CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project: Enhancing livelihoods of pastoral communities in Somalia through sustainable water and livestock management

Country: Somalia

Thematic Focal Area: Agriculture and Food Security.

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: UNIDO

Executing Entities: Shabeel Group and UNIDO

Amount of Financing Requested: 10,000,000 (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes ☒ No ☐

Amount of Requested financing for PFG: 150,000 (in U.S. Dollars Equivalent)

Letter of Endorsement (LOE) signed: Yes ☒ No ☐

NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐ This concept has been submitted before

☒ This is the first submission ever of the concept proposal

In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

Please note that concept note documents should not exceed 50 pages, including annexes.

Abbreviations and Acronyms

AF	Adaptation Fund
AICCRA	Accelerating Impacts of CGIAR Climate Research for Africa
ATC	Agricultural Transformation Center
AWPB	Annual Work Plan and Budget
BoQ	Bill of Quantities
CAHW	Community Animal Health Worker
CBBP	Community-Based Breeding Program
CCA	(UN) Common Country Analysis
CPS	Conflict Prevention System
CV2060	Centennial Vision 2060
DRR	Disaster Risk Reduction
E&S	Environmental and Social (safeguards)
EARNSS	Enhancing Adaptation and Resilience through Nature-based Solutions (Somalia)
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EWS	Early Warning System
FGS	Federal Government of Somalia
FMS	Federal Member State(s)
FPIC	Free, Prior and Informed Consent
GAP	Gender Action Plan
GBV	Gender-Based Violence
GHG	Greenhouse Gas
GIS	Geographic Information System(s)
GoS	Government of Somalia
GRM	Grievance Redress Mechanism
HDI	Human Development Index
IBLI	Index-Based Livestock Insurance
IEC	International Electrotechnical Commission
IPCC AR6	Intergovernmental Panel on Climate Change, Sixth Assessment Report
ISO	International Organization for Standardization
IVR	Interactive Voice Response
IDP(s)	Internally Displaced Person(s)
kWh / kWp	kilowatt-hour / kilowatt-peak
LDCF	Least Developed Countries Fund
LSDS	Livestock Sector Development Strategy (Somalia, 2020–2030)
MIE	Multilateral Implementing Entity
MNO(s)	Mobile Network Operator(s)
MoECC	Ministry of Environment and Climate Change (Somalia)
MoLFR	Ministry of Livestock, Forestry and Range
MRV	Measurement, Reporting and Verification
NDA	National Designated Authority
NDC 3.0	Nationally Determined Contribution (third-generation, 2025–2035)
NTP	National Transformation Plan (2025–2029)
O&M	Operations and Maintenance
OHS	Occupational Health and Safety
SADAR	Executing Entity for Hal-abuur project
SME(s)	Small and Medium Enterprise(s)
SOP(s)	Standard Operating Procedure(s)
THI	Temperature-Humidity Index

Table of Contents

List of Tables

List of Figures

PART I: PROJECT/PROGRAMME INFORMATION

Project Background and Context:

A. Country context, Geographic, and Climate Overview:

Country profile and geographical:

Somalia lies in the eastern Horn of Africa, straddling the equator, with a warm desert climate in the north that grades to semi-arid conditions toward the south. The country has one of Africa's longest coastlines, about 2,720 km, fronting the Gulf of Aden and the Indian Ocean. Two main rivers, the Juba and Shabelle, flow into Somalia from the south/western highlands and run toward the Indian Ocean, shaping the country's limited riverine farming zones within an otherwise dry landscape. Somalia's population is roughly 19.01 million and growing rapidly (about 2.89% annually, among the highest globally). Poverty is widespread, with an estimated of about 69% of people living below the national poverty line. The economy revolves around agriculture and livestock, which together account for about 40% of GDP and over 50% of export earnings. Livestock herding and agro-pastoralism remain the primary rural livelihoods and a cornerstone of food security and trade. The country has faced a series of compounding shocks, prolonged and recurrent droughts, flash floods, locust swarms, and conflict, which have intensified since 2020. These hazards, layered onto high poverty and limited basic services, repeatedly erode household assets, depress consumption, and push families into humanitarian need. In this context, climate-resilient investments in water security, rangeland and livestock health, and diversified rural enterprises are essential to protect development gains and reduce chronic vulnerability.

Map Sources: OCHA, UNGIS.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Map created in Jan 2025.

Figure 1: Map of Somalia

Somalia's population of 19.01 million (World Bank, 2024) is projected to grow rapidly to 35 million by 2050, intensifying pressure on water and food systems (NAP, 2024). Poverty affects 67% of the population, while youth (81.5% under 35) face unemployment, exclusion, and migration pressures. Women, with a literacy rate of only 28%, bear the brunt of climate impacts due to limited access to land, finance, and decision-making (NDC 3.0, 2025).

Climate variability:

Baseline climate regime: Somalia's climate is tropical, predominantly hot and dry, with most of the country arid to semi-arid. The seasonal cycle is set by the north–south migration of the ITCZ and monsoonal winds, giving two rainy seasons, i.e., Gu (April–June) and Deyr (October–December), and two dry seasons, i.e., Jiilaal (December–March) and Xagaa (June/July–September). Rainfall is low, erratic, and unevenly distributed: the north/northeast typically receives 0–150 mm/year, southern zones 400–700 mm/year, for a national average around 250 mm. Variability is further modulated by the Somali Low-Level Jet, easterly waves, tropical cyclones, and ocean–atmosphere teleconnections (ENSO, Indian Ocean Dipole); El Niño often brings wetter, flood-prone seasons in parts of the south, whereas La Niña tends toward drought.

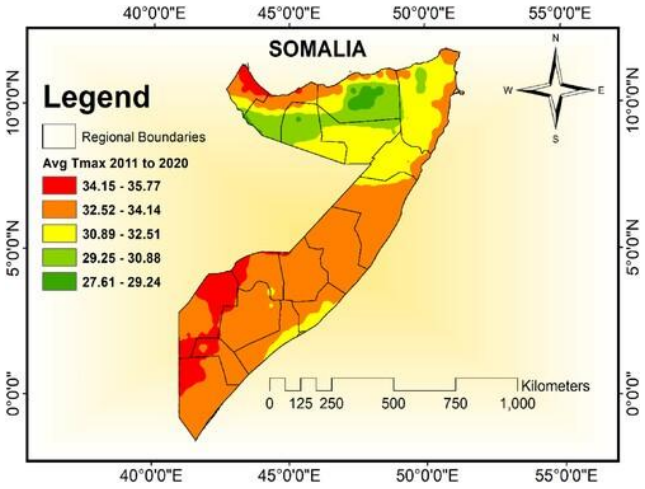

Figure 2: Annual mean temperature of Somalia (2011-2020) (Abdi et al., (2022)

Historical climate change in Somalia: Somalia has already experienced significant climate shifts in recent decades. Since 1991, the country has recorded a steady increase in mean annual temperatures, despite already being one of the hottest regions globally with annual averages close to 30°C. In the Lower Jubba Region, both minimum and maximum temperatures have shown a consistent upward trend across the year. Precipitation has been marked by erratic variability, with rainfall patterns strongly influenced by ENSO events, the Inter-Tropical Convergence Zone, and Indian Ocean Sea surface temperatures. Between 1981 and 2015, rainfall during the Gu season (April–June) showed a declining trend, while Deyr season (Sept–Nov) rainfall increased. Historical droughts have been severe and recurrent, with major episodes occurring in 2007–2008, 2011–2012, 2015, and 2016, resulting in widespread livelihood losses, food insecurity, and displacement. These dynamics, coupled with overgrazing and weak land governance, have accelerated land degradation and desertification.

Projected climate change in Somalia: Looking ahead, Somalia is expected to face further warming and increasingly irregular rainfall. Climate models project a 0.3–0.7 °C rise in mean temperatures by 2035, with variation across regions and seasons. By the end of the century, temperatures are expected to rise by 3.2°C–4.3°C relative to historical baselines. Minimum and maximum daily temperatures will rise in tandem, intensifying heatwaves in duration, frequency, and severity. Projections for rainfall indicate a 3% overall increase by 2050, but this will not translate into improved water security: precipitation is expected to become less regular and more intense, leading to greater risks of flooding, flash floods, and soil erosion. These changes will exacerbate existing challenges of drought frequency and severity, water scarcity, rangeland degradation, and heightened vulnerability of pastoral and agropastoral livelihoods.

Observed hydrometeorological hazard projected risks:

Somalia faces a dual hazard trajectory, more intense rain events that increase flood risk, and hotter, more evaporative conditions that sustain chronic drought risk, with both hazards interacting across the same communities and river systems. Priorities implied by the profile include upgrading early-warning/early-action, managing transboundary water risks, restoring rangelands and catchments, expanding safe water storage, and strengthening climate-resilient livelihoods in flood- and drought-prone areas.

Existing drought risk: Somalia experiences recurrent, severe droughts linked to highly variable Gu/ Deyr rains and ENSO cycles. Major nationwide droughts occurred in 2007–2008, 2011–2012, 2015, and 2016, driving livelihood losses, food insecurity, and displacement. Arid and semi-arid lands cover about 80% of the country, with low soil water retention that amplifies drought impacts; river flows in the Juba and Shabelle have at times run dry, worsening water scarcity and agricultural stress. Downstream dependence on rainfall and water management in Ethiopia/Kenya further heightens drought exposure.

Projected drought risk: Warming of 0.3–0.7 °C by 2035 and 3.2–4.3 °C by 2100 will intensify evaporative demand and the frequency/severity of dry spells, even where mean rainfall changes are modest. Modelled rainfall shows interannual volatility persisting; while a national-scale about 3% increase by 2050 is possible, the increase is expected to be irregular and does not translate into reliable recharge, leaving drought a chronic and escalating hazard for rain-fed and pastoral livelihoods.

Existing flood risk: Somalia already experiences damaging flash and riverine floods when delayed rains are followed by intense downpours. In 2019, such sequencing caused floods that displaced >370,000 people and damaged infrastructure and water sources. The country's downstream position on the Juba/Shabelle basins and rapid runoff from degraded catchments magnify flood peaks; coastal populations are additionally exposed to tropical cyclones, e.g., Cyclone Gati (Nov 2020) brought more than a year's rainfall in two days and displaced thousands.

Projected flood risk: Rainfall events are expected to become less regular but more intense, increasing risks of flash flooding, riverine flooding, and soil erosion; this compounds urban drainage challenges and rangeland degradation. Sea-level rise and a likely increase in tropical cyclone risk along the long, densely settled coastline raise the probability of coastal inundation and storm-surge damage to assets and services.

B. The economic, social, development, and environmental context:

Economic context: Somalia's economy is dominated by pastoralism and livestock trade, which account for roughly 40% of GDP, 80% of export earnings, and 60–65% of livelihoods. Small ruminants, i.e., goats and sheep, are pivotal because of their adaptability, fast reproduction, and cultural importance, serving as the primary source of food, cash, and social security for rural households, especially women and youth. Economic resilience, however, is severely undermined by climate change: recurrent droughts and disease outbreaks cause catastrophic herd losses that erode household assets and national export revenues; livestock markets are disrupted by insecurity, weak infrastructure, and thin value chains; and high humanitarian spending crowds out investment in sustainable growth. The project tackles these vulnerabilities by protecting herds, upgrading market-enabling services and infrastructure, and reducing reliance on humanitarian relief.

Social context: Somalia remains one of the world's most fragile settings, with over 70% of the population under 30 and pastoralists concentrated in remote, underserved areas. Women shoulder central roles in goat and sheep management, milk processing, and petty trade, but are excluded from finance and decision-making and bear disproportionate time burdens for water and fodder collection (often 4–6 hours daily). Youth face >60% unemployment, few pathways into value chains, and heightened risks of marginalization and outmigration. Climate shocks intensify inequities, women's unpaid workloads increase, girls leave school, and risks of early marriage and Gender-based violence (GBV) rise, while displacement surged (about 1.3 million people in 2021–2023), straining coping systems and urban/peri-urban centers. The project responds by elevating women's leadership in veterinary and rangeland governance, backing youth-led SMEs, and reducing displacement pressures through resilient services and livelihoods.

Poverty and HDI: Somalia faces severe climate–poverty vulnerability, with an HDI of 0.404 (192/193) and 54% of the population below the national poverty line. Recurrent drought–flood cycles are eroding livestock assets and incomes, driving 1.3 million drought-related displacements since 2021 and worsening food insecurity. IPCC projections indicate rising heat stress and rainfall variability, increasing risks for households with already low adaptive capacity. Strengthening the small-ruminant economy through climate-smart herd health, resilient water and rangelands, inclusive governance, and risk-transfer systems offers a high-return resilience pathway, reducing dependence on repeated humanitarian response. Despite large-scale relief in 2022–2023, 3–4 million people remain food insecure, underscoring the need for predictable adaptation investment rather than crisis cycles.

Development context: Somalia's NTP (2025–2029) focuses on strengthening climate resilience, advancing sustainable and diversified livelihoods, and enhancing effective and inclusive governance systems. The livestock sector is a pillar of recovery and food security; its adaptation is essential for national goals. The NAP (2025) identifies the stabilization of pastoral water sources, restoration of degraded rangelands, and strengthening of livestock resilience as immediate national priorities. The NAP Framework (2022) reaffirmed livestock as a core adaptation sector and stressed institutional capacity, finance readiness, and gender inclusion; and NDC 3.0 positions livestock-focused adaptation as a core pillar of its climate strategy, emphasizing its importance for food security, gender-responsive livelihoods, and

reducing climate-induced displacement. This project operationalizes those priorities, filling financing and implementation gaps by converting policy intent into on-the-ground investments and capacities.

Environmental context: Somalia's dryland ecosystems are highly stressed, with 50–70% rangeland degradation, over 70% of rural households lacking reliable water, and ongoing deforestation reducing productivity. Climate change (projected +3–4°C by 2100) is intensifying droughts and rainfall variability, increasing competition over water and grazing.

The project addresses these pressures by restoring 50,000 ha of rangeland, rehabilitating 100+ solar-powered water systems, and strengthening inclusive resource governance. This will reduce desertification, improve fodder and water security, support carbon gains, and stabilize livelihoods—helping protect household assets, reduce displacement risks, and advance Somalia's NAP/NDC resilience goals.

- **Escalating variability and drought**: From 2015–2025 Somalia faced recurrent, intensifying multi-season droughts, with major crises in 2016–2017 and 2020–2023, where the latter described as the longest and most severe in at least 40 years. These events triggered widespread crop failure, large-scale livestock losses, and mass displacement, pushing millions into IPC Phase 3+ food insecurity.
- **Water stress and ecosystem decline:** Erratic Gu/Deyr rains and chronic water scarcity have undermined reliable access to safe water. An estimated 50–70% of rangelands are degraded, reducing fodder, biodiversity, and carrying capacity, and accelerating desertification.

C. Climate change impact on the livestock sector and livelihoods

Livestock sector: Somalia's goat and sheep herds, central to exports, jobs, and rural welfare, are nearing their adaptive limits under multi-season droughts, erratic Gu/Deyr rains, and chronic water scarcity. In some areas during 2021–2023, small-ruminant mortality reached 50–60%. Degraded rangelands (about 50–70% degraded) reduce fodder, biodiversity, and carrying capacity, while deteriorating boreholes/berkads and weak cold-chain infrastructure further depress productivity. Disease risks rise as drought-stressed animals become more susceptible to PPR, CCPP, and parasitic infections. Binding constraints include: (i) Technical: thin last-mile veterinary services, limited resilient genetics and forage systems; (ii) Institutional: weak, inclusive rangeland and water governance, limited climate budgeting and standards; (iii) Financial: inadequate risk-transfer instruments and SME finance.

Livelihoods: Pastoral and agropastoral households rely on goats and sheep for food, income, savings, and social identity but have few viable alternatives and limited access to timely climate and early-warning information. Over 70% of rural households face chronic water insecurity as supplies become unreliable, intensifying competition over grazing and water. This has driven localized conflict, distress migration, and internal displacement, accounting for 1.3 million people in 2021–2023, while poverty and food insecurity deepen, and fragile dryland ecosystems erode. Women and youth, who are central to herd management and value addition, face rising workloads and risk exclusion unless adaptation explicitly targets their roles and decision-making.

D. Sensitivity and adaptive capacity of herding communities

Pastoral and agropastoral communities in Somalia are highly sensitive to climate hazards because they operate across an 80% arid–semi-arid landscape with low water-retention soils and erratic Gu/Deyr rainfall, compounded by downstream dependence on the Juba–Shabelle basins and chronic service gaps; nationally Somalia ranks 179th on ND-GAIN and 154/169 for water vulnerability, with cascading drought–flood sequences (e.g., 2019 drought followed by floods displacing >370,000) and locust outbreaks degrading rangelands and food security. Poverty and protection risk further elevate sensitivity: about 69% live below the poverty line, and about 2.6 million people are displaced, with women and youth facing heightened barriers to resources, decision-making, and safety.

At the same time, adaptive capacity is present but constrained: customary mobility, social networks, and local knowledge provide a coping base, yet weak institutions, limited veterinary/water services, and financing gaps restrict recovery and transformation. National frameworks aim to close this gap, Somalia's NAP Framework establishes a whole-of-society, conflict-sensitive, gender-responsive process to integrate adaptation into development and peacebuilding; the NAP (2025) prioritizes integrated water resources management, rangeland rehabilitation, early warning, and diversified livelihoods; and the NDC (2025) proposes scaled investments (e.g., US$ 200 m for rangeland restoration and drought-resilient livestock systems; US$ 500 m for rural/peri-urban water supply) and loss-and-damage systems to strengthen institutional capacity, climate services, and finance signals that, with predictable resources and local governance, adaptive capacity can be significantly expanded.

E. Problem statement:

Somalia is one of the most climate-vulnerable countries in the world. More than 80 percent of its territory is arid or semi-arid, and livelihoods depend heavily on climate-sensitive natural resources, particularly pastoralism. The country has experienced 14 major droughts over the past five decades, with increasing

frequency and severity. The livestock sector, especially goats and sheep, contributes approximately 40 percent of GDP, 80 percent of export earnings, and supports between 60 and 65% of livelihoods. However, recurrent droughts, water scarcity, disease outbreaks, and accelerating rangeland degradation are overwhelming the sector's resilience. During the 2021 to 2023 drought, up to 60% of small ruminants were lost in some regions, wiping out household assets and driving food insecurity, distress migration, and deepening poverty.

More than 70% of rural households lack reliable access to safe water. Women and girls often walk four to six hours daily to collect it, which limits their opportunities for education and income generation. Governance and service delivery gaps further exacerbate the crisis. Veterinary coverage reaches fewer than 20% of households, vaccination campaigns fall far short of national herd coverage, and many rangeland and water committees lack resources, gender inclusion, and legal authority. Climate projections from the World Bank indicate continued warming and rainfall variability, while attribution studies confirm that recent droughts in the Horn of Africa were intensified by climate change. These compounding pressures such as, drought, degraded rangelands, disease, and weak governance, are eroding livelihoods, widening gender disparities, and increasing displacement and dependence on humanitarian aid.

Women, who play a central role in small ruminant care and milk processing, and youth, who make up more than 70% of the population, remain largely excluded from financial services and decision-making processes, which heightens their vulnerability. Climate change is already undermining well-being and development prospects across fragile contexts, and Somalia is on the front line. Global analyses warn that climate impacts could displace hundreds of millions of people internally by mid-century and push many into poverty. In Somalia, repeated drought, flood, and locust shocks intersect with human-driven degradation, such as charcoal production and overgrazing, to deepen food insecurity and poverty. Evidence from rural areas shows that greater exposure to drought significantly reduces household consumption, increases poverty rates, and intensifies gender and youth vulnerabilities.

The most recent multi-season drought was among the worst in decades. Widespread livestock deaths caused by water and fodder shortages triggered acute hunger, and families, many with children, undertook distress migration to urban centers in search of relief. This project directly addresses these climate drivers by safeguarding goat and sheep herds through improved animal health, vaccination, and climate-resilient breeding, securing water access through solar-powered and drought-resilient systems, restoring and inclusively managing rangelands, and diversifying incomes through early warning systems, index-based insurance, and climate-smart agro-enterprises. In general, these interventions aim to transform a cycle of crisis into a pathway for resilient and inclusive growth.

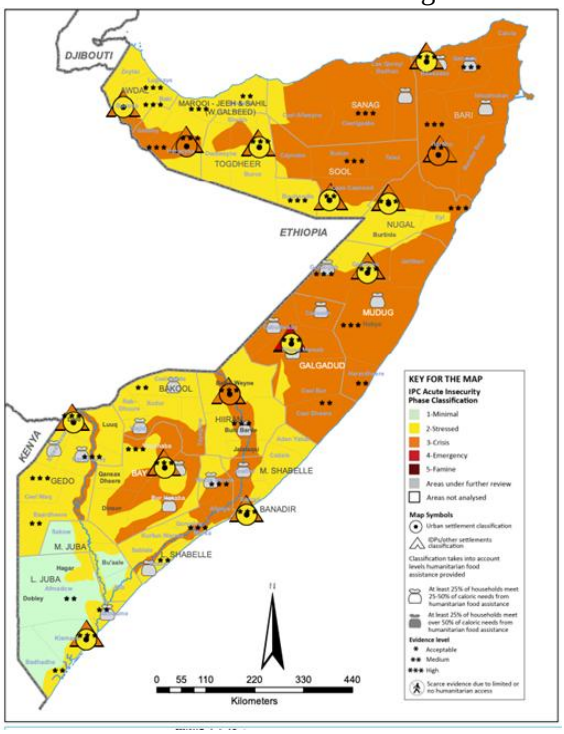

Figure 3: Drought and food insecurity intensity in Somalia (NDC 3.0)

F. Keystone barriers to adapting to climate-change impacts

Environmental and resource-based barriers:

Somalia's pastoral and agropastoral systems are highly constrained by water scarcity and rangeland degradation, which limit their capacity to absorb climate shocks. Only about 30% of pastoral households have reliable access to safe water, increasing vulnerability and placing heavy burdens on women and girls. Degraded rangelands have reduced fodder availability and intensified competition over grazing, a priority vulnerability identified in the NAP (2025).

The NDC 3.0 (2025) calls for scaled investment in climate-resilient grazing systems, expanded veterinary services, and solar-powered water infrastructure to stabilize herds and reduce reliance on costly water trucking. These measures are essential to address declining natural capital and sustain pastoral livelihoods under rising heat and rainfall variability.

Service delivery and market-system barriers: Somalia's NAP (2025) highlights persistent gaps in veterinary services, disease surveillance, cold-chain capacity, and early warning systems, which limit herders' ability to protect livestock during drought and recover afterward. Expanding last-mile animal health services and diagnostic capacity is therefore a national priority.

The NAP also calls for livelihood diversification, including fodder production, milk and hide processing, cooperative strengthening, and better market access infrastructure. These measures are essential to reduce reliance on livestock alone and to improve household resilience and income stability in the face of climate shocks.

Somalia's updated NDC (3.0, 2025) prioritizes expanded veterinary services, livestock insurance, climate-resilient value chains, and the development of Agricultural Transformation Centers, early warning systems, and digital advisory platforms to close last-mile service gaps. It also targets SME development and value-chain infrastructure such as cold storage and weather-indexed insurance to address the 80% reliance on livestock-only income. Key barriers include weak animal health systems, limited institutional and veterinary capacity in remote areas, and low economic diversification with minimal value addition and market access.

Governance, coordination, and finance barriers:
Somalia's adaptation efforts are constrained by fragmented governance, limited coordination, and insufficient financing, as recognized in national strategies. Climate shocks further strain institutions, drive displacement, and heighten resource-based conflict. While the NDC 3.0 estimates a need of US$55.5 billion (2021–2030), only about US$300 million has been mobilized to date, reflecting severe fiscal and absorptive capacity constraints.

The barriers are not a lack of solutions, but unclear mandates, weak monitoring systems, and under-investment. Data gaps on rangeland conditions, disease patterns, and herd mobility hinder evidence-based planning. Scaling adaptation therefore requires predictable external finance, stronger public–private coordination, and institutional capacity to manage and report climate investments effectively.

Information and decision-support barriers: Somalia's adaptation strategies identify weak climate and disease early warning systems as a major barrier to timely, risk-informed action. Despite highly variable Gu and Deyr rainfall and known climate drivers (e.g., ENSO, Indian Ocean patterns), communities and institutions often lack reliable, actionable advisories to anticipate droughts, floods, or livestock disease outbreaks. The RCCC–ICRC climate risk profile shows how delayed early action, such as during the 2019 drought and subsequent floods that displaced over 370,000 people, carries high humanitarian and economic costs. The NAP (2025) notes that livestock surveillance systems have weakened and that telecom channels remain underused for climate alerts. Key gaps include limited access to timely climate information, weak data flow, and fragmented monitoring systems.

Social inclusion and equity barriers:

Somalia's climate policies identify social inclusion and equity gaps as major barriers to effective adaptation. Women and youth face limited access to land, finance, and grazing rights and are under-represented in water, rangeland, and climate governance, reducing the reach and impact of adaptation measures.

The NAP Framework (2022) calls for gender-responsive, conflict-sensitive implementation and equal participation of women and youth in planning and monitoring. NDC 3.0 reinforces this with a target of 30% women's representation in climate decision-making bodies and support for women- and youth-led green enterprises and accessible climate information systems.

Without addressing these disparities, adaptation efforts risk underperformance. Inclusion is therefore not an add-on, but a prerequisite for effective and equitable climate resilience.

Security and access barriers:

Insecurity linked to climate and conflict frequently disrupts last-mile services, asset upkeep, and market access in remote pastoral areas. The RCCC–ICRC climate risk profile shows how droughts and floods drive livelihood loss, displacement, and resource-based conflict, further weakening governance. The NAP Framework (2022) notes that limited institutional capacity and instability hinder planning and monitoring of adaptation measures. Effective programming therefore requires conflict-sensitive delivery, flexible access arrangements, and stronger local coordination, as key barriers include service disruption and restricted market access in insecure areas.

G. The climate change adaptation rationale:

In light of Somalia's escalating climate risks, i.e., recurrent droughts, rising heat stress, degraded rangelands, and increasingly unreliable rainfall, the small ruminant livestock sector is becoming increasingly fragile. Somalia has experienced 14 major droughts in 50 years, and the 2011 famine and 2021–2023 drought caused widespread livestock loss and displaced 1.3 million people (NAP

2025; UNOCHA 2023). IPCC projections indicate 3–4°C warming and more erratic rainfall, further reducing pasture and water availability and increasing disease outbreaks. Goats and sheep, the primary livelihood asset for most pastoral and agropastoral households, are therefore at acute climate risk. The project addresses these vulnerabilities by reducing climate-induced livestock mortality, restoring water and rangeland systems, diversifying livelihoods, and integrating livestock adaptation into national planning. This shifts Somalia's response from repeated crisis relief to proactive, climate-resilient development.

H. Project location and target groups descriptions:

Project location: The project will be implemented in three FMSs as a demonstration to scale up throughout the country through leveraging AF resources. The three target States in this project include Southwest, Hirshabelle, and Puntland.

Figure 4: Map of the project location (Southwest FMS, Hirshabelle FMS, and Puntland FMS).

Southwest State: Southwest State in southern Somalia contains fertile riverine lowlands along the Juba and Shabelle rivers, with comparatively higher rainfall of up to ~500 mm annually. However, it is increasingly affected by severe droughts and floods. IPCC AR6 projects a 3–4°C temperature rise and more erratic rainfall, heightening risks to the state's agropastoral and subsistence farming economy. Livestock productivity is declining due to pasture degradation, water scarcity, and rising disease incidence. Southwest is among the most populous states and hosts large numbers of IDPs, with widespread poverty and limited access to services, particularly for women and youth. Adaptation priorities include climate-smart agriculture, drought-resilient livestock systems, and strengthened water governance aligned with the NAP and NDC. The project will focus on Baidoa, a major agro-pastoral hub heavily impacted by drought and hosting 500,000+ IDPs, but strategically positioned for scaling integrated, climate-resilient farming, livestock, and water-harvesting solutions.

Hirshabelle State: Hirshabelle, located in central Somalia and encompassing Middle Shabelle and Hiiraan, is defined by the Shabelle River, which sustains riverine farming and livestock. The state faces high climate variability, with recurrent floods during rainy seasons and prolonged dry periods. IPCC AR6 projects increasing extreme rainfall and heatwaves in East Africa, heightening risks to Hirshabelle's mixed

livelihoods. Floods damage crops and infrastructure, while droughts deplete water and pasture, and changing humidity expands livestock disease risks. The population is growing rapidly, with a youth majority and high displacement, while governance and service delivery remain limited. Priority adaptation measures include nature-based flood management, early warning systems, and inclusive land-use planning that links climate resilience with peacebuilding. The project will operate in Beledweyne, a productive but flood-prone Shabelle corridor, where integrated flood control, water governance, and climate-smart livestock and rangeland systems can be effectively piloted.

Puntland State: Puntland, in northeastern Somalia, is predominantly arid to semi-arid, with annual rainfall often below 200 mm. It is highly vulnerable to climate change, facing increasing drought frequency, desertification, and chronic water scarcity. Pastoralist livelihoods are under pressure as heat stress, declining forage, and disease outbreaks reduce livestock productivity. The IPCC projects that up to 34% of current livestock production areas may become climatically unsuitable by 2100, with Sub-Saharan Africa among the most affected. Puntland has an estimated population of about 2.5 million, largely rural and reliant on remittances and humanitarian assistance. While institutional capacity is relatively stronger than in newer federal states, infrastructure and financing constraints persist. Key adaptation priorities include rangeland restoration, improved water harvesting, drought-resilient livestock breeds, and strengthened decentralized climate governance.

The project will specifically be implemented in the Jariiban district. Jariiban is semi-arid and pastoral, where chronic water scarcity, drought, and rangeland degradation make livelihoods highly vulnerable to climate change. Yet, it offers scope for rangeland rehab, improved livestock water points, and mobile vet services aligned with LSDS (2020).

I. Target Beneficiary groups

Table 1: List of beneficiaries, their profiles, barriers and adaptive solutions

Beneficiary group	Profile and vulnerabilities	Priority needs/barriers	Tailored benefits under the project
1. Pastoral households (small-ruminant herders)	Mobile/transhumant families relying on goats and sheep for food, income, and savings; highly exposed to drought, water stress, and rangeland decline.	Reliable water near routes; affordable animal health; secure, well-governed grazing; early warning and drought buffers.	Mobile vet clinics, mass vaccination/deworming, climate advisories and drought triggers, solar-powered water points, fodder banks, negotiated grazing by-laws, index-based livestock insurance.
2. Agro-pastoral households (mixed crop–livestock)	Sedentary/semi-sedentary; depend on seasonal rains for crops + small ruminants; market access often weak.	Climate-smart water/soil management; drought-tolerant forage; post-harvest handling; links to buyers/finance.	Rehabilitation of water systems, forage seed and fodder systems, training on climate-smart husbandry, and access to Agricultural Transformation Centers (ATCs) for chilling, processing, and market services.
3. Women in pastoral and agro-pastoral households	Central to herd care, milk processing, and petty trade, they face heavy unpaid workloads, mobility/safety constraints, and financial exclusion.	Time-saving water access; skills, tools, and capital; voice in resource governance; safe market access.	Women para-vet training/certification, at least 40% in committees/co-ops, gender-responsive water points and ATCs, grants/credit for women-led SMEs, tailored financial literacy.
4. Rural and peri-urban youth (app. 15–35)	High underemployment/out-migration risk; limited capital and networks despite strong tech adoption.	Skills, start-up support, entry points into value chains and services, digital climate info.	CAHW training, youth enterprise incubation (feed, milk, hides/skins, solar O&M), access to ATCs and agrivoltaics-powered services, linkage to micro/Islamic finance.
5. Local SMEs and cooperatives (rural/urban)	Small processors/traders (milk, meat, hides/skins, feed); constrained by power, cold chain, and finance.	Reliable energy and cold chain; working capital; quality standards; market links.	ATCs with cold storage, agrivoltaics power at aggregation hubs, HACCP/quality training, blended finance/guarantees, buyer linkages.
6. Service providers (vet suppliers, insurers, MNOs, solar/water firms)	Operate in thin, high-risk markets; scale is limited by demand and capital.	De-risking and predictable demand; standard contracts; data access.	Framework contracts, premium support for index insurance pilots, co-developed advisory channels (SMS/IVR), service-level agreements for uptime.
7. Government institutions	Mandate to scale adaptation but limited tools, staffing, and budget tagging.	Policy integration, MRV, budgeting tools, trained cadres, and coordination forums.	Capacity building (≥40% women), climate-budget tagging, pipeline scoring tools, updated NAP/NDC measures, and national–FMS coordination platform.

Targeting notes (cross-cutting): geographic focus on drought hot-spots; household targeting uses vulnerability scores (female-headed, asset-poor, IDP/returnee status); all people-level metrics are sex-/age-disaggregated; governance bodies maintain at least 40% women/youth representation.

Project Objectives:

General Objective: To strengthen the climate resilience of Somalia's pastoralist communities, particularly women and youth, by safeguarding and enhancing the climate resilience of the goat and sheep subsector, ensuring reliable and sustainable water and rangeland systems, diversifying household incomes, and mainstreaming livestock adaptation across national policies and institutions so that gains are durable, equitable, and scalable.

Specific objectives:

1. **Enhance climate-resilient livestock health and productivity.** The project will reduce climate-related livestock deaths by expanding last-mile veterinary services, mass vaccination, improved husbandry, and climate-tolerant breeds, while training women and youth as para-veterinarians to ensure equitable access to animal health services.

2. **Secure climate-resilient water and rangeland systems.** The project will rehabilitate climate-resilient pastoral water systems, restore degraded rangelands through reseeding and managed grazing, strengthen inclusive rangeland governance to reduce conflict, and establish community fodder reserves to buffer households during drought.

3. **Diversify pastoral livelihoods and strengthen climate information systems.** The project will expand access to climate and early-warning information, pilot livestock insurance to reduce asset losses, and support women- and youth-led SMEs in fodder, milk, hides/skins, and input supply, complemented by vocational training and start-up support for climate-resilient livelihoods.

4. **Strengthen institutional frameworks and finance readiness for livestock adaptation**. The project will integrate livestock adaptation into the NAP, NDCs, and NTP, strengthen federal–state coordination, and build capacities in adaptation planning, M&E, and climate finance to sustain and scale successful models nationwide.

Accordingly, the project aligns with and operationalizes the priority actions identified in Somalia's NAP (UNFCCC, 25 September 2025) and related climate strategies. The project interventions are designed to build climate resilience in Somalia's arid and semi-arid regions by strengthening pastoralist and agro-pastoralist livelihoods. The project promotes sustainable grazing systems and community-led rangeland rehabilitation to combat land degradation and enhance pasture productivity, while expanding veterinary services and disease surveillance to improve the health and productivity of small ruminants such as sheep and goats. The project promotes community-based breeding programs to increase the adaptive capacity of small ruminants and enhance productivity in the face of a changing environment. It invests in inclusive water management through the rehabilitation of existing infrastructure and the development of pilot rainwater harvesting structures, ensuring equitable access for pastoralists, women, and displaced populations. Additionally, the project promotes dryland regenerative systems by introducing drought-tolerant fodder crops, integrated crop-livestock systems, and climate-resilient value chains, alongside early warning systems and community strategic emergency feed and water storage to mitigate and adapt to drought and flood risks.

This project aims to strengthen the climate resilience and adaptive capacity of pastoral and agropastoral communities in Somalia's arid and semi-arid lands through climate-smart water and livestock sector development. The project will improve sustainable access to water, promote community-based livestock breeding, introduce climate-resilient forage varieties, support climate-

smart rangeland and livestock management, diversify livelihoods, and enhance market connectivity. In so doing, project contributes to Adaptation Fund Outcomes 2 and 7 by strengthening institutional capacity and integrating livestock adaptation into national and FMS planning and budgeting. It supports Outcome 3 by increasing community awareness and use of climate information services. It advances Outcome 4 by improving adaptive capacity in the livestock and water sectors. The project enhances ecosystem resilience under Outcome 5 through rangeland restoration and sustainable resource management. Finally, it contributes to Outcome 6 by diversifying and strengthening climate-resilient livelihoods. Overall, the components translate national priorities into concrete, gender-responsive adaptation actions with clear outcomes and scalable models. Localized adaptation needs will be further identified and integrated into the project during the PFG and inception phase in the FSM of Somalia.

Project Components and Financing:

Table 2: Project components and financing

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Climate-Smart Livestock Health and Productivity	Output 1.1.1: Climate-smart animal health systems upgraded/ established. Output 1.1.2: Resilient genetics and solar-powered aggregation hubs.	**Outcome 1:** Reduced climate-induced small-ruminant mortality and improved herd productivity	2,582,234
2. Climate-Resilient Water and Rangeland Systems	Output 2.1.1: Climate-resilient water systems and fodder banks developed. Output 2.1.2: Rangeland restoration and inclusive governance demonstrated.	**Outcome 2:** Reliable and equitable access to climate-resilient water and healthy rangelands	3,485,000
3. Climate information, early warning and resilient livelihoods	Output 3.1.1: Climate/EWS advisories and index insurance upgraded/ piloted. Output 3.1.2: Cold-chain, ATCs, and climate-smart enterprise.	**Outcome 3:** Vulnerable communities adopt climate-informed and diversified livelihood strategies	1,651,558
4. Policy integration, institutional capacity, and finance readiness	Output 4.1.1: Policy and coordination integrated into national climate adaptation strategies. Output 4.1.2: Institutional capacity supported through training and upgrading of climate adaptation systems and climate-finance instruments developed.	**Outcome 4:** Practical livestock adaptation integrated into national/ sub-national planning and finance systems	844,130
Project Execution cost			653,668
Total Project Cost			9,216,590
Project Cycle Management Fee charged by the Implementing Entity (if applicable)			783,410
Amount of Financing Requested			10,000,000

The project's four components, described in Table 2, directly operationalize NAP 2025. C1 (animal health, resilient genetics, solar hubs) advances the livestock objective of reducing climate-related mortality and enhancing productivity, while leveraging cross-cutting renewable energy for rural services. C2 (water systems/fodder banks; rangeland restoration/governance) provides access to water resources and facilitates ecosystem/rangeland rehabilitation through community management. C3 (climate/EWS advisories, index insurance; cold-chain/ATCs/enterprise) implements EWS coverage and DRR priorities and strengthens climate-smart value chains for diversified livelihoods. C4 (policy integration, capacity, MRV/finance readiness) embeds adaptation in national/sub-national planning, establishes MRV, and aligns with the NAP financing strategy under MoECC coordination.

Projected Calendar:

Table 3: Project milestones

Milestones	Expected Dates
Start of Project Implementation	January 2027
Mid-term Review (if planned)	June 2029
Project Closing	December 2031
Terminal Evaluation	March 2032

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project components

The Theory of Change presented below illustrates how the project addresses the underlying climate challenges and systemic barriers affecting pastoral and agropastoral communities in Somalia. It outlines the causal pathway through which climate-smart water and livestock management, rangeland restoration, livelihood diversification, and institutional strengthening activities lead to improved outputs, strengthened adaptive capacities, and resilient livelihood and ecosystem outcomes. By linking interventions directly to expected changes and long-term impacts, the ToC highlights how the project enables communities and institutions to better anticipate, withstand, and adapt to climate-related shocks while supporting sustainable and inclusive development.

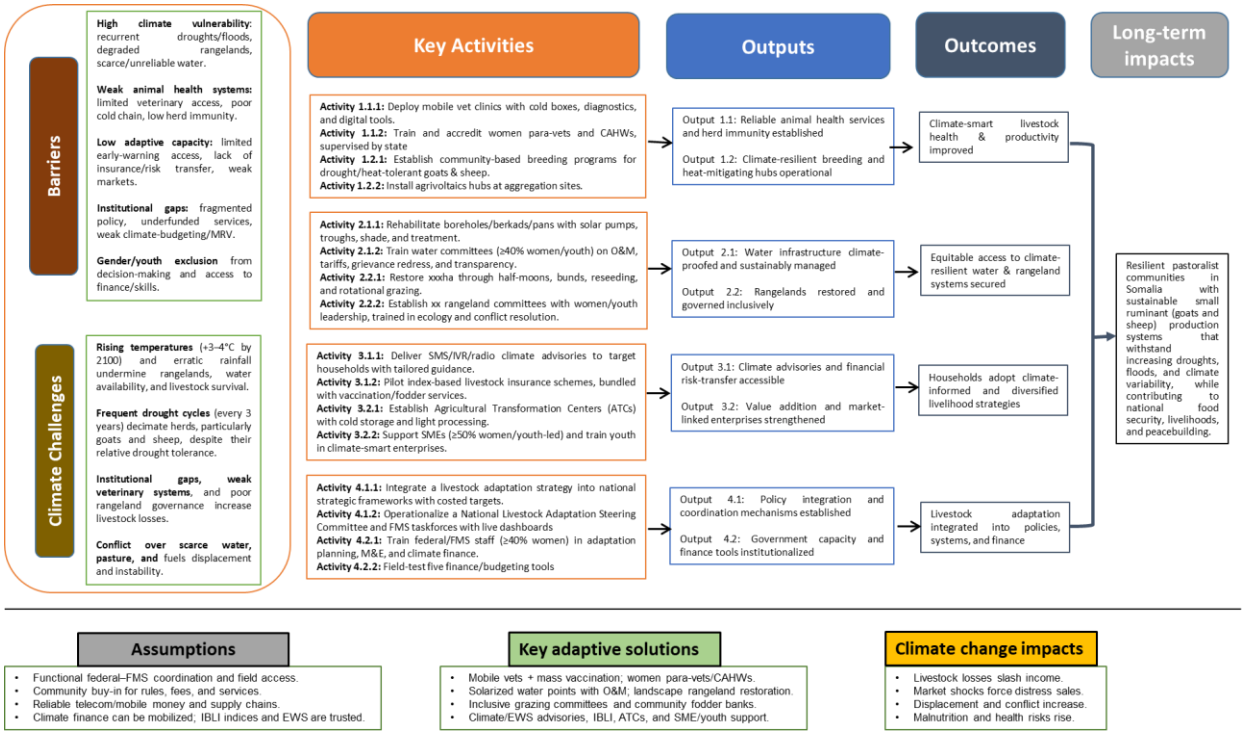

Figure 5: Theory of Change

<u>Component 1: Climate-smart livestock health and productivity</u>

Component 1 address key adaptation priorities and strategies for the livestock sector identified by the NAP. This component aims to cut climate-induced small-ruminant mortality and raise herd productivity among vulnerable pastoralists by delivering reliable animal-health services, building herd immunity at scale, climate-resilient genetics and breeding, and PV (solar) powered aggregation hubs. By

Year 5, the project targets about 30% reduction in drought-year mortality, a 10–15% gain in meat and milk yield, and a 10% improvement in kid and lamb survival, and establishment of durable, local capacity led by women and youth, reflecting priorities consistently raised by women's groups and youth networks during the consultations. Under this component, Shabeel Group and ICARDA will deliver both outputs (1.1.1 and 1.1.2) as executing entities (EE) of the project. Particularly, ICARDA leads the technical design and scaling of climate-resilient small ruminant systems through the SmaRT PACK approach, including community-based breeding programs, improved genetics, herd performance monitoring, and capacity building for animal-health service providers. In addition, UNIDO will partially execute specific activities that will be defined during the PFG phase.

Outcome 1.1: Reduced climate-induced small-ruminant mortality and improved herd productivity

Outcome 1.1 will be achieved by providing evidence-based solutions, piloting livestock innovations, and scaling best practices; demonstrating SmaRT PACK innovations to build resilience and commercial viability, especially for economic resilience; and supporting knowledge exchange and regional collaboration to replicate successful models, consistent with stakeholder workshop recommendations led by the NDA. The project will expand last-mile animal health services, coordinated vaccination, and climate-resilient breeding, supported by solar-powered service hubs that connect health, genetics, and markets. ICARDA will lead technical support through community-based breeding programs, capacity building, and deployment of the SmaRT PACK[1], drawing on indigenous knowledge and drought-tolerant livestock to strengthen adaptation in drought-prone pastoral areas.

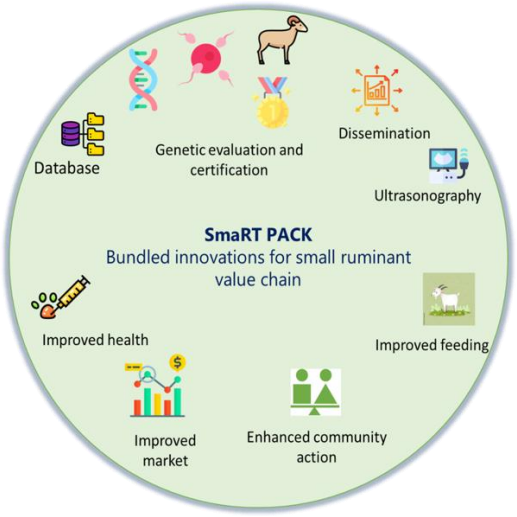

Figure 6: SmaRT PACK (Climate resilient small ruminants development model by ICARDA - CGIAR)

The SmaRT PACK, developed under the CGIAR–AICCRA initiative, is a bundle of proven technological and institutional innovations designed to enhance the productivity, sustainability, and climate resilience of small ruminant value chains. It combines community-based breeding programs to improve resilience and productivity, forage development and feed conservation to ensure nutrition, vaccination and preventive health measures to reduce disease burdens, and cooperative-led commercialization and private sector engagement to connect producers with markets. These components, together with inclusive institutional arrangements that empower women and youth, strengthen smallholder livelihoods while promoting sustainable and climate-resilient agriculture.

[1] SmaRT PACK is comprehensive innovation package designed to strengthen the resilience of pastoral and agropastoral systems.

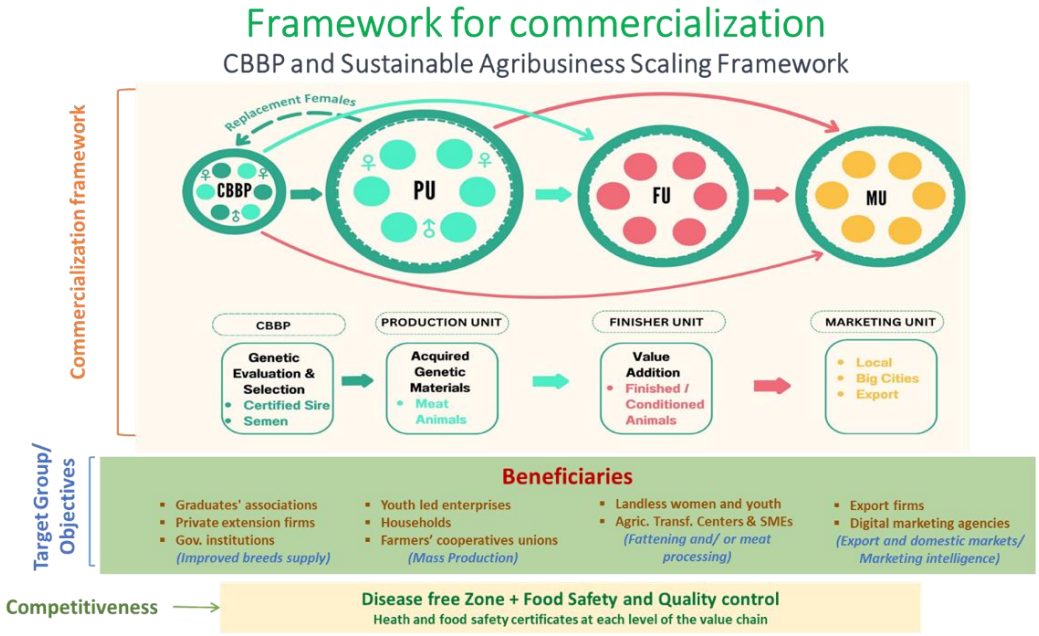

Figure 7: Community-based Breading Program

The project will also advance the commercialization of Community-Based Breeding Programs (CBBPs) in Somalia and transform traditional livestock breeding practices into sustainable, market-oriented enterprises that contribute to economic diversification in climate-vulnerable pastoral and agropastoral areas. This framework will be a shift from subsistence herding toward viable rural agribusinesses that enhance resilience, diversify incomes, and contribute to climate-smart livestock development in fragile dryland systems.

Output 1.1.1: Climate-smart animal health systems: A climate-resilient animal health and surveillance system will be established to provide timely preventive and curative care, sustaining herd immunity during drought and heat stress. This will include locally tailored vaccination and deworming calendars, routine disease monitoring, and rapid response protocols. ICARDA and the Shabeel Group will support veterinary capacity building and coordination with community animal health workers to ensure accessible, affordable, and climate-responsive services that reduce livestock losses and maintain productivity.

Key activities:

1. **Mobile veterinary delivery:** Deploy 20 mobile veterinary clinics operating on fixed circuits along migration corridors and market routes. Each unit will be equipped with diagnostic tools, essential medicines, cold storage boxes, and digital case-logging systems. A total of 200 women para-veterinarians and 1,000 Community Animal Health Workers (CAHWs) will be trained and accredited, supervised by state veterinarians. Routes will be co-designed with local communities, supported by buffer stocks and framework supply contracts to ensure continuity.
2. **Mass immunization and parasite control**: Implement seasonal micro-plans to vaccinate 5 million small ruminants against Peste des Petits Ruminants (PPR) and Contagious Caprine Pleuropneumonia (CCPP), complemented by area-specific deworming and ectoparasite control calendars. Solar-powered refrigeration units and temperature loggers will be deployed to maintain cold chain integrity. Community mobilization will be supported through radio broadcasts, SMS campaigns, and market-day clinics. Pharmacovigilance systems and digital coverage registers will be maintained to monitor efficacy and reach.
3. **Surveillance and early action:** Integrate syndromic surveillance with climate alerts (heat and drought) and referral pathways for timely responses. Conduct quarterly refresher training courses and quality audits with field personnel. Link surveillance efforts to district and state-level Disaster Risk Reduction (DRR) coordination mechanisms to enhance preparedness and response.

Together, these activities will establish a climate-smart animal health service and surveillance network that not only maintains herd immunity but also provides rapid response to emerging threats, safeguarding the productivity and resilience of small ruminant flocks under changing climate conditions.

This output aligns with NAP priorities on disaster risk reduction and livestock systems, the NAP Framework's emphasis on coordination and monitoring, and the Nationally Determined Contributions (NDC) focus on adaptation in agriculture, livestock, and health. The approach also promotes last-mile service delivery, climate-resilient infrastructure, and inclusive participation of women and youth.

Core indicators (with Year-5 targets):

- **Reduction in drought-year mortality:** Achieve at least 30% reduction in small ruminant mortality rates at targeted zones compared to baseline levels**.**
- **Vaccination coverage and cold chain performance:** Ensure at least 80% annual vaccination coverage of targeted small ruminants against PPR and CCPP. Maintain effective cold chain operations with a minimum of 95% of logged hours within the optimal temperature range of 2–8 °C at both fixed and mobile service points.
- **Service reach:** At least 60% of registered households are contacted by qualified animal health service staff at least once per season.
- **Equity and inclusion:** Women hold at least 50% of new certifications among trained providers, and youth represent at least 40% of total trainees, promoting inclusive participation in service delivery.
- **Disease burden reduction:** Reported incidence of PPR and CCPP outbreaks in project districts reduced by at least 50% from baseline, adjusted for surveillance intensity.

Output 1.1.2: Resilient genetics and breeding and solar-powered aggregation hubs: This output focuses on establishing genetically and physically climate-resilient herds, supported by cooler microclimates and reliable access to energy, water, and fodder at strategically located service hubs.

Key Activities:

1. **Community-based breeding for climate resilience:** The project will pilot 10 community-based breeding programs (CBBPs), each managed as a breeder cooperative with a nucleus herd of approximately 2,500 breeding females. These programs will select and propagate drought- and heat-tolerant small ruminants based on survival, fertility, maternal traits, and parasite resistance. Communities, cooperatives, and extension agents will jointly manage breeding decisions, maintain basic performance records, and produce improved sires for wider use. The CBBPs will be supported with essential services such as vaccination, mineral supplementation, shade and water access, and biosecurity measures. A structured rotation of elite rams and bucks across communities will reduce inbreeding and accelerate the spread of genetic gains.
2. **Value addition and agrivoltaics service hubs:** The project will establish integrated value addition and market integration units to convert genetic gains into higher incomes. These units will aggregate and fatten male animals for uniform sale, support meat processing and packaging, and supply producer groups with key inputs such as feed and veterinary supplies. Each unit will include an agrivoltaics service hub, with solar-powered shade structures that generate energy for cold storage, water pumping, and processing. Operated by cooperatives with strong participation of women and youth, these hubs will strengthen climate-resilient livestock value chains, improve market access, and enhance income security while reducing vulnerability to drought and heat stress.

Core Indicators (Year 5 Targets)

- **Productivity gains**: meat and milk yield per doe/ewe increased by 10–15% (season-adjusted); and kid/lamb survival to weaning improved by 10–15%.
- **Genetic resilience adoption:** at least 8,000 households using improved rams/bucks or replacement females from the program; and inbreeding coefficient in pilot herds maintained at ≤6%.
- **Heat-stress mitigation**: Temperature-Humidity Index (THI) reduced by at least 5 points in shaded

aggregation centers compared to the traditional setup. At least 80% of the animals in the aggregation centers received access to shade.

- **Energy and water reliability**: PV system uptime more than 95%; water pumping efficiency improved by over 20% (liters per kWh, baseline-adjusted); and cold-chain uptime maintained at least 95%.
- **Fodder productivity under agrivoltaics**: Dry-matter yield in shaded strips increased by ≥20% compared to unshaded controls, and water-use efficiency improved by at least 25%.
- **Governance and inclusion**: 100% of the 15 hubs operating under formal O&M plans with cost-recovery tariffs, and at least 40% of hub committee seats held by women.

Component 2: Climate-resilient water and rangeland systems

Component focus and outcome. Aligned with NAP's priority to build resilience, reduce environmental pressures, and ensure sustainable productivity in the livestock sector, this component aims to strengthen climate-resilient pastoral corridors by restoring the reliability of critical water points and grazing landscapes, and by anchoring these assets in fair, accountable local governance. Consultations with pastoralist groups, women's collectives, and youth organizations consistently emphasized the urgent need for reliable water access, reduced trekking distances, and fair grazing arrangements**,** which directly informed the design of this component. By linking directly with breeder cooperatives, collection units, and production units, the interventions under this component will ensure that the improved livestock breeding, and production systems are supported by resilient water and forage resources. Shabeel Group and ICARDA will be executing entities to deliver both outputs (2.1.1 and 2.1.2) as EE of the project with ICARDA providing technical guidance for rangeland restoration, climate-resilient fodder and feed systems, and governance of grazing and fodder banks, ensuring that improved herd productivity is supported by sustainable and accessible natural resources. UNIDO will partially execute specific activities that will be defined during the PFG phase.

Outcome 2.1: Reliable and equitable access to climate-resilient water and healthy rangelands:

Pastoral corridors deliver reliable, equitable access to climate-resilient water and healthy rangelands, anchored in inclusive governance and drought-buffering mechanisms. By Year 5: ≥100 water points are climate-resilient, ≥50,000 ha of rangeland is restored, ≥40% women/youth are in rangeland institutions, and 25 fodder banks are established to cushion drought shocks. This reflects Somalia's adaptation priorities in agriculture, water resources, DRR, and sustainable land management.

Output 2.1.1: Climate-resilient water systems and fodder banks developed: This output focuses on establishing a reliable, solar-powered water infrastructure and strategic fodder reserves to mitigate water stress, reduce collection times, and stabilize feed availability during drought periods, especially in areas surrounding breeder cooperatives, collection units, and production units.

Key Activities:

1. **Water point rehabilitation:** Conduct hydro-technical assessments and rehabilitate at least 100 water sources, including boreholes, berkads, and surface pans by installing solar-powered pumps, livestock troughs, fencing, silt traps, and shaded areas. Basic water treatment (chlorination and filtration) will be introduced. Operations and maintenance (O&M) will be formalized through trained operators, tariff systems, spare-parts inventories, vendor service contracts, and asset registries.
2. **Community water governance:** Establish or strengthen local water management committees with a minimum of 40% representation from women. These committees will oversee access rules, manage grievance mechanisms, and ensure equitable service delivery.
3. **Fodder bank development:** Twenty-five fodder banks will be established near breeder cooperatives, water points, and market centers. Each will be equipped with baling and silage machinery, ventilated storage, and quality control protocols. Stocks will be built through contracts with local growers and the promotion of drought-tolerant forage varieties. Early-warning systems will trigger timely and affordable fodder releases. Operations will be sustained through revolving funds and transparent

financial management.

Core Indicators (Year 5 Targets)

- **Functional water infrastructure**: ≥100 rehabilitated water points with ≥90% operational uptime during dry seasons.
- **Access equity**: ≥70% of households report reduced water-fetching time, with a ≥30% decline in average collection time for women and girls.
- **Solar pumping reliability**: ≥95% system uptime across rehabilitated sites.
- **Fodder reserve performance**: ≥25 functional fodder banks storing and releasing ≥50,000 tons over five years; and fodder prices in target districts maintained at ≤20% above baseline during drought years.
- **Governance and inclusion**: ≥40% of committee seats held by women.

This intervention directly addresses Somalia's climate vulnerabilities, particularly recurrent droughts and water scarcity, while supporting sustainable livestock systems and inclusive local governance. It aligns with national adaptation priorities under the NAP, NAP Framework, and NDC, contributing to resilience-building, reduced emergency needs, and improved livelihood security.

Output 2.1.2: Rangeland restoration and inclusive governance: This output aims to restore degraded rangelands and establish inclusive, adaptive governance structures that enhance productivity, reduce resource-based conflicts, and build climate resilience. Restoration will be designed to strengthen the production environment of cooperative-linked livestock systems.

Key Activities:

1. **Rangeland restoration** (50,000 ha): Conduct participatory mapping to identify degradation hotspots and implement restoration measures, including half-moons, bunds, micro-catchments, and gully plugs. Apply assisted natural regeneration and reseeding with drought-tolerant grasses and trees. Introduce seasonal resting and rotational grazing practices, control invasive woody species, and pilot community-based fire management strategies.
2. **Inclusive rangeland governance** (50 Committees): Establish or strengthen 50 rangeland management committees with at least 40% representation from women. Develop local by-laws and link governance structures to district and Federal Member State (FMS) authorities. Train committee members in rangeland ecology, gender-responsive leadership, conflict resolution, and budgeting. Responsibilities include overseeing restoration activities, enforcing grazing rules, protecting migration corridors, and managing accessible grievance mechanisms. Use community scorecards and remote sensing data to enable real-time adaptation of management practices.

Core Indicators (Year 5 Targets)

- **Restored rangeland**: ≥50,000 hectares under improved management practices; ≥20% increase in biomass and vegetative cover, verified through remote sensing.
- **Grazing pressure reduction**: Average daily livestock trekking distance reduced by ≥25% from baseline.
- **Conflict mitigation**: Reported disputes over water and rangeland access reduced by ≥30% in target areas.
- **Committee functionality**: ≥50 operational committees with established by-laws, budgets, and monitoring systems; Sustained ≥40% representation of women.
- **Adaptive managemen**t: ≥70% of committees demonstrate real-time adjustment of grazing and resting rules based on monitoring data.

By integrating sustainable water systems and fodder banks with rangeland restoration around breeder cooperative and production units, and inclusive governance, this component directly supports Somalia's climate adaptation priorities. It links water, forage, and governance interventions to the genetic and production gains achieved under Component 1. This component supports Somalia's climate priorities by

restoring rangelands and securing water and forage systems (NAP), strengthening drought-resilient livestock livelihoods (NDC), and building inclusive local governance for adaptation (NAP Framework). It reduces climate vulnerability and enhances pastoral resilience, especially for women and youth.

Component 3: Climate information, early warning and resilient livelihoods

This component supports the NAP's cross-cutting priorities by strengthening early warning and expanding the dissemination of climate-smart practices. Both youth groups and women's associations stressed challenges in accessing timely climate information and functioning markets, influencing the decision to use SMS/IVR, women's listening groups, and local information champions. The interventions under this component equip vulnerable pastoral and agro-pastoral households with the information, tools, and market linkages needed to manage climate risk and benefit from more resilient livelihood opportunities. This component will reach 100,000 households with tailored climate and early-warning advisories delivered via SMS/IVR and community radio, pilot three index-based livestock insurance (IBLI) schemes to provide predictable drought payouts, establishes six Agricultural Transformation Centers (ATCs) with cold storage and light processing/quality control, and supports 20 SMEs (≥50% women/youth-led) while training 2,000 youth in climate-smart enterprise development. The design is tightly integrated with Components 1–2: advisories guide vaccination and mobility decisions and schedules; insurance complements herd-health and fodder measures; ATCs leverage solar-powered water and agrivoltaics power; and SMEs/youth services plug into rangeland and livestock value chains. Shabeel Group and UNIDO will serve as executing entities for outputs 3.1.1 and 3.1.2 under this component. ICARDA links climate advisories to livestock management practices, contributes data to calibrate index-based livestock insurance, and supports product quality standards and cooperative-market linkages emerging from improved breeding systems.

Outcome 3.1: Vulnerable communities adopt climate-informed and diversified livelihood strategies: Vulnerable pastoral and agropastoral households use climate forecasts to guide anticipatory action, benefit from automatic drought insurance through index insurance, reduce post-harvest losses through solar-powered cold storage and improved quality control. Income diversification (non-herd income) expands through support to SMEs and youth employment. This reflects GoS direction on climate information services, early warning, MRV/indicators, and private-sector engagement with strong inclusion of women and youth.

Output 3.1.1: Climate/EWS advisories and index insurance: This output ensures that households receive timely, actionable climate advisories and predictable drought-related insurance payouts, enabling proactive herd and water use decisions while protecting livestock assets during climate shocks.

Key Activities:

1. **National climate advisory service (Target: 100,000 Households):** Co-develop localized seasonal forecasts and 7–14-day alerts in collaboration with meteorological and rangeland monitoring agencies. Disseminate advisories via SMS, IVR, and community radio, with practical guidance on vaccination schedules, grazing route adjustments, fodder bank access. Establish hotlines, deploy trained "information champions," and form women's listening groups to overcome literacy and device-access barriers. This activity supports Somalia's NDC commitments to climate services and disaster risk reduction (DRR) and aligns with NAP guidance on indicator-based monitoring, evaluation, and learning (MEL).
2. **Sharia-compliant index-based livestock insurance (IBLI) Pilots** (3 Migration Corridors): Design and pilot vegetation- and rainfall-indexed insurance products, calibrated and validated against local herd loss data to minimize basis-risk. Bundle enrollment with vaccination campaigns, mobile veterinary clinics, and community-managed fodder bank services. Enable automatic payouts via mobile money platforms, supported by declining premium subsidies for first-time adopters. Establish grievance redress mechanisms to ensure transparency and trust. This activity directly contributes to NDC commitments on weather-indexed insurance and private sector engagement in climate resilience.

Core Indicators (Year 5 Targets)

- **Reach and utilization**: ≥100,000 households receive climate advisories; ≥60% report taking at least one recommended adaptive action per alert cycle.
- **Timeliness of alerts**: ≥85% of alerts issued at least five days before threshold events (e.g., heatwaves, dry spells, seasonal onset shifts).
- **Insurance uptake and performance:** IBLI coverage reaches ≥30,000 policyholders; Basis-risk events limited to ≤10% of trigger cases (validated via ex-post audit); Payouts disbursed within ≤10 days of trigger events.
- **Household resilience:** Distress livestock sales during drought reduced by ≥25% among insured households; Net livestock offtake aligned with advisories increased by ≥20%.
- **Equity and inclusion**: ≥40% of policyholders or co-signatories are women; ≥40% of information champions are women or youth.

This output strengthens Somalia's climate resilience by linking early warning systems with financial protection mechanisms. It enables households, especially women, to make timely, informed choices, reduce vulnerability to climate shocks, and protect livelihoods in the face of increasing climate variability.

Output 3.1.2: Cold chain, Agricultural Transformation Centers (ATCs), and climate-smart enterprises: This output will reduce post-harvest losses, improve product quality and market value, and create climate-resilient employment opportunities, particularly for women and youth, through the establishment of six ATCs and support for 20 climate-smart small and medium enterprises (SMEs).

Key Activities:

1. **Agricultural Transformation Centers (six sites):** Establish six ATCs near major markets and reliable water points within pastoral corridors, equipped with milk chillers, cold rooms, and light processing units (grading, baling, hide/skin curing) powered by solar or mini-grid systems. Each will be operated by cooperatives with at least 40% women and youth, trained in O&M, food safety, and financial management. Centers will apply cost-recovery tariffs, maintain reserve funds, and use digital inventory/traceability systems and buyer MoUs. This advances NDC goals on cold-chain expansion and value addition, and supports NAP priorities for coordinated, climate-resilient market systems.
2. **SME and youth enterprise development (20 SMEs; 2,000 Youth):** Support 20 climate-smart SMEs through challenge grants and first-loss financing, with training in solar O&M, cold-chain, quality control, and digital sales, plus apprenticeships via ATCs. This strengthens livelihood diversification and women/youth-inclusive enterprise development in line with NAP/NDC priorities.

Core Indicators (Year 5 Targets)

- Cold chain reliability: ≥95% uptime across all ATCs; post-harvest losses for chilled products reduced by ≥30% from baseline.
- Producer value enhancement: Farm-gate prices for chilled and graded products increased by ≥15% compared to non-ATC supply chains.
- Job creation and enterprise development: ≥20 SMEs supported, with ≥50% led by women or youth; SME survival rate at 24 months ≥70%; 2,000 youth trained, with ≥60% placed in jobs or enterprises within six months (≥40% women).
- Financial viability of ATCs: O&M cost-recovery ratio ≥1.0; Days cash-on-hand maintained at ≥45.
- Market access and traceability: Active purchase MoUs with ≥2 off-takers per ATC; Digital traceability used in ≥80% of outbound product lots.

This component directly supports Somalia's national adaptation priorities by linking climate-resilient infrastructure and enterprise development with inclusive economic growth. Specifically: NDC 3.0: Prioritizes early warning systems, weather-based insurance, solar-powered cold storage, value addition, and inclusion of youth and women, addressed through Outputs 3.1.1 and 3.1.2; NAP Framework: Emphasizes indicator-based monitoring, coordination, and integration with a national adaptation M&E system, reflected in the indicator design and reporting mechanisms; NAP (2025): Highlights the importance of early warning, disaster risk reduction, value-chain infrastructure (e.g., cold storage and agro-

processing), and livelihood protection for vulnerable groups, which are core to the third component's outputs.

Component 4: Policy integration, institutional capacity, and finance readiness

This component ensures that adaptation gains become institutionalized, financed and scalable. It includes key interventions encompassing practical, field-tested livestock adaptation, such as mobile animal-health services, vaccination, solar-powered water points, rangeland restoration, fodder banks, ATCs, and risk-transfer instruments into Somalia's national and Federal Member State (FMS) policies, plans, and budgets. The focus is to move from discrete projects to a coherent public programme that is mandated, resourced, and measured. The component aims to integrate an innovative livestock adaptation strategy into the NAP, NDC and NTP (and forthcoming sectoral climate strategies during implementation); establish a functional national platform with mirroring FMS taskforces; train 200 government staff (at least 40% women) in adaptation planning, M&E and climate finance; and operationalize five practical planning tools that enable ministries to cost, tag, prioritize, track, and report adaptation investments. Under this component, Shabeel Group and UNIDO will act as executing entities to deliver outputs 4.1.1 and 4.1.2. ICARDA supports the integration of climate-resilient livestock practices into national policies, strategies, and MRV systems, and provides training and technical guidance to government and local institutions to sustain and scale adaptation outcomes.

Outcome 4.1: Practical livestock adaptation integrated into national/sub-national planning and finance systems: When adaptation is codified in policies and translated into budget lines, the results of Components 1–3, such as area specific vaccination and deworming calendars, veterinary outreach, breeder cooperative-linked fodder banks, resilient water sources and rangelands, feed reserves, value-chain development, and climate finance instruments, become institutionalized and continuously funded. Clear mandates reduce duplication, trained officials sustain results-based delivery and safeguards, and finance tools direct scarce resources to the highest-impact, gender-responsive measures. The result is a self-reinforcing system that continuously expands coverage to women, youth and marginalized groups, locking in resilience gains from Components 1–3 and reducing reliance on humanitarian cycles.

Output 4.1.1: Policy and coordination integration: This output supports the development and institutionalization of a government-endorsed Livestock Adaptation Strategy, fully integrated into Somalia's key national planning frameworks, including the NAP, NDC, and NTP and its successors. Implementation will be driven through a two-tier coordination architecture comprising a national platform and mirrored taskforces at the FMS level, supported by an online, geotagged results reporting system.

Key Activities:

1. **Strategy integration and legal anchoring:** Conduct a cross-ministerial gap analysis and co-design the strategy with FMS representatives, pastoralist groups, women and youth networks, and private sector stakeholders. Define clear targets, indicators, and cost estimates, harmonized with AF and UNFCCC metrics. Formal adoption will be pursued through Cabinet notes and ministerial directives, with integration into Medium-Term Expenditure Frameworks (MTEFs) and Annual Work Plans and Budgets (AWPBs).
2. **Establishment of coordination mechanisms:** A National Livestock Adaptation Steering Committee will be established, bringing together MoECC, key line ministries, and FMS taskforces, supported by a dedicated secretariat. The committee will coordinate joint planning and budgeting and hold quarterly reviews with partners including IFAD, UNEP, WB, FAO, and national NGOs to align interventions and pool financing. A shared data system and live geotagged dashboard will link early warning signals to anticipatory actions such as vaccination campaigns, fodder bank releases, and insurance triggers.
3. **Online adaptation monitoring, reporting, and verification (MRV):** Establish or upgrade the national online adaptation M&E hub. Define sector-specific, gender-responsive indicators and issue standardized reporting guidelines. Introduce a regulatory instrument mandating annual adaptation reporting by federal institutions, FMS authorities, and non-state actors.

Core Indicators (Year 5 Targets)

- **Strategy integration**: Livestock Adaptation Strategy formally referenced in NAP, NDC, and NTP; with strategy costed and reflected in MTEF; ≥80% of Component 1–3 KPIs mirrored in the national MRV system.
- **Coordination effectiveness**: National platform and ≥6 FMS taskforces operational; ≥4 joint reviews conducted annually: and ≥80% of districts actively reporting to the geotagged dashboard.
- **MRV and M&E performance:** Online adaptation hub fully operational; ≥75% of obligated entities submit annual adaptation reports; ≥30% of indicators disaggregated by sex and age; and Conflict Prevention System (CPS) indicators tracked, with ≥20% reduction in resource-based conflicts in target corridors.

Output 4.1.2: Capacity development and climate-finance systems: This output strengthens institutional capacity and equips government entities with practical finance tools to plan, tag, prioritize, cost, and report climate adaptation investments. The goal is to unlock domestic and international financing while safeguarding resources for high-impact, gender-responsive measures.

Key Activities:

1. **Competency-based training and certification (≥200 Staff; ≥40% Women):** The project will provide modular training on climate risk, M&E, AF ESP/gender standards, and basic geospatial skills, delivered through Training-of-Trainers and mentored practical assignments. Scholarships and flexible scheduling will ensure meaningful participation of women and youth.
2. **Design and field-test climate finance tools:** Develop and pilot five key tools: climate-budget tagging system; investment pipeline with multi-criteria scoring; cost–benefit and avoided-loss toolkit; Adaptation Fund-aligned MRV dashboard with geotagged registries and ESP/gender compliance checks; access-to-finance toolkit, co-designed with the Ministry of Finance and FMS treasuries, and linked to a National Climate Fund blueprint.

Core Indicators (Year 5 Targets)

- **Institutional capacity:** ≥200 officials certified, with ≥40% women's participation; ≥70% of agencies applying climate-risk screening in project documentation
- **Budgeting and transparency**: Climate-budget tagging applied in ≥3 budget cycles; ≥70% of adaptation spending tagged and publicly reported
- **Finance mobilization:** Climate proposals submitted using the toolkit valued at ≥US$150 million; approvals totaling ≥US$40 million (GCF, AF, GEF, bilateral sources) and ≥US$10 million from blended/private finance; Investment pipeline tracker operational
- **Governance and safeguards**: 100% of financed projects pass ESP/gender compliance checks; 100% of projects registered with geotagged entries on the MRV dashboard

This component operationalizes Somalia's NAP Framework by establishing an online, geo-tagged adaptation M&E system, strengthening vertical coordination between federal and FMS institutions, creating a structured platform for private-sector engagement, and institutionalizing climate-budget tagging alongside a national climate finance blueprint. It advances NDC/NDC 3.0 commitments by embedding MRV systems, integrating climate-peace-security indicators, supporting policy and regulatory reforms, and mobilizing international finance at scale. It also scales NAP (2025) priorities nationwide by creating the enabling environment and financial architecture for disaster risk reduction, early warning systems, and water and rangeland investments, ensuring predictable, gender-responsive, and conflict-sensitive delivery of climate services that reduce risk and enhance adaptive capacity, particularly for women and youth.

Integration with Components 1–3

Component 4 provides the institutional backbone of the project, ensuring that the technical innovations demonstrated through climate-smart animal health services (Component 1), cooperative-linked water and rangeland systems (Component 2), and value addition and market integration (Component 3) are captured

in national strategies, legally anchored, and sustainably financed. By embedding these measures into Somalia's policy and public finance architecture, the project shifts from short-term resilience pilots to durable, system-wide adaptation gains for women, youth, and marginalized pastoralists.

The overall contribution of the project components into resilient building efforts:

The project design directly reflects priorities raised during community and stakeholder consultations, with women and youth positioned as central actors. Component 1 strengthens herd health and climate-resilient livestock systems. Component 2 restores rangelands and water access through inclusive local governance. Component 3 expands climate information, insurance, cold-chain infrastructure, and climate-smart enterprise opportunities. Component 4 anchors these models in national policy and financing systems. Together, the components reduce climate risk, protect livelihoods, and build long-term adaptive capacity.

B. Economic, Social and Environmental Benefits

Economic benefits: The project strengthens Somalia's rural economy on several fronts. First, it protects household balance sheets by reducing small-ruminant mortality by ≥30% through mass vaccination, last-mile veterinary services, and drought-/heat-tolerant breeding to safeguard the primary store of savings and working capital for pastoral families prioritized in the NAP (2025) and NAP Framework (2022), as consistently raised during consultations with pastoralist and agro-pastoralist groups. Second, it seeds diversification by establishing 20 SMEs (≥50% women/youth-led) across fodder production, milk chilling/processing, hides and skins, and veterinary inputs linked to aggregation hubs and market corridors, creating climate-robust revenue streams and local jobs, responding directly to community requests for livelihood diversification. Third, by rehabilitating 100+ boreholes, berkads, and pans with solar pumping, the project lowers the structural cost of water access versus recurrent trucking, freeing scarce household cash and public funds for productive use, reflecting priority water access concerns raised in field consultations. Fourth, fodder banks and landscape-scale rangeland restoration smooth seasonal feed availability, dampen drought-time price spikes, and reduce search and transport costs for herders and traders, stabilizing markets. Finally, index-based livestock insurance provides predictable payouts when vegetation/rainfall indices signal severe conditions, limiting distress sales, averting debt spirals, and reducing reliance on emergency aid. Together, these measures shift pastoral livelihoods from high-cost, shock-prone coping toward a more efficient, diversified, and investable growth path aligned with Somalia's NAP and NDC priorities.

Social benefits: The project places inclusion at its core, translating Somalia's NAP and NDC commitments and the Adaptation Fund's Gender Policy into measurable gains in access, agency, and resilience. Training 200 women para-veterinarians and supporting women-led cooperatives to manage fodder banks and water points positions women as service providers and resource stewards, increasing their income, leadership, and decision-making power while improving access to services for other women and girls. This responds directly to findings from the gender analysis and consultations with women's groups, which confirmed that women carry primary responsibility for small-ruminant care and milk processing but face limited control over financial and productive resources. A parallel skills pipeline for 2,000 youth in ICT, renewable energy, cold-chain operations, and livestock entrepreneurship opens real employment pathways along pastoral value chains, reducing marginalization and pressures for irregular migration. Stabilizing water access, fodder supply, and herd productivity lowers the likelihood of displacement and the social disruption that follows climate shocks. Household well-being improves as reliable, safer water and shorter collection trips cut women's time burden by ≥30%, freeing hours for schooling, childcare, and income-earning, and improving nutrition and personal safety. Finally, inclusive rangeland and water committees with at least 40% representation by women build community trust and dialogue, reduce resource-based tensions, and create fair, rules-based access to shared assets, strengthening social cohesion in drought-prone areas.

Environmental benefits: The project delivers measurable ecosystem gains while reducing emissions and strengthening landscape-level climate buffering capacity. Restoration of 50,000 hectares of degraded rangelands will increase vegetative cover, rebuild soil organic matter, improve habitat diversity, and enhance carbon sequestration, with co-benefits for pollinators and native species. Climate-resilient water infrastructure, i.e., re-lined pans/berkads, protected boreholes, silt traps, and solar pumping, will reduce over-abstraction, improve infiltration and aquifer recharge, and replace diesel, lowering fuel related emissions and contamination risks. Community fodder banks will reduce pressure to cut trees for emergency feed or charcoal, slowing deforestation and protecting watershed stability. These ecological gains translate into adaptation co-benefits, including reduced wind and water erosion, improved soil moisture retention, enhanced groundwater recharge, moderated local temperatures that mitigate livestock heat stress, and more reliable forage productivity per unit of rainfall. Together, these actions shift pastoral landscapes from a degradation spiral to a regenerative trajectory, supporting long-term resilience to droughts and climate extremes as prioritized in consultations with pastoralist and environmental authorities.

Targeting vulnerable communities and groups:

1. **Pastoral and agro-pastoral households**: The project primarily targets herd-dependent households in drought-prone corridors where food security and incomes hinge on goats and sheep, where exposure to heat stress, erratic rainfall, rangeland degradation, and endemic livestock disease is highest. Targeting will use transparent geographic climate-risk criteria and community-based selection, prioritizing households experiencing herd collapse, female-headed households, persons with disability, and recently displaced families). The support package includes mobile veterinary clinics, mass vaccination and deworming, climate-resilient breeding, solar-powered boreholes/berkads/pans, rangeland restoration, fodder banks, climate/EWS advisories, and access to index-based livestock insurance. Expected result includes at least a 30% drop in small-ruminant mortality, shorter treks and water collection times, higher milk and meat output, fewer distress sales, and reduced displacement.

2. **Rural marginalized women and youth (priority vulnerable groups):** The gender analysis and women's consultations revealed that women carry primary responsibility for small-ruminant care, milk processing, and household provisioning but face barriers to finance, land use and decision-making. Rural youth face unemployment exceeding 60% and limited entry points into value chains. The project ensures ≥40% women's representation in rangeland and water committees, trains and certifies 200 women para-veterinarians, deploys CAHWs, supports women-led cooperatives to manage fodder banks/ATCs, and time-/mobility-sensitive service delivery (clinic routing, SMS/IVR). For youth, the project provides competency-based training for 2,000 learners (solar O&M, cold-chain, quality control, digital sales, entrepreneurship), apprenticeships at ATCs/SMEs, and start-up support. FPIC-style engagement, an accessible GRM, and GBV referral pathways safeguard participation. Expected outcomes include higher female income and decision power, meaningful youth employment, and a ≥30% reduction in women's unpaid labor burden for water and fodder collection.

3. **Rural and urban SMEs and the wider private sector (market actors):** To expand climate-resilient economic opportunities and professionalize service delivery, the project targets SMEs across fodder production, milk aggregation/processing, hides and skins, veterinary inputs, logistics, and renewable-energy services linked to pastoral market corridors. Support includes business incubation, unit-economics coaching, ESG compliance, and digital bookkeeping/market access tools; blended-finance facilitation to unlock credit; and service contracts linked to ATCs and solar-powered water sites. At least 50% of supported firms are women- or youth-led, with a preference for those serving high-risk corridors and low-income clients. Anticipated benefits include improved last-mile service reliability, reduce post-harvest losses, better producer prices for graded products, and new decent work opportunities.

4. P**ublic sector institutions (FGS, FMS, district)**. Federal and state ministries responsible for environment/climate, livestock, water, finance, disaster management, and district authorities are

strengthened so pilot measures become policy-backed, budgeted public services. Support spans policy and planning (integrating livestock adaptation into NAP/NDC/NTP and rangeland/water by-laws), coordination (national steering committee and mirroring FMS taskforces with joint Annual Work Plans and Budgets (AWPBs) and drought-trigger protocols), capacity (training 200 officials, out of which women will be ≥40%, in adaptation planning, safeguards, results-based M&E, climate-budget tagging, and pipeline development), and finance tools (budget tagging, multi-criteria pipeline scoring, avoided-loss CBA, MRV dashboards, access-to-finance packs). The payoff is reduced duplication, stronger accountability, and sustained funding for clinics, water/rangelands, fodder reserves, ATCs, and insurance at scale.

Avoiding/ mitigating negative impacts (ESMP and GP Compliance)

Risk category and instruments: The project is screened as Adaptation Fund Category B, i.e., potential risks are site-specific and reversible and can be managed through proportionate safeguards. A project-wide Environmental and Social Management Plan (ESMP) and a Gender Action Plan (GAP) will guide implementation. All site-level activities will be screened with a standardized checklist aligned to AF's 15 E&S principles and national regulatory mechanisms. Exclusion criteria apply, including no critical habitat conversion; no involuntary resettlement; no harmful pesticides; no activities without documented community consent. Safeguards are embedded from design through procurement, construction, operation, and handover, with clear roles for the Implementing Entity, Executing Entity, and FMS-level project implementation units (PIUs).

Environmental safeguards. All water and rangeland investments will undergo screening and, where required, site-specific ESMPs. Designs follow climate-resilient standards, including safe abstraction limits, silt and erosion control, basic chlorination/filtration, and solar-powered pumping and cold chains. Rangeland restoration applies indigenous seed mixes, assisted natural regeneration, rotational resting, and invasive-species control, with no habitat conversion. Construction and operations follow pollution-prevention and resource-efficiency measures, and veterinary waste, pharmaceuticals, PV components, and batteries are managed through approved take-back and recycling systems. Chance-find procedures will be followed.

Social safeguards. Community engagement will follow FPIC-style processes using Somali-language materials, iterative consultations, and documented community agreements for site selection and resource-use rules. Governance will be inclusive: rangeland and water committees will include ≥40% women, with transparent by-laws, posted tariffs, and conflict-sensitive access protocols for minority clans and IDPs. Labour practices comply with ILO core standards (no child/forced labour, fair wages), with OHS training, PPE, and Codes of Conduct to prevent SEA/SH. A multi-tier GRM will operate at community, FMS, and national levels, with in-person and phone/SMS entry points, clear timelines, and public reporting. Conflict sensitivity (do-no-harm screening and mediation support) will be applied, including adaptations for mobile communities and persons with disabilities.

Gender policy compliance. A Gender Action Plan ensures ≥40% women's participation in training, committees, and cooperatives, with targeted recruitment and support for women para-veterinarians. All results are sex- and age-disaggregated. Water and service sites are designed for safe, accessible use by women. Advisory services, insurance, and SME support include simplified, women-friendly access (e.g., group enrollment, mobile money). Gender audits and community scorecards track equitable benefits and trigger corrective action where needed.

Monitoring, reporting, and accountability. Safeguard commitments are built into contracts and bills of quantities; site supervision checklists verify compliance during works; and result dashboards track key E&S/Gender indicators (e.g., water-point uptime and quality, rangeland cover/ normalized difference vegetation index (NDVI) trends, inclusion ratios, GRM resolution times, waste manifests). The Executing Entity submits semi-annual E&S reports; independent reviews occur at mid-term and completion.

Community disclosure (noticeboards/radio/SMS) keeps eligibility rules, committee decisions, and budgets visible.

Capacity and resourcing. A Safeguards and Gender Team (national specialists plus FMS officers) are funded to train contractors, committees, and PIU staff; conduct spot audits; and manage GRM and gender audits. Safeguards are adequately resourced within the project budget (including provisioning for e-waste, OHS, monitoring, and training) to ensure measures are effective and sustainable.

By integrating robust environmental design standards, inclusive social processes, and a results-oriented Gender Action Plan, and by enforcing them through contracts, monitoring, and an accessible GRM, the project prevents, minimizes, and mitigates adverse impacts while maximizing equitable benefits for the most vulnerable, in full alignment with the Adaptation Fund's Environmental and Social Policy and Gender Policy. The project provides triple wins: i) Economic resilience by protecting assets and diversifying incomes; ii) Social resilience by empowering women and youth, reducing displacement, and strengthening social cohesion; (iii) Environmental resilience by restoring rangelands and safeguarding water resources. All interventions are designed with gender and social equity at their core and in compliance with the Adaptation Fund's ESP and GP, ensuring that the most vulnerable benefit and that risks are mitigated.

C. Cost Effectiveness of the Project

The project is demonstrably cost-effective because it replaces cyclical relief with prevention that avoids large asset losses and recurring humanitarian bills. For example, vaccinating a small ruminant typically costs well under $2 yet averts $40–$60 in mortality and productivity losses; integration of PV(solar energy) and rehabilitating water points eliminates high diesel and water-trucking costs and keeps systems running in crises; and rangeland restoration delivers multi-year forage gains at modest per-hectare costs that reduce feed purchases and trek losses; index-based livestock insurance triggers targeted, rapid payouts that stabilize households for a fraction of the cost of late food aid. Activities are designed for durability and efficiency, mobile vet-clinics/ standardized clinic and water designs, PV power, community-based operation and maintenance with transparent tariffs, indigenous seed mixes for restoration, cold-chain and value addition by establishing ATCs that cut post-harvest losses, and digital MRV to track performance, so assets last 10–15 years and operating costs stay low. By contrast, business-as-usual (trucking water, repeated animal restocking, ad-hoc vaccinations, and emergency food aid) is more expensive and less effective, does not build local capacity or institutions, and perpetuates dependence; it pays repeatedly for symptoms rather than fixing causes. This package delivers the lowest cost per avoided loss, while creating systems that continue to save money and livelihoods long after the project ends.

1. Comparison with business-as-usual/ no-adaptation:

Under a business-as-usual path with no adaptation, Somalia remains trapped in costly, self-reinforcing cycles of herd collapse, displacement, and emergency relief. During the 2021–2023 drought, households in some regions lost up to 60% of small ruminants, which is about US$ 200 million in asset losses, while severe-drought humanitarian bills routinely exceed US$ 1 billion per year with little durable impact on resilience (NAP, 2025, and NDC, 2025). Money goes again and again to symptoms like trucking water, food aid, and ad-hoc animal restocking, without tackling the root causes of the losses. By contrast, the project invests US$10 million over five years to tackle the structural drivers of vulnerability, including high climate-related mortality, unreliable and costly water, degraded rangelands, desertification, and undiversified incomes. The project funds prevention and systems change, such as mass vaccination and last-mile animal health to avert large losses; solar-powered water points to end trucking and keep services running in crises; landscape restoration to increase forage per unit rainfall or supplementary irrigation; and livelihood diversification/insurance to buffer shocks and reduce distress sales. Thus, the project delivers far lower cost per avoided loss than repeated humanitarian responses and converts recurring emergency expenditure into assets, institutions, and markets that continue to protect households long after the project ends.

2. Cost-effectiveness of key interventions:

ICARDA's community-based breeding programs (CBBPs) are a highly cost-effective, self-sustaining innovation. In Ethiopia, more than 150 CBBPs have been scaled since 2021 with a total investment of US$1.6 million and support from over 54 universities and research centers. Through cooperative-led dissemination of improved rams and bucks, the programs boost livestock productivity, cut climate-related mortality, and raise household incomes. Studies also show a 24–40% reduction in emission intensity, where each animal produces more milk and meat while emitting fewer greenhouse gases/per unit production. Because the marginal cost of producing improved sires is low and genetic gains are inherited, benefits accumulate across generations. As a result, CBBPs deliver one of the highest returns on investment (benefit–cost ratio of 14:1) while strengthening long-term biological performance and pastoral resilience to climate change.

Across all four investment areas, the project's interventions deliver high impact per dollar by preventing losses, lowering operating costs, and locking in sustainable systems. Livestock health and productivity (US$2,562,664) achieve an exceptional return. The vaccination of five million goats and sheep at approximately US$0.51/head averts US$40–60 in mortality/productivity losses per animal (benefit–cost >20:1), while each proposed mobile clinic provides year-round coverage to tens of thousands of herders for far less than repeated emergency restocking. Water and rangelands (about US$2,495,688) replace recurrent trucking and degradation costs with long-lived assets. The rehabilitation of water points with solar pumps costs about US$20-25k/site vs about US$200k/settlement/year for trucking; restoring 50,000 ha at US$45–50/ha raises forage and carrying capacity; and fodder banks curb reliance on costly imported feed and drought subsidies. Climate information and livelihoods (US$1,651,558), leveraging IGAD's Centre for Pastoral Areas and Livestock Development, deploy low-cost, high-leverage tools with SMS/IVR early warnings routinely avert losses worth thousands per household; index-based livestock insurance delivers rapid, rules-based payouts at a fraction of food-aid costs; targeted SME support and youth skilling create diversified income streams. Furthermore, agrivoltaics is typically cost-effective for goat and sheep meat/milk in off-grid, arid areas. A 30 kWp (about 33,000 kWh/year) solar PV canopy, with a capital cost of about $80,000 and annual operation and maintenance costs of about 2%, can generate electricity at $0.15 per kWh. In comparison, diesel-generated electricity costs $0.35–$0.70 per kWh, making solar more than three times cheaper than conventional fuel-based power generation. Agrivoltaics reduces heat stress (often resulting in 5–10% lower mortality) and can increase hot-season milk yields by 5–15%. Under-panel forage and drip irrigation improve water-use efficiency and reduce the need for purchased feed. Cold storage/chilling further reduces spoilage and can earn quality premiums. Finally, policy and institutions (US$844.13) embed interventions in NAP/NDC/NTP budgets and plans and build government capacity to avoid duplication and attract co-finance and investment, multiplying the impact of Adaptation Fund resources over time.

3. Durability and efficiency:

The project is designed for long service life and low operating costs, so benefits persist well beyond the grant. Climate-resilient water points (re-lined pans/berkads, protected boreholes, solar pumps, silt traps, shade structures) will be designed for 10–15 years of service with preventive maintenance; rangeland restoration (assisted natural regeneration, reseeding, soil-and-water conservation, rotational resting) becomes self-sustaining after 3–5 years as seed banks recover, delivering multi-year forage gains at minimal O&M. Agrivoltaics canopies at aggregation/ATC sites add a dual-use, high-efficiency asset: elevated PV arrays (20–25-year panel life) provide shade that reduces heat stress and evapotranspiration (lowering mortality and improving milk/meat productivity), while producing off-grid power for cold chains, pumping and light processing; batteries/inverters are planned for mid-life replacement (year 7–10) and covered by vendor O&M contracts, keeping levelized energy costs far below diesel. Efficiency is baked in through standardized, modular designs (clinic kits, solar-water packages, ATC cold rooms), community ownership and O&M (water/rangeland committees; women/youth cooperatives) with transparent tariffs and spare-parts funds to cut downtime, and lifecycle costing that prioritizes low-operation-expenditure solutions (solar over fuel, indigenous seed mixes over costly replanting). A digital

MRV stack (geotagged assets, service-uptime, NDVI/cover trends, cold-chain temperature logs) enables adaptive management and performance-based funding. Finally, interventions are built to scale: pilots (insurance, SMEs, resilient breeds, agrivoltaics) come with unit-cost libraries, design toolkits, and procurement frameworks; institutional measures (policy integration, climate-budget tagging, pipeline scoring, avoided-loss cost–benefit analyses) ready the public system to replicate with GCF/LDCF/bilateral co-finance or PPPs, ensuring durable results and efficient expansion across high-risk corridors.

Genetic improvement achieved through Community-Based Breeding Programs (CBBPs) adds an especially durable dimension. Unlike infrastructure, which requires periodic maintenance, genetic gains are cumulative, permanent, and self-reinforcing. Once superior sires are identified and disseminated, their traits are passed on across successive generations without the need for repeated large-scale investment. Breeder cooperatives maintain nucleus herds, record pedigree and performance, and produce certified sires that continue to deliver resilience and productivity long after direct project support ends. This biological permanent genetic gain ensures that each year the average flock quality improves, locking in resilience to drought and heat while sustaining productivity gains at minimal recurring cost.

4. Cost per beneficiary:

The initial analysis of the project clearly identifies the highest value-for-money of the investment. Delivering a full bundle of resilience services to approximately 200,000 households at roughly US$50 per household per year, which covers last-mile animal health and vaccination, solar-powered water access, rangeland restoration, drought-time fodder, climate/EWS advisories, index-based insurance, ATC, and SME/youth support. By comparison, humanitarian relief typically costs US$500–800 per household per year and provides short-term consumables without building assets, systems, or skills. Even under conservative assumptions, the project delivers more than 10x lower annual cost per household while leaving behind durable infrastructure, local institutions, and diversified incomes that continue to reduce needs and costs, after the project ends. In general, the project delivers long-term resilience compared to humanitarian relief by tackling the root causes of loss. Key levers show strong returns by vaccinating about 5M goats/sheep that would avoids about US$40–60 in losses; solar powered (PV) water points could replace about US$200k/settlement/year in trucking; agrivoltaics provide low-cost power plus shade that cuts heat-stress/mortality and boosts milk/meat yields; rangeland restoration delivers multi-year forage gains; and SMS/EWS and index insurance prevent costly shock losses. Assets are built for 10–15 years with community O&M and are mainstreamed into NAP/NDC/NTP, reducing future aid needs and unlocking co-finance, making this the most cost-effective path to protect Somalia's livestock livelihoods under a warming climate.

Table 4: Cost-Benefit comparison

Project/Program Components	With Project	Without Project
1. **Climate-smart livestock health and productivity** (mobile vet services, mass vaccination, resilient breeding, agrivoltaics hubs)	Reduced mortality and higher yields	High mortality and productivity loss**:** repeated drought die-offs (often 50–60% in hotspots) and low vaccination coverage; higher drug/case-fatality costs; heat stress unchecked leads to lower conception and milk; cold-chain failures cause vaccine spoilage (sunk costs).
2. **Climate-resilient water and rangelands** (solar-powered water points, rangeland restoration, inclusive governance, fodder banks)	Cheaper, reliable water and more forage available, reduced conflict for resources.	Expensive, unreliable water and declining range**:** water-trucking costs spike in dry spells; diesel volatility; degraded rangelands lower carrying capacity; long treks raise animal losses and conflict costs; fodder prices soar, distress sales.
3. **Climate information, early warning, and resilient livelihoods** (SMS/IVR/radio advisories, IBLI, ATCs, SMEs/youth jobs)	Earlier action, protected cashflow, less spoilage**:** timely moves reduce losses; automatic IBLI payouts avert distress sales; ATCs cut post-harvest loss and lift prices; SMEs add non-herd income.	When action is late and reactive, missed forecasts lead to more herd losses. Without insurance or other risk-sharing, families often make distress sales or take on debt. Weak cold storage and transport cause about 20–30% food spoilage. With few local

		services and jobs, households stay exposed to climate-driven income shocks.
4. **Policy integration, capacity and finance readiness** (strategy into NAP/NDC/NTP, national–FMS coordination, training, finance/MRV tools)	Adaptation becomes part of government budgets, services are more predictable and coordinated, and more climate finance is mobilized and transparently tracked.	Projects remain fragmented and short-term, with weak reporting, high admin costs, and little ability to scale up or sustain services once funding ends

D. Consistency with national and sub-national SDGs

The proposed project is directly anchored in Somalia's policy architecture. They operationalize the NAP (2025) by financing priority measures in pastoral water management, rangeland rehabilitation, and livestock resilience; advance the NAP Framework (2022) through a strong focus on livestock adaptation, gender equity (women para-vets, inclusive committees), and institutional strengthening (federal–state coordination, M&E, climate finance tools); fulfill the commitments in the country's third generation NDC (NDC 3.0) by treating livestock adaptation as a central pillar for food security and displacement reduction via herd protection, diversified livelihoods, and climate information services; and contribute to National Transformation Plan (NTP) (2025-2029) by supporting livestock modernization and resilience as engines of economic recovery, with investments that improve productivity, market readiness, and governance. Most importantly, the project aligns with Somalia's Centennial Vision 2060 (CV2060) by supporting climate-informed development, promoting diversified and climate-resilient livelihoods, and strengthening disaster risk management systems.

Key policies and strategies focusing on the livestock and water sectors include:

A. **National Adaptation Plan (NAP, 2025):** The proposed project aligns with Somalia's National Adaptation Plan (2026–2030), which prioritizes strengthening climate resilience in livestock systems, rangelands, water resources, and food security among pastoral and agro-pastoral communities. The project advances these priorities by improving small-ruminant health and productivity, restoring pasture and rangeland ecosystems, and strengthening livestock-based livelihoods through value addition and climate-smart processing of animal products. It also builds the capacity of cooperatives, extension services, women, and youth to manage resources adaptively and sustain resilient production systems. Collectively, these interventions support the NAP's goals of climate-resilient livelihoods, sustainable natural resource management, and inclusive local governance in drought-prone dryland areas.

B. **Nationally Determined Contributions (NDC, 2025**): The project interventions are strongly aligned with Somalia's NDC 3.0 (2025–2035), which prioritizes building resilience in climate-vulnerable livestock and pastoral systems. In particular, the project advances national commitments to: (i) strengthen climate-smart livestock production and adaptive breeding systems; (ii) scale sustainable rangeland and grazing management; (iii) expand value addition and market integration in livestock-based supply chains; and (iv) enhance climate risk management through early warning systems and index-based livestock insurance. The project directly contributes to the NDC's goals of resilient rural livelihoods, reduced climate vulnerability, and inclusive, low-emission growth in pastoral drylands.

C. **National Transformation Plan (NTP 2025-2029):** The project proposal is aligned, specifically with Pillar 4 of the NTP "Environment and Climate Resilience", to strengthen environmental sustainability and climate resilience. The Pillar's key components include climate resilience and adaptation of climate-smart practices in the agriculture, livestock, and fishery sectors. Building on the successes of the National Development Plan (NDP-9) from 2020 to 2024, Somalia has made considerable progress in strengthening environmental policy frameworks and integrating climate action across all sectors. The NTP will serve as Somalia's poverty reduction strategy for the coming years.

D. **Somali Livestock Sector Development Strategy (LSDS 2020-2030):** The project is fully aligned with the National Livestock Sector Development Strategy (LSDS), which prioritizes climate-resilient

livestock production, improved breeds, commercial feed and fodder systems, reliable water access, and modernization of the livestock industry to increase competitiveness and expand value-added processing and market access. By establishing climate-resilient, inclusive rural transformation centers linked to value chains and equipped for meat and dairy processing and technology dissemination, the project supports the shift from live animal sales to higher-value products. The project also responds to climate risks highlighted in the UN Common Country Analysis and aligns with the forthcoming UN Sustainable Development Cooperation Framework for Somalia (2026–2030), particularly Outcome 2 on productive sector transformation and Outcome 4 on locally led climate resilience and risk reduction.

Table 5: Project Alignment with national and/or subnational development policies and strategies

Relevant Development Policy/Strategy	Policy/Strategy Objectives (essence)	Alignment of the project intervention with national policies/strategies
NAP (2025)	The NAP aims to strengthen the climate resilience of pastoral and agro-pastoral communities by improving livestock systems, restoring rangelands and water resources, and supporting resilient livelihoods. The project directly advances these priorities by enhancing herd health and productivity, rehabilitating grazing and water systems, promoting climate-smart value chains, and building institutional capacity for sustained adaptation.	The project directly supports NAP SO1 (water security) by rehabilitating and solarizing water points, NAP SO2 (climate-resilient pastoralism and rangeland management) through improved animal health, genetics and grazing systems, NAP SO3 (climate-smart agriculture and food security) by strengthening fodder production and feed systems, and NAP SO4(resilient and inclusive livelihoods) by expanding value addition and enterprise opportunities for women and youth. Together, the interventions advance the NAP's goal of building climate-resilient pastoral and agro-pastoral communities.
NAP Framework (2022)	Make livestock, water, and DRR core pillars; strengthen inclusive governance, gender equity, and institutional capacity.	Establishes rangeland/water committees (≥40% women); creates national–FMS coordination; trains key officials/ experts in adaptation planning, M&E/MRV, and climate finance to scale proven measures in budgets.
NDC**3.0** (2025-2035)	Aims to build climate-resilient pastoral livelihoods by improving livestock systems, securing water and rangelands, strengthening early warning, and expanding inclusive, climate-smart value chains. These are objectives directly reflected in this project's design and interventions.	The project advances NDC 3.0 priorities by strengthening climate-resilient livestock systems, improving rangeland and water management, enhancing early warning and risk transfer (index insurance), and supporting inclusive, climate-smart value chains for women and youth.
NTP (2025-2029)	To build a climate-resilient and inclusive economy by strengthening rural livelihoods, improving natural resource management, expanding opportunities for women and youth, and enhancing government capacity to deliver services.	The project raises livestock productivity, reduces unpaid labor burdens on women, creates youth employment through climate-smart SMEs and ATCs, and embeds adaptation measures into government planning and budgeting systems (MTEF and AWPBs), thereby strengthening livelihoods, service delivery, and institutional performance in line with the NTP.
Other instruments and regional/international coherence (UNFCCC Initial Communication; IGAD/ICPALD; SDGs)	Highlight pastoral vulnerability; promote regional mobility/rangelands; advance SDGs (1, 2, 5, 8, 13).	Finances concrete, MRV-ready livestock adaptation; complements IGAD/ ICPALD initiatives; contributes to SDGs by protecting assets, improving food security, elevating women's leadership, creating green jobs, and boosting adaptive capacity.
Sub-national consistency and sustainability	Align federal priorities with FMS/ district delivery; institutionalize adaptation.	Implements through FMS platforms, districts, and community institutions; uses climate-budget tagging, pipeline scoring, and results dashboards to ensure ownership, coherence, and post-project sustainability.

E. Relevant national technical standards and compliance to environmental and social policy

National technical standards and legal compliance: All activities will follow Somali laws and ministerial requirements for environment, water, livestock, energy, and public works. Infrastructure

(boreholes, berkads/pans, ATCs/cold rooms, agrivoltaics) will be screened under national EIA procedures; site ESMPs will be prepared where needed. Water works will use hydrogeology to set safe extraction, protect wellheads, line pans with silt traps, and include basic treatment and monitoring. Veterinary services will follow national protocols for vaccination, biosecurity, cold-chain handling, and pharmacovigilance. Rangeland restoration will comply with grazing bylaws and district/FMS land-use rules. All civil/energy works will meet OHS requirements; solar systems will use certified components with proper earthing and protection. Chance-find procedures will safeguard cultural heritage.

International best practice: Technical designs draw on recognized standards: WOAH and FAO guidance for animal health; IGAD/ICPALD pastoral codes for mobility and rangeland governance; Codex/HACCP for food safety at ATCs; and IEC-certified equipment and logging protocols for solar and cold-chain systems. These references are embedded in specifications, Bills of Quantities (BoQs), and supervision checklists, so contractors must comply.

AF environmental and social policy and gender policy: The project is Category B: site-specific, reversible risks managed with proportionate safeguards. It commits to all 15 AF principles: compliance with law; equitable access; protection of natural habitats; pollution prevention; climate-compatible design; labour/OHS; public health; cultural heritage; and land/soil conservation. There are no involuntary resettlement and no critical habitat conversion. Engagement follows FPIC-style practice, with ≥40% women/youth in local governance bodies and gender-responsive site design (safe, well-lit access; scheduling suited to care burdens). Contractors observe ILO core labour standards and Codes of Conduct to prevent SEA/SH. A multi-tier Grievance Redress Mechanism (GRM) (community–FMS–national) offers confidential, time-bound resolution.

Safeguards instruments, monitoring, and enforcement:

A project-level ESMP and Gender Action Plan guide screening and monitoring, with site-specific ESMPs where needed. Contracts include waste and e-waste management, spill and noise control, and PPE requirements. Water use follows safe-abstraction limits, and rangeland restoration is tracked via community scorecards and remote sensing. A digital dashboard reports service access (sex/age-disaggregated), environmental indicators, and GRM performance. Safeguards and gender specialists train implementers, audit sites, and trigger corrective actions to ensure the project remains environmentally sound, socially equitable, and gender responsive.

F. Duplication of project with other funding sources

The project is designed to complement existing Adaptation Fund and other donor initiatives while avoiding duplication. It aligns with national priorities (NAP/NDC), Somali technical standards, WOAH/FAO animal health guidance, and IGAD/ICPALD rangeland governance principles. The project fills key gaps not currently financed at scale, including permanent veterinary service networks, rangeland governance and restoration, index-based livestock insurance, agrivoltaics/ATCs, and SME diversification. Geographic overlap will be prevented through shared site maps and asset registries with FAO, the World Bank, IFAD, UNEP, and NGO partners, prioritizing underserved drought-affected areas. By integrating animal health, water, rangelands, livelihoods, and policy systems, the project ensures efforts reinforce one another. Component 4 embeds these approaches into government budgets and MRV systems to support long-term scaling. The table below summarizes major complementary programs.

Table 6: List of relevant projects in Somalia.

Table 6: List of relevant projects in Somalia and complementarity with the proposed project

No.	Project (from mapping)	Implementing / Executing Entity	Geography / Location/ interventions	Complementarity – gaps AF fills	Synergies – multiplier moves
1.	Green and Resilient Ecosystems for Somali Livelihoods (Hal-abuur)	IFAD (IE); SADAR (EE)	Lower Shabelle (SWS) and Mudug (Galmudug State), Somalia	The project is complementary to IFAD's Hal-abuur initiative, which focuses on land and ecosystem restoration in dryland farming areas. While Hal-abuur strengthens soil, vegetation, and watershed health for smallholders, this project extends the Adaptation Fund's reach to pastoral and agro-pastoral communities dependent on rangelands and livestock. The two approaches form a continuum: Hal-abuur restores the ecological base, and this project translates those gains into productive adaptation through improved water management, rangeland governance, and livestock value chains. Geographically, the project expands AF coverage to Southwest (Baidoa), Hirshabelle (Beledweyne), and Puntland (Jariiban), complementing Hal-abuur and broadening resilience across key dryland zones.	Synergies between the two projects will be achieved through joint knowledge exchange, technical coordination, and aligned monitoring. UNIDO and IFAD will coordinate adaptation practices and community-based natural resource management so that Hal-abuur's restored landscapes provide the ecological foundation for the livelihood and water resilience models supported by this project. Cross-learning events, shared indicators, and harmonized reporting will reinforce institutional coordination. The UNIDO project's climate-smart water systems, drought-resilient livestock management, and inclusive value chains can be scaled into Hal-abuur areas, while Hal-abuur's experience in ecosystem governance will support community engagement in adaptive pasture and water management. Together, the projects create a reinforcing adaptation pathway that links ecosystem restoration, sustainable resource use, and climate-resilient economic opportunities, maximizing the impact of Adaptation Fund resources.
2.	Enhancing Adaptation and Resilience through Nature-based Solutions (EARNSS) (AF Pipeline)	UNEP (IE); SADAR (EE)	Beledweyne (upper), Jowhar (middle), Afgooye (lower)	The project complements UNEP's EARNSS initiative by working in adjacent ecological zones. While EARNSS focuses on riverine and wetland restoration in the Shabelle Basin (e.g., Beledweyne), this project targets nearby rangeland and dryland areas where pastoral livelihoods are affected by drought and grazing pressure. Together, the two projects create a connected adaptation corridor. EARNSS strengthens flood-prone riverine ecosystems through NbS, while this project builds drought resilience, water security, and livestock-based livelihoods in semi-arid landscapes, reinforcing resilience across the basin.	Synergies with UNEP's EARNSS will be achieved through coordinated site planning, shared climate information, and joint monitoring in Beledweyne. EARNSS strengthens riverine ecosystems through NbS, while this project builds drought resilience and livestock-based livelihoods in surrounding drylands. Together, they create a linked adaptation corridor that connects flood resilience in lowlands with drought resilience in rangelands.
3.	Climate Promise / NDC Implementation	UNDP	Nationwide (policy/NDC support)	National-level TA; no field operations in Galmudug.	AF field data (rangeland, livestock, water) to feed into NDC MRV and GHG accounting for pastoral systems.
4.	NAP Project – National Adaptation Planning	UNDP with MoECC	National framework; pilot states (Jubaland, Hirshabelle)	No Galmudug activities. Gap at district implementation.	AF serves as a Galmudug pilot for sub-national adaptation planning; its governance templates can be scaled via NAP.
5.	Climate–Nature Linkages / IWRM	UNDP	Baidoa–Shabelle corridor	Outside Galmudug.	AF expands integrated rangeland-water governance to arid central regions; learning exchange possible.

6.	Just Transition / Energy Access	UNDP–FAO–UNEP	National; select SWS clusters	None in Galmudug.	AF agrivoltaics models in Galmudug provide new demonstration sites for productive-use energy and cold-chain innovation.
7.	Integrated Food Systems / Nutrition Support	FAO	SWS & Hirshabelle	No direct Galmudug coverage.	AF ATCs (Agro-Tech Centers) in Galkayo/Dhusamareeb to replicate food-system lessons for semi-arid zones.
8.	Climate-Resilient Agriculture / CSA Pilots	FAO	Mixed systems (Bay, Bakool, SWS)	No Galmudug pilots.	AF fills the geographic gap — extending CSA and fodder innovations to pastoral zones of Galmudug.
9.	Youth Climate Platform / Green Jobs	UNDP	Baidoa, Mogadishu	Absent in Galmudug.	AF adds a 2,000-youth track for green jobs, creating new opportunities in central regions.
10.	Urban/IDP Resilience	UNDP	Baidoa, Mogadishu	Not in Galmudug.	AF introduces climate-livelihood models adaptable to urban/peri-urban centers like Galkayo and Dhusamareeb.
11.	Climate Services / Early Warning Systems	UNDP–FAO	National coverage	Active but thin in Galmudug.	AF strengthens last-mile advisories and integrates livestock insurance triggers into EWS for Galmudug herders.
12.	Nature-based Solutions / Land Restoration (non-AF)	UNEP–UNDP	SWS and central rangelands (partial)	Some overlap in thematic scope; no duplication geographically.	AF contributes data and community by-laws for rangeland governance; harmonizes biomass monitoring via satellite.
13.	CSFP – Climate-Resilient Food Security Project	GIZ with MoLFR & MoENV	Baidoa/Buur-Hakaba (SWS)	No Galmudug coverage.	AF mirrors CSFP's success model in Galmudug by linking water access, livestock, and agro-processing.
14.	Biyooley (Water for Agro-Pastoral Productivity & Resilience)	World Bank / FGS & FMS	SWS and Puntland	Not active in Galmudug.	AF complements geographically; it can replicate Biyooley's community water governance model in Galmudug.

G. Learning and knowledge management

The project is designed not only as an implementation program but also as a dynamic learning platform for livestock adaptation in Somalia. From inception, learning is embedded into workplans, budgets, and supervision frameworks to ensure that every deployed mobile clinic, solar-powered borehole, restored hectare of rangeland, and supported SME generates actionable evidence. Communities, particularly women and youth, are actively engaged in participatory monitoring and evaluation, tracking indicators such as herd health, vaccination coverage, water-point functionality, rangeland condition (using simplified range scorecards), and livelihood outcomes. This community-based M&E is complemented by a digital monitoring, reporting, and verification (MRV) system that captures geotagged assets, NDVI trends, cold-chain temperature logs, and service utilization data, transforming field observations into timely insights for decision-makers.

Innovation streams within the project are treated as action research. Climate-resilient breeding, index-based livestock insurance, agrivoltaics hubs, and SME acceleration initiatives function as "learning laboratories" with structured feedback loops. Each intervention is guided by explicit hypotheses, documented baselines, and seasonal reviews to inform iterative improvements. Results are disaggregated by sex and age, applying a gender-responsive learning lens to understand how women para-veterinarians, women-led cooperatives, and youth entrepreneurs experience access, benefits, constraints, and safety, informing design refinements and scaling strategies.

Knowledge is translated into practical products beyond traditional reports. Annual Pastoral Resilience Briefs synthesize lessons learned, linking intervention costs to avoided losses. Short case studies on mobile clinics, fodder banks, rangeland governance, and insurance payouts capture user perspectives on climate services, water access, and market outcomes. Targeted policy briefs distill findings into actionable recommendations for future updates to the NAP, NDC, and national budget frameworks.

Dissemination occurs through multi-level channels. At the national level, a Livestock Adaptation Knowledge Hub hosted by the Ministry of Environment and Climate Change curates datasets, briefs, standard operating procedures, and toolkits, and convenes learning events aligned with planning and budget cycles. At the community level, learning circles and exchange visits foster peer-to-peer problem-solving among rangeland committees, women's cooperatives, and youth-led SMEs. Regionally, lessons are shared through IGAD and ICPAC platforms to inform cross-border mobility norms and climate services. Globally, Somalia's experience contributes to the Adaptation Fund Knowledge Hub, the UNFCCC Nairobi Work Programme, and relevant COP side events.

Learning is systematically fed back into policy and operations. Implementing ministries, including the Ministry of Livestock, Forestry and Range (MoLFR), the Ministry of Environment and Climate Change (MoECC), and FMS counterparts, use evidence to adjust by-laws, tariff structures, vaccination micro-plans, restoration protocols, and targeting criteria. A light-touch decision log documents changes and their rationale, ensuring institutional memory and continuity across staff transitions. Data governance protocols safeguard privacy and consent, while quality standards, templates, and peer reviews ensure credibility and consistency of knowledge products.

Overall, the learning and knowledge management component ensures that the project not only delivers results but also generates insights that accelerate the scale-up of livestock adaptation in Somalia. It promotes evidence-based, gender-responsive, and user-informed approaches, positioning Somalia as a regional reference for climate-resilient pastoral systems.

H. Consultative Process

The project concept was developed through a multi-layered and inclusive consultation process, in full alignment with the Environmental and Social Policy and Gender Policy of the Adaptation Fund. Initial

engagement included virtual focus group discussions with key government institutions to identify national priorities and institutional capacities. These were complemented by on-site meetings in February 2025 with a broad range of stakeholders, including financial institutions, technology providers, innovation hubs, and private sector actors involved in the small-ruminant meat and dairy value chains, and importantly, women association representatives. A public–private stakeholder workshop, convened by the National Designated Authority (NDA) in Mogadishu, provided a platform to present the draft intervention and gather feedback. Special attention was given to the inclusion of vulnerable groups, with targeted outreach to pastoralist representatives, women's networks, and youth organizations to ensure their perspectives were reflected in the project design.

The February 2025 stakeholder consultation in Mogadishu brought together government institutions, financial sector actors, women's associations, and innovation hubs to validate priorities and ensure coherence with national adaptation and development frameworks, including the NAP (2025)**,** NDC 3.0**,** NAP Framework**,** and the National Transformation Plan (NTP 2025–2029)**.** Participants emphasized the need to strengthen last-mile veterinary and animal-health services, expand climate-resilient water and rangeland systems, and improve the adaptive capacity of pastoral and agro-pastoral livelihoods—all key priorities identified in the NAP and NDC. They also highlighted the importance of livelihood diversification, women- and youth-led enterprise development, and market system strengthening, in line with NTP priorities for inclusive economic growth. Stakeholders stressed coordination with existing livestock insurance pilots, rangeland management initiatives, and value-chain certification efforts to avoid duplication and ensure complementarity. These insights directly informed the project design, reinforcing community-led governance structures, blended finance for SMEs, gender-responsive service delivery, and climate information systems to support proactive adaptation.

Community-level consultations in Baidoa, Beletweyne, Dhusamareeb, and Garowe brought forward the experiences of agro-pastoralist groups, pastoralists, cooperatives, women's associations, and youth groups (See the summary report in annex 2, table 9). Agro-pastoralists and pastoralists emphasized recurrent droughts, rangeland degradation, and declining herd productivity due to limited veterinary services and feed access. Women highlighted reduced income from milk processing, heavy unpaid labor burdens, and limited participation in decision-making over water and grazing resources, while youth identified unemployment and restricted pathways into livestock-related enterprises. These insights shaped project design: Component 1 expands climate-smart veterinary and breeding services; Component 2 rehabilitates water points and restores rangelands through inclusive governance; Component 3 strengthens climate information services, pilots livestock insurance, and supports women- and youth-led enterprises; and Component 4 ensures long-term institutional integration and finance readiness.

Because direct access to some remote communities was constrained by security and mobility limitations, the project will further deepen community participation during the Project Formulation Grant (PFG) and inception phases. With PFG support, local NGOs, cooperatives, and government counterparts will lead structured field-level consultations to validate intervention sites, operational arrangements, and gender-responsive safeguards. This phased approach ensures that the final project reflects priorities clearly identified during consultations: strengthening small-ruminant adaptation capacity, restoring rangeland and water systems, diversifying local economies for women and youth, and embedding inclusive governance to ensure equitable and sustained climate resilience outcomes.

I. Justification for funding

Somalia's pastoral economy is increasingly destabilized by rising temperatures, multi-season droughts, erratic rainfall, and flash floods. These climate extremes amplify livestock mortality, water scarcity, disease outbreaks, and rangeland degradation, placing goats and sheep, which are central to food security and household income, beyond traditional coping thresholds. Without targeted adaptation, climate hazards will continue to erode assets, drive displacement, and perpetuate costly humanitarian cycles.

Baseline (no adaptation): The 2021 to 2023 drought illustrates the cost of inaction. In some regions, up to 60 percent of small ruminants were lost, representing over US$200 million in asset losses. More than 70 percent of rural households lacked reliable access to water, resulting in emergency water trucking costs of approximately US$200,000 per settlement per year. Additionally, 50 to 70% of rangelands were degraded, triggering a fodder crisis and resource-based conflict. Humanitarian needs routinely exceed US$1 billion annually, yet these responses offer limited durable resilience. Women and youth remain excluded from financial services and decision-making, and ministries lack the tools to translate NAP and NDC priorities into funded, scalable programs. Without support from the Adaptation Fund (AF), these losses and dependencies will escalate.

What US$10 million in AF Financing Delivers: The requested US$10 million over five years represents the full cost of adaptation for a targeted set of drought-exposed corridors. It covers the incremental, climate-specific investments that humanitarian and development funding typically do not address. The financing will support:

1. **Last-mile animal health services:** including mass vaccination, mobile veterinary outreach, climate-resilient breeding, and training of women para-veterinarians and community animal health workers to prevent climate-amplified disease and mortality.
2. **Climate-resilient water and rangeland systems:** through solar-powered, reliable water points with operations and maintenance support, targeted rangeland restoration, inclusive governance, and strategic fodder reserves to stabilize access during drought.
3. **Information, risk transfer, and livelihood diversification**: via SMS/IVR climate advisories, index-based livestock insurance pilots, and support for women and youth-led SMEs, including agrivoltaics-powered aggregation and cold-chain infrastructure.
4. **Institutional integration and finance readiness**: embedding proven adaptation measures into NAP, NDC, and NDP frameworks, training officials, and deploying climate-budget tagging and MRV tools to ensure results are budgeted, monitored, and scalable.

To maximize impact within the US$10 million envelope, interventions are phased, geographically targeted, and sequenced to high-risk hotspots and will leverage complementarities with ongoing initiatives (e.g., Biyoole II water infrastructure, FAO vaccination campaigns, private SME capital) to extend impact. In line with AF policy, it embeds activities in Somalia's NAP/NDC/NTP and delivers through government systems with a clear exit strategy, transferring assets, O&M, and budgets to mandated institutions. It strengthens policy and institutional capacity (gender-responsive governance, fiduciary/ESP compliance, MRV) and establishes climate-finance readiness (budget tagging, pipeline development, safeguards, procurement, audits). Aligned with Somalia's NAP 2025, the project backs a centralized MRV system led by the MoECC with line ministries, FMS, NGOs, and partners using strong technical capacity, GIS, and climate data to ensure transparency and truly data-driven decisions. Rigorous M&E will track results, facilitate learning, and enable timely corrective actions. In parallel, the project will build the capacities and investment culture needed to prepare bankable, costed packages and standardized designs aligned with AF, GCF, GEF/LDCF, IFIs, and bilateral windows to ensure sustainability and support replication and scale-up across the country.

Why AF resources are essential: Somalia's domestic budgets are severely constrained, and most external flows are either short-term humanitarian aid or technical assistance for planning. These do not fund the critical adaptation measures, such as solar-powered water systems, rangeland restoration, scaled vaccination and cold chains, insurance and early warning systems, and gender-responsive institutions, needed to break the cycle of crisis. AF financing is catalytic, de-risking innovative solutions like resilient breeds, livestock insurance, and agrivoltaics for future scale-up. It is equitable, directing benefits to women, youth, displaced, and minority groups in line with the AF Gender Policy and Environmental and Social Policy. It is also cost-effective, with interventions such as vaccination showing benefit-cost ratios exceeding 20:1, and solar water systems displacing expensive trucking.

The project follows the Adaptation Fund's full-cost-of-adaptation principle; no co-financing is required. The AF grant covers the incremental, climate-specific investments necessary to reduce climate-induced livestock mortality, secure water and rangeland systems, diversify livelihoods, and strengthen institutional capacity. Complementary programs are referenced for coordination and learning, not for co-financing.

J. Sustainability of the project

Institutional and policy sustainability: The project embeds proven measures into Somalia's public systems, securing continuity after grant funding ends. Component 4 integrates practical livestock adaptation (mobile vet services, vaccination, solar-powered water points, rangeland restoration, fodder banks, ATCs, IBLI) into the NAP, NDCs, and NTP instruments, and embeds them in Medium-Term Expenditure Frameworks and Annual Work Plans/Budgets. A national–FMS coordination mechanism with agreed mandates, SOPs, and a live results dashboard reduces fragmentation and enables timely, drought-triggered decisions. Training 200 officials (≥40% women) in adaptation planning, safeguards, M&E, and climate-budget tagging builds a permanent cadre to plan, fund, and supervise services.

Financial sustainability: Each asset and service has a cost-recovery or co-financing pathway: water points operate with transparent pro-poor tariffs, operator contracts and maintenance reserves; fodder banks run revolving stocks with quality standards and pre-agreed release rules; ATCs apply service fees that cover O&M and replacements; agrivoltaics generate low-cost power and fee-based services (pumping, chilling, charging) that offset O&M (approximately 2% of capital expenditure) and fund battery replacement in years 7–10; insurance pilots use temporary, declining premium support and group policies to reach commercial viability; SMEs access blended finance (challenge grants/guarantees) to unlock private capital. Climate-budget tagging and a pipeline scoring tool steer domestic and external finance to the highest-impact, gender-responsive investments, while MRV evidence positions the portfolio for results-based funding (e.g., AF/GCF/LDCF scale-up).

Technical and operational sustainability: Project designs are standardized and modular to minimize lifecycle costs and maximize operational uptime. Assets such as solar-powered water systems, veterinary clinic kits, HACCP-compliant cold storage units, and agrivoltaics canopies use certified components (IEC) and come with detailed O&M manuals. Asset registries document serial numbers, warranties, and spare parts kits. Maintenance is ensured through vendor contracts and locally trained technicians via apprenticeship programs. Clear O&M protocols, including responsibilities for payment, repair, and response timelines, are established prior to commissioning. Key performance indicators (KPIs), such as ≥90% uptime for water points, ≤10% fodder loss, cold-chain temperature compliance, and high vaccination coverage, are digitally tracked to enable timely corrective actions.

Environmental sustainability: The programme prioritizes ecosystem restoration over resource extraction. Rangeland rehabilitation across 50,000 hectares employs indigenous species, assisted natural regeneration, rotational grazing, erosion control, and basic fire management to enhance soil health, biomass productivity, and biodiversity. Hydrogeological assessments inform safe water abstraction limits, while infrastructure such as silt traps and water treatment systems safeguard water quality. Solar energy replaces diesel, reducing emissions and spill risks. Agrivoltaics shading mitigates evapotranspiration and heat stress, improving local microclimates. All sites adhere to Environmental and Social Management Plans (ESMPs) aligned with the AF Environmental and Social Policy (ESP), ensuring no conversion of critical habitats, pollution prevention, and responsible waste/e-waste management.

Social and gender sustainability: Inclusive governance structures ensure equitable and trusted service delivery. Rangeland and water committees, as well as ATC cooperatives, include at least 40% representation of women, and operate under formal by-laws, transparent tariffs, grievance redress mechanisms, and conflict-sensitive access rules, including provisions for internally displaced persons (IDPs) and minority clans. Women para-veterinarians and women-led cooperatives play a central role in last-mile service delivery and governance. Infrastructure is designed to be gender-responsive, featuring

safe and well-lit access points and schedules that accommodate caregiving responsibilities. Labour standards (ILO) and safeguards against sexual exploitation, abuse, and harassment (SEA/SH) are enforced through contractor codes of conduct, training, and confidential reporting channels.

Exit and scale strategy: Sustainability is reinforced by clear transition and growth pathways: (i) signed asset-handover and O&M agreements with committees and local authorities; (ii) unit-cost libraries, SOPs, and toolkits that make replication turnkey; (iii) pipeline development and finance-readiness tools that position additional corridors for GCF/LDCF/bilateral funding; and (iv) regional alignment through IGAD/ICPAC so standards and lessons spread across borders. Overall, these measures ensure that the project's benefits, healthier herds, reliable water and forage, diversified incomes, and capable institutions continue to expand in coverage and quality long after AF financing ends.

K. Environmental and social impacts and risks

The project has been screened against the Adaptation Fund's Environmental and Social Policy (ESP). It is classified as Category B, with site-specific, reversible risks that will be managed through a project-level Environmental and Social Management Plan (ESMP) finalized at full proposal. Core safeguards include inclusive governance of water and rangeland assets (with ≥40% women/youth), a Gender Action Plan with participation quotas and sex-disaggregated monitoring, and environmental screening for all infrastructure to avoid sensitive areas and set mitigation at the site level. Accountability is ensured via a multi-tier Grievance Redress Mechanism (community–FMS–national) with clear, time-bound procedures. Implementation capacity is strengthened through targeted training on labor standards (ILO), biodiversity and invasive-species control, OHS/SEA-SH protocols, cold-chain and biosafety, and public/animal-health safeguards.

Table 7: Environmental and social impacts and risks

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law		**Likelihood:** Low **Risk:** proposed activities could go against applicable Somali national/Federal Member State (FMS) regulations and/or international veterinary standards (WOAH/FAO), due to evolving/fragmented frameworks, overlapping mandates, weak institutional capacity, or contractor error. **Mitigation Measures**: The project will fully comply with Somali environmental, water, and land regulations and embed international veterinary standards (WOAH/FAO). A legal review will produce a compliance matrix and permit register, enforced by decision gates (a pre-defined go/no-go checkpoints). Legal compliance will be monitored continuously, with a checklist integrated into the project's reporting system to ensure transparency and a timely response to any regulatory changes. Note: detailed strategic action plans will be developed during the PFG and inception phase of the project.
Access and Equity		**Likelihood**: Low **Risk**: there is a low risk that target beneficiaries, particularly women, girls, and young men, IDPs, and minority groups, could face unequal access or elite capture of project benefits. **Management Measures:** To ensure access and equity, the project includes all community groups in planning and service delivery, especially women, girls, young men, and marginalized populations. It applies pro-poor tariffs, transparent rules, and inclusive governance to prevent exclusion or elite capture. A grievance redress mechanism and digital monitoring ensure fairness and allow quick correction of any access issues. Note: detailed strategic action plans will be developed during the PFG and inception phase of the project.
Marginalized and Vulnerable Groups		**Likelihood**: Medium to high Risk: Given Somalia's entrenched gender and social inequalities, widespread displacement, and fragile governance, there is a risk that women, girls, young men, persons with disabilities, IDPs, and minority clans could be excluded from planning, governance, or equitable access to water, rangeland, and climate-resilient

		services, or that benefits are captured by elites. **Management Measures:** The project ensures marginalized and vulnerable groups, including women, youth, IDPs, and minority clans, are actively included in planning, governance, and service delivery. Pro-poor tariffs, transparent by-laws, and a multi-tier grievance redress mechanism further protect against exclusion and ensure equitable access to water, rangeland, and climate-resilient services.
Human Rights		**Likelihood**: Medium R**isk Statement:** Potential infringements on non-discrimination, participation, decent work, bodily integrity, privacy, and remedy (e.g., exclusion, SEA/SH, child/forced labor, unsafe sites, data misuse). **Management Measures:** Enforce UNGPs/ILO/AF-ESP; set inclusion targets (equal participation of women leaders); SEA/SH Code and survivor-centered GRM; OHS/PPE and safe design; ban/screen for child/forced labor; equal pay/non-discrimination; data-protection SOPs; accessible grievances/whistleblowing; social/labor audits and corrective action.
Gender Equality and Women's Empowerment		**Likelihood:** Medium **Risk:** Cultural resistance to women's leadership and roles, leading to reduced access to services, benefits, and decision-making. **Mitigation Measures:** The project applies a Gender Action Plan (GAP) to promote women's participation and leadership. Monitoring will track sex-disaggregated indicators, including women's leadership roles, participation rates, service coverage, access to credit or insurance, early warning reach, time-use, and GBV safety markers. If targets are missed for two consecutive quarters, corrective actions will be triggered, such as revising governance composition, intensifying outreach, strengthening safety or access measures, and applying partner performance remedies. .
Core Labor Rights		**Likelihood:** Low **Risk:** Informal contractors and SMEs may not meet UNIDO and ILO labor core standards, including fair wages, decent working conditions, and protection from discrimination, child labor, and forced labor. **Mitigation Measures:** The project enforces compliance with UNIDO's social inclusion and decent work principles and the ILO Core Labor Standards, covering freedom of association, collective bargaining, elimination of forced and child labor, and non-discrimination in employment. All implementing partners, SMEs, and contractors will include ILO-aligned contract clauses, undergo mandatory occupational health and safety (OHS) training, provision of personal protective equipment (PPE), and Codes of Conduct addressing sexual exploitation, abuse, and harassment (SEA/SH). These measures ensure safe, fair, and rights-based working conditions across all project activities. Periodic labor audits, worker consultations, and third-party monitoring will verify compliance, with corrective measures, including contract suspension or remediation, which will be triggered in cases of non-conformity. These measures ensure alignment with labor standards, promoting safe, fair, and rights-based employment across all project activities.
Indigenous Peoples	✓ No distinct IP groups recognized	**Likelihood:** No risk
Involuntary Resettlement	✓ No land acquisition; communal/degraded sites used with documented community consent.	**Likelihood:** No risk
Protection of Natural Habitats		**Likelihood:** Low **Risk:** Localized disturbance/fragmentation from water points, fodder banks, tracks, or hubs sited near wetlands, riparian corridors (Juba/Shabelle), wadis, or coastal dune/mangrove areas, leading to erosion, altered flows, or invasive species. **Mitigation Measures:** The project will apply the mitigation hierarchy (avoid–minimize–restore–offset); pre-screen all sites and exclude critical habitats; enforce buffer distances from rivers/wetlands/floodplains; require ESIA/ESMP with biodiversity and erosion/sediment controls, seasonal timing windows, and invasive-species management; set permit-compliant water abstraction limits; mandate site rehabilitation; and embed contractor

		clauses, supervision, and community monitoring to ensure compliance with conservation standards. Detailed field assessment supported by GeoAI technology, and the design of biodiversity and natural-habitat-responsive action plants will be developed during the PFG and project inception phases.
Conservation of Biological Diversity		**Likelihood:** Low **Risk:** Use of non-native or poorly sourced seed/stock in restoration and fodder pilots could threaten local biodiversity, introduce pests/invasives, and reduce habitat quality for native flora/fauna and pollinators. **Mitigation Measures:** The project will require the use of indigenous species, local-provenance seed/seedlings from accredited nurseries, and pre-approved species lists for all restoration activities, and design restorations for habitat heterogeneity and connectivity. An invasive species control plan will be implemented to prevent ecological disruption and protect native flora and fauna. Build community capacity and bylaws for stewardship. Monitor biodiversity (native cover, species richness, pollinators) with adaptive actions, and hard-wire compliance through contract clauses. Moreover, through the economic diversification by promoting beekeeping, the project enhances biodiversity conservation and maintenance functions.
Climate Change	✓ All actions are adaptive; solar displaces diesel—no significant GHG increase.	**Likelihood:** No risk
Pollution Prevention and Resource Efficiency		**Likelihood:** Low **Risk:** Improper handling/disposal of construction waste, veterinary sharps/pharmaceuticals, and e-waste (PV batteries, cold-chain refrigerants), causing soil/water contamination and GHG releases. **Mitigation Measures:** The project will implement a project-wide waste and resources management and take-back for hazardous and electronic waste. The project prioritizes reduce–reuse–recycle, recycled-content materials, and efficient designs (solar power, water, and energy saving technologies); and requires contractor training, PPE, and the international standard for environmental management systems (EMS) - (ISO 14001) aligned supervision and audits.
Public Health		**Likelihood:** Low **Risk:** Zoonotic exposure during veterinary campaigns (e.g., needle-stick injuries, handling sick animals, contaminated waste/water). **Mitigation Measures:** The project will ensure cold-chain integrity for vaccines, provide and require PPE and hand-hygiene stations, where required; enforce biosafety/IPC SOPs (safe animal restraint, no recapping needles, sharps boxes, waste segregation); train teams on needle-stick and post-exposure protocols (reporting, prophylaxis). Water quality will be monitored regularly to prevent health risks and maintain hygiene standards.
Physical and Cultural Heritage	✓ No known sites affected; works avoid sensitive areas.	**Likelihood:** No risk
Lands and Soil Conservation		**Likelihood:** Low **Risk:** Erosion and soil compaction due to poor drainage or unsuitable siting and land operation, and harvest. **Mitigation Measures:** The project will incorporate soil and water conservation designs, enforce slope limits for infrastructure placement, and implement restoration and maintenance plans to preserve soil health and prevent degradation.

PART III: IMPLEMENTATION ARRANGEMENTS

Summary of the implementation/execution arrangements:

UNIDO as Implementing Entity (IE): UNIDO will serve as the Implementing Entity (IE), responsible for fiduciary oversight, supervision of project delivery, quality assurance of environmental, social and gender standards, and compliance with AF policies. UNIDO will approve annual work plans and budgets, monitor implementation progress, and ensure that reporting, M&E, and safeguards requirements are met. In line with AF and UNIDO policies, any execution functions undertaken by UNIDO will be carried out independently and under separate management arrangements from its IE functions. UNIDO will also serve as co-chair of the PSC.

Executing Entities: UNIDO and Shabeel Group will carry out execution under distinct and non-overlapping mandates. Shabeel Group will act as the primary Executing Entity, responsible for day-to-day implementation, coordination with local authorities, community engagement, service delivery, infrastructure supervision, and operational management of project activities across the target locations. UNIDO will undertake limited execution functions, only where specifically justified, focused on specialized technical support, international procurements, knowledge management, and institutional capacity building.

Government Partner: Ministry of Environment and Climate Change (MoECC) will provide government leadership and strategic oversight, chair the Project Steering Committee (PSC), ensure alignment with national adaptation frameworks, and facilitate coordination with line ministries. MoECC will serve as the central policy counterpart but will not manage project funds.

Technical Assistance Provider: ICARDA will act solely as a technical assistance provider, offering expertise on climate-resilient small-ruminant systems, rangeland management, animal-health systems and targeted capacity development.

These arrangements are preliminary and will be further refined during CN consultations and at full proposal stage, including fiduciary due diligence and validation of execution mandates. They will be finalized prior to submission of the full proposal to the AF Secretariat, and related activities have been included in the PFG to support further assessment and clarification.

The Government of the Federal Republic of Somalia agrees to apply to the present project, mutatis mutandis, the provisions of the Standard Basic Assistance Agreement between the United Nations Development Programme and the Government, signed on 16 May 1977 and entered into force on 11 October 1978.

A. Project Alignment the Results Framework of the Adaptation Fund

Table 8: Alignment of project outcomes and outputs with AF results and indicators

Project Objective(s)[1]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (US$)
Strengthen the climate resilience of pastoralist communities, especially women and youth, by safeguarding the goat and sheep subsector, securing climate-resilient water and rangelands, diversifying livelihoods, and mainstreaming	Climate-resilient pastoral livelihoods are strengthened—evidenced by a ≥30% reduction in small-ruminant mortality; a higher share of households with reliable, climate-resilient water; improved rangeland condition (hectares with increased NDVI/cover); more households receiving and acting on actionable EWS; timely IBLI payouts (≤30 days) to enrolled households; and	▪ Outcome 4: Increased adaptive capacity in relevant sectors. ▪ Outcome 5: Increased ecosystem resilience. ▪ Outcome 6: Diversified and strengthened livelihoods. ▪ Outcome 3: Strengthened	AF core indicators (examples): ▪ 4: km of linear infrastructure and # physical assets improved or constructed to withstand climate variability and change ▪ 5: # of ha of ecosystems and natural resources brought under protection, restoration, or improved management in response to	US$10,000,000 (incl. IE fee).

adaptation in national/FMS systems	the adoption and operational use of climate-resilient policies and budget instruments.	awareness/ownership. ▪ Outcome 2: Strengthened Institutional capacity ▪ Outcome 7: Improved policies	climate variability and change 6.2: # of households with increased income, or avoided decrease in income ▪ 3.1: # of people with strengthened awareness of climate change risks and how to better address them • 2: # of institutions with strengthened capacity to understand and better address climate risks and resilience • 7: # of policies, strategies, and/or plans adopted, implemented, and/or enforced that integrate climate risk and resilience considerations	
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (US$)**
Outcome 1: Reduced climate-induced small-ruminant mortality and improved herd productivity through last-mile animal health, vaccination, climate-resilient breeding, and agrivoltaics at aggregation hubs.	▪ ≥30% Mortality rate of goats/sheep in target zones ▪ (#) of Animals vaccinated/ dewormed ▪ (#, uptime %) of mobile vet clinics operational ▪ Sites with agrivoltaics shade/ power in use (#, kWh; heat-stress days reduced)	**AF Output 4.1:** Vulnerable development sector services and infrastructure assets strengthened	**4.1.1** # Development sector services strengthened to respond to climate variability and change	774,670
		Output 6.1: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. # of People receiving targeted support for new and/or improved livelihoods to manage climate risk	1,807,564
Outcome 2: Reliable and equitable access to climate-resilient water and healthy rangelands via solar-powered water points, landscape restoration, inclusive governance, and fodder banks.	▪ Water-point uptime ≥90%; safe abstraction compliance (%) ▪ Rangeland restored/ improved (ha) and NDVI increased. ▪ Committees with ≥40% women/youth (#) ▪ Fodder banks established/stocked (#; losses ≤10%)	**AF Output 5.1:** Vulnerable ecosystem services and natural resource assets strengthened.	**5.1.1** #/type of Ecosystems and natural resources targeted by activities to improve protection, restoration, and/or management	1,916,750
		AF Output 4.1. Vulnerable development sector services and infrastructure strengthened	4.1.1: # of Development sector services strengthened to respond to climate variability and change	1,568,250
Outcome 3: Vulnerable households adopt climate-informed and diversified livelihood strategies via EWS advisories, index-based livestock insurance (IBLI), ATCs/cold chain, and SME/youth support.	▪ HHs receiving/applying EWS advisories (#, %) ▪ IBLI policies in force and payout timeliness (%) ▪ SMEs supported and surviving at 12 months (#; ≥50% women/youth-led) ▪ Youth trained/placed (#) ▪ Post-harvest loss reduction at ATCs (%)	**AF Output 3.1:** Targeted population groups participating in adaptation and risk reduction awareness activities	**3.1.1** # of people participating in activities to improve awareness of climate risks and how to address them	578,045
		AF Output 6.1: Targeted individual and community livelihood strategies strengthened	**6.1.1.** # of People receiving targeted support for new and/or improved livelihoods to manage climate risk	1,073,513
Outcome 4: Practical livestock adaptation integrated into national/FMS plans and finance systems ***(strengthened capacity, MRV, and budget tools).***	Policies/strategies updated to include livestock adaptation (#) ▪ Staff trained and certified (≥40% women) (#) ▪ Climate-budget tagging and pipeline tools adopted (yes/No; # of budgets tagged) ▪ Results dashboard operational (yes/No)	**AF Output 2.1:** Strengthened capacity of institutions to understand and better address climate risks	**2.1.1** # of Institutions supported to strengthen capacity to understand and address climate risks and resilience	506,478
		AF Output 7.1: Improved integration of climate-resilience strategies into country development plans	7.1.1: #Policies, strategies, and/or plans developed or adjusted to integrate climate risk considerations	337,652

[1] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology, but the overall principle should still apply

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[2]:

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments as possible if a regional project/programme:

Mr. Liban Obsiye Executive Director National Climate Fund (NCF) National Climate Fund Corso Somalia Street, Shangaani District Mogadishu, Somalia Somalia Tel: +252 61 0997293 Email: edncf@mof.gov.so	Date*: (Month, day, year)* December 22, 2025

B. Implementing Entity certification:

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans [NAP (2025); NAP Framework (2022); NDC 3.0 (2025-2035); NTP (2025–2029); and other instruments and regional/international coherence (UNFCCC Initial Communication; IGAD/ICPALD; SDGs)] and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme	
Name and Signature/ Implementing Entity Coordinator: Ms. Ganna Onysko Senior GEF, GCF, AF Coordinator Division of Funding Partner Relations Directorate of Global Partnerships and External Relations United Nations Industrial Development Organization - UNIDO Implementing Entity Coordinator	
Date: *(Month, Day, Year):* **December 23, 2025**	Telephone: +43 1 26026 3708
Project Contact Person: Ms. Ganna Onysko	
Email: g.onysko@unido.org	

[2] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

Jamhuuriyadda Federaalka Soomaaliya
Wasaaradda Maaliyadda
Sanduuqa Qaran Ee Cimilada
Xafiiska Agaasimaha Fulinta

جمهورية الصومال الفيدرالية
وزارة المالية
الصندوق الوطني للمناخ
مكتب المدير التنفيذي

Federal Republic of Somalia
Ministry of Finance
National Climate Fund (NCF)
Office of The Executive Director

Ref.: REF: NCF/0022/2025 **22 December, 2025**

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for Enhancing Livelihoods of Pastoral Communities in Somalia through Sustainable Water and Livestock Management

In my capacity as designated authority for the Adaptation Fund in the Federal Republic of Somalia, I confirm that the above national grant proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Somalia.

Accordingly, I am pleased to endorse the above grant proposal with support from the Adaptation Fund. If approved, the project will be implemented by United Nations Industrial Development Organization (UNIDO) of the United Nations and executed by Shabeel Group.

Sincerely,

Liban

Mr. Liban Obsiye
Executive Director, National Climate Fund (NCF)
National Designated Authority (NDA) – Somalia
Federal Republic of Somalia

Revised PFG Submission Form1

Project Formulation Grant (PFG)

Submission Date: 23.12.2025

Adaptation Fund Project ID: xxxx

Country/ies: Somalia

Title of Project/ Programme: Enhancing livelihoods of pastoral communities in Somalia through sustainable water and livestock management

Type of IE (NIE/RIE/MIE): MIE
Implementing Entity: United Nations Industrial Development Organization (UNIDO),
Executing Entity/ies: UNIDO

A. Project Preparation Timeframe

Start date of PFG	01 June 2026
Completion date of PFG	31 May 2027

B. Proposed Project Preparation Activities ($)

In line with the Adaptation Fund's policy, the PFG budget will support the conduct of local-level Climate Risk and Vulnerability Assessments (CRVAs) to inform location-specific project design decisions and ensure that proposed adaptation interventions are context-appropriate and responsive to local climate risks.

List of Proposed Project Preparation Activities	Output of the PFG Activities	US$ Amount	Budget note[2] (Based on Lead Organization)
1. Conduct integrated baseline, gender and vulnerability, climate, environmental and social risk, and institutional analyses through participatory stakeholder	**Output 1:** Integrated baseline and risk analysis completed **Deliverables:** baseline, gender vulnerability assessment, and institutional	67,364	Integrated baseline and risk analyses will be conducted through field assessments, stakeholder consultations, data analysis, and validation of findings to inform climate-resilient adaptation planning.

[1] As presented in AFB/PPRC.33/40 Annex 1.
[2] The proposal should include a detailed budget with budget notes indicating the break- down of costs at the activity level. It should also include a budget on the Implementing Entity management fee use.

engagement to generate a validated evidence base for climate-resilient adaptation planning.	and policy alignment review reports; environmental and social impact assessment (ESIA)/ environmental and social management plan (ESMP) report developed and endorsed by key stakeholders.		- Baseline assessment and national and sub-national stakeholder/community consultation: US$22,,000 - Gender and vulnerability analysis: US$5,000 - Environmental & social risk assessment (ESS): US$20,000 - Climate risk & impact modelling: US$15,000 - Institutional & policy alignment review: US$5,364
2. Apply spatial mapping, data analytics, and feasibility assessments to identify and prioritize sustainable climate adaptation solutions and prepare, revise, and finalize a compliant Adaptation Fund submission package.	**Output 2:** Climate adaptation solutions and AF submission package developed. **Deliverables:** a fully fledged AF project proposal developed according to the AF policies and requirements.	53,000	The estimated budget is required to undertake activities, such as identification and prioritization of climate adaptation solutions; conducting environmental, social, and financial feasibility assessments; and preparation and revision of the adaptation fund submission package. - National and sub-national stakeholder consultation: US$10,000 - Mapping and data analytics, and formulation of the AF proposal: US$33,000 - Analysis of proposed solutions, sustainability & financial feasibility: US$10,000
3. Develop and nationally validate a participatory implementation framework, including monitoring, evaluation and learning, sustainability and exit strategies, through structured stakeholder consultations and workshops.	**Output 3:** Implementation, monitoring, and sustainability framework validated **Deliverables**: A participatory implementation, monitoring, learning, and sustainability framework is developed and nationally validated to guide effective project delivery.	17,885	The estimated budget will support participatory implementation planning and institutional arrangements, development of monitoring, evaluation, and learning (MEL) and sustainability frameworks, and the organization of two national stakeholder consultation and validation workshops to review, refine, and formally endorse the implementation framework and sustainability arrangements. - Develop MEL, an exit strategy, synergies, and sustainability planning: US$10,000 - Federal and Regional/FSM level stakeholders‘ validation workshops: US$7,885
Total Project Formulation Grant		138,249	
Implementing-Entity management fee (Agency fee)	8.5%	11,751	
Total Project Formulation Grant		150,000	

Please describe below each of the PFG activities and provide justifications for their need and for the funding required:

For LLA Projects only:

If requesting additional funding for LLA projects to enable devolving decision making to the local level, please specify the activities that would directly serve to enable devolving decision making to the lowest appropriate level and enable local actors to make informed decisions on how adaptation actions are defined, prioritized, designed, and implemented:

Please provide justifications for their need and for additional funding required:

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation.

Implementing Entity Coordinator, IE Name	Ms. Ganna Onysko Senior GEF, GCF, AF Coordinator Division of Funding Partner Relations Directorate of Global Partnerships and External Relations United Nations Industrial Development Organization - UNIDO Implementing Entity Coordinator Tel. and email: +43 1 26026 3708 TO: g.onysko@unido.org CC: gef@unido.org / glo@unido.org / f.haidara@unido.org		
Signature	Ganna Onysko	Date (Month, day, year)	23 December 2025
Project Contact Person	Ms. Yvonne LOKKO Head IET/AGR/AIB Email: y.lokko@unido.org Work Phone: +43 1 26026 3737		
Telephone	Work Phone: +43 1 26026 3708		
Email Address	g.onysko@unido.org CC: gef@unido.org / glo@unido.org / f.haidara@unido.org		

Annex 1: Summary of Community Consultations and integrations into the Project design.

Table 9: Consultation summary and project design integration

Consulted Entity / Group	Date	No. of Participants (M/F)	Topics Discussed	Key Outcomes / Issues Raised	How Considered in Project Design
Agro-pastoralists (Baidoa & Beletweyne)	31 Oct – 2 Nov 2025	24–28 (18/10)	Crop-livestock climate impacts; shrinking forage; damaged irrigation structures; post-harvest losses	Sorghum/maize yields declining; forage shortages increasing feed costs; irrigation canals and community water points deteriorated; women losing income from milk and small processing	Component 1 supports climate-resilient small-ruminant breeding and herd health. Component 2 rehabilitates community water points and small irrigation structures and establishes fodder banks near agro-pastoral clusters. Component 3 provides localized climate/EWS advisories and pilots livestock index insurance. Component 4 integrates agro-pastoral corridor needs into state adaptation plans and MRV.
Pastoralists (Dhusamareeb & Garowe)	3–4 Nov 2025	22–25 (15–17/7–8)	Rangeland degradation; restricted mobility; rising livestock mortality; unreliable veterinary access	Pasture decline; increased trekking distances; high losses of goats/sheep during droughts; feed price spikes and weak veterinary coverage	Component 1 deploys mobile veterinary circuits, mass vaccination, and community-based breeding of drought/heat-tolerant animals. Component 2 restores rangeland blocks, introduces rotational grazing rules, and rehabilitates key boreholes with solar pumping. Component 3 issues seasonal grazing advisories and drought alerts + pilots IBLI to reduce distress sales. Component 4formalizes grazing corridor governance in FMS bylaws and joint drought protocols.
Women's Groups (All locations)	Integrated across FGDs	7–10 Women per group	Roles in milk processing, household water management, and petty trade; exclusion from decision spaces	Women's income impacted by declining milk production; heavy labor burden fetching water and feed; limited representation in cooperatives and resource committees	Component 1 trains/certifies women as para-veterinarians and CAHWs. Component 2ensures ≥40% women in water and rangeland management committees and reduces water/forage collection time via nearby water points and fodder banks. Component 3supports women-led SMEs in milk, fodder, hides/skins and provides climate/EWS information via women's listening groups. Component 4 embeds gender-responsive budgeting and sex-disaggregated MRV indicators.
Youth Groups (Baidoa, Dhusamareeb, Garowe)	Integrated across FGDs	6–8 Youth per group	Unemployment; limited market entry; digital information use; seasonal herding responsibilities	High motivation for enterprise and technology roles but lack of skills, finance, and networks; youth leaving pastoralism due to low incomes	Component 1 trains youth as CAHWs and digital health/logistics monitors. Component 2 organizes youth brigades for rangeland restoration and solar water site maintenance. Component 3 provides vocational training (solar O&M, cold-chain handling, digital marketing) and supports youth-led SMEs. Component 4 ensures youth representation in FMS taskforces and monitors youth employment outcomes.
Cooperatives & Producer Associations (All states)	31 Oct – 4 Nov 2025	8–15 per session	Governance, group marketing, storage, and aggregation	Weak governance, record-keeping, and financial systems; inability to negotiate aggregated sales; lack of cold storage reducing product value	Component 1 anchors community-based breeding programs within cooperatives. Component 2 assigns cooperatives O&M of water points and fodder banks with cost-recovery agreements. Component 3 links cooperatives to Agricultural Transformation Centers (ATCs) for cold-chain, grading, and supply contracts. Component 4 strengthens cooperative governance and integrates them into climate-budget tagging and MRV frameworks.

Figure 8: Photos from community consultations in various project locations

Annex 2: Gender analysis

Table 10: Tabulated summary of gender-related findings

Location / State	Date of Consultation	Participants (M/F)	Key Gender-Related Findings	How Reflected in Project Design
Baidoa (Southwest State)	31 Oct 2025	28 (18M / 10F)	Women contribute to milk processing and small trade but have limited access to vet services, credit, and cooperative leadership. Youth seeking climate-smart livelihood options.	Comp 1: Train women para-veterinarians & CAHWs. Comp 3: Support women/youth-led SMEs + digital training. Comp 2: Ensure ≥40% women in water committees.
Beletweyne (Hirshabelle State)	2 Nov 2025	24 (14M / 10F)	Flooding disrupts women's vegetable gardens and household food security. Women's workload increases during recovery. Youth eager to join irrigation and rangeland management initiatives.	Comp 2: Introduce flood-resilient water/irrigation solutions with women's participation. Comp 3: Youth training in irrigation maintenance and market linkages.
Dhusamareeb (Galmudug State)	3 Nov 2025	22 (15M / 7F)	Women face declining milk income due to drought, limited access to hygiene and processing technologies. Pastoral mobility constraints affect women's caregiving and food roles.	Comp 1: Women-led milk hygiene and processing training. Comp 2: Community-based rangeland restoration with women/youth representation in grazing committees.
Garowe (Puntland State)	4 Nov 2025	25 (17M / 8F)	Women active in trade but under-represented in export/value-chain associations. Youth engaged in digital livestock platforms but lack finance and mentorship.	Comp 3: ATCs with ≥40% women/youth governance. Comp 3: Finance and incubation for youth and women-led livestock enterprises. Comp 4: Ensure women's voice in public–private coordination platforms.

Figure 9: Photos taken during discussion on gender equality and social inclusion

Annex 3: Stakeholder consultation process outcomes

Table 11: Tabulated summary of stakeholder consultation outcome

Consulted Entity / Group	Date & Location	No. of Participants (M/F)	Topics Discussed	Key Issues / Outcomes Raised	How Reflected in Project Design
Somalia Bureau of Standards (SBS)	3 Feb 2025, Mogadishu (UNIDO Office FGD)	1 (1M/0F)	Livestock product quality assurance; feed & water safety; certification standards	Need for quality control, standardization, and promotion of sustainable livestock practices; EMA certification identified as relevant incentive	Integration of quality assurance guidelines in ATCs; support for compliance and certification capacity-building for cooperatives and SMEs
Ministry of Livestock, Forestry & Range (MoLFR)	3 Feb 2025, Mogadishu	1 (1M/0F)	Livestock sector priorities; rangeland and veterinary initiatives; alignment with ongoing programs	Importance of coordination with existing livestock insurance, rangeland programs, and disease surveillance systems; avoid duplication	Clear complementarity with existing GoS and WB livestock resilience programs; joint planning and governance mechanisms built-in
IBS Bank (Investment Department & Board)	4 Feb 2025, Mogadishu	2 (2M/0F)	Financing of livestock businesses; financial risk mitigation; bank partnership models	Banks ready to co-finance livestock value chain actors if risks are reduced through veterinary oversight and structured value chain models	Component 3 SME financing structure includes blended finance, guarantees, group-based lending, and insurance-linked risk reduction
Somali Agricultural Women Association (SAWA)	4 Feb 2025, Mogadishu	1 (0M/1F)	Women's role in livestock value chain; climate impacts on women's livelihoods	Women disproportionately affected by climate shocks; need for women-focused training, leadership, and enterprise support	≥40% women representation; women para-vet certification; women-led cooperatives for fodder, water points & ATCs prioritized
SIMAD iLAB	5 Feb 2025, Mogadishu	1 (0M/1F)	Innovation & youth entrepreneurship in agribusiness	Need for incubation and business startup support in climate-smart livestock enterprises	ATCs include innovation & incubation services; Component 3 supports youth entrepreneurship and digital service tools
iRise Innovation Hub	5 Feb 2025, Mogadishu	1 (1M/0F)	Tech-enabled livestock services and commercialization pathways	Innovation hubs willing to co-lead youth enterprise acceleration; digital solutions can expand advisory access	Digital climate-advisory and market tools embedded in Component 3; partnerships with hubs formalized in implementation

Figure 10: Photos taken during stakeholder engagements and consultations and with various actors

Annex 5: List of stakeholder consultation participants

Table 12: List of stakeholder consultation participants

No.	Name	Institution / Organization	Position / Role	Role Category	Email / Contact	Phone
1	Dr. Sharmake Abdullahi Duale	Ministry of Livestock & Animal Husbandry (MoLAH)	Director, Planning & M&E	Government	calikaarvet@gmail.com	+252 907 791 249
2	Mr. Mohamed Osman	Ministry of Agriculture	Director of Production	Government	n/a	+252 90 312 4587
3	Eng. Hassan Elmi	Hared Livestock Company	Managing Director	Private Sector (Livestock Export)	n/a	+252 904 315 933
4	Mr. Faisal Abdillahi	Ganacsi Kaab Consulting Firm	Business Development Manager	Private Sector (BDS)	ganacsikaabfirm@gmail.com	+252 906 065 334
5	Mr. Haji Jamal	Puntland Livestock Exporters Umbrella	Chairperson	Private Sector / Exporters Association	n/a	+252 905 773 221
6	Ms. Hawa Jama	Puntland Women in Agribusiness Network	Chairperson	Women's Group / Agribusiness	n/a	+252 906 108 992
7	Mr. Fuad Mohamed	Puntland Youth Connect	Coordinator	Youth / Innovation	n/a	+252 907 415 002
8	Ms. Amal Abdirahman	Puntland Chamber of Commerce, Industry & Agriculture	Programme Officer	Private Sector / Chamber	n/a	+252 906 847 113
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