arabic Sector in Sudan" was implemented by FNC in Sheikan Locality, North Kordofan State, from 2014 to 2018.

[23] These management tools are provided in Appendix c of Chapter 6, Implementation Arrangements, Annex 13, PFS.

been engaged in contract farming arrangements with the Elemats company since 2015 provides further evidence of the attractiveness of this model to smallholder producers.[24] Given FNC's ample experience with this task, the project will include facilitation of sensitization and roundtable meetings in its annual work programme and budget under the project. There will be 3 sensitization meetings, one per state, between GAPAs and gum buyers at State level, followed by 11 sensitization meetings at Locality level. (**FNC responsible EE for the full Activity**).

24. Activity 1.3.2 Build the technical organizational and commercial capacity of GAPAs to produce clean, dry gum according to the international IAPG standard. In order to design the GAPA capacity building programme, the project will recruit a national consultant for analysis of GAPA training needs and elaboration of training materials – building on those developed under the AFD-funded pilot project. The project will also recruit a Gender Action Learning System (GALS) consultant to ensure that structural gender issues are properly addressed and that the GAPA capacity building programme benefits women – one of the major challenges identified by the pilot project. Among other things, the project will provide literacy and numeracy training for women in order to address this. For the technical training, the project will procure the services of the Institute for Gum Arabic Research and Desertification of the University of North Kordofan (IGARD), who conducted GAPA training in clean dry gum production according to the international standard established by the International Association for the Production of Gum (IAPG) under the pilot project. The project will then conduct GAPA training, including GALS and literacy and numeracy for women GAPA members. **(FNC responsible EE for sub-activities 1.3.2e, Training delivery, 1.3.2f, Deploy training and capacity building programme (technical, organizational and commercial) for GAPAs and 1.3.2k, operational costs for 11 Locality-level gum extension officers; FAO responsible EE for sub-activities 1.3.2a, Chief Technical Advisor (Value chain specialist), 1.3.2b, National consultancy for training needs analysis and training material development, 1.3.2c, Contract with IGARD for adaptation of technical training material, 1.3.2d, IGARD national trainer consultancy, 1.3.2g, Rapid assessment of post-training program impact, 1.3.2h, Contract with NGO for Gender Action Learning System (GALS) training for beneficiary households and training of FNC trainers, 1.3.2i, Contract with NGO for functional literacy and numeracy for women group members, and 1.3.2j, Contract with NGO to validate gender action plan activities and targets at State level and adjust project gender mainstreaming activities).**

25. **Output 1.4 and associated activities:** Output 1.4 is "280 smallholder gum producer groups linked up with gum exporters paying premium price for clean, dry gum". The main beneficiaries of this output are the smallholder Gum Arabic Producer Associations (GAPAs) in North, South and West Kordofan targeted by the project, including mixed gender groups and women only groups. They will receive a premium price (auction market price plus 10%) in return for delivering clean, dry gum Arabic compliant with the AIPG standard. This is about twice the price they currently get for the gum they produce. It represents a major scaling up vis-à-vis the FNC pilot project funded by AFD that the GAMS project is replicating, which was successful in doubling smallholder gum producer prices under gum purchase agreements they facilitated for 30 GAPAs (around 14 of which are still operational) in North Kordofan State only. The GAPAs to benefit from this output would self-select from among the GAPAs whose technical and organizational capacity will have been built by the project under Output 1.3, but would also depend on the availability of a gum company willing to engage in contract farming with them. One activity is planned for this output: 1.4.1.

26. Activity 1.4.1 Facilitate contract farming relationships between GAPAs and gum buyers/exporters. The project will facilitate these contract farming relationships by organizing business brokering meetings between GAPAs and gum buyers at Locality and Village Cluster level. During these meetings, participants will be informed about the management tools for contract farming relationships[25] which were developed in collaboration between private gum buyers, GAPAs and FNC under the AFD-funded pilot project that GAMS aims to scale up, the use of which will be mandatory for all partnerships benefiting from GAMS support. For the implementation of this

[24] In addition to Elemats, which has committed to provide leveraged finance alongside the GAMS project, FAO and FNC are in dialogue with four other gum companies that expressed an interest in partnering with GAMS. One of these, Almotahida, has already started a pilot with 6 GAPAs. All companies participating in GAMS will be required to use the management tools (see fn 25 below) developed under the pilot project to guarantee transparency and equity in their dealings with the GAPAs.

[25] These management tools are described in detail in Chapter 6, Implementation arrangements, of Annex 13, Pre-Feasibility study.

activity, the project will recruit two national consultants: a Contract Farming Specialist familiar with the gum value chain and a GAPA/Community Development Officer. Specific support will be provided to women to (i) tailor the contract farming purchase guarantee to be signed with gum exporters to fit with women's profiles, constraints and needs; and (ii) monitor the correct use of the GAPA management tools (see Chapter 6 implementation arrangements) to ensure that women members of mixed GAPAs receive an equitable amount of pre-financing from the gum exporters. **(FNC responsible EE for sub-activities 1.4.1a, Organize business brokering meetings between GAPAs and buyers at Locality level, 1.4.1b, Organize business brokering meetings between GAPAs and buyers at village cluster level, and 1.4.1d, Operational cost for FNC GAPA/Community Development Officer; FAO responsible EE for sub-activity 1.4.1c, Contract farming specialist consultancy)**.

27. **Output 1.5 and associated activities:** Output 1.5 is "120 smallholder gum producer groups selling clean, dry gum in standardized auction markets". The main beneficiaries of this output are the smallholder Gum Arabic Producer Associations (GAPAs) in North, South and West Kordofan targeted by the project, including mixed gender groups and women only groups. The GAPAs to benefit from this output would self-select from among the GAPAs whose technical and organizational capacity will have been built by the project under Output 1.3, but would also depend on the crop auction market establishing "clean, dry gum arabic" as a new market standard, one of the project's strategies to ensure that scaling up continues after the project ends. Establishing an open market gum quality standard represents a new departure vis-à-vis the FNC pilot project funded by AFD that the GAMS project is scaling-up and forms a key part of the project's exit strategy. Currently, gum markets in Sudan don't have a separate quality standard for clean, dry gum, which prevents smallholders from being rewarded for their best-quality gum and removes any incentive for producing more. Once auction markets in Sudan start formally recognizing clean, dry gum as a distinct product, with a unique price, it will provide an important incentive for smallholder gum producers, organized in GAPAs, to improve the quality of their gum and increase the income they derive from it. The greater value derived from quality gum sales with further incentive farmers in investing and maintaining their gum gardens, and thus strengthen their climate change adaptation preparedness. Introducing gum quality standards in crop auction markets is also a key element of the Government of Sudan's new Gum Arabic Sector Strategy. The gum market auctions provide open access to any producer groups capable of meeting the specified quality standards, thus create the potential of greatly expanding project achievements in helping smallholder producers to enhance the adaption to climate change stressors. There are two activities associated with this Output: 1.5.1 and 1.5.2.

28. Activity 1.5.1 Facilitate dialogue with gum producers, gum buyers and State-level agricultural and trade authorities to promote recognition of "clean, dry gum" as a new market standard, starting with the El Obeid Crop Auction Market. The project will recruit a national consultant for the analysis of gum market standards and quality assurance protocols. Once this analysis has been completed, the report will be widely disseminated for feedback, and discussed at a gum stakeholder roundtable meeting, aiming to build support for the recognition of "clean, dry hashab gum" in auction markets, starting with the El Obeid Crop Auction Market, which is the main market for gum in the project area and nationally. This activity is completely in line with the new national Gum Arabic Strategy issued recently (in Arabic) by the Gum Arabic Board (GAB), so the project will work closely with GAB to disseminate the roundtable meeting report widely and conduct follow-up events to increase stakeholder buy-in for the new gum standards. Women gum producers are less able to travel to far-away auction markets than men, so they will need additional assistance to benefit from the new gum quality standards. Once "clean, dry gum" is recognized in auction markets, the project will recruit a service provider to facilitate exchange visits and workshops with women GAPAs and village/local market traders, followed by meetings to broker long-term supply contracts for the delivery of high-quality gum by women's GAPAs to village/local market traders, at higher prices. **(FNC responsible EE for sub-activities 1.5.1a, Organize roundtable discussion on product standardization and market recognition of clean, dry hashab gum, and 1.5.1e, Organize exchange visits and workshops in 11 Localities between village traders and women's groups; FAO responsible EE for sub-activities 1.5.1b, National consultancy for gum market standards and quality assurance protocols, 1.5.1c, National consultancy for facilitation services for roundtable discussion and 1.5.1d, National consultant facilitator for linking up women gum producer groups with local market traders)**.

29. Activity 1.5.2 Elaborate and conclude an agreement among gum buyers and market authorities to fund and maintain the gum market information system established by the AFD-funded pilot project. The GAMS project will establish a simple gum market information system, modelled on the AFD pilot project, that provides text messages about gum prices, volumes traded in nearby markets and the new quality standards to anyone with a basic cell phone. An initial radio messaging campaign will help to generate interest among the beneficiaries for the information system. As became apparent from AFD project reports and from field visits conducted in North Kordofan for the preparation of the GAMS project, this system is highly appreciated by smallholder gum producers and other gum value chain actors. As part of its exit strategy, the GAMS project aims to make this system financially self-sufficient and independent of external project funding. The project will recruit a national consultant to draft a "white paper" on possible options for sustaining the gum market information system independent of donor financing. The project will disseminate the white paper widely among gum value chain stakeholders and solicit feedback on the proposed options. Subsequently, the project will recruit a facilitator and hold a multi-stakeholder roundtable meeting to build consensus on the preferred market information system option. Finally, the project will recruit an IT consultant to complete development of the market information system, including technical and administrative requirements and provisions for installation, maintenance and cost recovery. The project will also provide the necessary support to ensure that women have equitable access to the market information system. (**FAO responsible EE for the full Activity**).

30. **Output 1.6 and associated activities:** Output 1.6 is “180 smallholder gum producer groups linked up with micro-finance institutions (MFI)”. The main beneficiaries of this output are the smallholder Gum Arabic Producer Associations (GAPAs) in North, South and West Kordofan targeted by the project, including mixed gender groups and women only groups. The GAPAs to benefit from this output would self-select from among the GAPAs whose technical and organizational capacity will have been built by the project under Output 1.3, but would also depend on the willingness of microfinance institutions (MFI) to provide the GAPAs with appropriate financial services. The latter may also depend on the availability of a gum company willing to engage in contract farming with the GAPAs, as the project aims to convince the MFIs to accept the gum purchase guarantees provided by the gum companies as collateral for GAPA loans. This represents another departure vis-à-vis the FNC pilot project funded by AFD that the GAMS project is scaling-up and forms a key part of the project’s exit strategy. The AFD pilot project provided some financial literacy training but this did not lead to an increase in lending to GAPAs by MFI, mainly because the conditions imposed by the latter (collateral for loans, “sellam” loans based on undervalued gum prices) were not acceptable, or even possible, for the GAPAs. The involvement of MFI in pre-financing GAPAs is an essential part of the scaling-up strategy of the project. Without the MFIs, gum contract farming would remain small as gum exporters could not absorb the transaction costs of working directly with many GAPAs, and GAPAs wanting to sell directly into auction markets would also need MFI support. This Output is associated with one Activity: 1.6.1.

31. Activity 1.6.1 Design GAPA-friendly financial products and facilitate credit relationships between GAPAs and microfinance institutions. The project will recruit an international consultant for developing new lending modules, and to discuss these with micro finance institutions (MFI). The project will then hold sensitization events with MFIs and GAPAs at Locality level, followed by brokering events with MFIs and GAPAs at Locality level (including specific events for women GAPAs and MFIs). Finally, the project will conduct further follow-up meetings to facilitate further negotiations as needed and will support women’s savings and credits groups in order to improve their chances of receiving MFI financing. (**FAO responsible EE for the full Activity**).

32. **Component 2 outputs and activities:** Component 2 is “Climate change adaptation at landscape level through establishment of livestock corridors, restoration of rangelands and improvement of the enabling policy and institutional environment. Restoration of livestock mobility through the establishment of livestock corridors contributes directly to climate change adaptation of pastoralists’ livelihoods, and by facilitating livestock movement, it also reduces the risk of livestock damage to the areas restored under Component 1. Restoration of rangelands has direct greenhouse gas mitigation benefits as well as adaptation benefits for pastoralists’ livelihoods. Finally, this component also aims to improve cross-sectoral coordination among land use agencies at State and Locality level, in order to improve the enabling environment for the implementation of climate change adaptation strategies in the land use sector, and safeguard the results of the project. This outcome has four outputs (2.1 to 2.4) associated with 12 activities, as follows.

33. **Output 2.1 and associated activities:** Output 2.1. is "Climate Resilient Village Cluster Plans (CRVCP) completed and adaptation interventions (land restoration and revegetation, water conservation & management) prioritized and implemented in 125 village clusters". Village clusters, which consist of 2-3 villages on average, are used by many projects as the unit for local-level climate change adaptation planning. Many Village Clusters in the project area already have so-called Climate Resilient Village Cluster Plans (CRVCP) or Village Cluster Level Adaptation Plans (VCLAP), which were prepared in a participatory manner under the IFAD-funded Western Sudan Resources Management Project that closed in 2017, in North, South and West Kordofan, and under the ongoing IFAD-funded Livestock Marketing and Resilience Project (LMRP), in North and West Kordofan only. While some of the priorities of these CRVCP or VCLAP have been funded by IFAD, especially those related to the creation of water reservoirs ("hafir"), other priorities – including farm and rangeland restoration – have remained unfunded in many Village Clusters. The GAMS project will work with local communities in the 11 Project Localities to confirm land restoration priorities for 100 existing CRVCP and will facilitate preparation of 25 new CRVCP focusing on the areas around new stock routes, in a participatory manner. Village clusters to benefit from this output will be selected by the project on the basis of the following criteria: (i) geographical vicinity to the livestock corridor to be re-negotiated, demarcated and equipped by the project; and (ii) the existence of previously established CRVCP/VCLAP with land restoration priorities (for 100 villages), or the willingness of village clusters without existing CRVCP/VCLAP to engage in the climate change adaptation planning process and in rangeland restoration. The implementation of the land restoration investments prioritized under these 125 CRVCP is covered under the climate change mitigation outputs 1.1, 1.2 and 2.3. In South Kordofan State, the CRVCPs will provide a supportive matrix for the establishment of 400 km of livestock corridors, see Output 2.2 below. Output 2.1 will be realized through the implementation of three activities: 2.1.1, 2.1.2 and 2.1.3.

34. Activity 2.1.1 Provide training for community stakeholders on climate change adaptation (CCA) and natural resource management (NRM). To improve the quality of the Climate-Resilient Village Cluster Plans (CRVCP) to be formulated and prioritized under this output, it will be important to first provide basic training in Climate Change Adaptation/Natural Resource Management (CCA/NRM) to local communities. The project will recruit an international consultant to adapt and update the IFAD CCA/NRM training programme developed earlier and recruit a local NGO to train community stakeholders in CCA/NRM. This training will not only improve the quality of the CRVCP, but also generate other ideas with local communities on how they can adapt their livelihoods and natural resource use practices to better respond to climate change stressor. (**FAO responsible EE for the full Activity**).

35. Activity 2.1.2 Formulate Climate-resilient Village Cluster Plans (CRVCP) and help communities prioritize climate change adaptation investment options in 25 new Village Clusters. The project will conclude a LoA with a local NGO for facilitating elaboration of new CRVCP around stock routes to be established under Output 2.2.1. The NGO will assist 25 village clusters in elaborating their CRVCP. (**FAO responsible EE for the full Activity**)

36. Activity 2.1.3 Facilitate implementation of prioritized CRVCP climate change adaptation investments (100 existing CRVCP and 25 new CRVCP). Under this activity, the project will assist village clusters (VC) with the implementation of their prioritized Climate Change Adaptation (CCA) investments other than land restoration (which will be implemented under the climate change mitigation outputs), with an average financial envelope of USD 6,000 per VC. The CCA investments will be executed in year 2 (25 VC), year 3 (30 VC), year 4 (50 VC) and year 5 (20 VC). (**FAO responsible EE for the full Activity**).

37. **Output 2.2 and associated activities:** Output 2.2 is "Four hundred (400) km of stock routes negotiated with local government, farming communities and pastoralists, demarcated on the ground and equipped (watering points), and arbitration mechanisms established to resolve conflicts among different user groups." The stock routes, often called livestock corridors in the literature, are an essential tool for strengthening climate change adaptation in the project area, where livestock relies mobility to reach natural pasture and tree browse and where grass grows only 5-6 months a year.[26] Many stock routes have been blocked in recent decades, often

[26] See Annex 13, PFS, Chapter 3 for a definition of the livestock corridor concept, and its importance for climate change adaptation.

due to land grabbing for large-scale rainfed mechanized farming and to internally displaced populations following the civil conflict. The resulting overconcentration of livestock in small areas has led to degradation of vegetation cover, including rangelands and gum arabic stands. The stock routes that will be established by GAMS in South Kordofan will link up with stock routes established under the IFAD-funded Livestock Marketing and Resilience Project in North and West Kordofan, thus facilitating climate change adaptation of transhumant pastoralists – and conflict prevention with sedentary farmers – over a much larger area. FAO has gained considerable experience with the participatory mapping and demarcation of livestock corridors, most recently in Darfur. This output will require the implementation of four activities: 2.2.1, 2.2.2, 2.2.3 and 2.2.4.

38. Activity 2.2.1 Participatory mapping, demarcation of conflict hotspots and validation with local stakeholders of stock routes. The project will recruit a service provider for the rapid assessment and validation of 400 km of proposed stock routes, and subsequently, for participatory mapping and validation of the definitive stock routes, including conflict hotspots. The project will then recruit a service provider to produce and install concrete markets for demarcation of conflict hotspots on the ground over an estimated 60 km.(**FAO responsible EE for the full Activity**).

39. Activity 2.2.2 Plan construction of watering points along livestock routes; agree on maintenance arrangements and cost recovery mechanism with farmers and pastoralists, and implement construction. The project will facilitate stakeholder discussions among farmers and pastoralists to reach agreement on location of watering points and on local institutions taking responsibility for maintenance and cost recovery, then construct them. (**FAO responsible EE for the full Activity**)

40. Activity 2.2.3 Build capacity of rural communities and State and Locality level institutions to co-manage transhumant livestock corridors and establish arbitration mechanisms to reduce conflict between farmers and pastoralists along corridors through the gum belt. FAO will conclude an LoA with the Rangeland and Pasture General Directorate (RGPD), to mobilize government rangeland management specialists to implement this activity. FAO will also recruit an international consultant for developing stock route co-management training materials and training of trainers for stock route co-management. The project will then reconvene and empower 16 mobile stock route co-management teams to train change agents - including women – in farming and pastoralist communities along the stock routes and assist them in conflict reduction and management. Finally, the project will update stock route co-management training materials to cover new NRM regulations developed under Activity 2.3.1.2. (**FAO responsible EE for the full Activity**).

41. Activity 2.2.4 Set up a geographic information system (GIS), and provide training sessions to the project partners on enhanced cross-sectoral coordination and geo-referencing, recording and monitoring in the GIS. The project will recruit an international consultant for setting up the GIS system for recording activities and for training FNC and Rangelands staff in using it, and for conducting refresher training. (**FAO responsible EE for the full Activity**).

42. **Output 2.3 and associated activities:** Output 2.3 is “151,000 ha of rangelands associated with stock routes restored by local and transhumant communities supported by the project” (121,000 ha in South Kordofan, 15,000 ha each in North and West Kordofan). The sites for the rangeland restoration activities will be selected by the project on the basis of the community preferences and aspirations expressed in the Village Cluster Level Adaptation Plans (VCLAP) or Climate Resilient Village Cluster Plans (CRVCP) elaborated and validated under output 2.1 above. The achievement of this output will be verified using data provided by Locality teams (LT) and State Coordination Units (SCU) including a georeferenced M&E Archive and reports. Changes in Land productivity Dynamics (LPD) and Normalised Difference Vegetation Index (NDVI) will be assessed against the baseline. FAO will sign a LoA with the Rangeland and Pasture General Directorate (RPGD) to make available two rangeland management specialists – one for South Kordofan and one to be shared between North and West Kordofan – to assist in the implementation of the three activities which are planned for this output: 2.3.1, 2.3.2 and 2.3.3.

43. Activity 2.3.1 Raise awareness regarding the importance of rangeland restoration with stakeholders at State and Locality levels. Stakeholder meetings at State and Locality levels will be essential for ensuring local

authorities are supportive of the project objectives and planned rangeland restoration activities, and representatives of smallholder pastoralist and livestock producer organizations are aware of project activities and benefits to the targeted beneficiaries. The project will sign Letters of Agreement (LoA) with local NGOs to develop a communication strategy and facilitate meetings of the various actors involved in rangeland restoration, then organize three Kick-off meetings at State level and 11 Kick-off meetings at Locality level. **(FNC responsible EE for sub-activities 2.3.1a, Organize three kick-off meetings at State level and 2.3.1b, Organize eleven kick-off meetings at Locality level; FAO responsible EE for sub-activities 2.3.1c, Operational cost for Rangeland Management specialist, 2.3.1d, Operational cost for Community Development Specialist and 2.3.1e, Contract with NGO to develop communications strategy and design and publish communications materials).**

44. Activity 2.3.2 Facilitate participatory process with farming and pastoral communities to identify sites and species (trees, shrubs, grasses) for rangeland restoration and agree on division of labour among project and beneficiaries for implementing agreed plans. The mobile stock route co-management teams established by the project (see output 2.2 above) will conduct local-level stock route segment meetings (up to 16) to prioritize restoration sites and species (making sure to interview women, who often have different species preferences, separately) and agree on management arrangements. As for the other restoration activities, most of the work will be done by local communities, in this case including transhumant pastoralists, so it is essential that they are properly informed and consulted prior to the implementation of any restoration activity. (**FAO responsible EE for the full Activity**).

45. Activity 2.3.3 Implement 151,000 ha rangeland restoration program in South Kordofan (121,000 ha), North Kordofan (15,000 ha) and West Kordofan (15,000 ha). The project will conclude partnership agreements with agro-pastoralists' and transhumant pastoralists' communities to implement rangeland restoration programmes for years 2 (30,200 ha), 3 (45,300 ha), 4 (37,750 ha) and 5 (37,750 ha). As for other restoration activities, most of the work will be done by local communities. Where external inputs are necessary, (quality seed supply, mechanical soil preparation on the most degraded land), the project will recruit service providers, providing specific support to women as for the reforestation/agroforestry output. The project will also recruit a consultant for mid-term and final livelihood and gender impact assessment of this activity. **(FNC responsible EE for sub-activities 2.3.3c, Procurement of quality seed, machine rental for soil preparation, 2.3.3e, Procurement of 4WD station wagon and 2.3.3f, Procurement of 25 motorbikes; FAO responsible EE for sub-activities 2.3.3a, Operational costs for two Rangeland Management specialist, 2.3.3b,Operational costs for 11 Locality Rangeland Extension Officers and 2.3.3d, Consultant for Livelihood and Gender Impact Assessment).**

46. **Output 2.4 and associated activities:** Output 2.4 is "State-level cross-sectoral policy dialogue and adoption of climate-responsive natural resource management regulations (including protection of livestock corridors). The First Communication to the UNFCCC of Sudan in 2003 highlighted the lack of cross-sectoral coordination on land use policies and strategies as one of the major constraints in implementing climate change adaptation and mitigation programmes. This is still the case. Output 2.4 will improve cross-sectoral coordination at State and Locality level27 and thus help to safeguard the long-term sustainability of adaptation and mitigation results generated by the project's investments in land restoration. This output will require implementation of two activities: 2.4.1 and 2.4.2.

47. Activity 2.4.1 Facilitate policy dialogue to strengthen the enabling environment for climate change adaptation investments (NTFP value chains, land management and restoration). The project will recruit an international Climate Change Adaptation (CCA) policy consultant and a national Natural Resources Management (NRM) consultant to prepare and organize two stakeholder roundtable meetings on enabling policy environment for CCA/NRM investments, one on climate resilient Non-Timber Forest Product (NTFP) value chains and one on climate resilient land management and restoration practices – both involving the participation of women's groups representatives. **(FNC responsible EE for sub-activities 2.4.1a, Organization of roundtable discussion on enabling policy environment for smallholder producers' inclusion in NTFP value chains**

[27] Following a request from the NDA, the GAMS project focuses on policies and regulations at sub-national level. Some of the planned results of the GAMS project, however, will also provide relevant inputs for the review of national-level policies and regulations.

and 2.4.1d, Organization of Stakeholder review meetings; FAO responsible EE for sub-activities 2.4.1b, International Natural Resource Management Specialist consultancy and 2.4.1c, National Natural Resource Management Specialist consultancy).

48. Activity 2.4.2 Elaborate State level natural resource management regulations, including those needed to provide legal protection for livestock corridors and community forests - and their respective management arrangements - and disseminate these regulations amongst rural communities. The project will recruit a two-person consultant team consisting of an international specialist on the Voluntary Guidelines for the Governance of Tenure (VGGT) and a local land and natural resource tenure specialist to elaborate new climate change resilient Natural Resource Management (NRM) regulations for the protection of livestock corridors, community forests and other Climate change adaptation (CCA) priorities involving land and other resource utilization. **(FAO responsible EE for the full Activity)**.

B.3. Implementation / institutional arrangements (max. 750 words)

49. The Food and Agriculture Organization of the United Nations (FAO) is the Accredited Entity (AE) to implement the Project. The project will be co-executed by the Forests National Corporation (FNC)[28] and FAO.
50. The independence of the two roles of FAO will be guaranteed by establishing two separate functions as follows: **FAO as Accredited Entity**. FAO Regional Office for the Near East (RNE, located in Cairo) with the FAO Office of Climate Change, Biodiversity, and Environment (OCB, formerly CBC, located in Rome) and other technical divisions as required will be responsible for performing AE functions. A specific project supervision team will be established, including FAO staff from RNE, OCB and other technical divisions. The separation from the role of executing entity will be ensured by the establishment of: (a) regular system of review/ clearance of Annual Work Plan and Budget – exercised by the Lead Technical Officer (belonging to RNE) and the members of the Project Task Force, composed of FAO technical staff; (b) regular independent supervisions of the project activities throughout the project intervention, ultimately to ensure that the project management takes corrective measures if and when required, and (c) through the evaluation functions carried out by the FAO Office of Independent Evaluation (in Rome) at mid-term and final stage. The project will be executed according to the agreed Term Sheet (Annex 6). FAO will sign a subsidiary agreement (i.e. Project Agreement) with the Government of Sudan, acting through the Ministry of Agriculture and Natural Resources (MoA).
51. **FAO as Executing Entity**. The FAO Representation in Sudan (FAO-SD) will be in charge of the execution of selected activities and of the contractual agreements with the executing entity FNC (see below), as well as the recruitment and management of all consultants and sub-contractors. A project delivery team will be set up in FAO-SD, comprising staff covering all functions relevant to the execution of the envisaged activities. FAO-SD will ensure the provision of relevant TA (recruitment and management of international consultants and of service providers)[29]and provide quality assurance throughout all project components, to enhance the success of the project and its potential replicability. Technical assistance will be provided by mobilizing FAO experts, or FAO supervised consultants and service providers. FAO's mandate as a global stakeholder in the field of agriculture, forests and rangeland management, and climate change, and its related expertise represents a comparative advantage in providing technical assistance and quality assurance. FAO will ensure the highest level of ownership and sustainability of the project investment at country level (i.e., within local institutions)
52. FAO, in its role as AE, will conclude a five-year Operational Partnership Agreement (OPA) with FNC. The OPA that FAO will conclude with FNC will also include a Risk Mitigation Plan[30] to address the weaknesses highlighted by the above-mentioned HACT assessment. FAO will also engage with other procured parties (to be identified in accordance with FAO procurement rules and regulations) through Letters of Agreement (LoA) for the delivery of specific services. FNC is a semi-autonomous government organization, which has a separate juridical person from the ministry system in accordance with the Government Law. FNC was established as corporation according to the Forests Act 1989, following to the Council of Ministers Order No.284 of 20 April 1986, which approved the establishment of FNC. FNC will sign a subsidiary agreement (i.e. Operational Partners Agreement (OPA)) with

[28] The OP Assessment of FNC has been finalized and is being recognized in the IAs.

[29] FAO will take on this role because of FNC's relative inexperience with recruiting and managing international consultants and subcontractors, as recommended by the April 2019 micro assessment of FNC under the Harmonized Approach to Cash Transfer (HACT) framework. A copy of this micro-assessment is included in the project package submission.

[30] The risk mitigation plan is provided as Appendix a of Chapter 6, Project Implementation Arrangements, in Annex 13, Prefeasibility Study.

FAO to enter EE role for the project. Scope of roles and responsibilities and legal conditions are defined in the OPA.

Project execution:

53. A dedicated **Project Management Unit** (PMU) will be established under this project and be hosted by FNC in Khartoum. It will be functional for the entire duration of the project, and will have State Coordination Units (SCUs) in North Kordofan, West Kordofan and South Kordofan.
54. The Project Management Unit (PMU) will be responsible for the day-to-day implementation of the project. The Forestry National Corporation (FNC) will provide office space for the Project Management Unit free of charge, an in-kind contribution valued at USD 60,000 for the duration of the project, but not included as co-financing in the project budget. The Sudanese government will also commit staff resources, from FNC, and to a lesser extent the Rangeland and Pasture Administration (RPA), worth USD 2,232,000 for the duration of the project for its implementation – again these have not been counted as co-financing, as they are existing FNC and RPA staff. The PMU will include a Project Coordinator, Admin and Finance Officer and M&E Officer. Financial management and procurement arrangements are described in paragraphs 64-71, section C.6, below. Other support staff from FNC will be seconded to the PMU, this includes technical officers, procurement, IT, HR, Safeguards officer, M&E Assistant, accountant, legal advisor, documentation and media officer. The PMU will develop 3-month work plans and budgets and submit them to the Project Steering Committee (PSC) for endorsement. Similarly, the PMU will prepare quarterly progress reports, financial reports and procurement plans and submit them to the PSC for endorsement. Quarterly reports after endorsement by the PSC will be submitted to the FAO-GCF project supervision team for release of subsequent disbursement of funds.
55. In each of the three targeted states, a light **State Coordination Unit (SCU)** will be established to coordinate the project implementation at State and Locality levels. The unit will consist of a State Coordinator and seconded staff from FNC office at State level. The State Coordinator will report to the Project Coordinator at the PMU and will be also responsible for coordination of the project with all stakeholders at State and Locality levels. The SCUs will play an extremely important role in ensuring the correct sequencing of the participatory planning processes to be conducted at different levels – Locality, Village Cluster, Community – prior to implementation of the field activities of the project.
56. In each Locality, a **Locality Team (LT)** consisting of field supervisor, forests extension officers, range extension officers and agricultural engineers will be seconded from FNC and agriculture and livestock administrations based on the specific need in each locality. Locality teams will support the State Coordinators on implementation of the project activities at Locality level. The Locality Team will be the front-line implementation team and will be responsible for day-to-day implementation of project activities at Locality level.
57. A **Chief Technical Advisor (CTA)** will be selected by FAO in accordance with FAO HR rules and regulations. CTA's overall role is to enhance the capacity of smallholder gum Arabic producer associations (GAPAs) and improve their positioning in the gum value chain through facilitating better linkages with gum buyers, microfinance institutions and market authorities. Also CTA will ensure effective and efficient deployment of experts and sub-contractors and facilitate the engagement of project partners and make sure the project procedures in compliance with FAO and GCF rules for PMU. The CTA will be based in the PMU and work closely with the PMU staff. FAO will ensure coordination and collaboration between international experts and national sub-partners on the one hand and the PMU and FNC on the other, by explicitly adding to their contracts an enforcement statement on collaboration with the PMU and the linkages between their deliverables and the PMU deliverables. This is necessary to ensure that the work of these consultants and sub-partners is fully coordinated with the other activities being implemented by the PMU at Federal, State and Locality levels.
58. A **Local Procurement Committee** will review procurement actions, as indicated in the procurement plan (see Annex 8).

Flow of funds:

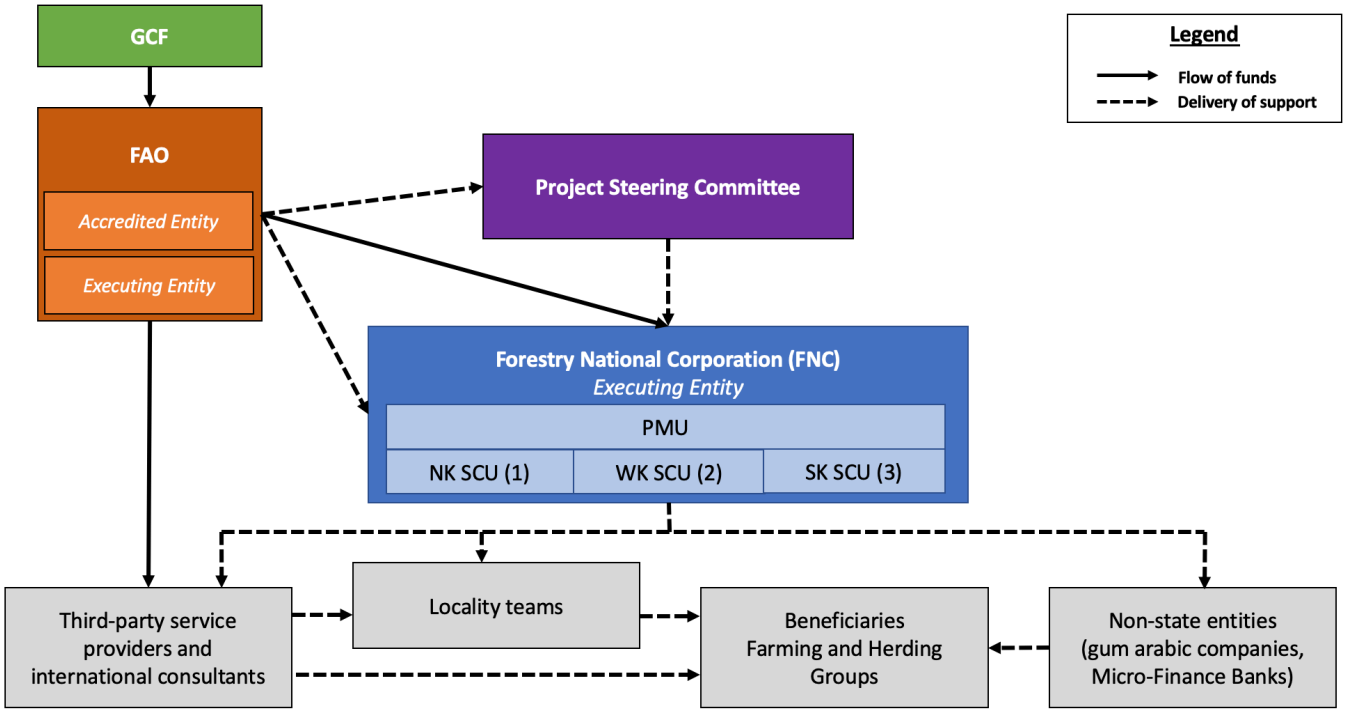
59. In line with the project implementation arrangements outlined above, funds that FAO receives from GCF in its capacity as Accredited Entity would flow forward to the Executing Entities for the execution of project activities, in accordance with the respective responsibilities of FNC and FAO listed in Annex 2a, project logframe, activity section. Please note that in the Flow of Funds chart below, the project beneficiaries and private sector project partners (gum companies and microfinance institutions) are not included, as no GCF funds flow to them.

Project Governance:

60. A **Project Steering Committee (PSC)** will be established to provide strategic guidance for the project. The PSC

will be chaired by the Director General of FNC. The Coordinator of the PMU for this project will act as Rapporteur to the PSC and FAO CTA will participate as resource person. The PSC, which will be composed of 15 primary stakeholders of this project including FNC, HCENR (GCF-NDA), FAO, ministries of agriculture, livestock, water resources, trade, finance, research corporation, gum producers and traders and microfinance banks. The role of the PSC will be to:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints including policy alignment;
- Discuss project issues as raised by the project coordinator;
- Monitor project risks and the effectiveness of mitigation measures, and provide guidance on new project risks, and agree on possible countermeasures and management actions to address specific risks;
- Review the project progress, and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Review and approve annual work plan and provide necessary strategic guidance for its implementation;
- Appraise the annual project implementation report, including the quality assessment rating report; make recommendations for subsequent workplans to build on achievements and address any shortcomings; and
- Provide ad hoc direction and advice for exceptional situations when the project coordinator's tolerances are exceeded.



C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi)	10	million USD ($)		

GCF Financial Instrument		Amount	Currency	Tenor	Pricing
(i)	Senior loans	Enter amount	Options	Enter years	Enter %
(ii)	Subordinated loans	Enter amount	Options	Enter years	Enter %
(iii)	Equity	Enter amount	Options		Enter % equity return

(iv)	Guarantees	Enter amount	Options	Enter years	Enter %
(v)	Reimbursable grants	Enter amount	Options		
(vi)	Grants	9.975	million USD ($)million USD ($)		

(b) Co-financing information[31]	**Total amount**	**Currency**
	0	million USD ($)million USD ($)

Name of institution	Financial instrument	Amount	Currency	Tenor	Pricing	Seniority
Click here to enter text.		0.0	million USD ($)million USD ($)	Enter years	Enter%	Options
Click here to enter text.	Options	Enter amount	Options	Enter years	Enter%	Options
Click here to enter text.	Options	Enter amount	Options	Enter years	Enter%	Options
Click here to enter text.	Options	Enter amount	Options	Enter years	Enter%	Options

(c) Total investment (c) = (a)+(b)	**Amount**	**Currency**
	9.975	million USD ($)

(d) Co-financing ratio[32] **(d) = (b)/(a)**	*0.0*
(e) Other financing arrangements for the project/programme (max ½ page)	*Please explain if any of the financing parties including the AE would benefit from any type of guarantee e.g. sovereign guarantee, MIGA guarantee, etc.* N.A.

C.2. Financing by component

Please provide an estimate of the cost per component (as outlined in Section B.2. above) and disaggregate by sources of financing.

Component	Output	Indicative cost (USD)	GCF financing		Co-financing		
			Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
1.Smallholder gum agroforestry	Click here to enter text.	5,599,100	5,599,100	GrantsGrants		Choose an item.	Click here to enter text.
2. Livestock mobility and rangeland restoration	Click here to enter text.	3,900,900	3,900,900	GrantsGrants		Choose an item.	Click here to enter text.
Project management	Click here to enter text.	475,000	475,000	GrantsGrants		GrantsGrants	
Click here to enter text.	Click here to enter text.	Enter amount	Enter amount	Choose an item.	Enter amount	Choose an item.	Click here to enter text.

[31] These figures do not include USD 14.72 million of leveraged private sector financing for Component 1 to be provided by COMATS/Elemats gum company and EBDAA Bank (see signed commitment letters attached). In addition, the GAMS project aims to mobilize an additional USD 25 million in private sector financing from other gum exporting companies. Nor do these figures includee the in-kind contribution of the Government of Sudan for staff salaries and office space, valued at USD 2,232,000.

[32] Not taking into account leveraged private sector financing of USD 14.72 million (see commitment letters provided) and the government in-kind contribution worth USD 2.3 million, as explained in fn 21.

Indicative total cost (USD)	9,975,000	9,975,000	0

C.2.1 Financing structure (if applicable, mandatory for private sector proposal (max.300 words)

For private sector proposals, provide an overview (diagram) of the proposed financing structure. Please note that this section should focus on describing what is being paid for, either by GCF funding and/or co-financing.

N.A.

C.3 Capacity Building and Technology development/transfer

If the project/programme is envisaged to support capacity building and technology development/transfer, please specify the total requested GCF amount for these activities respectively in this section.

C.3.1 Capacity building[33]	Amount:___3,078,800_ USD
C.3.2. Technology development	Amount:___0_ USD

C.4. Justification for GCF funding request (max. 500 words)

61. The project is fully aligned with the national REDD+ strategy and with Sudan's NDCs and will thus contribute to achieving the Paris Agreement "[…] Developing country Parties should continue enhancing their mitigation efforts, and are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances." (Article 4.4). The proposed project represents an opportunity for Sudan to maximize the synergy beween its adaptation and mitigation actions. As highlighted in the NDC, Sudan will require financial and technical support to implement its proposed strategies and achieve its conditional commitments. Currently, the GCF is the only donor that can mobilize the necessary resources and leveraged financing to support Sudan's climate change commitments. As an LDC, Sudan has important financing needs due to the vulnerability of its economy and inhabitants to climate change (see B1 above). But the country has been isolated from global financial markets due to the international sanctions that were imposed on it. Though these sanctions were conditionally lifted in January 2017, in practice, little has changed. Foreign direct investment has not picked up, and the civil unrest in 2019 has also affected private domestic investment. The country has a severe balance-of-payments deficit (about USD 3 billion in 2017) making it hard to mobilize public investment funds. Finally, Sudan receives only about US$22 in donor aid per capita and per year, which is about one-third of the aid receipts of other Sahelian countries.

C.5. Exit strategy and sustainability (max. 300 words)

62. The sustainability of the project will be guaranteed by two major transformations: (i) the increased capacity and improved market linkages and access to financial services of smallholder gum arabic producer associations (GAPAs), achieved through the combination of the GCF grant (for GAPA capacity building) and leveraged private sector financing from gum companies and micro-finance institutions (enabling GAPAs to scale up production of high-quality and climate resilient gum and access formal financial services), and (ii) the successful cross-sectoral collaboration and co-management of the livestock corridors ("stock routes") by State and Locality level government agencies with farmers' and pastoralists' communities. Regarding (i), the technical, organizational and commercial capacity of the GAPAs and their resulting ability to derive increased economic returns from climate resilient production and marketing of high-quality gum will constitute a major economic incentive to continue investing in management and restoration of agrosilvopastoral landscapes after the project ends. Regarding (ii) the GCF grant investment in building institutions, especially mobile stock route co-management teams to reduce conflicts between farmers and herders, and tripartite agreements on rights and responsibilities among local water management committees, State Water Ministries and local government, including a water fee sharing mechanism to fund long-term maintenance of the watering points along the corridors, as well as long-term protection provided by new State-level regulations, will provide for sustainability beyond the project end (see PFS para 93).

[33] The following six outputs are capacity building:1.3 (1,741,400); 1.4 (170,400); 1.5 (37,250); 1.6 (60,750); 2.1 (902,300) and 2.3 (166,700). Total amount is inserted under C3.1.

63. The project will invest in a major scaling up – from one to eleven Localities and 30 to 500 GAPAs – of GAPA capacity building, enabling them to engage in fair and equitable contract farming arrangements with private sector gum buyers willing to pay a premium price for high-quality gum (see paragraph 23 above and Chapter 3, paragraph 69, Annex 13 PFS). These community-company partnerships will be another key element of the project's exit strategy – as their continued functioning does not depend on project support beyond the initial investment in capacity building of smallholder producer groups and brokering of relations with responsible gum buyers. At the same time, higher gum prices will incentivise restoration of gum agroforestry systems, with gum trees providing protection for local food crops suffering from increased moisture stress due to climate change. Regarding (ii), reinforcing cross-sectoral collaboration among government land use agencies at the State and Locality level, and improving their capacity to facilitate the negotiation and implementation of livestock corridors and other resource sharing agreements between groups of farmers and pastoralists, will – apart from contributing directly to climate change adaptation of pastoralists' livelihoods and reducing livestock damage to gum stands – make a crucial contribution to the social and institutional sustainability of project results. The good practice guide that will be developed under the GAMS project will inform further scaling up across the Sahel region, under the GCF-UNCCD Great Green Wall umbrella programme, which will link ecosystem restoration with locally appropriate smallholder non-timber forest product value chain improvements in other countries in the Sahel to achieve both climate change mitigation and adaptation objectives.

Please describe the GCF's financial exit strategy in case of private sector (through IPOs, trade sales, etc.).

N.A.

C.6. Financial management/procurement (max. 300 words)

64. The project will be co-executed by FAO and FNC. The FAO, in her capacity as the Accredited Entity will enter into an Operational Partner Agreement (OPA) with FNC to transfer funds for execution, as per the details agreed between the partners in the OPA.
65. An FAO-commissioned micro-assessment of FNC in April 2019 (which included an assessment of *inter alia* FNC's financial management and procurement policies and practices) identified FNC as a "moderate-risk" partner for financial management and low risk for procurement. It also noted FNC's relative inexperience with hiring and managing consultants and sub-contractors. To enable effective performance of financial management and procurement functions under this project, all procurement activities that require the selection and sub-contracting of sub-partners will be executed by the FAO (please see Annex 2a, activity section, for further details on the organization of procurement per Executing Entity). FNC's own procurement unit will take responsibility for other procurement, applying the mandatory rules and regulations of Sudan's Ministry of Finance, with oversight provided by the GCF project personnel, thus avoiding any potential conflict of interest.
66. To enable effective performance of financial management by the FNC, the project will hire a finance as well as an admin officer, both will be part of the PMU. The Chief Technical Advisor, who will be hired based on FAO rules and regulations and be based in the PMU, will also support effective performance in this regard.
67. Any financial management and procurement performed by the FAO in her capacity as Executing Entity will be guided by relevant FAO rules and regulations, as well as relevant provisions in the Accreditation Master Agreement (AMA) signed by FAO and the GCF. These rules and regulations were reviewed and deemed satisfactory by the GCF Secretariat and Accreditation Panel as part of FAO's accreditation to the GCF.
68. Direct procurement during the project lifetime, by FAO, is done in accordance with the FAO Manual Section 502, ''Procurement of Goods, Works and Services''. To sub-contract the delivery of specific activities using Letters of Agreement, FAO operates in accordance with its Manual Section 507, ''Letters of Agreement''. Such services are managed under the FAO Procurement Service, which provides policy and operational support to FAO offices and staff undertaking these activities to ensure the Organization procures goods, works and services based on ''Best Value for Money'' principles.
69. Financial management and procurement by FNC will also be overseen and supervised by the FAO-GCF project supervision team. As per the provisions of the FAO Operational Partners Implementation Modality (OPIM), the FAO-GCF project supervision team will undertake regular supervision missions, and will recruit a qualified, internationally recognized auditing firm to perform regular spot checks and audits, to ensure financial management and procurement by the Operational Partner are being performed in line with agreed standards and practices. This will be governed by the agreement to be signed between FAO and the Government of the Sudan before the project becomes operational.
70. The PMU will prepare annual procurement plans for the main items that will be used as a basis for procurement requests during implementation. The plans will include a description of the goods, works of services to be acquired, and the estimation of the budget and source of funds, the schedule of procurement activities and the proposed

procurement method. Where applicable, the local procurement Committee will review procurement actions (see Annex Annex 8)

71. FAO has deployed an Oracle based Enterprise Resource Planning (ERP) system entitled 'Global Resources Management System' (GRMS). This system provides all FAO employees around the world with travel, human resources, procurement and finance functionalities. Using GRMS improves the flow of financial information, supports financial monitoring and reporting, increases transparency and visibility, and strengthens internal control. FAO maintains a Chart of Accounts which is used by the whole Organization and that allows for a separation of income and expenditure by donor and project and it provides a standardized coding structure that enables data to be recorded, classified and summarized to facilitate internal management and external reporting requirements.

D. LOGIC FRAMEWORK AND MONITORING, REPORTING AND EVALUATION

This section refers to the project/programme's logic framework in accordance with the GCF's Performance Measurement Framework under the Results Management Framework to which the project/programme contributes as a whole, including in respect of any co-financing. This is different from the project/programme-level log frame(as there may be other impact measures for example that go beyond those defined by the GCF).

A project-level logical framework, with specific indicators, baselines and targets, means of verification and assumptions should be provided as part of Annex 2.

D.1. Paradigm shift objectives

Shift to low-emission sustainable development pathwaysShift to low-emission sustainable development pathways	By 2040, carbon emissions reductions and removals increased by at least 9.23 million tonnes of CO2e. This will be achieved by improved land management through gum agroforestry restoration (75,000 ha), reforestation (50,000 ha) and rangeland restoration (151,000 ha).
Increased climate-resilient sustainable developmentIncreased climate-resilient sustainable development	By 2026, livelihoods of 66,338 smallholder households (371,528 direct beneficiaries) more resilient to the impacts of climate change. This will be achieved by: (i) protection of annual crops against increased moisture stress provided by gum trees; (ii) increased revenue from the most climate-resilient livelihood activity, gum production; and (iii) increased livestock mobility to respond to climate shocks and reduce pressure on gum tree stands.

D.2. Impacts measured by GCF indicators

Select the appropriate impact for the project/programme. Note that more than one indicator may be selected per expected impact result. Add results as appropriate.

Expected Result	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (if applicable)	Final	
	(Core indicator, adaptation) Total number of direct and indirect beneficiaries; number of beneficiaries in relation to total population[34]	Records of gum arabic producer associations (GAPAs) and of participating companies buying gum from GAPAs Records of gum auction markets Agreed Livestock Route	*Total number of direct and indirect beneficiaries:* *0 males* *0 females* *0% of total population* *Direct beneficiaries:* *0 males*	*Total number of direct and indirect beneficiaries:* *790,764 males* *790,764 females* *3.5% of total population* *Direct beneficiaries:* *160,755 males*	*Total number of direct and indirect beneficiaries:* *790,764 males* *790,764 females* *3.5% of total population* *Direct beneficiaries:*	Calculations of direct beneficiaries are given under A1.2 below. Indirect beneficiaries are calculated as follows: Component 1: 1.1 million (200,000 smallholder gum producer households with 5.5 members on average, or 10% of national gum producers), would benefit from standardized gum auction markets. Component 2: 20,000

[34] Core indicators are for the project as a whole

		maps and published State-level regulations protecting Livestock Routes Published State-level regulations guaranteeing equity and transparency in gum auction markets Baseline and completion surveys[35]	*0 females* *0% of total population* *Indirect beneficiaries:* *0 males* *0 females* *0% of total population*	*160,755* *0.71% of total population* *Indirect beneficiaries:* *605,000 males* *605,000 females* *2.68% of total population*	*185,764 males* *185,764 females* *0.82% of total population* *Indirect beneficiaries:* *605,000 males* *605,000 females* *2.68% of total population*	farm households (110,000 beneficiaries) around the 400 km livestock corridors would benefit indirectly, from reduced livestock damage to crops and conflicts with pastoralists. See also Annex 2a, log frame and detailed explanations in PFS para. 111-117. For component 1 (gum producers), mid-term targets for numbers of direct beneficiaries are the same as final targets as all beneficiaries would already have received some benefits by mid-term. But there would be zero indirect beneficiaries as standardized gum auction markets (output 1.2.3) would not be effective yet. For component 2, mid-term targets for direct (pastoralists) and indirect (farmers) beneficiaries are 37.5% of final targets (150 km out of 400 km stock route completed). The population of Sudan is estimated to number 45.2 million in 2020, based on FAO projections of the latest population census taken in 2008
	Core indicators, mitigation: (i) Tonnes of carbon dioxide equivalent (t CO2eq) reduced as a result of Fund-funded projects/ programmes (ii) Cost per t CO2eq decreased for all Fund-funded mitigation	Reduced emissions will be monitored with FAO Ex-ACT[36] methodology and tools. The geo-referenced land cover and emissions data used will be publicly accessible, for easy verification of emissions reductions results by GCF and by the general public.	*0 tCO2eq* *n.a.*	*Midterm (2.5y)* *1,153,603 tCO2eq* *1.08 USD/tCO2e*	*Project (5y)* *2,307,205 tCO2eq* *1.08 USD/tCO2e*	(i) Annual emissions reductions are estimated at 461,441 tCO2e. Total expected emissions reductions for the 20-year project lifetime are 9,228,818 tCO2eq. (ii) Cost per tCO2e: **Total GCF investment**: USD 9,975,000 **Leveraged financing**: (not cofinancing, so not included in

[35] Baseline and completion surveys will be conducted in Years 1 and 6 by an independent firm contracted by FAO.
[36] For the ExAct Assessment, see Annex 13, Prefeasibility study, and for the ExAct methodology, http://www.fao.org/tc/exact/ex-act-home/en/

	projects/ programmes					calculation of target on left) USD 14,720,000NB if finance leveraged from the private sector is also included, the cost per tCO2eq would be US$ 2.68 **O&M costs** (over the project lifetime): Not quantified. NB these will be borne by the owners/users of the land restored, because of the economic incentives established by the project. **Emissions reductions over the project lifetime (20 years):** 9,228,818 tCO2eq
	Core indicator, Volume of finance leveraged by Fund funding	Records of GAPAs participating in project, detailing financial contributions from gum companies and micro-finance institutions (MFI). Accounts of participating gum companies and MFI	*0*	*n.a.*	*USD 14.72 million*	NB Signed commitment letters for leveraged finance received from Elemats gum company (USD 13.5 million) and Ebda'a Bank (USD 1.22 million) are attached.
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regionsA1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	GCF A1.2 Number of males and females benefiting from the adoption of diversified, climate-resilient livelihood options (including fisheries, agriculture, tourism)	Baseline and completion surveys[37] Records of gum producer groups (GAPAs) and of participating gum buyers, completed Climate-Resilient Village Cluster Plans, agreed Livestock Route maps.	*Direct beneficiaries of component 1 (gum producers):* *0 males* *0 females* *Direct beneficiaries of component 2 (transhumant pastoralists):* *0 males* *0 females*	*Direct beneficiaries of component 1:* *145,750 males* *145,750 females* *Direct beneficiaries of component 2:* *15,005 males* *15,005 females*	*Direct beneficiaries of component 1:* *145,750 males* *145,750 females* *Direct beneficiaries of component 2:* *40,014 males* *40,014 females*	For component 1, direct beneficiaries are calculated as follows. The project will build the capacity of 500 gum arabic producer associations (GAPA) with an average membership of 106 people per GAPA. Therefore, component 1 directly benefits 53,000 farm households with 5.5 members each, or a total of 291,500 people, including 145,750 males and 145,750 females. Component 2 directly benefits 13,338 transhumant pastoralist households with 6 members each, or a total of .80,028 beneficiaries, including 40,014 males and 40,014 females. For component 1 (gum producers), mid-term targets for numbers of direct beneficiaries are the same as final targets as all beneficiaries would already have

[37] Baseline and completion surveys will be conducted in Years 1 and 6 by an independent firm contracted by FAO.

						received some benefit by mid-term. But there would be zero indirect beneficiaries at mid-term as standardized gum auction markets (output 1.2.3) would not be effective yet. For component 2, mid-term targets for both direct (pastoralists) and indirect (farmers) beneficiaries are 37.5% of final targets based on completion target for stock routes (150 km out of 400 km).
A4.0 Improved resilience of ecosystems and ecosystem services	GCF A4.1 Coverage/scale of ecosystems protected and strengthened in response to climate variability and change	Georeferenced M&E Archive and reports from contractors/ involved stakeholders (LPD[38] and NDVI[39] improvements against baseline).	Hectares of land restored: 0	Hectares of land restored: 98,750	Hectares of land restored: 276,000	Absence of major natural disasters including forest fires in the country and in target areas. The economic, social and political context in the country and project areas remains stable.
M4.0 Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocksM4.0 Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest	GCF M4.1 Tonnes of carbon dioxide equivalent (tCO2eq) reduced or avoided (including increased removals) as a result of GCF-funded projects/programmes *– forest and land-use sub-indicator*	Reduced emissions will be monitored with FAO EX-ACT[40] methodology and tools. The geo-referenced land cover and emissions data used will be publicly accessible, for easy verification of emissions reductions results by GCF and by the general public.	0 tCO_2eq	Midterm (2.5y) 1,153,603 tCO_2eq	Project (5y) 2,307,205 tCO_2eq	The calculation of the carbon emissions reductions and removals, using the Ex-ACT methodology, is explained in detail in Chapter 8 of the PFS, pp. 102-109. This chapter (para 265) also explains why these ER are additional to what would happen without the project. Annual emissions reductions are estimated at 461,441 tCO2e and total expected emissions reductions for the 20-year project lifetime are -9,228,818 tCO2eq. Emissions baseline is set at zero to be conservative, though in reality there is likely to be a positive emissions baseline because of ongoing degradation in the without project scenario (meaning that effective project emissions reductions are likely to be higher).

[38] https://www.unccd.int/sites/default/files/inline-files/Presentation%20of%20UNCCD-%20Monitoring%20and%20Evaluation.pdf
[39] FAO Earth Map 2018
[40] For the ExAct Assessment, see Annex 13, Prefeasibility study, and for the ExAct methodology, http://www.fao.org/tc/exact/ex-act-home/en/

management and conservation and enhancement of forest carbon stocks						Mid-term target is calculated as 2.5 times the annual emissions reductions target.

D.3. Outcomes measured by GCF indicators

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (if applicable)	Final	
M9.0 Improved management of land or forest areas contributing to emissions reductionsM9.0 Improved management of land or forest areas contributing to emissions reductions	GCF M9.1 Hectares of land or forests under improved and effective management that contributes to CO2 emission reductions	(Georeferenced M&E Archive and reports from partners / involved stakeholders (LPD and NDVI improvements against baseline))	Agroforestry systems restored: 0 ha Reforestation: 0 ha Restored Rangeland: 0 ha	Restored agroforestry systems: 30,000 ha Reforestation: 18,750 ha Restored Rangeland: 50,000 ha	Restored agroforest 75,000 ha Reforestation: 50,000 ha Restored Rangeland: 151,000 ha	Assumption is that enhanced smallholder revenue from selling increased quantities of clean, dry gum arabic at premium price will continue to provide an incentive for land restoration and management, also after project closure. The target is aligned with land and forrest management practices in the Sudan.
A7.0 Strengthened adaptive capacity and reduced exposure to climate risksA7.0 Strengthened adaptive capacity and reduced exposure to climate risks	GCF A7.1 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[41]	IGARD reports and,once auction market standard for clean, dry gum is adopted, gum auction market records	Percentage of GAPAs producing clean, dry gum according to AIPG standard: 6%	50%	90%	Mid-term target for gum producers using project-supplied tools and strategies assumes that half of end of project target of 280 GAPAs are producing clean, dry gum in contract farming arrangements with participating gum exporters by then. End target also includes 120 GAPAs selling clean, dry gum directly in standardized auction markets (see Outputs 1.4 and 1.5 below). Major assumption underlying all GAPA targets is that GAPAs will continue to be able to obtain premium price for clean, dry gum, (through favourable contract farming arrangements and later, standardized gum auction markets) and will thus continue to utilize
		GAPA and gum exporter records and accounts, gum auction market records.	Percentage of GAPAs effectively using the eight tools42 guaranteeing effectiveness, transparency and	50%	80%	

[41] More qualitative indicators are included in the project logframe in Annex 2a.

[42] The contract farming tools piloted by the AFD project that GAMS will scale up are provided in pages 83-87 of Annex 13, PFS.

			equity ed in the execution of their contract farming agreement s with the gum companies : 5%			the improved technical and organizational capacity they acquired through the project. Mid-term target for transhumant pastoralists using project-supplied tools and strategies is 37.5 % of total pastoralist households targeted, based on mid-term target for completion of South Kordofan livestock corridor (150 out of a total of 400).
		Local water management committee records and accounts	Number of transhuma nt pastoralists using livestock corridors and associated watering points effectively: 0	30,010 transhumant pastoralists are satisfied with their use of livestock corridors and associated watering point	80,028 transhum ant pastoralis ts are satisfied with their use of livestock corridors and associate d watering points	
		Stock route co-management teams (which include both pastoralists and farmers) reports on livestock-related conflicts.	Km of stock routes negotiated, formally adopted and conflict hotspots demarcate d in SK: 0	Km of stock routes adopted: 150	Km of stock routes adopted: 400	
		Agreed Livestock Route maps	Km of stock routes negotiated, formally adopted and conflict hotspots	Hotspots demarcated: 22.5 km	Hotspots demarcat ed: 60 km	

			demarcated in SK: Hotspots demarcated:0			
A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development	Outcome 3, GCF A5.1 Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation	South, North and West Kordofan State records (published regulations) and Water Ministry records (for tripartite agreements on watering points) and accounts (for sharing of water fees)	0 State-level regulations adopted, implemented	0 State-level regulations adopted, implemented	1 livestock corridor protection regulation adopted and effectively implemented in South Kordofan (score 3 out of 3) 2 State-level gum auction market transparency regulations adopted and effectively implemented in North and West Kordofan (score 3 out of 3)	NB Regulations governing tripartite agreements for water revenue sharing and maintenance of watering points alongside livestock corridors already exist in all three Kordofan States. The tripartite agreements will be signed by the South Kordofan State water ministry, the Locality Administration (local government) and the local community-level water management committee, with the latter charging fees for water use, which are shared among the three parties to fund their respective O&M obligations, as foreseen under the regulation (see detail in PFS para 93 sub 3). The new State level regulations for livestock corridor protection (1) and gum market standards (2) will be prepared jointly by the RPGD and the FNC PMU, in consultation with other relevant stakeholders (such as the auction market authorities) Scorecards will be developed by project implementation team to monitor effective implementation of State regulation and tripartite agreements. Scorecards for livestock corridor protection will include: (i) adoption of regulation; (ii) absence of competing land use allocation decisions; and (iii) effectiveness of local conflict resolution mechanism supported by the project. Scorecards for state-level gum auction market transparency will include: (i) adoption of
			0 tripartite agreements for management of watering points along livestock corridors signed and effective	10 tripartite agreements for management of watering points along livestock corridors	40 tripartite agreements for management of watering points along livestock corridors signed and effective (average score 2.5 out of 3)	

						"clean, dry hashab gum arabic" quality standard aligned with AIPG standard; (ii) share of gum sold according to new quality standard; (iii) quantities of clean, dry hashab gum sold by GAPAs directly in auction market. Scorecards for tripartite watering point management agreements will include: (i) water revenue collection; (ii) effective revenue sharing among the three parties to the agreement; (iii) timeliness of O&M interventions.

D.4. Arrangements for Monitoring, Reporting and Evaluation (max. 300 words)

72. The project will follow an Evidence and Result-Based Management approach, involving farming and pastoral communities directly in project implementation and monitoring. The project will be monitored via: (i) **Georeferencing** of all field activities allowing clear and transparent identification of activities and beneficiaries. (ii) **Field data Collection:** field data will be collected by the Forest National Corporation and by the State-level M&E teams following a protocol including stakeholder participation, ensuring the equal participation of women. The project has also planned for two households and institutions surveys at mid term and project completion (iii) **Geospatial analysis:** the FNC - supported by FAO - will monitor activities and processes using satellite imagery, following the methodologies developed for the National Forest Inventory, which was also supported by FAO. The combination of georeferencing, groundtruthing, participatory monitoring involving farming and pastoral communities and remote sensing analysis will enable stakeholders, including the GCF and the general public, to access a verifiable assessment of the project's effectiveness and efficiency. Apart from generating information for the annual reports, the described approach will also enable the Project Management Unit and State Coordination Units to take real-time corrective measures to improve project management as necessary.
73. The PMU will also establish a grievance redress system that will be communicated by each implementing agency to the participants so that the latter can directly access the system in a manner which guarantees their confidentiality. FAO's Guidelines for Compliance Reviews will follow the procedures for Complaints Related to the Organization's Environmental and Social Standards which specify that complaints "... will be sent to the PMU, where someone will be designated as the Safeguards Specialist, and will act as the Grievance Redress Mechanism Focal Person" (FAO ESS, 2015). In addition, the project budget forsees to hire one full-time M&E officer to coordinate any impact evaluation that has been budgeted for and ensure the reporting and consideration to/ by the Project Management Unit in the approval or adjustment of workplans.
74. In accordance with the AMA between FAO and GCF, the FAO Office of Evaluation will be responsible for the independent interim and final evaluations. The evaluations will be conducted using a question-driven approach, and may include assessments against the criteria of relevance, effectiveness and sustainability, among others. The interim evaluation will be instrumental in contributing – through operational and strategic recommendations – to improve implementation, setting out any necessary corrective measures for the remaining period of the project. The final evaluation will assess the relevance of the intervention, its overall performance, as well as sustainability and scalability of results, differential impacts and lessons learned. The evaluation will also assess the extent to which the intervention has contributed to the Fund's higher-level goal of achieving a paradigm shift in adaptation to climate change in Sudan. Special attention will also be given to the involvement of most vulnerable groups and individuals, to the establishment of synergic and innovative partnerships leading to impact and on the establishment of a clear pathway to transformational change. To measure attributable changes, the evaluation will draw on mixed-methods, using qualitative methods (e.g. participatory rural appraisal, focus group discussions, key informant interviews, etc.,)

in combination with counterfactual analysis (e.g. quasi-experimental methods, depending on the existence of reliable control group data from the project's baseline and completion surveys, which will be confirmed during project inception). In addition to primary data collected by the evaluators and secondary national data, both interim and final evaluations will draw on the mid and end line surveys and monitoring reports and activities prepared by project staff. The final evaluation will draw on results of the impact evaluation and both processes impact and final evaluation will be carried out under OED's responsibility. Careful attention will be paid to the disaggregation of data, results and outcomes by gender. The innovative aspects of the project with respect to gender will be especially highlighted in the assessments and evaluations with key lessons drawn for the future.

E. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

E.1. Impact potential (max. 300 words)

E.1.1. Expected tons of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (Mitigation only)	Annual	461,441 tCO_2 eq
	Lifetime	9,228,818 tCO_2 eq
E.1.2. Expected total number of direct and indirect beneficiaries, disaggregated by gender[43]	Direct	371,528 50% of female[44]
	Indirect	1,210,000 50% of female
	**For both, Specify the % of female against the total number.*	
E.1.3. Number of beneficiaries relative to total population	Direct	0.82 (Expressed as %)
	Indirect	2.68 (Expressed as %)

E.1.4. *Describe the potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas. Specify the impact for mitigation and/or adaptation, as applicable.*

75. As foreseen by the NDC, the project will directly enhance the resilience to climate change impacts of the livelihoods of the most vulnerable people (53,000 rural smallholder farm households[45] and 13,338 smallholder pastoralist households in drought-prone areas[46]) by: (i) improving the sustainability of their rain-fed cropping systems through climate-smart agroforestry (75,000 ha of rehabilitated agroforestry land and 50,000 ha of reforestation); (ii) transforming their relationships with markets and formal financial services; (iii) re-establishing livestock mobility and rangeland restoration (151,000 ha); and (iv) improving institutional arrangements for cross-sectoral, climate responsive land use planning. In line with the NDC, (i) carbon emissions from degradation of agroforestry landscapes are reduced through improving livestock mobility and facilitating resource-sharing arrangements between farmers and pastoralists; and (ii) carbon removals are increased due to promoting and incentivizing climate responsive landscape restoration methods, with a total net sequestration of 9.23 million tCO2e over the lifespan of the investment. Indirect beneficiaries are estimated at 1.21 million: 1.1 million people depending on gum production for part of their livelihoods[47], who would benefit from the new market standard and better prices for clean, dry gum; and 110,000 farmers living around the livestock corridors who would benefit from reduced livestock damage to their crops and trees, and from reduced conflict. Scaling up the GAMS project approach under the GCF-UNCCD GGW umbrella programme, which will link ecosystem restoration with locally appropriate smallholder non-timber forest product value chain improvements in other countries in the Sahel to achieve both climate change mitigation and adaptation objectives, could further enhance its impact potential.

E.2. Paradigm shift potential (max. 300 words)

Describe the degree to which the proposed activity can catalyze impact beyond a one-off project or programme Investment.

In terms of rationale, please briefly describe the theory of change and provide information on how it serves to shift the development pathway toward a more low-emissions and/or climate resilient direction, in line with the Fund's goals

[43] For calculation of gender targets, see Annex 4, Gender Action Plan

[44] See Annex 4, Gender Action Plan, for details re targeting of women beneficiaries.

[45] The 500 GAPAs supported by the project have 106 members on average (Mahmoud and Elhassan 2018).

[46] At 5.5 members per farm household on average, and at 6 members per pastoral household on average (FAO 2017b), this translates to a total of 371,528 direct beneficiaries. For further details on calculation of numbers of beneficiaries, see PFS paragraphs 111-117.

[47] 1.1 million people corresponds to 200,000 farm households, with an average of 5.5 members per household, or about 10% of total smallholder gum producer households in Sudan, estimated to number 2 million.

and objectives. This should summarize the diagram of the theory of change requested as an annex to the funding proposal.

76. This project will directly transform the livelihoods of 53,000 smallholder farmer and 13,338 pastoralists households in the semi-arid zone of Sudan through investing in climate change-resilient land management, organizational capacity building, improving market access and brokering more equitable relationships with private sector buyers and financial institutions. The restoration of degraded drought-resistant agroforestry systems and livestock corridors and associated grazing areas will increase the resilience of farming and pastoralist households facing a future with higher temperatures and greater moisture loss. The introduction of more drought-tolerant gum tree varieties and better gum tapping tools will enhance the trees' productivity and lifespan, thus carbon sequestration potential, while the restoration of livestock corridors will protect the agroforestry investments by restoring pastoralists' mobility, their chief adaption strategy for negotiating the risks of a drought-prone environment. The increased prices obtained by smallholder gum producer organizations will create the financial incentives for them to continue to invest in restoration and management of climate-smart agroforestry systems – beyond the project implementation period. Furthermore, the establishment of "clean, dry hashab gum" as a new market standard in the public auctions, and getting micro-finance institutions to accept gum purchase guarantees as collateral for smallholder group credit, will open the door for benefits accruing to millions of other potential beneficiary households. By linking financial rewards to management decisions evoking climate change adaptation outcome, households in some of the most vulnerable environments in the country will be supported in greatly increasing the resilience of their livelihood systems. These fundamental transformations will continue to have an impact long after the project ends.

Provide a summary of the potential for scaling up and replication, knowledge sharing and learning, and contribution to the creation of an enabling environment.

77. The project has tremendous potential for scaling up. Gum Arabic plays an important role in rural smallholder production systems in 10 additional Sudanese States, and in many other Sahelian countries. The world market for gum is currently undersupplied, with potential to absorb increased production (Annex 13, PFS para 66). The restoration of livestock mobility is a key adaptation strategy for pastoralists throughout Sudan and in other countries in the Sahel. Lessons learned from the project experience in the 3 Kordofan States will be shared with the other 10 States, and with interested Financial and Technical Partners.
78. By 2040, carbon emissions reductions and removals will be increased by at least 9.23 million tonnes of CO2e. This will be achieved by improved land management through gum agroforestry restoration (75,000 ha), reforestation (50,000 ha) and rangeland restoration (151,000 ha). By 2026, livelihoods of 66,338 smallholder households (371,528 direct beneficiaries) will be more resilient to the impacts of climate change. This will be achieved by: (i) protection of annual crops against increased moisture stress provided by gum trees; (ii) increased revenue from the most climate-resilient livelihood activity, gum production; and (iii) increased livestock mobility to respond to climate shocks and reduce pressure on gum tree stands (see also PFS Chapter 4, Theory of Change).

Describe overall contribution to climate-resilient development pathways consistent with relevant national climate change adaptation strategies and plans. DONE UNDER E.5

E.3. Sustainable development (max. 300 words)

79. The project will contribute to 4 SDG indicators, see project co-benefits table below. Project M&E will ensure data collection for each of the 4 SDG indicators, in addition to those included in the logframe matrix. As noted earlier, further scaling up of the GAMS project approach under GCF-UNCCD planned Great Green Wall umbrella programme would multiply contributions to sustainable development across the Sahel region. The contribution to poverty reduction (SDG1) is especially important: the 450 smallholder gum producer associations (GAPAs), whose capacity will be successfully improved by the project, will reap an incremental net benefit of USD 5,249,275 from selling export-quality gum for higher prices over the five-year duration of the project.[48]

	Sustainable Development Potential:[49]	Target	Rationale

[48] This is based on a conversative price increase of 40% used in the EFA, Annex 10, rather than the 100% price increase achieved under the AFD-funded pilot project that GAMS will scale up. It takes into account gum production from existing trees only. Once trees established with GAMS help start producing gum, after the project ends, local benefits will multiply.
[49] A more detailed table of benefits for other SDGs is included in Chapter 7 of Annex 13, PFS.

PROJECT'S COBENEFITS	*Expected positive environmental, social and economic impacts, including in other result areas of the Fund, and/or in line with the priorities set at the national, local or sectoral level, as appropriate*	Contributions to: **Environmental:** SDG 13 SDG 15 **Social and Gender** SDG 5 **Economic** SDG 1	The activities proposed by the project will contribute to tangible improvements of the overall state of the environment in Sudan. In addition to the presented positive impacts in terms of CCM and CCA, the project will have positive impacts on Sudanese Biodiversity, on soil and water conservation (increasing water infiltration and reducing wind and water erosion). Empowering smallholder producer groups and improving the position of women – both through mixed and women-only producer groups – will have a number of social co-benefits. Increasing women's revenue leads to improvements in children's health and education. Enabling smallholder rural producer groups to access formal financial services, often for the first time, will not only facilitate faster adaptation to climate change, e.g. through providing credit for small-scale irrigation, but also have major socio-economic co-benefits in the short term. Building the capacity of smallholder gum producer groups, helping them to restore degraded agroforestry systems and mainstreaming "clean, dry gum arabic" as a new market standard will have many economic benefits. Better integration into crop markets under more favourable conditions (as witnessed by the doubling of the gum producer price under the pilot project that will be scaled up) will increase smallholder revenues and investment in more sustainable and diversified agricultural, livestock and forestry production – with favourable macro-economic impacts as well as positive effects on food security and poverty reduction.

Provide a summary of the gender assessment and project/programme-level gender action plan that is aligned with the objectives of GCF's Gender Policy. Please provide the full gender assessment and project-level gender action plan as an annex to the funding proposal.

80. In 2017, Sudan was ranked 140 out of 159 countries[50] in the UNDP Gender Inequality Index (GII).[51] Gender inequality expresses itself in differences in literacy (73% for males, 52% for females), health, mobility income, employment status (37.4% of women are unpaid family workers,against 13.8% of men), access to agricultural land and markets, etc. Two key ways have been identified to help empower women in the project: (i) the implementation of gender specific activities towards women beneficiaries in order to strengthen their capacities, e.g. the creation and/or support of Women only or women-led smallholder gum producer groups; and (ii) the consideration of project accompanying measures that aim at raising awareness and strengthen the sensitivity of the various project stakeholders to gender. These gender responsive actions are detailed in the Gender Action Plan in Annex 4.

E.4. Needs of recipient (max. 300 words)

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).

81. Sudan, which is facing rising temperatures and increasing moisture stress, is among the LDCs most vulnerable to climate change in the world.[52] Sudan's economy and people are highly dependent on rainfed farming and livestock raising, making the country very vulnerable to climate change and climate variability – especially traditional rain-fed farmers and pastoralists, who account for more than 80% of the country's population.[53] This is even more true of the three Kordofan States where the project will be implemented, and where irrigation opportunities are limited and poverty rates high.[54] Smallholder farmers and pastoralists do not generally have access to insurance and other financial services that could assist them in coping with climatic shocks. In the 1970s and 1980s, droughts

[50] http://hdr.undp.org/en/composite/GII

[51] The GII looks at three dimensions of inequality between men and women: reproductive health, empowerment, and economic activity

[52] Sudan is ranked 175 out of 181 on the index of the Notre Dame Global Adaptation Index, see https://gain.nd.edu/our-work/country-index/rankings/

[53] Sudan's National Adaptation Programme of Action (NAPA) can be accessed through http://unfccc.int/resource/docs/napa/sdn01.pdf

[54] See detailed analysis of climate vulnerability of livelihoods in project area in Chapter 2 of Annex 13, PFS, para. 30-34.

caused major economic losses[55] as well as large-scale human suffering due to hunger, forced out-migration and death of livestock. According to local communities consulted during project preparation, gum trees provided the only source of income – as well as a valuable source of livestock fodder – in most of the extreme drought years. Climate-induced stress interacts with multiple other stresses such as unsustainable management of natural resources, complex disasters and conflicts, and limited access to capital, markets, infrastructure and technology, together reducing people's ability to diversify their sources of income and adapt to changes in climate.[56] The GAMS project has been carefully designed to avoid the risk of maladaptation of local communities' livelihoods vis-à-vis expected climate change through the selection of resilient plant species and production models. According to ICRAF, the Acacia Senegal tree is tolerant to temperatures up to 48 C, significantly above those expected for the Kordofan States (See Annex 7, risk management).

82. Sudan's economic and social development needs addressed by the project are described in section E.3, the absence of alternative sources of finance is described in C.4 and the need for strengthening institutions and implementation capacity is covered in section B.1

E.5. Country ownership (max. 500 words)

83. The project objectives are closely aligned with the national policy objectives and international climate change commitments of the Government of Sudan, including the Intended Nationally Determined Contribution (INDC), the National Adaptation Plan (NAP), National REDD+ strategy, Nationally Appropriate Mitigation Actions (NAMA) and the 2015 National Action Plan for the Implementation of the Great Green Wall for the Sahel and Sahara Initiative. The Higher Council for Environment and Natural Resources (the NDA) and the Forest National Corporation (FNC) have been actively involved in developing the project proposal (see also C.4 Stakeholder Engagement).
84. Since January 2017, FNC and FAO have engaged stakeholders in project preparation in a number of ways: (i) January 2017 multi-stakeholder workshop to discuss scope of project[57]; (ii) July 2017 workshop with government and non-government stakeholders from all the 13 gum belt states, to agree on criteria for selecting the project area, focusing on climate change considerations and environmental and socio-economic co-benefits[58]; (iii) September 2017 – September 2018 FNC/FAO field visits and stakeholder discussions in seven gum belt States, including North, South and West Kordofan; (iv) November 2017 – September 2018 FNC participatory assessment of the capacity of smallholder gum producer groups (GAPAs) to engage in the project; (v) January 2018 multi-stakeholder workshop to discuss initial findings of project preparation team; (vi) May 2018 workshop to consult with private sector gum buyers and micro-finance institutions; (vii) September 2018 project preparation team meetings with local stakeholders in North Kordofan. A final validation workshop will be organized after GCF feedback on the proposal has been received and incorporated (see also PFS paragraph 20).
85. All these consultations have been documented and are summarized in the PFS, paragraphs 19-21.
86. The NDA initiated the project idea together with FNC and FAO, and has been involved in project preparation throughout the process. FNC played a lead role in project preparation, collecting information on smallholder gum producer groups in the project States and helping to oversee thematic studies commissioned jointly with FAO.[59] The gum agroforestry component is an upscaling of a successful pilot project that FNC implemented with support from the French Development Agency (AFD) in 2014-2018.

Please describe experience and track record of the AE and EE(s) with respect to the activities that they are expected to undertake in the proposed project/programme. Please mention the AE's and EE's experience in the country/region, in the sector and experience of handling projects of similar funding cost. Describe in what way the AE is well placed to undertake the planned activities and what will be the implementation arrangements with the EE(s) and implementing partners.

87. FAO is a highly experienced organization with strong technical and implementation capacity in the land use sectors. It is already serving as AE and/or EE for a number of GCF funded projects. FNC has gained considerable experience with the implementation of donor-funded projects, including with the World Bank, IFAD and AFD,

[55] Agriculture, forestry and fishing value added declined by 25.3% between 1978 and 1980 and by 25.7% between 1983 and 1985, World Bank, http://databank.worldbank.org/data/source/world-development-indicators. According to farmers interviewed during project preparation field visits, the drought years brought many repeated crop failures but there was only one year in the past 40 years when gum yields collapsed.
[56] Sumaya Ahmed Zakieldeen (2009) Adaptation to Climate Change: A vulnerability assessment for Sudan. International Institute for Environment and Development Gatekeeper Series No 142, London.
[57] Scoping workshop recommendations and participant's list will be attached to full SAP proposal.
[58] Workshop participants' list and site selection report will be attached to full SAP proposal.
[59] See Annex 13, PFS, paragraph 21.

involving extension work with smallholder gum producer groups and gum reforestation, among others. FNC generates significant amounts of revenue for the Sudanese treasury, and has gained experience in financial management and accounting as well.

Describe the selection process and related consultations undertaken to ensure the proposed project/programme reflects a broad spectrum of stakeholder views, including the approval process by NDA for providing the no objection letter and criteria used for selection of the proposed activities, with a particular emphasis on gender and ESS consultations. Details on the stakeholders consultation carried out during the project proposal preparation can be reported as part of annex 2.

Briefly summarize the multi-stakeholder engagement plan and the consultations that were conducted when this proposal was developed.

88. The multi-stakeholder engagement plan and the consultations that have been conducted during project preparation are covered in Chapter 1 of the PFS (paragraphs 19-21).

E.6. Efficiency and effectiveness

E.6.1. Estimated cost per t CO_2 eq, defined as total investment cost / expected lifetime emission reductions (Mitigation only)	(a) Total project financing	US$9,975,000__
	(b) Requested GCF amount	US$___9,975,000_____
	(c) Expected lifetime emission reductions	_9.23 mn_ tCO_2eq
	(d) Estimated cost per tCO_2eq (d = a / c)	US$**_1.08_ / tCO_2eq**[60]
	(e) Estimated GCF cost per tCO_2eq removed (e = b / c)	US$**_1.08_ / tCO_2eq**
E.6.2. Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (Mitigation only)	(f) Total finance leveraged	US$_14.72 million
	(g) Public source finance leveraged	US$ 0.0 million__
	(h) Private source finance leveraged	US$_14.72 million____
	(i) Total Leverage ratio (i = f / b)	**__1.47_____**
	(j) Public source leverage ratio (j = g / b)	**__0.0**[61]**__**
	(k) Private source leverage ratio (k = h / b)	**___1.47____**

E.6.3. *(max. 500 words)*

89. The project uses a relatively modest grant of USD 9.975 million to mobilize USD 14.72 million of private sector financing from the Ebda'a Microfinance Bank (USD 1.24 million) and the Elemats gum exporting company (USD 13.5 million), who will invest directly in enabling the smallholder gum producer groups participating in the project to scale up production of clean, dry gum. The indicators generated by the Economic Analysis (see Annex 10, EFA) are modest, with a Economic Internal Rate of Return of 21 percent (just above the 18% discount rate) and a Benefit-Cost Ratio of 2.67. While these values are quite marginal, once greenhouse gas emission reductions are included in the analysis at the social price of carbon of USD 8/tCo2e, the project is much more viable, economically and financially speaking. In addition, the smallholder capacity building investments made by GCF, through doubling the gum producer price, will create a strong economic incentive for gum producers to continue to invest in land restoration and management, generating major reductions in land use emissions. Smallholder farmer and pastoralist beneficiaries will also invest significant resources in the project, mainly in-kind, but these have not been included in the calculation of the co-financing numbers, as they are leveraged financing rather than direct co-financing. The project design thus "crowds in" private sector and farmer financing, rather than crowding it out.

[60] NB if finance leveraged from the private sector (f) is also included, the cost per tCO2eq would be US$ 2.68

[61] NB This does not include the in-kind contribution provided by the Sudanese government USD 2,172,000 worth of FNC and Rangeland staff salaries, and USD 60,000 for office space, totalling USD 2,232,000 for the duration of the project)

Provide the rationale of requested concessionality and explain the methodology and assumptions used to define it. Justify why the level of concessionality of the GCF financial instrument(s) is the minimum required to make the investment viable considering the incremental cost or risk premium of the project/programme. Additionally, how does the grant and the proposed pricing fit with the concept of minimum concessionality? Who benefits from concessionality? Refer to the financial analysis where appropriate.

90. The concessionality of the funding requested is inspired by the characteristics of the direct (371,528) and indirect (1.21 million) beneficiaries that will be supported by the GAMS project. They are poor smallholder farmers and pastoralists, wholly dependent on rainfed farming and pasture, most of whom are food-insecure during at least part of the year and all of whom are extremely vulnerable to climate change impacts.[62] In addition, they have few assets and little or no access to formal financial services. They also lack direct access to the most remunerative crop auction markets because of the limited quantities they produce. Building the capacity of smallholder producer groups to produce larger quantities of better quality gum (which is the crop most resilient to climate change impacts) and reposition themselves in the gum value chain – and building the capacity of the women in these groups to obtain more equitable benefits from their activities – will be essential to reduce their vulnerability and help them adapt to climate change, but would not attract any private investment. For smallholder pastoralists, restoring livestock mobility – which has been significantly reduced in recent years, leading to overgrazing and damage to gum stands, as documented by the REDD+ preparation studies – is the single most important way to adapt to climate change impacts. But again, the investments required would not attract any private sector funds.
91. The estimated GCF cost per tCO2eq removed is USD 1.08, which is a very low cost for a project that also generates major climate change adaptation benefits – compared to e.g. Forest Carbon Partnership Facility Emissions Reductions Purchase Agreements paying USD5.00 per tCO2eq. The reason for the low GCF cost is twofold: (i) the restoration techniques used (mainly direct seeding) are quite cost-efficient and (ii) for agroforestry and "taungya" reforestation (see para 16 above), weeding (which accounts for over 50% of costs in most reforestation projects) is done by the farmers who grow their annual crops in the same plots, at no extra cost to the GAMS project. In addition to mobilizing important in-kind inputs (land and labour) from the beneficiaries, the GCF grant, by building the capacity of smallholder producer organizations and improving the enabling environment for climate-responsive land use management and restoration (neither of which could be funded commercially), "crowds in" private investment – from gum companies and microfinance institutions, who have already committed leveraged financing worth USD14.72 million (see signed letters from Elemats and Ebda'a Bank) – that would not have materialized otherwise.
92. Currently, most smallholder farmers and pastoralists that are to be supported by the project rely on the so-called "sheil" system, under which local traders provide credit on highly unfavourable terms, buying crops from farmers they pre-financed at 45% below market rate. The lack of access to affordable financial services not only depresses smallholder production and revenues, but also hinders smallholder investment in sustainable land management and restoration and makes rural households more vulnerable to external shocks, including those caused by climate change.The main barrier to access finance for the smallholders is the lack of a production and marketing track record that financing institutions need if they are to waive unrealistic collateral requirements. Capacity building of smallholder producer groups and facilitating formal contract farming arrangements with reputable gum companies will create a track record and make smallholders bankable.
93. The gum agroforestry restoration and reforestation practices will be based on established best practices, as summarized in the project preparation study by Ballal et al. (2018).[63] The methodology for involving local communities in species selection as well as implementation of restoration activities was elaborated and tested under a recently completed EU-funded FAO project covering six other Sahelian countries, Action Against Desertification.[64]
94. The standards for the production of clean, dry gum that the smallholder producer groups will be trained in are those codified by the Association for the International Promotion of Gum (AIPG), an industry body with a worldwide membership.[65] Smallholder gum producers will also be trained in better tree tapping practices using the *sonki*[66] in

[62] For a detailed description of the vulnerability of the beneficiaries targeted by the project, see PFS paragraphs 30-32

[63] As summarized in PFS paragraph 122.

[64] See http://www.fao.org/in-action/action-against-desertification/en/

[65] AIPG's "Good Practices for Gums" are accessible at http://www.treegums.org/fileadmin/inhalte/PDF/Good_Practices_for_Gums/AIPG_Good_Practices_for_Gums__English_Version.pdf

[66] *Sonki* is an improved hand tool that combines a chisel with a hook shape. It allows the tapper to strip just the bark of the tree to obtain the gum exudate, and avoid doing damage to the wood – which causes disease and reduces the productive life-span of the tree – with the

place of the traditional small axe, extending the lifespan of the tree stock while increasing the gum yield from the tree by up to 30 percent.[67]

F. ANNEXES

F.1. Mandatory annexes

☒	Annex 1	NDA No-objection Letter
☒	Annex 2	Project level logframe
☒	Annex 3	Budget plan
☒	Annex 4	Gender assessment and action plan
☒		Leveraged financing commitment letters
☒	Annex 6	Implementation Timetable
☒	Annex 7	Risk assessment and management
☒	Annex 8	Procurement plan model
☒	Annex 9a	Legal Due Diligence (regulation, taxation and insurance)
☒	Annex 9b	Legal Opinion/Certificate of Internal Approvals

F.2. Other annexes to be submitted when applicable/requested

☒	Annex 10	Economic and financial analysis
☒	Annex 11	Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
☒	Annex 12	Environmental and Social Action Plan (ESAP)
☒	Annex 13	Prefeasibility Study
☒	Annex 14	Exact Assessment[68]

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

small axe that is used traditionally. The *sonki* has the added advantage of being easier to use for women, and of reducing injury to the tapper from the long and sharp Acacia spines.

[67] International Journal of Environmental Planning and Management; "Management of *Gum arabic* Production Potentialities in the Gum Belt in Kordofan, Sudan", 2016.

[68] Annex 14 is the Ex-ACT spreadsheet in Excel. The write-up of the Ex-ACT carbon impact assessment is in Chapter 8 of Annex 13, PFS.

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

جمهورية السودان
Republic of Sudan
المجلس الأعلى للبيئة والموارد الطبيعية
The Higher Council for Environment and Natural Resources
General Secretariat
الأمانة العامة

To: The Green Climate Fund ("GCF")

Khartoum, 18 April 2020

Re: Re: Funding proposal for the GCF by Food and Agriculture Organization of the United Nations regarding Gums for Adaptation and Mitigation in Sudan (GAMS): Enhancing adaptive capacity of local communities and restoring carbon sink potential of the Gum Arabic belt, expanding Africa's Great Green Wall

Dear Madam, Sir,

We refer to the project **Gums for Adaptation and Mitigation in Sudan (GAMS):** Enhancing adaptive capacity of local communities and restoring carbon sink potential of the Gum Arabic belt, expanding Africa's Great Green Wall in SUDAN as included in the funding proposal submitted by Food and Agriculture Organization of the United Nations to us on 18/4/2020.

The undersigned is the duly authorized representative of [the Higher Council for Environment and Natural Resources], the National Designated Authority/focal point of Sudan.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project as included in the funding proposal.

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

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

We also confirm that our national process for ascertaining no-objection to the project 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 project.

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

Kind regards,

EL Khitma EL Awad Mohammed

Acting Secratory General

P.O.Box: 10488 - Tel:+249 183 784279 - Fax:+249 183 787617
Website:www.hcenr.gov.sd - E-mail:hcenr2005@yahoo.com
Gamaa Street, Khartoum, Sudan

Secretariat's assessment of SAP019

Proposal name:	Gums for Adaptation and Mitigation in Sudan (GAMS): Enhancing adaptive capacity of local communities and restoring carbon sink potential of the Gum Arabic belt, expanding Africa's Great Green Wall
Accredited entity:	Food and Agriculture Organization of the United Nations (FAO)
Country/(ies):	Sudan
Project/programme size:	Micro (SAP)

I. Summary of the Secretariat's assessment

1. The funding proposal is presented to the Board for consideration with the remarks shown below.

Strengths	Points of caution
The project provides an innovative opportunity to scale up gum arabic production to other countries in the Sahel region.	
The set-up of the gum arabic producer associations is innovative and proposes a sustainable approach to scale up gum arabic production and other commodities in Sudan and the Sahel region.	
The project would be the first to become part of the planned Great Green Wall umbrella programme and could be scaled up in other countries.	

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

3. The Gum for Adaptation and Mitigation in Sudan project is the first forestry-oriented funding proposal in Sudan for GCF. It aims to support climate-resilient gum agroforestry and rangeland restoration in the country and to address the main causes of landscape degradation at scale by improving livestock mobility and cross-sectoral coordination. By building capacities and establishing remunerative relationships between smallholder gum arabic producer associations (GAPAs) and gum exporting companies, the project will also mobilize important private sector financing. This project is expected to run from 2021 to 2026 and will be implemented in the states of North, West and South Kordofan, which are considered to be very vulnerable to moisture stress.

4. Sudan is one of the most vulnerable countries to climate change.[1] The country faces rising temperatures and severe and increasing moisture stress. Over 80 per cent of the labour

[1] Sudan is ranked 175 out of 181 on the index of the Notre Dame Global Adaptation Initiative; see <https://gain.nd.edu/our-work/country-index/rankings/>.

force is employed in agriculture and livestock herding; the vast majority are smallholder producers, food insecure and poor. In the Kordofan States, where the project is located, 98 per cent of agriculture is rain-fed and greatly exposed to weather and climate threats. Gum arabic, harvested from acacia trees, provides smallholder farmers with up to 38 per cent of their income. Gum trees are grown in association with annual food crops, increasing crop yields by enhancing soil fertility, improving water infiltration and lowering evaporation by reducing wind speed. There is an annual yield loss of 50 per cent from gum trees due to moisture stress. Gum-based agroforestry associations thus both significantly boost crop yields and reduce household vulnerability to climate change stresses. Past policies and violent conflict have led to the degradation of gum-based farming systems, contributing to land use, land-use change and forestry sector emissions, which account for 47 per cent of Sudan's total greenhouse gas emissions.

5. The project will scale up the results from a successful African Development Bank (AFD) pilot, building the capacity of smallholder producer groups to produce high-quality gum, establish relationships with formal financial services (which will be essential for scaling up smallholder gum production) and facilitate contract agreements with gum exporters (the respective purchase guarantees will function as collateral for the smallholders to access finance). These actions will establish a virtuous, self-reinforcing cycle of profitable risk-reducing investment, which will facilitate adaptation to climate change with respect to the livelihoods of 371,528 direct beneficiaries and an estimated 1.21 million indirect beneficiaries, while sequestering 9.23 million tonnes of carbon dioxide equivalent (tCO_2eq) over a 20-year investment lifespan.

6. The project is fully aligned with the country's nationally determined contribution and REDD-plus strategy, as well as other related programmes and strategies in the forest and land-use sectors. It also contributes to the GCF and United Nations Convention to Combat Desertification umbrella programme on the Great Green Wall, which is currently under development and will be launched next year.

7. Component 1 will support the restoration of agroforestry systems with gum arabic trees as the main focus. The gum arabic trees play a key role in the landscape by protecting annual crops against increased moisture stress and thereby helping to improve the resilience of the livelihoods of poor smallholder farmers. Component 1 will enhance the capacity of 500 smallholder GAPAs to produce larger quantities of clean, dry gum and facilitate contract farming arrangements, and will mobilize private sector financing for these GAPAs. Interested gum companies will provide support through pre-financing of the GAPAs to help to increase the quantity and improve the quality of production. The GAPAs will be able to continue their engagement with the private sector through purchase agreements that ensure the required quantity and quality.

8. Component 2 focuses on the rehabilitation and restoration of rangelands and the related policy aspects to help to secure important livestock corridors. Such corridors contribute to improving the livelihoods of pastoralists by supporting a constant movement of livestock in order to reduce pressure on ecosystems and ensure sufficient fodder supply.

9. The proposal requests USD 9.975 million in GCF grant financing. There is no co-financing but an expected leverage of private sector parallel finance of USD 15 million from major gum companies active in the country and region.

10. In terms of environmental and social safeguards, this proposal has been categorized as a category C project. The review by the Secretariat confirms the environmental and social risk category assigned by the accredited entity (AE).

II. Assessment of performance against investment criteria

2.1 Impact potential *Scale: N/A*

11. The project has a clear climate rationale and a significant impact potential in both mitigation and adaptation, with an expected reduction in emissions of 9,228,818 tCO_2eq through improved management of gum arabic agroforestry systems and improved rangeland management. In addition, the resilience and adaptive capacity of 371,528 direct beneficiaries and 1,210,000 million indirect beneficiaries will be increased through improved livelihood strategies. The project focuses on the communities active in gum production and pastoralists and provides them with a platform for better organization, strengthening their governance and access to finance.

12. The project promotes a sound and sustainable way of improving the management of the key landscapes in Sudan and will help to enable the government, communities and partners to scale up these efforts to other regions in Sudan and in the Sahel region and to continue to adapt and improve and diversify their livelihood strategies.

2.2 Paradigm shift potential *Scale: N/A*

13. The project promotes an innovative approach to the management of gum arabic production, offering a very clear path for scaling up the production system and management through the GAPAs. This methodology has great potential for other gum producing States in Sudan and offers a unique opportunity to scale up the best practices in gum production to other Sahelian countries through the Great Green Wall umbrella programme and the GAPAs.

14. The project offers a solid platform for the Great Green Wall umbrella programme to build on and use Sudan's considerable experience in gum arabic production and scale it up to other countries in a way that maximizes national contexts.

15. In particular, the GAPAs help to build a long-term innovative approach to secure the management of the gum arabic and pastoralist landscapes and offer communities the opportunity to be in control and strengthen their collaboration with the private sector.

16. The scaling up of past efforts and best practices plays a key role in the proposal and the opportunity to help Sudan to transform two of its key land-use systems, namely gum arabic production and livestock production. The project will also help to secure a more aligned and coordinated approach of the management and investments in Sudan's key landscapes and help to identify the best ways to combine them.

2.3 Sustainable development potential *Scale: N/A*

17. The sustainable development potential is deemed high owing to the project's focus on communities and management of key landscapes in Sudan, which function as the buffer systems for poor and vulnerable communities.

18. The economic, social and environmental co-benefits are all deemed high owing to the project's focus on sustainable management of key productive landscapes sustaining millions of people in rural and vulnerable poor communities.

19. The project helps to restore and improve management of two of the most important land uses and ecosystems in the country with job creation and long-term access to finance ensured. The activities focus on the creation of an enabling environment in which community groups can participate, grow and innovate themselves over time.

2.4 Needs of the recipient *Scale: N/A*

20. The project targets some of the poorest and most vulnerable communities in the three States mentioned in paragraph 3 above. Sudan is the world's largest gum arabic producer and by improving the set-up at the community level so as to provide community groups with more control and ownership, the project helps to promote a unique and transformative approach.

21. Gum arabic production and sustainable livestock production are key priorities for Sudan. The project will allow for the two land uses to be better aligned, combined and coordinated and allow initiatives to better collaborate. This will ensure a secure, sustainable and long-term opportunity for the millions of rural and vulnerable poor to improve and diversify their livelihood strategies.

22. The project focuses on ensuring a more cohesive approach to landscape management, avoiding and mitigating conflicts based on land-use challenges and rights and offers a great opportunity to support similar projects and programme in the Great Green Wall umbrella programme in the future.

2.5 Country ownership *Scale: N/A*

23. Country ownership is considered high with the project fully aligned with national strategies in the forest, land-use and agriculture sectors. The project will help to ensure more sustainable management and production of gum arabic, which is a key product and commodity in Sudan, and more sustainable and effective management of livestock production through improved access to market and ownership by pastoralists.

24. The project will help to produce clear evidence on how to combine several sector-specific policies and strategies and allow implementation with communities at the forefront. There is a clear opportunity to scale up the interventions to other States in Sudan and beyond to other Sahelian countries with similar climates and conditions for gum arabic production, a crop which is very well suited to the climate and soils of the Sahel with huge market potential.

2.6 Efficiency and effectiveness *Scale: N/A*

25. The project will result in emission reductions of 9,228,818 tCO_2eq over the 20-year project lifetime period. There is no co-financing but an expected leverage of private sector finance of USD 15 million from key gum companies in the area. The rationale for GCF financing is well explained, as is the rationale for grant financing on the specific activities.

26. The project offers the opportunity to leverage even higher amounts from the private sector once activities start and the GAPAs become operational. A clear part of the exit strategy of the project is to continue the strong linkage, buy-in and involvement of the private sector with a view to supporting the future scale-up and promotion of the best practices of the project.

III. Assessment of consistency with GCF safeguards and policies

3.1 Environmental and social safeguards

Does the project comply with the GCF Environmental and Social Policy?	Yes ☒ No ☐
Does the project have minimal to no ESS risks compatible with SAP?	Yes ☒ No ☐

27. The project involves various activities to restore and improve the gum agroforestry systems of smallholder gum producers and its value chain, and to establish livestock routes and restore rangelands. The restoration and reforestation of degraded lands will be implemented by planting locally adapted species such as *Acacia senegal* and *Acacia seyal* including planting of various non-timber forest products in stream buffers, which will result in various mitigation and adaptation benefits. The Secretariat confirms the AE's category C classification of the project, which is within the AE's accreditation level for environmental and social safeguards (ESS) risk.

28. Although the activities will enhance the natural regeneration of pasture and trees and increase livestock mobility for pastoralists, the proposed establishment of livestock routes at the landscape level may result in potential conflict among and between different user groups. This will be addressed by establishing arbitration mechanisms to resolve these conflicts. Potential social impacts on land tenure will also be addressed by not including any activities involving resettlement or land acquisition, and the restoration and reforestation activities will take place on lands where there is clear tenurial status. The potential for restrictions on land and resource use will be temporary and will be agreed upon by the community prior to their implementation. The project is also not expected to affect any cultural heritage sites and properties, and will not implement plantations in protected areas or other areas of ecological significance.

29. The project concerns pastoralists, who are a major focus of the project and who are under the scope of application of the GCF Indigenous Peoples Policy. The project is focused on supporting pastoralist and farmers to coexist in a more harmonious way. As a result, pastoralists are a major beneficiary of the project and there is no need for an Indigenous Peoples plan or an Indigenous Peoples planning framework pursuant to the GCF Indigenous Peoples Policy. The environmental and social action plan contains adequate safeguards for pastoralists' mobility, which in turn supports their way of life. The AE recognizes that tenure and resource use could possibly be a source of conflict requiring a local grievance redress mechanism (GRM), the free prior informed consent of the pastoralists and quarterly reporting of consultations and disagreements that are covered by the project.

30. Stakeholder engagement activities were conducted during the preparation of the project. Future stakeholder engagement will also be undertaken in the form of consultations, participatory planning and meetings with various stakeholders such as the smallholder GAPAs, gum arabic exporting companies, microfinance institutions, national agencies and civil society organizations at the national and local level, as well as other financial and technical partners that may have stakes on the project.

31. A project-level GRM will be established at the project management unit (PMU) which will build on the Forest National Corporation's (FNC) existing mechanism and will be communicated to each of the implementing agencies and the stakeholders. This is in addition to the AE-level GRM. A safeguards specialist will also be designated at the PMU to serve as the safeguards focal person including for issues relating to grievances. The GCF Independent Redress Mechanism and Indigenous Peoples Specialist will be available to any pastoralists affected by the project.

3.2 Gender policy

Does the project comply with the GCF Gender Policy?	Yes ☒ No ☐

32. The AE has provided a gender assessment and gender action plan that complies with the requirements of the GCF Gender Policy.

33. The gender assessment is conducted through document reviews and consultation with relevant experts and stakeholders. The assessment indicates the existence of a legal framework to address gender equality and women's empowerment issues in Sudan. The recent nationwide revolution has demonstrated that women can play and have played a great role in economic activities and the transitional government is showing commitment to removing all forms of gender inequality. The Interim National Constitution of the Republic of Sudan indicates that women will be emancipated from injustice, gender equality will be promoted and women's active role in the family and public life will be encouraged. However, laws and family codes that discriminate against women still exist. Women still need permission from male guardians to validate their marriage; women are still obliged to obey their husbands; forced early marriage is widely practiced; and dowry is connected to economic gains or losses so women are prevented from divorcing. These are legacies of cultural and traditional values that manifest and reinforce women's subordination. Furthermore, Sudan is not a signatory to the Convention on the Elimination of all Forms of Discrimination Against Women and has not ratified the Protocol to the African Charter on Human Rights on the Rights of Women in Africa.

34. The assessment indicates that in rural areas women contribute significantly to food production, which is mostly subsistent in nature, and household income, which is usually spent on household consumption. Their access to and control over land, credit, productive inputs, modern agricultural equipment, information and knowledge and access to markets are highly constrained and limited. Marketing is highly concentrated in the hands of men and remains one of the biggest challenges for women even in their engagement in the gum production value chain. Of the economically active population, 78 per cent of women are engaged in agriculture compared with 57 per cent of men. Access to land, although legislated to grant women ownership and inheritance rights, is either disregarded in implementation or women themselves are not aware of the rights and do not have control over them. Women are in addition solely responsible for fetching water and collecting fuelwood, which, in the absence of alternative sources and/or improved technologies, adds to their burden in times of scarcity due to climate change.

35. The assessment indicates that women are active in the GAPAs, with a 40 per cent female membership, which indicates the positive contribution that women are making and could make to the sector. This figure, however, stands at 17.5 per cent in the project location area. The 40 per cent representation of women could be owing to their husbands having registered them rather than their having registered of their own volition. Despite these realities, the assessment further explains that women do engage at every stage of the gum production and harvesting cycle, including seed collection, village/home nursery establishment and maintenance, seedlings transportation to field, seedlings transplantation and irrigation, tree tapping, gum nodules collection and harvesting, and gum grading and cleaning. However, it seems that women's contribution is mostly recognized in gum harvesting, cleaning and grading, with limited decision-making opportunities, while tree tapping is more male-dominated.

36. In general, smallholder gum producers face financial constraints, but this is intensified for women producers. Women also tend to be less literate and have restricted mobility, with travelling needing the approval of husbands and/or male relatives in addition to limited marketing opportunities for gum in Sudan.

37. The assessment also presents the case of female pastoralists who undertake many livestock activities, including herding of small stock, milking animals, providing veterinary care and preparing milk products. Income from the sale of products is used to sustain their families. The highly variable climatic conditions and environmental degradation, expansion of mechanized farming, and conflict in the southernmost areas of South and West Kordofan have affected the economic and social roles of pastoral communities and women in particular. These factors have affected grazing and water resources and other activities of the pastoral communities, including the migration of men for longer periods, which increases the number of

female-headed households. Pastoralist women therefore also engage in other activities to augment their income such as preparing and selling charcoal and firewood and performing agricultural labour. Some rent fields from the local community to graze or collect grass for their cattle, sheep and goats or to produce small crops. This change in household composition and gender division of labour has also led to women taking on increased responsibilities vis-à-vis livestock routes.

38. Given the challenges, the project has identified two entry points to enhance women's engagement and empowerment in the project: (i) the implementation of gender-specific activities towards women (in both pastoral and sedentary systems) beneficiaries in order to strengthen their capacities; and (ii) the consideration of project-associated measures that aim at raising awareness and strengthening the sensitivity of the various project stakeholders to gender.

39. The gender action plan provided by the AE fulfils the requirements of the GCF Gender Policy. It includes specific activities that address the challenges raised through the assessment with corresponding indicators, targets (50 per cent women), timelines and budget, with gender experts to support the implementation and monitoring of the gender action plan. The activities planned will strengthen the capacity of women members of mixed GAPAs in leadership skills, functional literacy and numeracy and facilitate premium contracts for clean, dry gum with local traders. It will enhance women's participation in the elaboration of village-level climate adaptation plans in the mobile stock route co-management teams and in leadership roles in local water management committees and conflict resolution mechanisms associated with the livestock routes that the project will rehabilitate. The project will promote women's empowerment using two entry points: (i) strengthening their social participation through the regeneration and reforestation activities and the planning, management and conflict resolution mechanisms for the livestock corridors; and (ii) supporting their economic empowerment in the conduct of income-generating activities through GAPAs. The project will facilitate and link women's groups with local market traders for selling clean, dry gum at premium prices with contract farming purchase guarantees tailored to fit to women's profile, constraints and needs, and GAPAs internal regulations tailored to ensure equitable pre-financing amounts as agreed in the contract to be received by women. The project will also support women's saving and credit groups in order to increase their chances of obtaining services from microfinance banks. Cultural and structural inequalities such as violence against women if they arise will be addressed at the household level through the use of the gender action learning system, allowing communities to identify inequalities in the household and engage in corrective action.

3.3 Risks

3.3.1. Overall programme assessment (medium risk)

40. GCF is requested to provide a grant of USD 9.9 million to build the capacity of smallholders to produce high-quality gum and contribute to agroforestry and rangeland restoration. GCF is sole financier and there is no co-financing.

41. This is a scale-up of an AFD pilot project. The GCF project is expected to benefit from the lessons learned from the pilot project. In addition, some private sector entities expressed their willingness to invest subject to the satisfactory quality of the gum products, thus indicating potential revenue. However, given the severe balance-of-payments deficit of Sudan, which is a least developed country, the AE requested a 100 per cent grant support.

3.3.2. Accredited entity/executing entity capability to execute (medium risk)

42. The AE, the Food and Agriculture Organization of the United Nations (FAO), will be one of the co-executing entities (EEs) for this project. FAO has been operating in Sudan for over 35 years. It has 12 offices in the country and has experience of working with the FNC.

43. FNC is the other co-EE. FNC has experience in implementing projects financed by AFD and the International Fund for Agricultural Development in which they undertook the tasks of coordination with gum producer groups. The capacity assessment of FNC showed a moderate risk.

3.3.3. Project-specific risks (medium risk)

44. **The impact calculation**: while the project mainly focuses on capacity-building of GAPAs, the project will benefit from the private sector's willingness to purchase the gum products (estimated USD 13.5 million) subject to its satisfactory quality and local financing institution's plan to scale up its credit line (estimated USD 1.2 million) subsequently. The project impact is calculated based on the assumption that the GAPAs will continue to have incentives for land restoration in the form of enhanced revenue by selling increased quantities of gum and obtaining a premium price for high-quality gum over a 20-year period. Therefore, the impact is partially contingent upon the revenue from the sale of the outputs to the private sector.

45. **Extreme weather conditions**: restoration activities could be hindered by moisture stresses and drought, which the AE identified as a strong likelihood during the implementation period. On the other hand, high levels of rainfall will cause large fuel loads, which could lead to destructive vegetation fire. The project will use an improved water harvesting technique and high-quality seeds to minimize the risk of losing plant established by the project during drought. Moreover, the State Ministry of Agriculture, FNC and other relevant agencies have developed a coordination mechanism to prevent the fires.

46. **Recurrence of civil unrest**: the funding proposal identified civil unrest as one of the risks as many parts of Sudan have seen violent conflict over the past two decades. The AE stated that the project target areas are less affected by violent conflict and were carefully chosen with the potential risks of conflict in mind. The AE expects the project to contribute to reducing the risk of conflict through participatory land-use planning from both farming and pastoralist communities.

47. **Economic and project viability**: the economic analysis resulted in an economic internal rate of return of 21 per cent, taking into consideration both GCF grant financing of USD 9.9 million and leveraged private sector financing of USD 14.7 million. The sensitivity analysis shows that the project will be viable with a 20 per cent increase in cost, 20 per cent decrease in benefit, three-year delay in benefit and 45–50 per cent of the farmers' adoption rate. The project is likely to remain above this adoption rate as the adoption rate of the previous pilot project was 84 per cent.

3.3.4. Compliance risk (medium risk)

48. Sudan is subject to United Nations Security Council (UNSC) Resolution 1591 (2005), which imposes certain sanctions against Sudan, including an arms embargo, asset freeze, travel ban and targeted sanctions against a limited number of individuals.

49. The AE (FAO) has stated that none of the activities to be undertaken in this project are subject to or prohibited by these sanctions, and that the project and its activities will not engage with any entity or individual who may be subject to, or listed on, any UNSC sanctions lists.

50. The AE has advised that neither FAO-United Nations work in the Sudan nor the work of the Higher Council for Environment and Natural Resources (the national designated authority), FNC (co-EE with FAO) or the selected beneficiaries can be associated with individuals or entities

targeted by these sanctions. The work of FAO under this proposal, including the enhancement of climate change resilience among smallholder farmers, is in line with the priorities and work of the United Nations in the Sudan. In addition, FAO is currently operating a large portfolio in the Sudan, without being affected by targeted United Nations Sanctions, which includes the arms embargo, travel bans and freezing of assets.

51. Having reviewed the activities to be undertaken in the project, the Secretariat found that the activities do not by themselves pose any uniquely high risk for money laundering, terrorist financing, or prohibited practices. Nevertheless, appropriate internal controls are necessary to ensure that any inherent risks are properly mitigated and addressed. FAO has indicated that it is committed to such internal controls being applied in this project.

52. FAO has explained that its procedures are designed to manage risks (including fraud) and implement adequate internal control systems, in accordance with the FAO Internal Control Framework and Risk Policy. Procurement, inventory management and fixed asset procedures are designed accordingly to address and mitigate relevant risks. Each FAO Country Office is accountable for implementing relevant procedures as well as maintaining an adequate internal control system.

53. FAO has advised that there are no intentions to disburse or distribute cash, vouchers, commodities, or other items of value among beneficiaries, either directly or indirectly.

54. FAO has advised that, should any indications of misconduct be detected, the matter will be referred to FAO Office of the Inspector General to determine if an investigation is warranted and that appropriate remedial measures can be taken, including recovery or referral to national authorities. FAO has a zero-tolerance policy for fraud and other corrupt practices.

55. FAO has confirmed that all entities involved in the project undergo an assessment. EEs to which FAO will transfer GCF proceeds are subject to an audit before they qualify as an operational partner.

56. For procured parties, FAO, in accordance with the policy of agencies of the United Nations participating in the United Nations Global Marketplace, strictly enforces a zero-tolerance approach to unethical, corrupt or fraudulent actions by United Nations vendors, including money laundering activities and the financing of terrorist activities. The UN Supplier Code of Conduct applies to all vendors and is enforced as part of an Organization-wide ethics framework.

57. FAO has advised that it has implemented a mechanism for the reporting of complaints or allegations of wrong-doing within FAO projects or any of its activities (i.e. a whistleblower programme)

58. The Office of Risk Management and Compliance (ORMC)/Compliance Team has conducted a review of the project in accordance with relevant GCF Board-approved policies and does not find any material issue or deviation with respect to compliance issues. Based on available information for this funding proposal, the ORMC/Compliance Team have determined a risk rating of 'medium' and has no objection to this request proceeding to the next steps for processing.

59. ORMC/Compliance Team would like to remind FAO, as the AE, of its continuing obligations and responsibilities with regard to monitoring and reporting any risks for money laundering, terrorist financing, or prohibited practices among the intended counterparties, EEs, beneficiaries, persons involved, or any of the proposed activities.

3.3.5. GCF portfolio concentration risk (low risk)

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

3.3.6. Recommendation

61. It is recommended that the Board take into account the above-mentioned factors in its consideration of the funding proposal.

Summary risk assessment		Rationale
Overall programme	Medium	The impact of the project will partially depend on the materialization of the leveraged financing from private sector. The extreme weather condition and civil unrest in the country needs to be carefully monitored and the project implementation needs to be adjusted accordingly by the project team.
AE/EE capability to implement the programme	Medium	
Project-specific execution	Medium	
GCF portfolio concentration	Low	
Compliance	Medium	

3.4 Fiduciary

Does the project comply with the GCF AE fee policy?	Yes ☒ No ☐
If the EE/EEs is/are different from the AE, has the financial management capacity assessment of the EE/EEs been undertaken?	Yes ☒ No ☐ N/A ☐

62. FAO will act as the AE for this project. FAO, in its role as AE, will enter a five-year operational partnership agreement with FNC, which is a semi-autonomous governmental organization. FAO and FNC will then serve together as the two EEs for the implementation of this project. FAO will also engage with other procured parties through letters of agreement for the delivery of specific services.

63. In its role as EE, FAO will provide quality assurance and technical assistance during project implementation. In addition, FAO Representation in Sudan will oversee the execution of selected activities and of the contractual agreements with FNC and will provide quality assurance throughout all project components to enhance the accomplishment of the project and its potential replicability.

64. A dedicated PMU will be established under this project and be hosted by FNC in Khartoum. The PMU will be responsible for the day-to-day implementation of the project.

65. Funds that FAO receives from GCF in its capacity as AE will flow to the two EEs for the implementation of project activities, in accordance with their respective responsibilities.

66. FAO conducted a micro-assessment of FNC in April 2019 for financial management and procurement policies and practices. The result of the assessment identified FNC as a moderate-risk partner for financial management and low risk for procurement. It also noted FNC's relative inexperience with hiring and managing consultants and subcontractors. To enable effective performance of financial management and procurement functions under this project, all procurement activities that require the selection and subcontracting of subpartners will be executed by FAO.

67. Financial management and procurement will be guided by relevant FAO rules and regulations, as well as relevant provisions in the accreditation master agreement signed by FAO and GCF. Direct procurement during project implementation, which will be conducted by FAO, will be performed in accordance with the FAO Manual section 502, "Procurement of Goods, Works and Services".

68. An FAO project supervision team will undertake regular supervision missions, and will recruit a qualified, internationally recognized auditing firm to perform regular spot checks and audits, to ensure financial management and procurement are being performed in line with agreed standards and practices.

3.5 Results monitoring and reporting

Is the project in line with the GCF monitoring and accountability framework for accredited entities?	Yes ☒ No ☐

69. The project is cross-cutting and will support climate-resilient gum agroforestry and rangeland restoration and address the main causes of landscape degradation at scale by improving livestock mobility and cross-sectoral coordination. The project interventions are expected to sequester 9.23 $MtCO_2eq$. over 20 years and reach 371,528 direct and 1,210,000 indirect beneficiaries. The project will lead to gum agroforestry restoration (75,000 hectares (ha)), reforestation (50,000 ha) and rangeland restoration (151,000 ha), which can be further replicated across the country. The AE has developed a detailed greenhouse gas emission estimation methodology, which is attached to the funding proposal. The assumptions in the methodology are transparent, conservative and aligned with the assumptions used in Sudan's national communication to the United Nations Framework Convention on Climate Change secretariat and other relevant documents.

70. The theory of change has been provided and includes clear linkages between the various elements of the theory of change and the recognition of certain assumptions with respect to the project. The barriers and how the project helps to overcome those are clearly articulated. However, as indicated by the AE during the last review round, explanation of the theory of change needs to be added to chapter 4 of the pre-feasibility study.

71. The logical framework is compliant with the GCF performance measurement framework/risk management framework. The relevant indicators have been selected, and the baseline and targets established. The assumptions for each indicator are clearly described and means of verification allowing triangulation of the results has also been provided.

72. The implementation timetable clearly describes the project deliverables and key milestones and is compliant with the GCF requirements.

3.6 Legal assessment

Has the AE signed the accreditation master agreement (AMA)?	Yes ☒ No ☐ Date of AMA execution: 4 October 2018
Has a bilateral agreement on privileges and immunities been signed with the country where the proposed project/programme will be implemented?	Yes ☐ No ☒
Has a certificate of internal approval been submitted?	Yes ☐ No ☒

73. The accreditation master agreement was signed with the AE on 8 June 2018 and became effective on 4 October 2018.

74. The AE has provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project.

75. The proposed project will be implemented in the Republic of the Sudan, a country in which GCF is not provided with privileges and immunities. This means that, among other things, GCF is not protected against litigation or expropriation in this country, risks which need to be further assessed. GCF sent a draft privileges and immunities agreement to the Republic of the Sudan in March 2016 and offered to provide any necessary clarifications in October 2018, but negotiations have not yet commenced on the agreement.

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

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

(a) Signature of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval; and

(b) Completion of legal due diligence to the satisfaction of the Secretariat.

Independent Technical Advisory Panel's assessment of SAP019

Proposal name:	Gums for Adaptation and Mitigation in Sudan (GAMS): Enhancing adaptive capacity of local communities and restoring carbon sink potential of the Gum Arabic belt, expanding Africa's Great Green Wall
Accredited entity:	Food and Agriculture Organization of the United Nations (FAO)
Country/(ies):	Sudan
Project/programme size:	Micro (SAP)

I. Assessment of the independent Technical Advisory Panel

1.1 Impact potential *Scale: N/A*

1. Sudan with a population of around 43 million people, is situated in north-east Africa, on the eastern edge of the Saharan desert along the Red Sea and is bisected through its north–south axis by the Nile river basin. The country occupies 1,886,068 square kilometres, making it Africa's third-largest country and also the third-largest country in the Arab world. On 11 September 2020, Sudan declared a state of emergency to avert an economic downturn due to the dramatic fall of its local currency against the United States dollar and soaring inflation.[1]

2. Agriculture accounts for 32 per cent of the country's gross domestic product. Sudan is the world's largest producer of gum arabic, and the country will continue to depend on agriculture to boost its exports, generate foreign exchange and reduce the current account deficit.[2] Gum trees are one of the most resilient crops in terms of tolerating increasing moisture stress in the project area. Gum arabic is an emulsifier and a stabilizer made from the branches of Acacia Senegal trees. It has multiple uses, including for shoe polish and ink, as a stabilizer in chocolates and sweets produced by the food industry and, most importantly, for soft drinks, where it is used to bind the sugar to the drink.

3. The GAMS project will enhance the resilience to climate change impacts of the livelihoods of rural smallholder farm households and smallholder pastoralist households in 11 localities in the states of North, West and South Kordofan. These three states are among the most vulnerable to climate change in Sudan, and the smallholder farmers and pastoralists are among the most vulnerable people.

4. The project has two components. In component 1 local communities will restore 75,000 hectares (ha) of gum agroforestry systems (40,000 ha in West Kordofan; 35,000 ha in North Kordofan). The project will also support reforestation in four areas (50,000 ha) identified by the Forest National Corporation (FNC) in South Kordofan. Households will be involved in reforestation using the taungya agroforestry system, under which local communities plant crops between the gum arabic trees, until the tree canopy closes after 5–6 years. The main tree species planted or seeded will be *Acacia senegal* (known as hashab, on sandy soils and sandy clay soils) and *Acacia seyal* (talha, on clay soils). While the main products of the acacia trees are

[1] Sudan declares a state of emergency as currency plunges. September 11, 2020. See https://world-news-monitor.com/money/finance/2020/09/11/sudan-declares-economic-emergency-as-currency-plunges/
[2] See <https://www.afdb.org/en/countries/east-africa/sudan/sudan-economic-outlook>.

hard gum (hashab) and soft gum (talha), they are multi-purpose trees that are also suitable as livestock fodder and for nitrogen fixation. In addition, stream buffers will be planted with a variety of suitable species, such as baobab and tamarind, identified in consultation with local communities.

5. Component 2, which focuses on the adaptation side, will build the capacity of 500 smallholder gum arabic producer associations (GAPAs) to produce sizable quantities of clean, dry gum and reposition the smallholders in the value chain and link them up with financial services providers. This component is a scaling up of a successful pilot project implemented by FNC with support from the French Development Agency (AFD) in 2014–2018.

6. The project has a target to link 280 GAPAs with gum exporters that are expected to pay a premium price (auction market price plus 10 per cent) in return for clean, dry gum that is compliant with the standard published by the Association for International Promotion of Gums (AIPG).[3]

7. Furthermore, the project expects to link 180 GAPAs with microfinance institutions, with the aim of convincing them to provide financial services and accept the gum purchase guarantees provided by the gum companies as collateral for loans to the GAPAs.

8. Component 2 supports climate change adaptation at the landscape level through the establishment of livestock corridors, restoration of rangelands and improvement of the enabling policy and institutional environment. The project aims to establish and demarcate 400 km of stock routes by negotiating with local government, farming communities and pastoralists, and equipping the routes with watering points. The proposal explains that establishing the livestock corridors contributes directly to climate change adaptation of pastoralists' livelihoods and, by facilitating livestock movement, it also reduces the risk of livestock damage to the areas restored under component 1.

9. The GAMS project will work with local communities in the 11 project localities to confirm land restoration priorities for 100 existing climate-resilient village cluster plans and will facilitate preparation of 25 new ones focusing on the areas around new stock routes, in a participatory manner. Many village cluster level adaptation plans were prepared under the Western Sudan Resources Management Project, which closed in 2017and was funded by the International Fund for Agricultural Development (IFAD), and some have been developed in the ongoing IFAD-funded Livestock Marketing and Resilience Project, in North and West Kordofan only.

10. This component also aims to improve cross-sectoral coordination among land use agencies at the state and locality level, in order to improve the enabling environment for the implementation of climate change adaptation strategies in the land use sector, and safeguard the results of the project. It will involve arbitration mechanisms established to resolve conflicts among different user groups.

11. The proposal states that the project's direct beneficiaries include 53,000 rural smallholder farm households and 13,338 smallholder pastoralist households in drought-prone areas. Indirect beneficiaries are estimated at 1.21 million, of which there are 1.1 million people depending on gum production for part of their livelihoods4 who would benefit from the new market standard and better prices for clean, dry gum; and 110,000 farmers living around the livestock corridors who would benefit from reduced livestock damage to their crops and trees, and from reduced conflict.

[3] URL: <http://www.treegums.org/start/>.

[4] The figure of 1.1 million people is estimated on the basis of 200,000 farm households with an average of 5.5 people per household, representing about 10 per cent of the estimated 2 million smallholder gum producer households in Sudan.

12. The greenhouse gas (GHG) emission estimates were made using the Ex-Ante Carbon-balance Tool (EX-ACT) developed by FAO, and amount to a total net sequestration (removals) of 9.23 million tonnes of carbon dioxide equivalent ($MtCO_2eq$) over the lifespan of the investment, comprising 6.69 $MtCO_2eq$ from the gum agroforestry system restoration, 1.05 $MtCO_2eq$ from the restoration of degraded land and 1.59 $MtCO_2eq$ from land restoration. However, the independent Technical Advisory Panel (TAP) asked the accredited entity whether the estimated GHG removals could be overestimated because the funding proposal states that the implementation period for restoration and reforestation activities is 4 years and the implementation will not be linear. In response, the proponents explained that the EX-ACT tool only allows for linear progression of project activities and carbon emission reductions over the project duration whereas, in reality, as noted by the independent TAP, there will be no restoration results and therefore no emission reductions in the first year. To account for this, they simulated the impact of this issue by extending the duration of the project (and its restoration activities) in the EX-ACT model from 5 to 7 years, which resulted in GHG removals of about 8.6 $MtCO_2eq$, or about 6.5 per cent lower than the original estimate of 9.2 $MtCO_2eq$.

13. The independent TAP also sought clarification on the success rate of trees growing, and the proponents explained that, based on the experience of FNC, the initial success rate for establishing trees would be at least 70 per cent. The estimated total number of trees planted (or, more often, seeded) over five years is slightly over 39.3 million across all three states over a total of 125,000 ha. The figure assumes a 70 per cent survival rate in the first two years, with a 30 per cent replacement value in the second year, after initial seeding or planting. The expected number of trees remaining in the ground is just above 30 million.

14. The independent TAP also asked whether the restoration targets (75,000 ha for gum arabic and 50,000 ha for taungya systems) were feasible given the amount of resources and the length of the project. The proponents answered that the targets are based on past experience, that they use direct seeding rather than planting seedlings and that the gum-producing trees do not need much maintenance once they are established. Furthermore, they stated that gum trees are one of the most resilient crops in terms of tolerating increasing moisture stress in the project area and that the targets will be achieved through bottom-up planning and a community-driven development approach, with site selection based on the preferences of the GAPA members that would be making the land available for restoration.

15. Overall, the project presents a high mitigation and adaptation impact. Re-establishing gum arabic in the crop fields would enhance total net sequestration of GHG emissions while reduce the impact of expected increases in moisture stress on field crops, thus enhancing climate change resilience of local farming systems and food security. Moreover, the project further elaborates on recent studies showing that when pastoralism is considered in the wider land use context it is carbon neutral, and when resource management is improved, pastoralism can result in carbon sequestration.5 The project will facilitate resource-sharing arrangements between farmers and pastoralists, ensuring landscape restoration while protecting the agroforestry investments by restoring pastoralists mobility.

1.2 Paradigm shift potential *Scale: N/A*

1.2.1. Innovation

16. Restoring large-scale degraded agroforestry systems and livestock corridors in Sudan will allow GAPAs to sustain their livelihoods. The introduction of more drought-tolerant gum

[5] Assouma MH, Lecomte P, Corniaux C, Hiernaux P, Ickowicz A and Vayssières J. 2019. Territoires d'élevage pastoral au Sahel : un bilan carbone avec un potentiel inattendu d'atténuation du changement climatique. *CIRAD Perspective*. 52: pp.1–4. Available at <https://www.cirad.fr/en/news/all-news-items/articles/2019/ca-vient-de-sortir/perspective-52-pastoral-landscapes-climate-change-sahel>.

tree varieties and better gum tapping tools will enhance the trees' productivity and lifespan, and the carbon sequestration potential, while the restoration of livestock corridors will protect the agroforestry investments by restoring pastoralists' mobility.

17. The two project components are not new to the country, as people in Sudan have years of experience in dealing with plantations of gum trees and agroforestry systems as well as managing livestock corridors as part of their livelihoods.

18. The short- to medium-term objective of the project is to improve the quality of the gum produced and thereby increase the prices received by smallholder farmers. The aim is to increase profitability of gum tapping and collection through better techniques and practices, and to maintain the restored gum stands to increase their gum production in the long term. One of the main paradigm shifts is to allow auction markets in Sudan to formally recognizing clean, dry gum produced according to the AIPG standard as a distinct product, with a higher price. This will provide an important incentive for smallholder gum producers, organized in GAPAs, to improve the quality of their gum and increase the income they derive from it. The greater value derived from high-quality gum sales will further incentivize farmers to invest in and maintain their gum tree stands, and thus strengthen their adaptation to climate change.

19. Around 80 per cent of the local communities in the project area have already gone through a village cluster level adaptation planning (VCLAP) exercise, facilitated by a previous IFAD-funded project, and have proposed gum agroforestry restoration investments, most of which have not yet been funded, as part of their adaptation plans. The project will validate the plans and the willingness of the communities to continue the reforestation and restoration efforts., Non-governmental organizations will conduct the VCLAP exercise in a participatory manner with the 20 per cent of local communities in the project area that have not yet gone through such a planning exercise, resulting in investment and restoration plans.

20. The selection of the 500 GAPAs that will benefit of the project will be based on two criteria: (1) willingness to engage actively in gum agroforestry restoration (output 1.1) or reforestation (output 1.2) activities, which is essential because the the GAPA members would need to devote significant labour (and farm land for output 1.1); and (2) willingness to apply the accountability and transparency tools developed under the AFD-funded pilot project that the GAMS project aims to scale up, in order to guarantee that the benefits are shared equitably by GAPA members.

21. FNC has already identified some 50,000 ha of potential areas of degraded land, include 16 community forests and 27 government forests, that local communities could reforest using the taungya model. The decisions on precisely where to reforest, and over what area, will be taken in a participatory manner with the communities involved, at the start of the project. This process is important because reforestation efforts should be based on science to ensure the success of environmental services and landscape restoration, but should also have a meaningful impact for communities who will take care of the trees.

22. The proposal will give some basic inputs to support the reforestation and restoration efforts but will rely on the efforts of the communities to plant and maintain the gum landscapes. The project proposal states that the increased prices obtained by smallholder GAPAs will create the financial incentives for them to continue to invest in restoration and management of climate-smart agroforestry systems beyond the project implementation period. However, the independent TAP notes that the incentives from the project should be clearer, because market prices will not change in year one of the project, but gradually. Therefore the project should consider providing some type of incentive or support to the communities in the first years of the project.

23. To support these restoration activities, FNC will use hashab seed from its own stocks, or procure it locally from women's groups and farmers. It may also obtain good-quality seed from the Sudanese Forestry Research Centre (striking a balance between gum yield and resilience to

moisture stress, and thus facilitating climate change adaptation). Where necessary, FNC may engage local machine operators in soil preparation. It is important to ensure that woman and farmers develop a system of seed procurement where they become the guardians and sellers of the best quality seeds.

24. The proposal will work in both the financial and market dimensions to support the GAPA members. The idea is to design GAPA-friendly financial products and facilitate credit relationships between GAPAs and microfinance institutions able to accept gum purchase guarantees as collateral for smallholder group credit. The establishment of "clean, dry hashab gum" as a new market standard in public auctions will ensure a fair negotiation with potential buyers that will sustain better prices.

25. Furthermore, the project will support efforts to reverse mistrust among smallholder GAPAs and gum buyers, through the organizational and commercial capacity strengthening programme for value chain actors. The project will facilitate contract farming relationships by organizing business brokering meetings between GAPAs and gum buyers at the locality and village cluster level.

26. Finally, component 2 will establish livestock corridors equipped with watering points to facilitate livestock movement, avoiding the need for livestock to remain in small areas, which results in overgrazing and degradation of vegetation cover including gum arabic stands. This component is important in the context of Sudan because there are nomadic pastoralists that often have conflicts with sedentary farmers. This component will build on an IFAD-funded Livestock Marketing and Resilience Project in North and West Kordofan, adding more routes and scaling the climate change impacts.

27. The independent TAP considers the project to be well thought, but notes that there are too many activities in the hands of a small number of consultants that have to develop studies and make the market and financial connections for a large number of direct beneficiaries. Furthermore, the project sustainability depends on the ability of the project proponents to ensure fair markets and auctions. So far there is only a commitment by one gum exporting company (Elemats), which is not able to buy the volume of expected gum arabic, and it would be an error to rely on only one buyer. Therefore, the project should make further efforts to ensure that more companies support the GAMS project.

1.2.2. Potential for knowledge and learning and the creation of an enabling environment

28. The project will enable Sudan to meet its national regeneration and reforestation targets in line with its climate change ambition, providing capacity-building activities and facilitating financial and market accessibility to communities.

29. The project will develop VCLAP activities, which will involve several capacity-building activities to allow communities to plan their own landscapes with agroforestry systems that will sustain their livelihoods in the long term.

30. The participating communities are already producing gum from their existing trees, but the gum is of poor quality and they get a low price for it from village traders. By training the communities to produce higher-quality gum in sizable quantities, and by facilitating contracts with gum exporters willing to pay a fair price, the GAMS project creates incentives for the maintenance and expansion of acacia agroforestry systems.

1.2.3. Scalability and replicability

31. The project is scaling and replicating the FNC pilot project funded by AFD, which strengthened the capacity of 30 GAPAs in only one locality of North Kordofan. The proposal's ambition to target 500 GAPAs could be a little overestimated, because many of the targets of the

AFD project have ended up in unfunded plans and only 14 GAPAs have contracts with only one company (Elemats).

32. The scalability of the project will depend on the ability of the project proponents to deliver the proposed reforestation targets and to empower the communities to engage in lucrative contract farming arrangements, or sell high-quality gum directly in the auction market, after a new market standard for clean, dry gum has been adopted (thanks to project intervention).

33. The experience of the AFD-funded pilot project is that scaling up GAMS is not sufficient to ensure that other companies will support 350 GAPAS able to produce clean, dry gum. As noted, Elemats has committed to support 150 out of 500 GAPAs.

34. The independent TAP considers that there is a point of caution in the targets and ambition of this project, especially in delivering studies and plans instead of supporting more communities directly to finance and implement their plans. Continuing to deliver village cluster level adaptation plans including gum agroforestry restoration investments, without having the means to implement them could result in the communities developing a mistrust of the project. The independent TAP considers that the project needs to develop further consultations with communities to understand their real willingness to participate in the project and to agree on a financial sustainability approach to implement the village cluster level adaptation plans.

35. In response, the proponents stated that the IFAD-funded VCLAP exercises have greatly contributed to adjusting and strengthening the community-based decision-making with regard to shared natural resources and that communities are willing to invest in joint restoration activities, which, however, require additional funding. The independent TAP concludes that there is a need to revise the existing plans and their desired investments and to ensure that the communities and the interested private sector actors support the implementation of the plans with the revenues from gum contracts.

1.3 Sustainable development potential *Scale: N/A*

1.3.1. Environmental co-benefits

36. The project is diversifying the species used to ensure the reforestation and regeneration targets. Even though the main species planted or seeded will be *Acacia senega*l (hashab, on sandy soils and sandy clay soils) and *Acacia seyral* (talha, on clay soils), the project will use multi-purpose trees that are also suitable as livestock fodder and for nitrogen fixation. In addition, stream buffers will be planted with a variety of suitable species, such as baobab and tamarind, identified in consultation with local communities. The diversification of nitrogen fixing species will certainly support the recuperation of degraded landscapes and their environmental services, including reduction in soil erosion, improve water catchment and the evapotranspiration regime to support water retention and limit the effects of floods.

37. Restoration at large will also increase biodiversity, supporting natural habitats to allow forest species to regrow and animal species to increase. Furthermore, the project will enhance ecosystem services as important as pollination, pest control and the provision of food and non-timber products.

38. The rangeland restoration will be critical to preventing overgrazing and its consequences for ecosystem degradation. Pastoral breeding coupled with rangelands managed as common property and with seasonal mobility at the regional scale is the best adapted option to cope with the seasonality and interannual variability of forage availability. Pastoral practices will be improved by offering flexible optimization of livestock grazing, with the rehabilitation of livestock corridors and associated watering points.

39. Growing gum trees in association with annual food crops will increase crop yields by enhancing soil fertility, improving water infiltration and lowering evaporation by reducing temperature and wind speed.

40. The gum belt that passes from east to west in nine Sudanese states represents a natural barrier protecting more than 40 per cent of Sudan's total land area from desert encroachment. The efforts of Sudan to avoid further desertification are crucial to support the sustainable development of the country.

1.3.2. Economic co-benefits

41. According to the funding proposal, the contribution to poverty reduction is especially important: the 500 smallholder GAPAs, whose capacity will be successfully improved by the project, will reap an incremental net benefit of USD 5,249,275 from selling export-quality gum for higher prices over the 5-year duration of the project.[6]

42. In the Kordofan states 78–89 per cent of households spend over 65 per cent of their household income on food. Without targeted climate change adaptation action, the current yield of local food and cash crops such as millet and groundnuts – already low when compared with yields in neighbouring countries – is projected to drop by at least 10 per cent in the next two decades. Therefore, improved and diversified agricultural production systems will ensure food security and will provide opportunities to connect to markets, generating revenues to achieve a better quality of life for the communities.

43. There are also new possibilities to create on-farm employment and to ensure efficient value chains able to support local economies. By diversifying crop production, the communities will be able to have more stable income throughout the year.

44. The planted forests will provide non-timber products that can be used to provide alternative medicines and building materials, as well as for produce craft goods. With more trees, water retention and catchments will improve the sustainability of the agriculture systems, intensifying productivity and reducing the risk of crop failure while providing benefits to the most vulnerable communities.

45. Moreover, the development of water points and the restoration of livestock corridors will increase animal well-being, which will be reflected in the pastoral economies.

46. The project will support financial schemes and market agreements that will in turn result in a price increase for gum arabic, benefiting the country's economy, the regional economy and the livelihoods of thousands of families associated with the GAPAs.

47. The project will support the communities through microfinancing arrangements with banks and will also improve market opportunities and fair contract agreements, which will allow the communities to have a better share of the profitable gum value chain.

1.3.3. Social co-benefits

48. The project will help to ensure greater food security for households through the implementation of agroforestry systems, as well as increasing the standard of living by increasing income. At the same time communities will be more resilient to the effects of climate change because forest and agroforestry systems will be restored and will have an effect in microclimates around the selected landscapes.

[6] This is based on a conservative price increase of 40 per cent used in the EFA (annex 10), rather than the 100 per cent price increase achieved under the AFD-funded pilot project that GAMS will scale up. It takes into account gum production from existing trees only. Once trees established with through the GAMS project start producing gum, after the project ends, local benefits will multiply.

49. Common property rights for the restored areas will enable communities to have a sense of ownership and allow them to care for their ecosystems because such rights will secure future livelihoods. Communities will also be able to agree on land use planning and will be able to maintain large agroforestry systems, with the expected economic and social benefits.

50. Empowering smallholder producer groups will allow social cohesion and build trust. Moreover, the GAPAs will gain more confidence to improve negotiations in the auction markets. The project will support the inclusion of woman in the producer groups, so they will have more direct income to care for their children's health and education.

1.3.4. Gender-sensitive development

51. Even though the 2005 Constitution of Sudan says that "the State shall emancipate women from injustice, promote gender equality and encourage the role of women in family and public life", the country is not a party to the Convention on the Elimination of All Forms of Discrimination against Women. In 2017, Sudan was ranked 140 out of 159 countries in the United Nations Development Programme Gender Inequality Index.

52. The proposal presents a well-documented gender assessment, pointing out several barriers faced by woman in the country and the heavier burdens they face in the rural areas.

53. The project will focus on the direct targeting of women's GAPAs and mixed GAPAs that are supportive of women's participation and empowerment, including representation of women in the GAPA leadership. The project will also provide capacity-building support, including basic literacy and numeracy combined with financial literacy training; technical, organizational and management training; and commercial training to facilitate women's access to markets.

54. To ensure the sustainability of its interventions, the project will also seek to build and strengthen women's skills and the know-how they have developed in specific activities in the gum arabic value chain, such as household/village nurseries, tree nursery and seedling production, facilitators for the dissemination of production techniques, gum cleaning and grading. Woman will develop the skills and the means to act as service providers of the regeneration schemes, diversifying their sources of income and contributing to the development of the gum value chain. With regard to market access, the project will provide facilitation services to link up women's groups with local market traders for selling clean, dry gum at a premium price. The contract farming purchase guarantee will be tailored to fit the profile, constraints and needs of women and women's groups, and the GAPAs internal regulations will be tailored to ensure that women members of GAPAs will receive equitable pre-financing amounts as agreed in the contract. The project will also support women's saving and credit groups in order to increase their chances of obtaining services from microfinance banks.

55. The action plan states that the project will promote women's empowerment using two entry points: (1) strengthening their social participation through the regeneration and reforestation activities to be carried out at the community level (component 1) and the planning, management and conflict resolution mechanisms for the livestock corridors (component 2); and (2) supporting their economic empowerment in the conduct of income-generating activities through GAPAs.

56. The project will provide technical support for women to become tree seed/seedling suppliers in the restoration process, on the basis of their specific skills (e.g. household/village tree nursery production, production of seedlings, collection of improved seeds, transportation of seedlings, and providing technical support).

57. The project will also recruit a consultant for carrying out a livelihood and gender impact assessment at mid-term and end of project, as well as a gender action learning system consultant to ensure that structural gender issues are properly addressed and that the GAPA capacity-building programme benefits women.

1.4 Needs of the recipient *Scale: N/A*

1.4.1. Vulnerability of the country and vulnerable groups

58. Sudan has experienced extreme social conflict and the loss of three-quarters of its oil production due to the secession of South Sudan. Sudan has struggled to stabilize its economy and make up for the loss of foreign exchange earnings.

59. Agriculture, accounting for 32 per cent of gross domestic product, contracted in 2019, due to shortages of inputs – especially fuel. Inflation, projected to be 61.5 per cent for 2020 and 65.7 per cent for 2021, is mainly driven by the monetization of the fiscal deficit. Sudan is in debt distress, reducing its capacity to mobilize domestic resources or to borrow from international markets. By September 2019, outstanding public and publicly guaranteed external debt was estimated at about USD 60 billion, up from USD 53.6 billion in 2016 and USD 56 billion in 2018.[7] The COVID-19 pandemic is also having a negative effect on the economy, with worsening financial scenarios expected for 2020.

60. Gum exports are one of the main sources of revenue to Sudan's weak economy. Sudan, Chad and Nigeria produce 95 per cent of the gum arabic exported to the world market. Sudan is the world's foremost producer, at an estimated 88,000 tonnes per year. Despite the political and economic problems, Sudan's gum arabic exports have grown from USD 33.1 million in 2009, when the government ended a state monopoly on the business, to USD 114.7 million in 2017, according to central bank statistics.

61. Over 80 per cent of the labour force is employed in agriculture and livestock herding; the vast majority are smallholder producers, food insecure and poor. Past policies and violent conflict have led to the degradation of gum-based farming systems, contributing to land use/land-use change and forestry emissions that account for 47 per cent of all GHG emissions.

62. Gum arabic, harvested from acacia trees, provides smallholder farmers with up to 38 per cent of their income. The collectors are often family groups who begin independent TAPping the trees in late September by making a cut in the trunk using a special knife. About 40 days after the acacias are wounded, the sap oozes out and hardens into beads. The tree requires daily attention. If left unpicked for two or three days the beads cover up and the tree stops bleeding, potentially for the rest of the season, which lasts until May or June. As in many food value chains in the world, the production of gum is in the hands of very poor families that receive minor gains from the profitable value chain even though they put a lot of effort into planting and maintaining the acacia tree plantations, and in collecting and processing the gum. Their efforts are not well rewarded because it all depends on the prices in the action markets.

63. In terms of climate change, Sudan is one of the most vulnerable countries in the world. The country faces rising temperatures, and severe and increasing moisture stress. According to the project proposal, in the Kordofan states targeted by this project, average temperatures increased by 1.95 °C from 1989 to 2016, more than double the global average and, while average precipitation increased by 78 mm, evapotranspiration rose by 136 mm, resulting in a net drying of the environment. Climate projections to 2050 under RCP 8.5 predict near constant levels of precipitation, with temperatures expected to increase by a further 2.8 °C, leading to an additional loss of 291 mm of soil moisture through elevated evapotranspiration.

64. In the Kordofan states, 98 per cent of agriculture is rain-fed and greatly exposed to weather and climate threats. The yield loss from gum trees due to moisture stress is 50 per cent of that of annual crops. Gum-based agroforestry associations thus both significantly boost crop yields and reduce household vulnerability to climate change stresses.

[7] See https://www.afdb.org/en/countries/east-africa/sudan/sudan-economic-outlook>.

65. The vulnerability to moisture stress is especially acute in the states of North, West and South Kordofan targeted by the project. These states are home to nearly 20 per cent of the country's population and produce 47 per cent of the country's cereals, virtually all under rain-fed conditions. While average national poverty rates are 58 per cent in rural areas, the populations in the Kordofan state are among the poorest and most food insecure.

66. The smallholder farmers and pastoralist beneficiaries of this project are the most vulnerable groups within the population and will greatly benefit from the proposed intervention. As gum arabic provides smallholder farmers with up to 38 per cent of their income, the improvement of the gum value chain will greatly support poverty alleviation and food security, so is much needed in the selected states.

67. Therefore, the independent TAP believes that the country is in great need of support, and that the selected communities will greatly benefit from the project interventions.

1.5 Country ownership *Scale: N/A*

1.5.1. Alignment with national climate strategy

68. Sudan has taken concrete actions and shown political will to address and minimize the risks posed by climate change to its communities, natural resources and economy by identifying and implementing adaptation measures while pursing low-carbon development strategies to spur its local and national economy in a sustainable manner. Sudan's initial national communication under the United Nations Framework Convention on Climate Change identified agriculture, water resources and public health as the most vulnerable sectors to climate change and climate variability. In 2012 the country further identified coastal zones as an increasingly vulnerable sector that needs to be considered in climate change adaptation actions.

69. The country has a national adaptation programme of action (2007) that has provided a solid base from which to take a systematic approach to adaptation planning and implementation, including through stakeholder engagement, raising public awareness, and building individual and institutional capacities in the Sudanese context that set the basis for further adaptation action. Sudan's national adaptation programme of action is the first adaptation plan prepared to enable Sudan to access funds made available through the Least Developed Countries Fund to implement real adaptation actions on the ground.[8]

70. Sudan conducted its technology needs assessment (TNA) for adaptation and mitigation in 2013. Regarding mitigation, the TNA covers the energy, industry and forestry sectors, while two priority sectors are identified with regard to technology for adaptation, namely the agriculture and water sectors. The TNAs resulted in a technology action plan that includes some priorities regarding technology transfer for enhancing national actions on adaptation and mitigation.

71. Moreover, in Sudan's intended nationally determined contribution (INDC) the country intends to pursue implementing low-carbon development interventions in three sectors: energy, forestry and waste.[9]

72. Furthermore, in 2016 Sudan presented a national adaptation plan (NAP), which has an underlying vision to contribute to climate change resilient communities, businesses and productive systems across the country in the future. Sudan's NAP is intended as a proactive approach to reduce vulnerability by integrating information about emerging climate change risks into current development planning systems and arrangements.

[8] National Adaptation Plan, Republic of Sudan, 2016.
[9] Available at: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Sudan%20First/28Oct15-Sudan%20INDC.pdf>.

73. As part of the development of Sudan's NAP each of Sudan's 18 states undertook vulnerability assessments of the relevant sectors and identified adaptation priorities that are informed by and build upon state-level development. These will serve as the basis of information for Sudan's INDC.

74. The project objectives are closely aligned with the national policy objectives and the international climate change commitments of the Government of Sudan, including the INDC, the NAP, the national REDD-plus strategy, its nationally appropriate mitigation actions and the 2015 National Action Plan for the Implementation of the Great Green Wall for the Sahel and Sahara Initiative.

1.5.2. Capacity of accredited entities and executing entities to deliver

75. FAO will serve as the accredited entity and execution agency for the project. The project will be co-executed by FNC and FAO. As such, FAO will be responsible for the overall management of this project. FAO is the agency in the United Nations system that is specifically involved in agriculture and forestry issues, and it is also accredited by the GCF. The organization has a solid reputation in the fields of forestry, agriculture and food with a long history of climate change-related knowledge and innovation, particularly in terms of the fundamental objectives of the strategic intervention areas of the GCF.

76. FNC is a semi-autonomous government organization, which has a separate juridical person from the ministry system in accordance with the Sudanese maws Law. FNC was established as corporation under the Forests Act 1989, following on from the Council of Ministers Order No. 284 of 20 April 1986, which approved the establishment of FNC. FNC will sign a subsidiary agreement (i.e. an operational partner agreement) with FAO to enter into the role of executing entity for the project. The scope of roles and responsibilities and legal conditions are defined in the operational partners agreement. FNC has gained experience through the implementation of large projects funded by multilateral donors, including IFAD and the World Bank. FNC is accountable to the Federal Minister of Agriculture and Forestry who has the right to issue directives that are deemed to be in the public interest to the Board of Directors of the corporation. FNC has offices in all 18 states of Sudan.

77. A dedicated project management unit (PMU) will be established under this project, which will be hosted by FNC in Khartoum. It will be functional for the entire duration of the project, and will have state-based coordination units in North, West and South Kordofan. The Sudanese Government will also commit existing staff resources, from FNC and, to a lesser extent the Rangeland and Pasture Administration, at a cost of USD 2,232,000 for the duration of the project for its implementation.

78. A project steering committee (PSC) will be established to provide strategic guidance for the project. The PSC will be chaired by the Director General of FNC. The coordinator of the PMU for this project will act as rapporteur to the PSC and a chief technical advisor (CTA), provided by FAO, will participate as resource person. The PSC will be composed of 15 primary stakeholders of this project including FNC, the Higher Council for Environment and Natural Resources (HCENR) (the national designated authority), FAO, ministries of agriculture, livestock, water resources, trade, finance, a research corporation, gum producers and traders, and microfinance banks.

79. HCENR is the government body responsible for coordinating all the national institutions on issues related to environmental protection and conservation of natural resources. As the national designated authority, HCENR has been catalytic in coordinating the dialogue across the many potential partners around project development opportunities for climate change resilience-building in vulnerable communities. It was closely involved in developing the initial GAMS project idea and participated actively in stakeholder consultation meetings organized by FAO and FNC.

80. In addition to the project director and the PMU staff, the project will hire a permanent international CTA, who will be selected by FAO in accordance with FAO human resources rules and regulations. The CTA's overall role will be to enhance the capacity of smallholder GAPAs and improve their positioning in the gum value chain through facilitating better linkages with gum buyers, microfinance institutions and market authorities. The provision of the CTA role is allocated 0.6 per cent of the total project costs. The independent TAP considers that Sudan has capable people to fill this role, at a lower percentage of the project costs, with the advantage of knowing the local culture. Moreover, this proposed expert costs more to the project (USD 600,000) than the overall team that will be responsible for the project management (USD 475,000). The project proponents should revise this disproportion and think of a shorter-term consultancy, hopefully with local experts that know the gum markets.

1.5.3. Engagement with civil society organizations and other relevant stakeholders

81. The project presents a list of workshops developed by FNC and FAO in preparation of the project: (1) a multi-stakeholder workshop to discuss the scope of project (January 2017); (2) a workshop with government and non-government stakeholders (July 2017) from all the 13 gum belt states, to agree on criteria for selecting the project area, focusing on climate change considerations and environmental and socioeconomic co-benefits; (3) FNC/FAO field visits and stakeholder discussions in seven gum belt states, including North, South and West Kordofan (September 2017 to September 2018); (4) FNC participatory assessment of the capacity of GAPAs to engage in the project (November 2017 to September 2018); (5)a multi-stakeholder workshop to discuss the initial findings of the project preparation team (January 2018); (6) a workshop to consult with private sector gum buyers and microfinance institutions (May 2018); and (7) project preparation team meetings with local stakeholders in North Kordofan (September 2018).

82. The project states that a final validation workshop will be organized after GCF feedback on the proposal has been received. However, the independent TAP notes that the project should have completed further consultations in the last 2 years, especially as the country has passed through difficult economic periods and the realities of the communities in the regions may have changed.

83. The project provides the titles of five studies that were conducted to validate approaches used in the pilot projects to be scaled up, or to fill information gaps. However, they are not summarized nor attached to the proposal.

84. The independent TAP notes the lack of consultations and agreements with private sector companies apart from Elemats. The project proponents responded that in order to ensure the participation of additional suitable companies in the GAMS project, FAO and FNC organized a private sector workshop with 14 gum companies during project preparation, to present the results and terms and conditions of the Elemats partnership with the GAPAs and gauge interest with other companies. FAO and FNC are currently in discussion with four additional companies who have shown a strong interest in collaborating with the GAMS project: Alategahat, Almotahida, CTC and Dar Group. Of these four, Almotahida starteda pilot effort collaborating with FNC and with six GAPAs. During the inception phase, GAMS will engage closely with these additional companies.

85. The engagement with private sector companies is crucial for the sustainability of the project, so the independent TAP considers that the proponents should develop further consultations and reach concrete agreements with more companies, to ensure the feasibility of the project.

1.6 Efficiency and effectiveness *Scale: N/A*

1.6.1. Cost-effectiveness and efficiency

86. The proposed project is requesting total GCF financing of USD 9,975,000 as a grant to implement all project activities.

87. The project will result in emission reductions amounting to 8.6 $MtCO_2eq$ over the 20-year project lifetime. This equates to a mitigation cost to the GCF of USD 1.15 per tCO_2eq. According to the project proponents, this is a low cost because the restoration methods favoured by GAMS (mainly direct seeding of trees together with annual crop seeds) are cheap.

88. The project provides a commitment letter of co-financing by the company Elemats which was one of the two companies that supported the FNC pilot project. This company has maintained contract farming arrangements with 14 smallholder GAPAs since 2015, despite the political unrest that occurred in Sudan in 2018–2019, and the resulting economic upheaval. Elemats is committing to scale up the contracts developed under the pilot project with 14 GAPAs to include 150 GAPAs, representing an additional investment of USD 2.7 million per year. Elemats will provide these groups with pre-financing for gum tapping and collection, key inputs such as jute bags, and premium prices for clean and dry gum, employing fair trade principles. The price arrangements, apart from being very attractive to the smallholder GAPAs, are also a profitable business from the gum exporters' point of view, because of lower downstream cleaning costs and better final product quality.

89. Consequently, GAMS is specifically working with Elemats, and most of the sales of gum arabic by communities rely on this company's willingness to purchase the gum with a better price arrangement. However, the project has a target to reach 500 GAPAs and Elemats' commitment is for only 150 GAPAs. The difference will have to be met with other companies which, until now, have not committed to support the project. Since the theory of change is based on the market scheme with more companies involved and willing to buy the clean gum arabic from the selected communities, there is a potential risk of failure and a lot of work to be done to reach more companies willing to sign contracts with the remaining GAPAs.

90. The independent TAP questioned the low costs of reforestation and regeneration and the high targets. The proponents explained that, for the agroforestry restoration activities under component 1 (output 1.1), the USD 17 per ha in budget line 17 (60,000 ha for a total cost of USD 1,020,000) and budget line 22 (15,000 ha for a total cost of USD 255,000) only covers the direct costs of the agroforestry restoration activities funded by the project. Indirect costs related to this activity are included in other budget lines under output 1.1, such as the operational costs of FNC supervisors.

91. Similarly, for the reforestation activity (output 1.2), the cost of USD 25 per ha in budget line 28 (35,000 ha for a total cost of USD 875,000) and budget line 34 (15,000 ha for a total cost of USD 375,000) only covers the direct costs of the reforestation activities funded by the project. Indirect costs related to this activity are included in other budget lines under output 1.2.

92. The proponents explained that restoration targets may appear large, but they are modest when compared with Sudan's annual restoration effort and with the overall size of the project area. The annual area of gum restoration (agroforestry and reforestation combined) under GAMS is 125,000 ha which is about 10 per cent of annual area restored with FNC support nationwide (75,000 and 50,000 ha for agroforestry and reforestation, respectively). Rangeland restoration, which will be done in association with the rehabilitation of livestock corridors, covers a total of 151,000 ha or about 30,000 ha per year. It is based on broadcasting of grass seed once transhumant pastoralists are ready to move to another area the area, a low-intensity restoration method that has been successfully tested under various IFAD-funded projects.

93. Furthermore, the proponents explained that tree establishment methods are very cost-effective (mainly direct seeding together with crops) and, since farmers mix the trees with annual crops (agroforestry), there are no additional costs for weeding – which is essential in the

first two years and accounts for more than 50 per cent of costs in many reforestation projects – because the farmers are weeding their crops in any case.

94. In terms of the final price of gum , the analysis assumes better management practices in the tapping of the trees, extending the lifespan of the tree stock by promoting the use of the sonki tool in place of the traditional small axe, while increasing the gum yield from the tree by 30 per cent. Furthermore, an increase in the price of the gum can be achieved by helping tappers to harvest and condition clean, dry gum, leading to smallholder producers receiving a 40 per cent price premium, while other gum products receive a 20 per cent (project) premium for improved product quality and regularity of supply with off-takers.

95. The economic analysis for component 2, regarding the contribution of rangeland restoration, suggests that improving the input to livestock directly will result in improving productivity in meat and milk production, with higher market prices to communities. In addition, the economic benefits calculated also draw on increases in ecosystem services through carbon sequestration.

96. Overall, the project suggests an economic internal rate of return of 19 per cent and a net present value of USD 12.7 million over a 20-year period.

97. As noted above, the independent TAP noted that, from the limited budget, one international consultant (the CTA) accounts for 0.6 per cent of the overall budget. This person will cost more (USD 600,000) than the overall costs for project management (USD 475,000) including a complete team of persons.

98. FAO did not revise the budget in response to the comment made by the independent TAP that the proponent review the budget to ensure that it is more balanced (because the current budget allocates too many resources to consultancies and training, and very few resources to support the communities who are putting all their efforts into regeneration and reforestation and maintenance of the agroforestry landscapes including controlling rangelands).

99. FAO explained that the project will support the communities with good-quality gum arabic seeds and soil preparation. The communities establish the trees on their own farmland, or on state forest land for which they will be given long-term use rights, first to grow crops among the trees and then to tap gum. Furthermore, the proponents argue that the communities are enthusiastic to establish gum trees because they will receive double the price for the high-quality gum arabic.

100. In general, the independent TAP believes that the amount of resources proposed for this project is small compared with the huge reforestation and regeneration targets, representing an effective use of the resources. However, the budget allocation seems heavy on international consultancies (specially the CTA) and short in support to the communities, a tendency that is often seen in GCF proposals and that will need to be revised by the Secretariat and the board.

101. The sustainability of the project is based on the increase in gum prices resulting from gum companies' fair contracts with communities or the sales of clean dry gum at the local auction market, once the new gum standard is adopted. The project is currently too dependent on the company Elemats and will need to diversify the potential buyers. Therefore, the project will need to develop the necessary consultations and agreements with companies to ensure that the overall rationale of the project is effective.

II. Overall remarks from the independent Technical Advisory Panel

102. The independent TAP recommends that the Board approve the project subject to the following condition:

(a) Prior to the second disbursement of the project, the accredited entity shall submit to the Secretariat a report, in a form and substance satisfactory to the Secretariat, which contains:

(i) A sustainability plan including the agreements reached with the gum private sector companies and the microfinance institutions willing to support the project; and

(ii) A revised engagement plan, including concrete agreements with communities willing to be part of the project.

Response from the accredited entity to the independent Technical Advisory Panel's assessment (SAP019)

Proposal name:	Gums for Adaptation and Mitigation in Sudan (GAMS): Enhancing adaptive capacity of local communities and restoring carbon sink potential of the Gum Arabic belt, expanding Africa's Great Green Wall
Accredited entity:	Food and Agriculture Organization of the United Nations (FAO)
Country/(ies):	Sudan
Project/programme size:	Micro (SAP)

Impact potential
FAO takes note of the assessment. Regarding carbon impact, FAO would like to note that the potential 0.6 million tCO2e (6.5%) reduction mentioned by iTAP is dwarfed by the likely underestimate of the results due to three conservative assumptions (concerning soils, zero carbon baseline and rangeland restoration end-point), which reduced the initial Ex-ACT result from 17.7 to 9.2 million tCO2e. Regarding the ambition of the gum restoration target, FAO would like to note that 25,000 ha per year constitutes less than 10% of FNC's current annual restoration program, which covered 80-100,000 ha of State forest land and 250-300,000 ha of other land in recent years.
Paradigm shift potential
FAO takes note of the assessment. While it is true that the two project components are based on the scaling up of existing efforts, the GAMS project has three major innovations: (i) supporting female leadership in smallholder producer groups and innovative gum tapping technology ("sonki" tool which is easier to manipulate than the traditional axe) (ii) leveraging purchase agreements provided to smallholder producer groups by gum exporters to obtain financial services from micro-finance institutions (iii) promoting formal recognition in local auction markets of "clean, dry gum" as a new product standard, to improve smallholder producer prices The sustainability of the project does not depend on the ability of the project proponents to ensure fair markets and auctions. Current auction market prices are competitive, but smallholder gum producers get only half of the auction price from village traders. Gum exporters like Elemats already pay smallholder gum producer groups (GAPAs) the auction

market price plus 10% quality premium thus doubling the smallholder gum producer price. The project will scale up an existing fair trade practice, working with Elemats company, which has committed USD 13.5 million in leveraged private sector financing to support 150 GAPAs under the project. In addition, the project is planning to work with another four companies (out of 14 approached) that have shown interest in joining – one of which has already started a pilot with 6 GAPAs.
Sustainable development potential
FAO takes note of the assessment.
Needs of the recipient
FAO takes note of the assessment.
Country ownership
FAO takes note of the assessment. As mentioned in para 76 of the iTAP report, the total cost of the team managing the project is USD 2,707,000, including a Project Management Cost of USD 475,000 (financed by GCF) and an in-kind government contribution of USD 2,232,000 for staff salaries of the Forestry National Corporation and the Rangeland Department. FAO confirms that the five studies mentioned by iTAP in para 82 are available and can be provided upon request. Key findings of these five studies have been integrated in the project pre-feasibility study and other annexes as relevant.
Efficiency and effectiveness
FAO takes note of the assessment. With regards to para 88 of the iTAP report, FAO would like to note that in addition to Elemats, FAO and FNC are in dialogue with four other gum exporters (out of 14 we approached), and that one of these, Almotihada, has recently started a pilot with 6 smallholder gum producer groups. Based on this ongoing dialogue, we are confident that other companies will join and we think that the potential risk of failure is low. Finally, FAO would like to point out that, as per calculations recently shared with ITAP (based on the Financial and Economic Analysis and the Budget), the total financial benefits generated for local communities during the five years of project implementation – whether through direct transfers from the project budget or through changes brought about by the project, e.g. in increasing smallholder gum producer prices and by making available State forest land for community agroforestry – amount to USD 12.5 million.
Overall remarks from the independent Technical Advisory Panel:

FAO thanks the independent Technical Advisory Panel for its review of the proposal and its recommendation to be approved by the Board. In addition, FAO acknowledges the conditions put forward and confirms that prior to the second disbursement in respect of the project, it will submit to the Secretariat a report which contains:

a) A sustainability plan including the agreements reached with the gum private sector companies and the micro-finance institutions willing to support the project; and

b) A revised engagement plan, including concrete agreements with communities willing to be part of the project.

GENDER ASSESSMENT AND ACTION PLAN

GUMS FOR ADAPTATION AND MITIGATION IN SUDAN (GAMS)

August 2020

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ACRONYMS

BIRDP	Butana integrated rural development project
FNC	Forestry National Corporation
GA	Gum arabic
GAC	Gum Arabic company
GALS	Gender Awareness Learning System
GAMS	Gums adaptation and mitigation in Sudan
GAPAs	Gum Arabic producers' associations
GDI	Gender development index
GII	Gender inequality index
GNI	Gross national income
GPI	Gender parity index
MICS	Multiple indicator cluster survey
NBHS	National baseline household survey
PRSP	Poverty reduction strategy paper

INTRODUCTION

This gender assessment aims at providing an overview of the gender situation in Sudan, identifying gender issues that may be relevant to the project, and examining potential gender mainstreaming opportunities. It was based on the review of reports and studies conducted by the national project preparation team, donor agencies, and multilateral development banks; and interviews with relevant stakeholders and experts.

I. Gender context in Sudan

Approved in 2005, the Interim National Constitution of the Republic of Sudan is the main policy document dealing with women's and men's rights, giving them equal entitlement to all civil, political, economic, social and cultural rights. Article 15 of the Constitution reiterates that "the State shall emancipate women from injustice, promote gender equality and encourage the role of women in family and public life." This national-level commitment towards the promotion of women's rights, has not led to similar commitments at the international level: Sudan is not a party to the Convention on the Elimination of all forms of Discrimination against Women; and the country has signed but not ratified the Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa.[1] With the removal of the military regime through a nation-wide revolution in which women has taken great role, the transitional government is showing clear commitment to remove all forms of gender inequalities.

The 1991 Personal Status Law for Muslims gives indications on the place of men and women in the marriage and reflects a discriminatory family code. Indeed even if both parties have to consent to marriage, the women needs permission from a male guardian to validate the marriage. When Article 51 of the Personal Status Law for Muslims considers men as the family breadwinners, Article 52 states that women must obey their husbands. Even if the minimum age for marriage is defined theoretically as both parties having reached puberty, forced early marriage is reported to be a significant problem in Sudan[2] and it is more prevalent in rural areas. Parental authority over children is solely granted to the father as head of the family, and in the event of divorce family law and customary law allow children to remain with their mothers only at a young age[3]. As the husband is obliged to give the bride a dowry for the marriage and as the law stipulates that the dowry is the property of the wife and her family, men in the wife's family are preventing women from seeking divorce as the loss of the dowry will have economic consequences for the entire family[4].

Influenced by a history of conflict and political changes[5], the status of women in Sudan has resulted from deeply rooted cultural and traditional values that manifest, reinforce, and regenerate women subordination and men domination. Customary law also foresees specific gender and age differentiated

[1] African Union, 2010
[2] OECD Development Center, Social Institution and Gender Index
[3] Discrimination in the name of religious freedom, Tonnessen and Roald, 2007
[4] OECD Development Center, Social Institution and Gender Index
[5] OECD Development Centre, Social Institutions and Gender Index

roles. In 2017, Sudan was ranked 140 out of 159 countries[6] in the UNDP Gender Inequality Index (GII).[7] The UNDP Gender Development Index (GDI)[8] - which measures gender gaps by accounting for disparities between women and men in three basic dimensions of human development namely health, knowledge and living standards - shows considerable disparities between male and female. In Sudan women live longer than men (66.3 years versus 63.1 for men) but spend less time at school (3.1 mean years of schooling versus 4.1 for men) and - despite the existing equal wage rate policy - earn less than males (1,785 compared to 6,455 GNI per capita for men)[9].

Gender, education and poverty. The literacy rate in Sudan for the population aged 15 years and older is 62%. The disparity between urban and rural areas is significant: 79% and 51% respectively. Referring to male and female literacy, the gender gap ratio is 0.71 as the literacy percentage is 73 for males and 52 for females[10]. The rural context and the level of poverty tend to widen the gender gap ratio further. Table 1 shows the literacy rate among 15-24 year-old women taking into account their location, age group and household level of poverty. The average literacy rate among females aged 15-24 is 59.8% with a large disparity between women in the poorest wealth index quintile (31.2%) and those in the richest quintile (92.2%).

Table 1: Literacy rate by location, age group and level of poverty among 15-24 year-old women

		Literacy rate
Area	Urban	79.8
	Rural	50.0
Age	15-19	63.4
	20-24	55.6
Wealth index quintiles	Poorest	31.2
	Second	38.1
	Middle	55.6
	Fourth	72.9
	Richest	92.2
Total		59.8

Source: Multiple Indicator Cluster Survey, 2014

The net primary school attendance ratio in Sudan is 76.4%. The Gender Parity Index (GPI) estimated at 0.98 appears to show that sex differentials do not exist; however, the primary school completion rate is higher for boys (85%) compared to girls (74%). Significant differentials are present by state and urban-rural areas: net attendance ratio for urban and rural areas are respectively 91.4% and 70.6%. The household wealth appears also to have an influence on the attendance ratio as it was only 57.4% among

[6] http://hdr.undp.org/en/composite/GII
[7] The GII looks at three dimensions of inequality between men and women: reproductive health, empowerment, and economic activity
[8] http://hdr.undp.org/en/content/gender-development-index-gdi
[9] http://hdr.undp.org/en/countries/profiles/SDN
[10] Sudan Household Health Survey, 2010

children belonging to households in the poorest quintile compared to 96.9 percent among children from households in the richest quintile.

The net secondary school attendance ratio of 28.4% is more dramatic than in primary school. While there is just some slight difference between boys (27.4) and girls (29.4) net attendance ratio, there were some huge variations between children living in urban (42.2) and rural areas (22.2) and by state. The influence of household wealth implies also some considerable variations, as the ratio was only 9.1% for children belonging to households in the poorest quintile compared to 68.5% for children from the households in the richest quintile.

If the girls out of school population in both primary and secondary school are to be considered, their percentage was 51.4 and 56.4 respectively.

Rural women and youth in Sudan form the majority of the extremely poor people in the country. Due to relatively high birth rates (estimation of population growth is 2.83 in 2008 population census) children and young people constitute a large proportion of the poor in Sudan. In 2008, almost 60% of the poor were under the age of 20. Furthermore, 55% of youth aged 15 to 24 are classified as poor. This age category constitutes 23% of the entire population and makes up 21% of the total poor (2012 Interim PRSP). Women and youth poverty is closely linked to their subordinate position and the substantial gender gap which has resulted in a shortage of economic opportunities and inadequate access to productive resources, including credit, land ownership, cattle, skills and support services.

Gender and health. Due to the implementation of the 2008 Government National Unity's free healthcare initiative for under-five children and pregnant women, maternal health and child survival improved in Sudan. The BHHS 2010 reported that 40% of women and 65% of under five year old children received care when needed. The 2014 MICS revealed a decreasing trend of infant and under-five mortality rates[11] at national level. These rates estimated in 2014 at 52.0 respectively and 68.4 per 1,000 live births are much lower than the rates reported in 1995-2000 at 104 and 68 respectively. In 2014, the under-five mortality rate presents some variations in urban area (56.5) compared to rural areas (72.8). Other socioeconomic characteristics appear to influence this mortality rate, the higher household wealth and mother's education, the lower the mortality rate. The MICS survey proved that higher levels of mother's education greatly improve infants and children's health and chances of survival.

Mother's health and nutritional status and newborn's chances for survival, growth, long-term health and psychosocial development are reflected through children's weight at birth. Sudan's 2014 MICS stated that only 16.3% of births are weighed, and that 32.3% percent of the children born the last two years before the survey were estimated to weigh less than 2,500 grams at birth. In addition, a high prevalence of child malnutrition was revealed by the survey: 33% of under-five children are respectively underweight, 38.2% are stunted (too short for their age) and 16.3% are wasted (too thin for their height). Considering the results of 2006 and 2010 BHHS and 2014 MICS, the prevalence of underweight, stunting and wasting have

[11] Probability of dying between birth and the fifth birthday

increased. It is also worth mentioning that some significant disparities on children's weight and nutritional status are noted between urban and rural areas, and that mother's high level of education tends to improve the low birth weight.

Coming to fertility, Sudan has a high adolescent (15-19) birth rate estimated at 87 births per 1,000 women. Rural area's adolescent birth rate (103) is almost the double of urban area's one (53), and the pattern of higher rural fertility is prevalent in all age groups. This situation is the result of women poor knowledge regarding birth spacing, and social and cultural context where women lack of freedom regarding their fertility decisions. Considering the three years preceding the MICS survey, the total fertility rate amounted at 5.2 births per woman, and it is considerably higher in rural areas (5.6) than in urban ones (4.4). Only 12.2% of 15-49 year married women reported the use of contraception; this percentage is 20.1 for married woman in urban area and 9 for rural area. The MICS survey revealed that 26.6% of married women age 15-49 years have unmet needs for contraception and family planning. Contraceptive prevalence appears to be strongly linked to women's level of education. Women access to various healthcare such as antenatal care, assistance at delivery by skilled personal, etc. are also correlated to women's level of education and level of poverty, and it is worth noting that significant differences between urban and rural areas exist.

Gender, employment and economic opportunities (in rural areas). Although Sudanese laws call for equal employment opportunities and work conditions for both men and women, women are still often disadvantaged compared to men. . Even if women (as a group) do as much as work as men, their types of work and their work conditions differ from those of men. In rural areas, women contribute significantly to the household's income and food production. Their productive activities are mainly subsistence-based for home consumption, due essentially to the heavy household maintenance and domestic responsibilities they have to carry. In addition, embedded social norms make it harder for women to access and have full control over land, credit productive inputs, modern agricultural equipment, information and knowledge, markets access, etc.; too many constraints that lower both women's productivity and income. The market access issue remains one key challenge that women needs to overcome as most of the marketing processes are carried out by men, women are therefore only able to sell their processed by-products to consumers or retailers in weekly village markets.

Regarding employment status, the 2008 Fifth Population Census indicated that 37.4 percent of women are involved as unpaid family worker while this percentage was only 13.8 for men. Men are also more likely to be employers or paid employees than women. The distribution of workforce by employment status and sex is presented in the table below. Women's participation in household decision making in terms of resource distribution is highest when women are employers or paid employees, lower when they are own account worker and lowest when they are doing unpaid work[12].

[12] ILO, 2010

Table 2: Distribution of workforce by employment status and sex (%)

Sex	Employer	Paid employee	Own account worker	Unpaid family worker	Unpaid working for others	Not reported
Males	7.6	32.4	32.7	13.8	0.4	13.1
Females	4.2	24.1	17.7	37.4	0.7	15.9
Total	6.8	30.4	29.0	19.6	0.5	13.8

Source: Sudan Population Census 2008, National Bureau of Statistics

Women working in the agriculture sector are hindered to engage into viable personally owned business due to their limited capacity and skills, their lack of ownership and control over key resources. As the limited employment opportunities in the formal sector push out workers with limited skills, women are mainly concentrated in the agricultural and informal sectors where the great majority perform unpaid family work and are engaged in unpaid farming activities[13].

The 2009 National Baseline Household Survey (NBHS) indicates a gender gap in earnings of 0.66. It measures the ratio of female-to-male average monthly earnings and means that female workers earned 34% less than male workers. Urban and rural areas present some disparities where the gender gap ratio is respectively 0.70 and 0.54. While the female-male earning differences may be explained by other factors including education, skills, hours worked, etc.; a significant part of them is attributable to gender discrimination.

Gender in the agriculture sector. Women comprise 78% of the economically active population who work in agriculture compared to only 57% of men[14]. Women normally work on their husbands' crop fields and on their own "jubraka" gardens, the latter averaging around 2 feddans (0.84 ha), where they grow leafy vegetables, tomatoes, cowpeas, okra, millet and maize, for both household consumption and sale. In addition to this, many women in the project area also own crop fields (29%) or rent land (12%) to grow crops (see table 1, page 9 below). Women constitute an overwhelming majority of the rural population as the prolonged internal conflicts and the poor environment of agriculture sector (deteriorating natural resources, lack of infrastructure, etc.) have led to a massive exodus of rural men looking for food and off farm employment. Women have therefore inherited the heavy responsibilities of feeding the household, engaging themselves in agricultural activities where they can only afford a subsistence level of production. New production technologies and practices, required to respond to climate change threats, that require purchase of additional resources will likely not be adopted causing future yields to decline further from what is possible. As agricultural production is proved insufficient to meet household food security needs, women tend to use multiple strategies including involvement in rural non-farming activities.

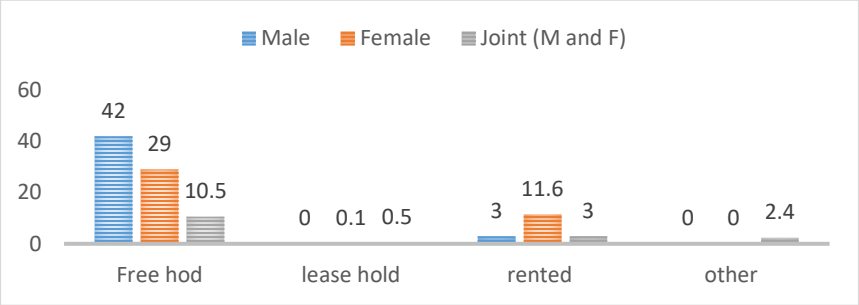
Women access to and control over agricultural resources are often restricted in comparison to men. Regarding access to land, although legislation grants women ownership rights as well as the right to inherit

[13] National Women's Empowerment Policy, 2007

[14] Integrated Agricultural and Marketing Development Project, Final Project Design Report, IFAD, 2017

land or any other assets belonging to the deceased parent, such laws are often disregarded. Confronted with social constraining factors, some women who legally own land have limited authority and control over their land. In fact, some women may not be aware of their new rights and others may be discouraged by administrative procedures or by a change-resistant society, in particular by men who resist losing their old privileges. The figure below based on a case study led by the Gender Department of the Ministry of Agriculture in North Kordofan to assess the gender role in Food Security confirms the gender inequalities in land access. Similar inequalities are observed in other properties and household assets.

Figure 1: Land type of ownership by sex, case of North Kordofan (%)



Source: Ministry of Agriculture, Gender Department, 2014

Coming to agricultural extension services and rural finance, their coverage appears to be poor in the traditional agriculture sector. In North Kordofan, the percent of famers outreached by Agricultural extension and finance services accounted at 36.1 and 24.7 respectively. While disaggregated data on men and women farmers are not available, gender imbalance is noted within the extension staff as only 22% of extension agents are women[15].

Another important factor to be considered while targeting women's development in rural areas is their heavier time burdens. Compared to men, women have the simultaneous productive, reproductive and community roles that hinder them on time use. The 2009 NBHS revealed that even with much education and experience as their male counterparts, women's heavier domestic work burden reduces their economic participation and income generation. The majority of economically inactive women were reported being unable to perform any remunerated labour due to their heavy domestic obligations as housewives.

Fetching water and fetching firewood are considered to be part of women and children's responsibilities according to the traditional divisions of tasks. According to the 2009 BHHS, 37.5% of households lack access to improved drinking water in Sudan, and huge disparity are present between urban areas and rural areas where this percentage is respectively 23% and 64%. The difficult access to water points puts greater burden on time use by rural women and affects children's enrolment and retention in school especially for girls. On average, travel to and from a water source consumes about 40 minutes per day, it could take over an hour per day in some remote areas. The use of firewood as main source of cooking

[15] Madre, Sudan, Women Farmers Unite, 2012

energy concerned 69% of Sudanese households in rural areas, and this percentage is very higher for poor households (70%) compared to the non-poor ones (31%). Women spend hours in firewood collection in some cases on a daily base and often several times a week. Another reason for poor women and children's excessive time burden is also the absence of basic technology in rural areas. This could be illustrated by the limited availability of simple hand grinders for grains (such as for maize) which obliged women and female children to process this time-consuming chore manually. Domestic transport task is also falling fully under women responsibility. Cultural traditions in Sudan, particularly in rural areas, prohibit women from using basic transport technology such as bicycles and wheelbarrows. Men frequently have access to such vehicles, although their carrying burden is much smaller than women's[16]. Women skills' development appears also to be correlated with gender work burden. A study conducted by Ahfad University noted that women's overloading time burden restricted them from making the best of the skills they obtained through vocational training. However, 84 % of women who attended vocational training reported the development of their skills and the generation of additional income, that improved their families' living standard.

II. Gender issues in the Gum Arabic value chain

Sudan is the world's largest producer and exporter of Gum Arabic. Sudanese gum accounted for 77% of the global gum trade in 2015. Gum Arabic represents one of the most important livelihood sources for around six millions traditional smallholder farmers in Sudan. The gum belt that passes from East to West in nine Sudanese states, represents an area of human activities including agriculture, livestock raising and forest products collection. On the environmental side, the belt represents a natural barrier protecting more than 40% of Sudan total area from desert encroachment. The *Acacia senegal* agroforestry system used in the Gum Arabic production and the bush fallow system are practiced as means of soil erosion reduction and soil fertility restoration. Gum production appears to have a higher potential to help smallholder farmers and rural households in the gum belt to adapt to climate change as it is less reliant on rainfall than agricultural crops. In addition, Gum Arabic constitutes a livelihood diversification strategy to mitigate crop failure, as it provides an important source of income to small producers during dry season when agricultural crops do not generate any[17].

While the gum producers sold their gums to the village traders initially, Gum Arabic Producers Unions were established in Darfur, Kordofan, White Nile and Sudan's central region in the 1960s. The first Gum Arabic Producers Associations (GAPAs) were established in 1992 by cooperative societies involved in Gum Arabic production, harvesting, and marketing. The objectives of these associations are: (i) to increase the bargaining power of the association members and their existences in the main gum Arabic markets; (ii) to maximize the returns to rural communities through the transfer of skills, especially improved tree tapping, cleaning, grading, packing, and collective delivery and marketing; and (iii) to increase the revenue of small-scale local producers. They intended also to reduce dependency of these associations on the collusive

[16] Sudan Gender Disaggregated Data with Focus On Rural women, Ministry of Agriculture, January 2016
[17] Marketing and contract farming feasibility of Gum Arabic in Sudan, Ali Musa Abakar, Abdelateif Hassan Ibrahim, FAO, December 2017

traditional finance system, locally known as the "Sheil" system[18]. A continuous increase in producer price ratio was noted: 4% between 2001-2003, 12% by 2008 and 36% by 2010, after the government agreed to lift the Gum Arabic Company (GAC) monopoly on gum exports. In 2018, there were 2 975 GAPAs operating in Sudan, with a total hashab area equivalent to 2.9 million Feddans[19]. The total number of female members in these GAPAs is equivalent to 40% accounting for 1.5 million[20]. The table below shows the situation of GAPAs in the three Kordofan States where GAMS will be implemented.

Table 3: Situation of GAPAs in the selected States of the GAMS project

State	GAPA gender status					Gender status of GAPA members (excl. GAPAs without membership data)		
	Women only GAPAs	Men only GAPAs	Mixed GAPAs	GAPAs with no membership data	Total number of GAPAs	Female members	Male members	Total members
North Kordofan	0	0	204	54	258	3 577	24 946	28 523
West Kordofan	19	0	170	0	189	3 749	10 656	14 405
South Kordofan	3	7	24	541	575	643	1 995	2 638
Total	22	7	398	595	1022	7 969	37 597	45 566

Source: Assessment Summary Report: Description, Analysis and Verification of GAPAs in the Selected States of the GAMS Project, Tarig Elshiekh Mahmoud, Sayda Mohamed Elhassan, October 2018

In the Gum Arabic value chain, women are involved at every stage of the gum production and harvesting cycle including seeds collection, village/home nursery establishment and maintenance, seedlings transportation to field, seedlings transplantation and irrigation, trees tapping, gum nodules collection and harvest, gums grading and cleaning. The important role women play is mostly recognized in gum harvesting, cleaning and grading; while tapping is more male-dominated. Despite the significant role women play in the gum value chain, women face socio-economic constraints that hinder their participation and their involvement in decision-making at all levels. .

A. Women social and cultural barriers

Heavy workload and time burden. Women in the project area shoulder the burden of housekeeping, childcare and household income generation since men have migrated for traditional mining and war in Darfur, South Kordofan and Blue Nile States. Heavier domestic obligations as housewives prevent women from developing their skills and performing good remunerated labour. Therefore, their opportunities for

18 UNSO, 1989, Mahmoud 2004, Ramly, 2011

19 Over 1.2 million hectares (1 Feddan is equivalent to 0.42 ha)

20 GAPAs Assessment Summary Report: Description, Analysis and Verification of GAPAs in the Selected States of the GAMS Project, Tarig Elsheikh Mahmoud, Sayda Mohamed Elhassan, October 2018

economic participation are reduced and so is income generation. Firewood collection had been often indicated to be among the time-consuming activities for rural women, as female villagers must address the daily need for domestic energy for cooking amongst other needs.

Restricted mobility. Women and girls are subject to mobility restrictions in Sudan. While married women cannot travel without their husbands' approval (women can even be denied the right to work outside the home by their husbands)[21], no legal restrictions could be found for unmarried women[22]. However, some women's rights activists reported in 2004 that women face day-to-day restrictions on freedom of movement as their male relatives deny them the right to leave the house unaccompanied[23]. Furthermore, there are concerns about women and girls' safety due to the existence of conflict-related sexual violence against women and girls.

Low level of literacy. The gender analysis led under the project preparation process indicates that girls' difficult access to school is one of the major illustration of the persistence of gender gaps. Household poverty is reducing educational opportunity for girls as the opportunity costs of girls' schooling are very significant to poor households. In addition, girls also have some time limitations as they inherit of their mothers' domestic work such as cooking, caring for siblings, etc. Females in the project areas tend to receive less education that do males: girls have no access to school and most women are illiterate.

Limited participation in social or economic group's activities. Women's membership in such groups does not always result from their own willingness to engage in them, they may be considered as group members since their husbands registered them as such. Whether their membership depends on their own choice or not, their participation may be hidden behind their husbands as the latter tend to speak on their behalf and may access twice to the group benefits by using their wives' name. In addition, women are constrained by their lower level of literacy, their sometimes limited leadership skills and by social pressure to be able to raise their voice, participate or contribute to the planning and decision making process.

B. Women's limited access to assets

Access to land. Although legislation grants women full land ownership rights, women's authority and control over land vary and often remain limited. One of the most serious obstacles to increase rural women GA income is the lack of tenure security. If historically, land was not formally owned and use rights vested in men and women who produced food for their kin, the titling of land and inheritance customs have led private lands to be more in the hands of men than women. Current ownership structure is the result of the predominant pattern of men controlling land allocation and the passing down of this inheritance right from father to son[24]. Women's limited control over land affects their access to finance as land remains the most common collateral requested by banks and microfinance institutions.

[21] Personal Status Law for Muslims, 1991
[22] World Bank, 2013
[23] Housing and Land Rights Network, United Nations Office of the High Commissioner for Human Rights, 2004
[24] Gender Analysis Framework Report, FAO, December 2017

Access to finance. Another important obstacle faced by smallholder producers in general and women producers in particular in the gum Arabic value chain is the very limited access to finance[25]. As the majority of gum producers are smallholder producers, they are in need of finance to perform the necessary activities of gum production including tapping, protection and collection. Moreover, these activities take place in a time when farmers have no money even to secure the family's essential and urgent needs. If smallholder and women producers had no other option but to turn to the exploitive informal credit or the inflexible formal banking system to overcome the problem of access to finance in the past, in recent years some microfinance institutions have introduced the use of non-conventional collateral to target smallholder producers.

C. Women's limited access to benefits

Limited access to markets. In Sudan, the commercialization of gum goes through three markets: village markets, town/city markets, and auction markets located in big cities that represent the final internal markets. El Obeid auction market is the most important for GA market where big suppliers, wholesaler buyers and dealers meet, and where GA price is mostly determined. The presence of GA producers at the auction markets is estimated at only 2% compared to 28% at town/city markets. Smallholder producers remain price taker in these markets as the quantity they supply is very small compared to the market brokers and traders. Since women are dealing with small quantity of wet and uncleaned gum and as they are often constrained by family urgent needs, they sell most of their products at village markets with no influence on the product prices. Women limited access to markets resulted as well from social factors namely men's supremacy in the marketing of products and women's social barriers on restricted mobility.

Less control over benefits. The experience of past and ongoing projects mentioned that some efforts have been put on women targeting to facilitate their access to project activities. While the expected target/quota of women accessing the various projects were in most cases attained (even if in Sudan the participation of males has always been higher), reaching these quantitative objectives does not appear to be sufficient to ensure women have enough control over activities benefits. The AFD-funded FNC project in North Kordofan and a number of other projects with similar focus showed that the improvement of the GAPAs' position in the gum does lead to significantly improved livelihoods outcomes for GAPAs' female members, but not to the same extent as the male GAPA members. During its implementation period, the AFD-funded project introduced a number of measures (called "management tools") to improve transparency and equity between the GAPA leadership (which is often dominated by male members) and GAPA members (many of whom are female) and made these mandatory for all GAPAs participating in the project, thus enhancing the benefits women derive from their GAPA membership.[26]

[25] Marketing and contract farming feasibility of Gum Arabic in Sudan, Ali Musa Abakar, Abdelateif Hassan Ibrahim, FAO, December 2017

[26] The GAMS project has integrated these mandatory "management tools" in its project implementation arrangements, see appendix c of Chapter 6, Annex 13, Prefeasibility study.

III. Women in the context of pastoralism[27]

In addition to their household work such as child care and food preparation, pastoral women in Kordofan undertake many livestock raising activities including herding of small stock, milking animals, providing veterinary care to nursing animals, and preparation of milk products. Some women earn income from the sale of fresh milk surplus and ghee and traditional yoghurt during the rainy season.

There has been a complete shift in the economic and social roles of pastoralist groups, particularly women, in the whole of Kordofan as a result of a combination of three factors: highly variable climatic conditions and environmental degradation, expansion of mechanized farming, and conflict in the Southern most areas of South and West Kordofan. These factors have led to a severe decrease in grazing and water resources; partial or complete blockage of traditional livestock corridors; emergence of new seasonal livestock migration patterns; migration of men for longer periods associated with increased number of female-headed households; partial sedentarization and family and herd splitting strategies. For wealthy pastoralist households, men can be absent for five or six months taking care of the non-milking stock, while for the agro-pastoralist groups, men can be absent for five or six months or even longer searching for other livelihood earnings such as immigration or gold mining. The result is that pastoralist women are now shouldering more household and livelihood responsibilities than ever before.

Partially sedentarized pastoral groups in West Kordofan as well as Baggara (cattle) and Abbala (camel) pastoralist groups that are using the northern, central and eastern livestock routes from South Kordofan to North Kordofan pursue a strategy of splitting the herd into milking stock and non-milking stock. Women, their children and elderly people are left behind with milking stock while men and older boys continue on the mobile livestock economy. Though producing and selling milk and its derivatives is the key source of income, sedentarized pastoralist women are also engaged in other activities to augment their income such as making and selling charcoal and firewood and performing farm work as labourers. Some pastoralist women rent fields from the local community to graze or collect grasses for their cattle, sheep and goats or to produce small crops. A positive impact of this sedentarization of women is that access to health care by the pastoralist groups has improved in terms of reproductive health and child immunization.

This change in household composition and gender division of labour has also led to women taking on increased responsibilities vis-à-vis livestock routes, e.g. under the IFAD WSRMP project that GAMS aims to upscale, women are represented on water management committees, and some were designated by their communities to be trained as paraveterinaries. They are also represented in the conflict resolution committees, which were previously dominated by men[28]. The GAMS project will endeavour to further empower pastoralist women in sustainable natural resource governance through decision-making over access to and use of land and water resources. The mobile stock route co-management teams to be supported by the project will actively involve pastoral women through capacity strengthening, developing their leadership skills, facilitating their involvement in conflict resolution mechanisms, and improving links with women in sedentary farming communities.

[27] Elmardi Ibrahim, Senior livestock specialist, FAO Sudan, pers. comm. 2020

[28] AbdelHamied Hamid, Senior forestry officer, FAO Regional Office for the Near East, pers. comm. 2020

IV. Potential gender mainstreaming opportunities (from successful project experience)

Despite the limiting factors that hinder women's participation, some successful experiences from past and ongoing projects to tackle gender inequalities and constraints have been identified. Given the positive results they had on women beneficiaries, these activities should be considered by the GAMS project as opportunities for scaling up:

- The use of community forest (as per the Butana Integrated Rural Development Project (BIRDP)'s experience) and taungya agroforestry arrangements for reforestation of degraded forests on State land (which is very popular with women) to facilitate women's access to land[29];
- The use of home nurseries to provide seedlings for reforestation activities, which is cheaper and more effective than the use of government nurseries, as an income-generating activity for women ;
- The effective skills women have proven in managing household/village nurseries;
- The use of women's skills to implement and sustainably promote the technical training received, e.g. in producing clean, dry gum that can be sold at premium price;
- The use of the "management tools" that the SSGASS project made mandatory for participating GAPAs, in order to increase transparency and equity in the GAPA transactions (e.g. equitable distribution of pre-finance provided by gum companies to GAPA members for gum tapping and collection);
- The promotion of marketing information services using SMS to enable women's access to market information (as per the SSGASS Project's experience);
- The promotion of women's saving and credit groups to empower women and increase their ability to access financial services.

V. Recommendations

The gender assessment has highlighted the persistence of gender inequalities in Sudan, including in the Gum Arabic value chain. Considering the 49.6%[30] of female population in Sudan and the 40% of women estimated to be involved in gum production nationwide, the share of women members in the GAPAs in the project area for which membership data are available (see table 3 on page 11 above), 17.5%, appears to be very low. The project will develop an adequate strategy to mainstream gender and empower women in the project activities. If women beneficiaries are empowered, have access to assets, are able to participate and are as actively involved as men are, the project is more likely to reach its objective for the whole community. Two ways have been identified to enhance women empowerment in the project: (i) the implementation of gender specific activities towards women beneficiaries in order to strengthen their capacities; and (ii) the consideration of project accompanying measures that aim at raising awareness and strengthen the sensitivity of the various project stakeholders to gender.

[29] Activities integrated in Output 1.2. For a description of taungya agroforestry, see pp. 12-13, Annex 13, PFS.
[30] https://countrymeters.info/fr/Sudan

VI. Gender action plan

The GAMS project will target women where they are involved in the different activities of the gum arabic value chain. Priority will be given to women-only groups which currently represent 2% of GAPAs (10% in West Kordofan and 0.5% in South Kordofan), and will support the emergence and structuring of additional women's groups. Women constitute 50% of the project's direct beneficiaries, but as a target group they will need extra attention because of the gender constraints cited above. Therefore, the emergence and functioning of women-only GAPAs will be supported to reach 20% of total GAPAs at the end of the project. In addition, the project will invest in specific activities to strengthen the capacity of women members of mixed GAPAs, including functional literacy and numeracy for women (activity 1.3.2) and facilitation of premium contracts for clean dry gum with local traders (activity 1.5.1). As the livestock corridors component does not address the marketing aspects – which are being addressed by IFAD's Livestock Marketing and Resilience Project – there are no specific gender activities for that component. However, special attention will be paid to the participation of women in the elaboration of Village Level Climate Adaptation Plans (VCLAP), the inclusion of women members in the mobile stock route co-management teams and in enhancing the leadership roles of women in the local water management committees and conflict resolution mechanisms associated with the livestock routes that the project will rehabilitate.

The project will promote women's empowerment using two entry points: (i) strengthening their social participation through the regeneration and reforestation activities to be carried out at the community level (component 1) and the planning, management and conflict resolution mechanisms for the livestock corridors (component 2); and (ii) supporting their economic empowerment in the conduct of income-generating activities through GAPAs (component 1). To this end, the project will focus on the direct targeting of women's GAPAs and mixed GAPAs that are supportive of women's participation and empowerment, including representation of women in the GAPA leadership. The project will also provide capacity building support, including basic literacy and numeracy combined with financial literacy trainings; technical, organizational and management trainings; and commercial trainings to facilitate women's access to markets. To ensure the sustainability of its interventions, the project will also seek to build and strengthen women skills and the know-how they have developed in specific activities in the gum Arabic value chain (household/village nurseries, tree nursery production, seedlings, facilitators for the dissemination of production techniques, gum cleaning and grading etc.). Making use of this know-how will make services available at local/community level without having to look for external service providers, will enable women to diversify their sources of income, and will allow them to better contribute to the development of the value chain. The lead validation of gender action plan activities to be carried out at project start-up will specify the type of activities where women could be involved. With regard to market access, the project will provide facilitation services to link up women groups with local market traders for selling clean dry gum at premium price. The contract farming purchase guarantee will be tailored to fit to women's profile, constraints and needs, and GAPAs internal regulations tailored to ensure that women members of GAPAs will receive equitable pre-financing amounts as agreed in the contract.[31] The project will also support women's saving and credit groups in order to increase their chances of obtaining services from micro-finance banks.

[31] This was one of the main problems encountered at the beginning of the AFD funded pilot project, see Chapter 3 of Annex 13, Prefeasibility study.

Issues related to cultural and structural inequalities will be addressed at household level through the use of the Gender action learning system (GALS)[32], a highly cost-effective and transformative methodology to implement gender equality efforts, which IFAD has already promoted in Sudan. Apart from working with women directly, GALS also involves work with men to enable them to notice inequalities in the household and to identify corrective actions that can be implemented.

ABOUT GALS AND THE HOUSEHOLD METHODOLOGIES

WHAT IS GALS[33]. GALS (Gender Action Learning System) is a community-led empowerment methodology that aims to give women as well as men more control over their lives and catalyse and support a sustainable movement for gender justice. GALS is not only a 'methodology for women', but a mainstreaming methodology for women and men to address gender issues that are important for the effectiveness of any development intervention.

All GALS processes start with individual visions for 'enlightened self-interest' as the basis for building sustainable structures for mutual support and collective action. Women and men develop achievable targets for change and road maps to move towards their visions, based on analysis of their current situation, past achievements and strengths/opportunities and weaknesses/challenges. A key focus for change is identifying and breaking through gender-based barriers at individual, household and community levels which prevent both women and men from achieving their vision. Barriers to be addressed are identified in a bottom-up manner. They can cover a range of issues, from simple economic inequalities to more fraught issues such as Violence Against Women (VAW), depending on the priorities of the participating households. People also identify other people in their own families and support networks who they have a self-interest in sharing the gender messages and GALS methodology with - either through love and a wish to help people who help them, or because without changing these people they cannot advance.

PRINCIPLES. The GALS share the four basic principles of Household methodologies (HHM):

- *Focus on people.* Household strategies are designed by and for household members who define whom they want to be and what they want to do. They define and implement their own strategies for developing and improving their livelihoods, based on their goals, strengths, opportunities and assets.
- *Empowerment.* The cornerstone of the HHM empowerment process is strengthening the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes. This can be achieved by building on a mutual understanding of different roles and responsibilities.
- *Self-generated solutions.* Willingness to change is generated by household members themselves (women and men of all ages) by placing them in the driver's seat of the development process. They take responsibility for the changes they want to see and work closely with one another, friends and the community to make them happen.
- *Equal opportunities.* Women and men, as well as youth, people with disabilities and other vulnerable groups, have an equal voice in setting the household vision and equal access to development opportunities, productive assets, decision-making and benefits. Some HHMs explicitly address gender relations with a "gender justice" lens, making the promotion of gender equality an essential goal of any type of intervention. In others, gender inequalities emerge as a factor limiting the achievement of

[32] Activity to be supported by FNC as FNC's team has already been trained on the methodology

[33] Equal together, gender action learning system for gender justice in development, Linda Mayoux, May 2013

household goals and the ability of households to better use the productive resources available to them, and participants commit to addressing gender issues as their own choice.

BASIC STEPS TO BE FOLLOWED AT THE HOUSEHOLD LEVEL. Implementing the GALS/HHM at household level involves 4 steps:
- Step 1: Creating a household vision,
- Step 2: Preparing an action plan,
- Step 3; Implementing the action plan and monitoring progress,
- Step 4: Graduating and sustaining the use of GALS/HHM.

All household members (women and men, youth, the elderly and children) should be involved in the GALS/HHM process to ensure that the collective vision reflects their different interests and priorities, and identifies their roles in implementing the action plan. The visioning and planning activities need to be adapted to different household structures (polygamous, single parent, nuclear family, female-headed, child-headed) and pay attention to potential sources of conflict and inequalities. The household structure has implications for the ability to develop social and marketing networks, to have access to and control over productive resources – such as land and equipment – and to acquire different types of knowledge. If adults are illiterate, older children may take on the responsibility of keeping records.

IMPLEMENTATION MODALITIES. A suitable person from the PMU is required to facilitate the implementation of the GALS in the project. For the case of GAMS project, this person will be the gender specialist, who will also be responsible for implementing the project's targeting and gender strategies. Among other tasks, he/she will be liaising with the service providers and will be contributing to household selection and initial discussions at community level.

Suitable service providers for this approach include government, non-governmental organizations (NGOs), CSOs and others who may already be associated with providing technical support and capacity-building to a specific group/household. They are responsible for selecting and training the facilitators who, in turn, train household/group members. Group facilitators usually develop a network of community-based peer facilitators who are selected from among the group members. The peer facilitators support fellow group members and train others.

Source: How to do household methodologies, IFAD, October 2014

The gender-related capacity of the project implementation team will be strengthened at the start to ensure that project management is gender-sensitive, including planning, budgeting, results monitoring, analysis and communication. In addition, as noted on page 8 of Annex 12, Environmental and Social Action Plan, "specific measures should be taken to facilitate the reporting of grievances by women, who may face higher barriers to doing so. Since there may be cultural constraints on women reporting grievances to men, the FNC confidential officer in charge of receiving grievances should be either a woman, or if it is a man, he should have a female colleague with a dedicated phone number for women to report their grievances." This dedicated phone number should be made available during all project sensitization and planning meetings.

Details on gender responsive activities per outcome and output are provided in the Gender action plan table below.

Table 4: Gender action plan

ACTIVITIES	PERFORMANCE INDICATORS AND TARGETS	TIMELINE (YEAR OF IMPLEMENTATION)					RESPONSIBILITIES	COSTS
		1	2	3	4	5		
IMPACT STATEMENT: **Adaptation impact:** By 2026, livelihoods of 66,338 smallholder households more resilient to the impacts of climate change. **Mitigation impact:** By 2040, carbon emissions reductions and removals increased by at least 28.9 million tCo2e								
Component 1: Restoration of smallholder gum agroforestry systems, reforestation of degraded lands and improvement of smallholder gum value chains								
Output 1.1: 75,000 ha of gum agroforestry systems restored (40,000 ha in West Kordofan; 35,000 ha in North Kordofan)								
Direct targeting of women-only and mixed groups that promote women's participation	Percentage of women and men participating in the restoration process (Target: 50% men, 50% women)	X	X	X	X	X	PMU	Already included in PMC and service providers' cost
Development of participatory planning and implementation approaches that allow women's participation (considering their constraints and needs) in the formulation, validation and implementation of restoration plans (particularly in the restoration species choice)	Percentage of participatory planning and training materials incorporating gender considerations (Target: 100%)	X	X	X	X	X	PMU and service providers	Already included in service providers' cost (Activities 1.1.1, 1.1.3 and 1.1.4)
Direct targeting of women to be suppliers in the restoration process based on their effective skills (seed supply, household/village tree nursery production, production of seedlings, collection of improved seeds, transportation of seedlings, women to become technical facilitators, etc.) + technical support[34]	Number of women's groups involved as suppliers in seed supply and tree nursery production supported by the project (Target: 80 women's groups)	X	X	X	X	X	PMU	25 000 USD (Activity 1.1.3)
Output 1.2. 50,000 ha of degraded lands reforested (40,000 ha in South Kordofan, 5,000 ha in North Kordofan, 5,000 ha in West Kordofan)								
Direct targeting of women-only and mixed groups that promote women's participation	Percentage of women and men participating in the reforestation process (Target: 50% men, 50% women)	X	X	X	X	X	PMU	Already included in PMC and service

[34] The technical support will be provided by FNC

ACTIVITIES	PERFORMANCE INDICATORS AND TARGETS	TIMELINE (YEAR OF IMPLEMENTATION)					RESPONSIBILITIES	COSTS
		1	2	3	4	5		
Development of participatory planning and implementation approaches that allow women's participation (considering their constraints and needs) in the reforestation process (particularly in the reforestation species choice)	Percentage of participatory planning and training materials incorporating gender considerations (Target: 100%)	X	X	X	X	X	PMU and service providers	providers' cost (Activities 1.2.1, 1.2.2, 1.2.3 and 1.2.4)
Use of the community forestry approach to facilitate women's access to non-wood forest products	Percentage of women and men beneficiaries of restored gum agroforestry systems (Target: 50% men, 50% women)	X	X	X	X	X	PMU	
Technical and organizational[35] capacity strengthening to support women's participation (for women group members and leaders)	Number and percentage of women and men participating in technical and organizational capacity strengthening (Target: 50% men, 50% women)	X	X	X	X	X	PMU and service providers	18 000 USD (Activity 1.2.2)
Leadership, management and communication capacity strengthening (for women group leaders)	Number and percentage of women and men participating in Leadership, management and communication capacity strengthening (Target: 50% men, 50% women)	X	X	X	X	X	PMU and service providers	18 000 USD (Activity 1.2.2)
Direct targeting of women to be suppliers in the reforestation process based on their effective skills (collection of improved seeds, production and transportation of seedlings, household/village tree nursery production, women to become technical facilitators, etc.) + technical support	Number women groups involved as quality tree seed and seedlings suppliers in the reforestation process supported by the project (Target: 40 women's groups)	X	X	X	X	X	PMU	25 000 USD (Activity 1.2.2)
Output 1.3: Technical, organizational and commercial capacity strengthening program for value chain actors implemented (500 smallholder gum producer groups, buyers, market authorities - detailing number of mixed groups and women only groups, total membership male and female)								
Direct targeting of women only groups and mixed groups that promote women's participation	Percentage of women and men beneficiaries of technical organizational and commercial capacity strengthening	X	X	X	X	X	PMU	Already included in PMC and

[35] Organizational trainings will consider how to organize teamwork, why and how to organize regular and extra meetings, why and how to record and monitor various types of information, how to produce and follow-up reports, how to run self-evaluation, etc.

ACTIVITIES	PERFORMANCE INDICATORS AND TARGETS	TIMELINE (YEAR OF IMPLEMENTATION)					RESPONSIBILITIES	COSTS
		1	2	3	4	5		
	(Target: at least 40% women							service providers' cost
Basic capacity strengthening to support women's participation: functional literacy and numeracy combined with financial literacy (for women group members)	Percentage of women participating in functional literacy and numeracy (Target: 100% older and young women)	X	X	X	X	X	PMU and service providers	86 400 USD (Activity 1.3.2)
Leadership, management and communication capacity strengthening	Percentage of women and men participating in Leadership, management and communication capacity strengthening (Target: at least 40% women)	X	X	X	X	X	PMU and service providers	Already included in service providers' cost (Activity 1.3.2)
Support of the creation of new women-only groups or women-led groups based on clearly identified income generating activities/projects in the value chain	Number of newly created women only or women-led groups functional (Target: 200 newly created women's groups or women-led groups)	X	X	X	X	X	PMU and service providers	
Provision of technical, organizational and commercial[36] trainings for women	Percentage of women and men beneficiaries of technical, organizational and commercial capacity strengthening and skills development (Target: at least 40% women)	X	X	X	X	X	PMU and service providers	
GALS for beneficiary households (including FNC and beneficiary HH trainings)	Number of beneficiary households using the GALS (Target: at least 200 HH)	X	X	X	X		PMU and service providers	120 000 USD (Activity 1.3.2)
Output 1.4. 280 Smallholder gum producer groups linked up with gum exporters paying premium price for clean dry gum (70% of GAPAs adoption rate of selling clean dry gum to exporters)								
Tailoring of the contract farming's purchase guarantee to fit to women's profile, constraints and needs (with gum exporters)	Number of women's GAPAs supported by the project fulfilling their gum purchase contracts (Target: 180 women's groups)	X	X	X	X	X	PMU and service providers	Already included in service providers' cost (Activity 1.4.1)
Tailoring of GAPA internal regulations to ensure that women members of women	Percentage of women members of GAPAs receiving agreed amount of pre-financing	X	X	X	X	X	PMU and service providers	Part of FNC standard

[36] Commercial trainings for women will consider marketing and negotiations

ACTIVITIES	PERFORMANCE INDICATORS AND TARGETS	TIMELINE (YEAR OF IMPLEMENTATION)					RESPONSIBILITIES	COSTS
		1	2	3	4	5		
only and mixed GAPAs receive equitable amount of gum exporter pre-financing	(Target end of project 100% - measured through company pre-finance forms signed by all GAPA members)							implementation manual (Activity 1.4.1)
Output 1.5. 120 Smallholder producer groups participating in selling clean dry gum in standardized auction markets.								
Facilitation services to link up women gum producers groups with local market traders for selling clean dry gum at premium price (national consultant)	Number of women gum producers groups linked up with local market traders for selling clean dry gum at premium price (Target: 24 women gum producers groups)			X	X		PMU and service providers	8 750 USD (Activity 1.5.1)
Exchange visits and workshops between local market traders and women groups	Percentage of women and men participating in exchange visits and workshops (Target: 90% women)			X	X		PMU	6 000 USD (Activity 1.5.1)
Facilitation of women access to market information through the gum market information system	Percentage of women and men benefiting from the gum market information system (Target: at least 40% of women)	X	X				PMU and service providers	Already included in service providers' cost (Activity 1.5.2)
Output 1.6. 180 Smallholder gum producer groups linked up with micro-finance banks								
Support women's saving and credit groups as a mean to liaise them with micro-finance banks	Number of smallholder gum producer groups linked up with micro-finance banks through women's saving and credit groups (Target: 40 smallholder gum producer groups)			X	X		PMU and service providers	2 500 USD (Activity 1.6.1)
Strengthen women's saving and credit groups' capacity on finance and management[37] (for the group accountants and other representatives of group members)	Percentage of women's group improving the management of group activities (Target: 80 % of women's groups strengthened)			X	X	X	PMU and service providers	Already included with financial literacy and numeracy (Activity 1.3.2)
Component 2: Climate change adaptation at landscape level through establishment of livestock routes, restoration of rangelands and improvement of								

[37] Finance and management trainings will consider bookkeeping, accounting, etc.

ACTIVITIES	PERFORMANCE INDICATORS AND TARGETS	TIMELINE (YEAR OF IMPLEMENTATION)					RESPONSIBILITIES	COSTS
		1	2	3	4	5		
enabling policy and institutional environment								
Output 2.1. Climate Resilient Village Cluster Plans (CRVCP) completed and adaptation interventions (land restoration and revegetation, water conservation & management) prioritized and implemented in 125 village clusters in North, South and West Kordofan								
Development of participatory planning and implementation approaches that allow women's participation (considering their constraints and needs)	Participatory planning and training materials incorporating gender issues (Target: 100%) Percentage of women and men participating in the planning process (Target: 50% men, 50% women)	X	X	X	X	X	PMU and service providers	Already included in service providers' cost (Activities 2.1.1, 2.1.2 and 2.1.3))
Specific training and facilitation for women to promote their participation in the formulation and implementation of CRVCP	CRVCP including adaptation investment priorities reflect women's needs and priorities (Target: 100%)	X					PMU and service providers	Already included in service providers' cost (Activity 2.1.1)
Output 2.2. Four hundred (400) km of stock routes negotiated with local government, farming communities and pastoralists, demarcated on the ground and equipped (watering points and other services), and arbitration mechanisms established to resolve conflicts among different user groups								
Promote women's participation in the mapping, demarcation and validation processes	Percentage of Women's actively involved in the mapping, demarcation and validation processes (Target: at least 30% women)	X	X	X			PMU and service providers	Already included in service providers' cost (Activities 2.2.1, 2.2.2 and 2.2.3)
Promote women's participation in the Locality level institutions for the co-management of livestock corridors and in the associated conflict resolution and socioeconomic development initiatives	Percentage of Women's actively involved in running the services associated with the livestock corridors (water yards, veterinary) (Target: least 30% women)	X	X	X	X	X	PMU	Already included in service providers' cost (Activity 2.2.3)
Output 2.3: 151,000 ha of rangelands associated with stock routes restored by local and transhumant communities supported by the project (121,000 ha in SK, 15,000 ha each in NK and WK)								
Development of participatory planning and implementation approaches that allow women's participation (considering their constraints and needs) in the rangeland restoration process	Percentage of participatory planning and training materials incorporating gender considerations (Target: 100%)	X	X				PMU and service providers	Already included in service providers' cost (Activities 2.3.1 and 2.3.2)

ACTIVITIES	PERFORMANCE INDICATORS AND TARGETS	TIMELINE (YEAR OF IMPLEMENTATION)					RESPONSIBILITIES	COSTS
		1	2	3	4	5		
Output 2.4. State-level cross-sectoral policy dialogue and adoption of climate-responsive natural resource management regulations (including protection of livestock corridors) will guarantee long-term sustainability of results generated under outcomes 1.1, 1.2, 2.1 and 2.2								
Facilitate the participation of women only group representatives at the roundtable discussion	Percentage of women and men participating as group representatives at the roundtable discussion (Target: at least 30% women)	X	X	X	X	X	PMU	Already included in PMC and service providers' cost (Activities 2.41 and 2.4.2)
Project management: Project well-managed, knowledge generated (by project implementation) used, and project results and lessons learned shared with relevant stakeholders								
Lead validation of gender action plan activities and targets at State level to adjust the project gender mainstreaming activities	Project gender action plan validated with clear activities and targets Target: 1	X					PMU and service providers	20 000 USD
Ensure that gender issues are prioritized in Project Steering Committee (PSC) meetings	Representative of the Women's Unit of the Ministry of Labour and Social Development is a member of the PSC	X	X	X	X	X	FNC	0
Ensure that project management is gender-sensitive:								
Adopt gender sensitive planning and budgeting approach	Number of gender-sensitive annual work plans and budget Target: 5 (1 per year)	X	X	X	X	X	PMU	Already included in PMC
Set an M&E system that allows the monitoring of gender progresses at outputs, outcomes and impacts level; and analyse project results through gender perspectives	Functional gender-sensitive M&E system Target: 1	X	X	X	X	X	PMU	Already included in PMC
Track gender indicators and collect sex-disaggregated data		X	X	X	X	X	PMU	Already included in PMC
Ensure gender balance in project staffing, particularly for extension staff (use of female facilitators)	Percentage of women and men among the project extension staff Target: at least 30% women	X	X	X	X	X	PMU	Already included in PMC
Integrate a FNC gender specialist and identify gender focal points in the project team in each State	Number of gender specialist or gender focal point within the PMU at national and state levels, Target: 4	X	X	X	X	X	PMU	Already included in PMC

ACTIVITIES	PERFORMANCE INDICATORS AND TARGETS	TIMELINE (YEAR OF IMPLEMENTATION)					RESPONSIBILITIES	COSTS
		1	2	3	4	5		
Provide gender awareness raising and trainings to project staff and key partners (and promote the use of innovative gender transformative approach)	Number of gender awareness raising sessions and trainings provided project staff and key partners Target: at least 1 per year	X	X	X	X	X	PMU	Already included in PMC
Assess/analyse project results through gender perspectives	Number of progress reports assessing project results through gender perspectives, Target: 10 (5 semi-annual and 5 annual reports)	X	X	X	X	X	PMU	Already included in PMC
Ensure that the project's grievance mechanism is accessible to women	Percentage of grievances reported by women and men (no target, but if women's grievances account for low proportion of total grievances reported, remedial action may be needed)	X	X	X	X	X	PMU	Already included in PMC
Capitalize and disseminate project's successes and failures on gender mainstreaming	Number of knowledge products related to gender mainstreaming, Target: 10 (2 per year)	X	X	X	X	X	PMU	Already included in PMC