

**Project Document**

**Building adaptive capacity and resilience to climate change in the water sector in Cape Verde**

**CIDA Fast Start Climate Change Funds**

**Brief Description**

Agriculture still contributes over 10% of the GDP in Cape Verde and constitutes the primary livelihood income source for over 30 of the population across the islands. Although scenarios are quite conflicting, climate trends in Cape Verde tend towards a similar behavior as in the Sahel with increases in temperatures, shortening of wet seasons and more erratic rainfall patterns. This is expected to have a significant impact on water resource availability on the islands and subsequently on agriculture production systems. This project financed with Canadian fast start financing complements an existing LDCF-funded project. With the CIDA funding a strong emphasis will be placed on food security through dedicated assessment and mainstreaming, up-scaling of successful pilots demonstrated with LDCF financing, and targeted research and development.

Total budget: $68,679,027

Co-financing: $63,699,027

GEF/LDCF: $3,000,000

CIDA: $1,980,000\*

Programme Period:

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### Situation analysis

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### Introduction

In line with guidance and eligibility criteria of the Canadian International Development Agency ( CIDA) Fast Start Climate Change Funds, this proposal seeks to address food security issues associated with climate change, with special considerations afforded to gender issues in particular with respect to access to resources and exacerbated vulnerability under condition of strain.

This proposals is built on the results, lessons learned and outcomes of the ongoing GEF-LDCF (Least Developed Countries Fund) project “*Building adaptive capacity and resilience to climate change in the water sector in Cape Verde”,* designed to address the priority adaptation options identified in Cape Verde’s National Adaptation Programme of Action (NAPA).

For NAPA’s formulation a series of scenario and vulnerability analyses were conducted. The analysis of the future agro-climatic development indicates that, under the anticipated conditions of increasing aridity resulting from decreasing rainfall (-10 to -20%) and under increasing temperature (up to 3.5º), the amount of food Cape Verde will be able to produce as a percentage of its requirements will drop dramatically, thereby exposing a large portion of the population to food deficits and food insecurity by 2020. ( Cape Verde NAPA report).

In order to respond to these challenge, Cape Verde’s NAPA delineated three main objectives: 1) Promoting integrated water resources management in order to guarantee water for the people, for the production of food, for the ecosystems and for the tourism industry; 2) Developing the adaptability of the agro-silvo-pastoral production systems in order to ensure and improve national food production; 3) Protecting and preventing degradation of the coastal zones, caused by climatic aggressions and by tourism.

During LDCF project implementation awareness on climate change risks and adaptation alternatives have been reinforced and adaptive measure have been demonstrated/ scaled up ((small-scale drip irrigation; biological and mechanical soil and water conservation measures). Through this additional funds, capacity to mainstream climate change adaptation in development planning will be further reinforced with a particular focus on analyzing current and projected impacts of climate change on food security status of the country and building community resilience through a shift towards climate-smart agriculture and integrated water resources management.

The current proposal will also support reinforcement of national applied-research programs targeted to climate resilient agriculture and food security in the context of a small island developing state (SIDS). Some priority measures identified in the NAPA, such as promotion of application of renewable energies for water mobilization in rural areas, will be also implemented with this additional funding.

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### Geography and Socio-Economic Context

In 2010, Cape Verde population reached 491,683 habitants. According to 2010 general population census, only 38% of the population lives in rural areas, however poverty is still a rural phenomenon in Cape Verde. Poverty in rural areas affected 44.3% of the population, while incidence in urban areas was at 13.2%.

According to the 2013 Human Development Report, Cape Verde ranked 132nd out of the 178th countries considered, with a human development index (HDI) of 0.586.

The ISVAF 2005( National survey on family food vulnerability shows that the two islands targeted for project intervention (Santo Antão e Santiago) are the ones presenting a higher percentage of families in a food insecurity situation. According to the same assessment, these two islands present as well the higher values in terms of population at risk of food insecurity. In Cape Verde rural areas, 81% of the families are involved in primary sector activities. However, the islands having the greatest agricultural potential are the one’s presenting the worst indicators in terms of food security. This situation is explained by the sector’s vulnerability in Cape Verde.

Other than climate-related vulnerabilities of the agriculture in Cape Verde, the sector presents other vulnerabilities that explain its low productivity and the limited contribution to the national GDP.

Access to finance and access to markets by farmers remain two important issues. The first is determined by the inexistence of a rural credit system; the second relates to inefficiencies related to the transport and logistics systems; unreliability and costs of transportation. Moreover, the limited capacities and infrastructures for agriculture products’ transformation and storage hinder the sector capacity to penetrate emerging markets associated with the tourism sector development.

Other weaknesses of the sector are related with the land tenure schemes that determine the prevalence of family farms with an average surface of 1.19 ha. The dimension of plots constrains access to inputs, as well as modernisation of techniques. The orographic and geologic characteristics of the islands determine the limitation on land available for agriculture practice.

Limited access to improved varieties and seeds, fertilizers is intimately linked to barriers in accessing rural credit and account also for the sector low productivity. Monoculture and lack of diversification of crops hinder farmers resilience to price shocks.

Together with climate-related factors, all these weaknesses and threats determine the sector vulnerability.

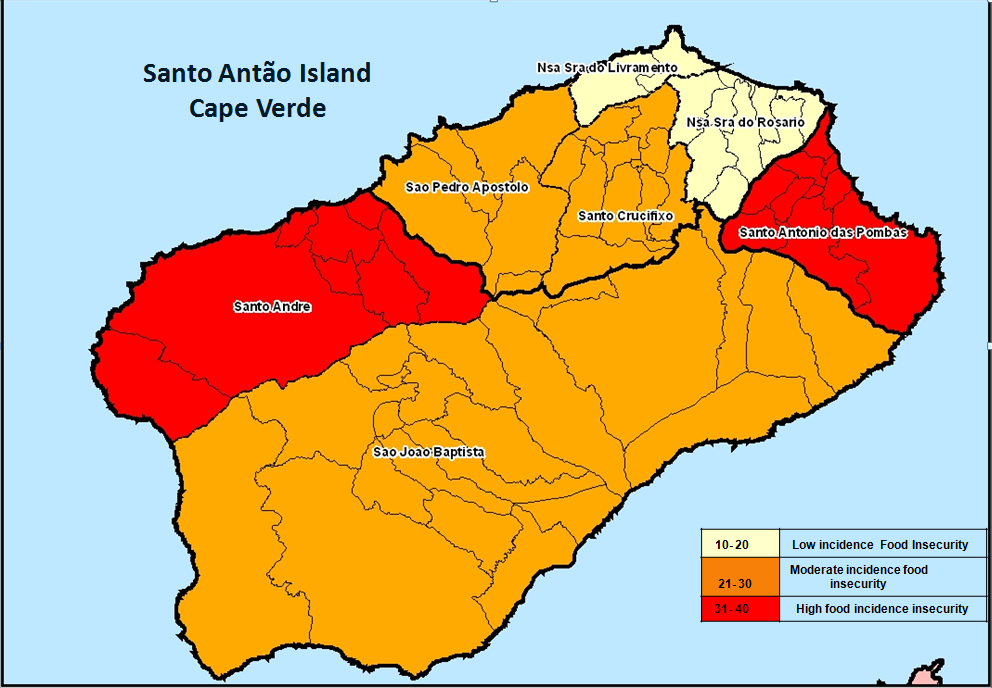
Food security distribution by island:

The following graph shows the distribution island by island of the food insecurity risk and occurrences. As shown in this graph, Santo Antão, Santiago and Fogo islands present the higher prevalence of moderate and severe food insecurity. Moreover, these three islands score the highest on the risk of food insecurity indicators.

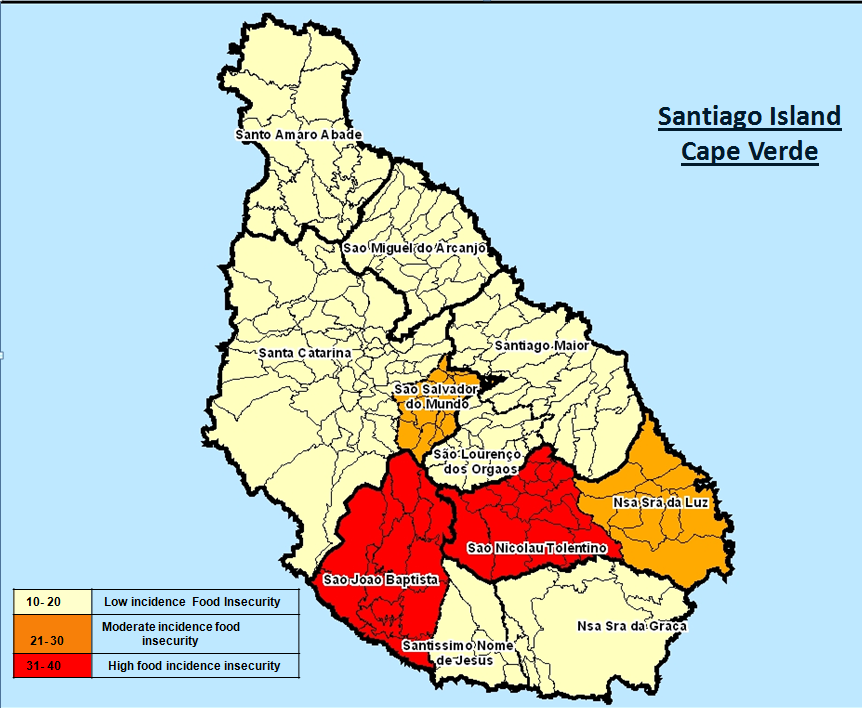


Food insecurity in Cape Verde islands. Source: DSSA-MDR

Looking more closely to the islands targeted by the project ( Santo Antão and Santiago) it is clear that the areas most affected by food insecurity are exactly the ones targeted by project interventions.



Food insecurity in Santo Antão Island. Source: DSSA-MDR.



Food insecurity in Santiago Island. Source: DSSA-MDR.

### Climate Variability and Change in Cape Verde

* 1. General situation

Cape Verde is situated in the eastern tropical Atlantic, spanning latitudes that fall within the Sahelian climatic zone in neighbouring West Africa. The Cape Verde islands experience a dry tropical climate which is influenced by a combination of the Azores high-pressure region, the inter-tropical convergence zone (ITCZ, associated with the summer African monsoon), the Canary maritime current, and the thermal depression located over North Africa in summer. While the climate of the islands shares a number of characteristics with that of the neighbouring Sahel, it also exhibits maritime characteristics. The surrounding oceans moderate temperature variations, resulting in a narrower range of mean and absolute temperatures than in neighbouring continental regions. Unlike the largely low-lying and topographically homogenous continental Sahel, Cape Verde’s climate is moderated by the surrounding ocean, and the varied topography of the islands results in a number of microclimatic zones.

Mean annual rainfall is 225 mm (averaged across the islands), although there are large geographical and temporal variations in rainfall amounts, which are highest on the more mountainous islands. Significant rainfall is restricted to the months of July-October, with the majority of rainfall occurring in August and September. This rainfall is associated with the northward movement of the ITCZ and the passage of squall lines or “lignes des grains” (organised disturbances in the easterly flow of air originating over the Sahelian region), and rainfall events can be intense (Nzeukou et al., 2004). High temperatures and strong maritime winds result in high evaporation rates. Droughts are common, and may be severe and protracted.

Large amounts of mineral dust are exported from West Africa in the Saharan Air Layer (SAL), which lies over Cape Verde, with the elevation of the SAL varying on seasonal timescales (Chiapello et al., 1995, 1997). Atmospheric dust results in warming of the atmosphere at the elevation of transport and cooling at the Earth’s surface, and is likely to play a role in suppressing rainfall (Brooks, 2000). There is evidence that the presence of atmospheric dust in the SAL acts to suppress the formation of tropical storms (Dunion and Velden, 2004; Evan et al., 2006).

* 1. Historical trends

Droughts are common, and became more frequent and protracted after about 1970, mirroring the climatic desiccation of the wider Sahelian region. A reduction in the length of the humid season has also been observed in recent decades. Mean annual temperature has increased by almost 1º C since the early 1990s, much more rapidly than the global trend. According to the NAPA, extremes such as high intensity precipitation events are occurring more frequently.

* 1. Future climate change

A number of interacting factors are likely to influence the future evolution and variability of the regional climate around Cape Verde. Projections in the IPCC’s Fourth Assessment Report (AR4) indicate an increase in surface air temperature of 2º-2.5º C in the eastern tropical Atlantic region over the coming century, in addition to that already experienced (Christensen et al, 2007). This is significantly less than over neighbouring parts of continental Africa, due to the cooling influence of the surrounding ocean. Nonetheless, extreme temperature events are likely to become more common. It should also be noted that atmospheric greenhouse gas concentrations are currently rising more rapidly than projected in the IPCC’s high-emissions scenarios, meaning that IPCC projections may underestimate the rate and magnitude of temperature change over the remainder of the century (Pittock, 2008).

Future changes in rainfall are more uncertain than those in temperature. Projections presented in the IPCC AR4 suggest a decline in annual rainfall of 5-10%, with a majority of models predicting drying (Christensen, 2007). However, the disagreement among models, uncertainty regarding the future behaviour of the ITCZ and African monsoonal circulation, and the position of Cape Verde near to a geographical transition between projected wetting and drying all mean that projections of future changes in rainfall should be treated with extreme caution.

Modelled projections of sea-level rise presented in the IPCC AR4 suggest an increase in global mean sea-level of between 0.18 and 0.59 m by the end of the 21st century, relative to the end of the 20th century (Meehl et al., 2007). However, these projections are seen by many scientists as conservative, as they do not consider potential carbon cycle feedbacks, and do not account for certain dynamical changes in ice sheets or recently observed increases in ice discharge from the Greenland and Antarctica, associated with the loss of fringing ice shelves and the resulting acceleration of coastal glaciers (e.g. Hansen, 2007; Rignot, 2008). A more recent study of potential sea-level rise than those reviewed in the IPCC indicates a sea-level rise of 0.5-1.4 m by 2100 (Rahmstorf, 2006). Research reviewed by the IPCC indicates that sea-level rise in the eastern tropical Atlantic is likely to be similar to the global mean (Meehl, 2007).

### Climatic Risk and its Impacts on the Water and Agriculture Sector

Agriculture remains the core of Cape Verde’s rural economy. Even if the national production only covers between 20-30% of the national food consumption, the agriculture sector, together with fisheries and silvo-pastoral production are key to poverty reduction and food security on rural areas.

The agriculture sector only contributes 10.7% to the national GDP[[1]](#footnote-2), however the livelihoods of rural populations are highly reliant on subsistence agriculture and artisanal fisheries. Both sectors are essential as well in terms of provision of employment opportunities on the rural zones.

Cape Verde archipelago is characterized by a dry topical climate. Geo-climatic conditions of the archipelago result in great spatio-temporal variability in rainfall, with frequent drought events and the presence of micro-climates. In addition, the strong North-East winds lead to contrasting agricultural landscapes from one island to the next. In general, a considerable area of the islands consists of a vast arid region.

The dry season in Cape Verde covers a period of approximately nine months from November to July. It is marked by an almost total absence of rainfall. Strong maritime winds also cause high evaporation rates, further aggravated by high solar radiation. The “wet season” corresponds to the months of July through October and is, generally, marked by rainfall events and associated intense cultivating operations, such as soil preparation and the seeding of the major rainfed crops.

Currently, the mean annual precipitation across the islands is 225 mm, although there are great temporal and spatial variations. It is notable that Cape Verde is experiencing a considerable reduction in rainfall since the 1970’s. Rainfall projection scenarios up till 2020, including adjustments of ±10% and ±20% starting in 1990, yielded values that are generally below the historical average (373.3 mm).

The monthly average air temperature varies between 20ºC and 26ºC, and is higher during the ‘wet season’. In the arid coastal zones, the maximum absolute temperature may exceed 32ºC. According to most scenarios, temperatures are expected to increase….

The projected conditions of rainfall decrease, increased prevalence of extreme climate events and increase in average temperatures exacerbate the vulnerability of a mainly rainfed agriculture sector in Cape Verde. Considering the characteristics of Cape Verde agriculture production systems and the limited arable land available in the country (according to the General Agriculture Census (RGA) 2004, the total arable land surface is 44,358.8 h, representing approximately 10 % of total area) climate change is expected to negatively impact crops yields.

On the one side, water availability will be reduced due to increased evaporation and evapo-transpiration and soil erosion, as well as from saline intrusion in watersheds and soil salinization associated with predicted sea level rise.

On the other side, climate change is expected to increase the incidence of pests and new patterns of disease which will put the most vulnerable farmers at risk of crop failure.

### Policy and Institutional Context

Cape Verde is currently engaged in a water and sanitation sector institutional reform. The reform is supported through the MCA (Millennium Challenge Account) WASH programs which intends to: i) clarify the institutional framework, revise and adapt the legal and regulatory framework; ii) reinforce operators capacities; iii) improve and develop infrastructures, with the objective of increasing coverage of the services; increase water quality and availability; improve affordability of poor populations while ensuring financial sustainability of the operators.

The current approach to water management in Cape Verde is governed either by water use or water resources origin. This approach has created a complex institutional structure where different institutions are granted overlapping responsibilities over water resources. Subsequent legal reforms have resulted in a fragmented legal and regulatory framework, which, coupled with a lack of institutional coordination, have impeded an integrated approach to water resources management in the country.

Currently INGRH (National Institute of Water Resources Management) is responsible for licencing any underground water exploitation, charging a fee per volume of water pumped. The Ministry of Rural Development is responsible for surface water management, as well as for rural water infrastructure, namely water reservoirs and dams.

The new institutional set up is still not decided, but the proposals under analysis point to an integration all water applications and origins under the same institution. To this purposes, the INGHR (National Institute of Water Resources management) would be soon extinct and a new national agency will be created. The new ANAS (National Water and Sanitation agency) will absorb the competencies over water for all uses, but the scope of these competencies is yet to be defined, especially with regards to sector policy, regulation, permitting, tariff setting, infrastructures conception and operators’ monitoring.

The national strategy for food security (ENSA 2002- 2015) and its derived national program (PNSA 2007-2011) set as an objective the promotion of a more efficient, sustainable and diversified agriculture and fisheries sector in order to respond to national demands in terms of quantity, diversity and quality.

To achieve this objective the promotion of sustainable agricultural production systems and targeted production were prioritized.. Improved water mobilization and management were also identified as a priority strategy. To this regards, the program identified some strategic actions which encompass :

adoption of more cost-efficient water desalination systems;

continued research and application of cloud harvesting system and surface water harvesting;

promotion of micro-irrigation system;

scale up of community and family cisterns / tanks to collect rain water;

dam construction when technical, economic, social and environmental feasibility is proved.

Sub-program two of the PNSA identified two priority actions: 1) promotion of production and productivity and diversification of the national agricultural and food system on a sustainable basis; 2) promotion of sanitary standards and quality food products and water.

PNSA also points to applied and experimental research as an essential requisite to valorize, preserve and manage natural resources. Programmatic documents give priority to the introduction and dissemination of climate resilient crops (pest and drought resistant) which improve food security of family agricultural systems and small private farmers.

National Growth and Poverty Reduction Strategic Paper (DECRP III 2012-2016) recognizes the pivot role of the agriculture sector for rural poverty reduction and food security. Moreover, the DECRP III identifies the agribusiness cluster as one of the main potential drivers of Cape Verdean economic growth. To this purpose the DECRP III aims for a sector modernization to ensure sustainability, food security and empowered producers. Cape Verdean agriculture policies are geared to improve sector productivity, develop values chains and promote a sector development geared towards satisfying market needs. Considering the development of other sectors, especially tourism, the potential for improving rural income and diversifying communities livelihoods from a high added value agriculture sector, is significant. The current proposals aligns with DECRP III strategies for the sector, and will especially contribute to build sector resilience to climate risks by reinforcing rural extension systems, improving research on climate-smart practices and promoting water use efficiency measures.

### [Barrier Analysis: Weaknesses in the current Response to Climate Change](#_Toc235425215)

The ongoing LDCF project includes measures to mainstream climate change risk in water sector planning and to build resilience and adaptative capacity to climate change in the water sector. **Food insecurity being one of the major manifestations of changing water availability as a result of climate impacts, additional resources were necessary to close that loop**. The goal of the current proposal is to reinforce analytical capacity to better understand food security and climate change interlinks; as well as to integrate food security focus in the adaptation alternatives being tested/promoted and scaled up.

A set of barriers have being identified as preventing the baseline response to have an **integrated** approach to climate change adaptation

*Barrier 1)* The capacity of key stakeholders to plan and respond to climate change risk and to incorporate adaptation measures in the conceptualization and implementation of development frameworks (i.e. policies, strategies, programmes, projects and initiatives) is still restrained.

The LDCF project has improved decision-makers awareness on climate change risk and adaptation measures, specially at the municipal level. However, capacity gaps still remains at the sectoral level to analyze climate change implications for public policies and practically integrate risk analysis and adaptation measures in the planning process. This is particularly true for sectors such as rural development and public health who tend to consider climate change issues as a matter of Environment Ministry competence.

Institutional and individual capacity in government for adapting to climate change is still weak. Local municipalities staff and deputy members have been targeted by capacity development actions. Their exposure to the knowledge and information needed to appraise feasibility and benefits of adaptation measures have certainly improved through this capacity building approach, but still they have not gained enough familiarity with the tools available for analysis to assess risks and take adaptation needs and issues into account. **While the underlying LDCF project addresses water issues broadly, tailored approaches to food security and coping mechanisms are needed, particularly at the very local levels where responses are enacted.**

Climate change risks and opportunities have not been mainstreamed into key sectoral policies and planning frameworks. National investment plan on the agriculture sector (PNIA); National Strategy on Food Security (ENSA); National Program on Food Security (PNSA) do not comprehensively consider climate change risks. Policies, plans, strategies and programmes that mention those threats are not based on a comprehensive risk analysis. Hazards’ intensity and dimension**,** as well as vulnerabilities are not comprehensively assessed and potential impacts modeled. In the absence of powerful risk analysis and impact modeling tools, considerations are very general and measures are not specific enough to tackle the issue.

The government has recently put forward a new vision for the governance and management of water and sanitation sectors. To lead the sector reform process a national reform commission for water and sanitation was established in January 2012. The main direction of this reform is to rationalize water resources management by introducing a more coherent institutional, legal and regulatory framework to avoid the current lack of coordination and overlapping institutional mandates.

*Barrier 2)* At the local level, the capacities to replicate and scale up the use of new technologies and practices in water resource management are low, making communities vulnerable to food insecurity and climate change even more.

Replication of adaptive methods and new measures and technologies has been limited due to limited access to financial mechanisms. The current project has not been successful in designing sustainable financial mechanisms for replication and scale up. Part of the problem resides in the adequacy of these technologies to the local conditions. Technology prices are unaffordable for local farmers therefore limiting uptake and proving inadequate. Some islands topography have worsen the cost-effectiveness ratios and difficult penetration of new technologies.

Limited innovation has been introduced in terms of adaptation measures by the current project. The impact of some initiatives on protected crops to deal with pest needs to be measured and captured to build an argument for replication. Associated with this, there are still some gaps in terms of applied research focused on climate-resilient and high nutritional value agriculture crops.

Some of the adaptative measures promoted (such as *aloe vera* fixation for water infiltration and erosion control) have a perceived limited economic benefit therefore rendering them uninteresting to farmers. Even when successful experiences have been developed in other contexts, the structure of value chains on the primary sector is still very incipient. Under these conditions, local communities do not easily see the socio-economic benefits of some pilot projects. This has created some resistance and deficit in local participation and investment.

In the framework of the sector-wide reform, inter-municipal management bodies are the preferred option for water resources and sanitation management at the decentralized level. Local services had been trained and supported by LDCF project to better understand and address water conflicts associated with climate change. However, new institutional actors will enter the scene and will need to be integrated in the strategy to build resilience and adaptive capacity.

*Barrier 3)* Climate change risk analysis in Cape Verde is still very incipient and poorly quantified at a significant scale, both spatially and temporarily.

LDCF project, through partnership with the National Institute of Meteorology and Geophysics is working to strengthen the national climate observation network. However analytical capacities are still limited. Climate models downscaling and climate forecasting capacities remain weak.

Analytical tools and capacity to use them need to be reinforced in order to improve mastery of climatic models and other forecasting tools and the ability to effectively use climatic data to guide decision-making and investment planning.

The capacity to use climate data and risk analysis for early warning system and contingency planning is still limited. This applies as well to data collection and analysis on pest risks in order to reduce exposure, increase resilience and better plan response when pest occurs.

[Stakeholder analysis. 18](#_Toc235425217)

Summary of the stakeholder analysis:

| **Institution/**  **Reference** | **Brief Summary** | **Expectations** | **Relevance- Project Proposal** |
| --- | --- | --- | --- |
| INGRH  (National Institute for Water Resource Management) | 1. Priority interventions: coastal zones to control salt-water intrusion (Ribera Seca, Ribera Charco), drip-irrigation to conserve water and improved management, water treatment plant for salt-water; 2. Need for capacity building for aquifers monitoring/control, superficial water management; 3. Will be extinct after the creation of ANAS (National Agency for Water and Sanitation), that will assume its competencies. |  | 1. Key executing agency and hence responsible for overall coordination of project activities; 2. Technical support for physical interventions. 3. Support for water resources monitoring |
| INMG  (National Institute for Meteorology and Geophysics) | 1. Implementing agency for NAPA process; 2. UNFCCC focal point and responsible for National Communications (INC and SNC); 3. Collects, detains and analyses Cape Verde’s climatic data; 4. Capacity for more sophisticated modelling and analysis is limited. | 1. Expects to directly benefit from the project’s capacity building activities. 2. Improve its observation network and data analysis capacities | 1. Important partner in implementation 2. Should benefit from capacity building provided by the project, but also from other sources; |
| DGASP  (National Agriculture Department) | 1. Consider water resource management in all islands as a major problem; 2. Limited capacity building activities at the institutional level; 3. Monitoring limitation for water use/quality; | 1. Capacity building- national/community level for water management; 2. Field monitoring for water use and quality; 3. Revive and support the Agricultural Extension System; 4. Knowledge-sharing for best water management practices and raised consciousness regarding water value. 5. Invest in the use of renewable energies for water pumping. | 1. Capacity building for climate change and policy development; 2. Technical Support for physical intervention. |
| Service Directorate of Food security ( DSSA) at the Rural Development Ministry | 1. Responsible for defining and implementing national food security policy and programmes 2. Monitoring food security situation and producing statistics | 1. Support for data collection and analysis 2. Support for strategy review and national food security evaluation | 1. Key on designing site-level assessments 2. Key on monitoring impact on food security of the interventions |
| INIDA  (National Agriculture Research Institute) | 1. Research in agricultural sector to improve productivity: efficiency study between traditional and drip-irrigation 2. Research on pests, crops and pesticides | 1. Support for water research for increased agricultural productivity; 2. Improve research capabilities in climate-smart agriculture 3. Update pests manual and produce technological packages. 4. Improve water management at the community level. | 1. Key partner for applied-research 2. Monitoring and research development for water management; 3. Technical support for physical intervention. |
| ADAD  (National Environment NGO) | 1. Environmental awareness raising on different islands for schools; 2. In the municipality of St. Cruz, discussion forum regarding climate change at the community level; 3. Water management in rural communities in Santiago. | 1. Involvement of civil society in project activities; 2. Improve information/knowledge sharing regarding water issues. | 1. Knowledge management and awareness raising at the community level; 2. Community mobilization. |
| NGOs’ Platform  (umbrella organisation) | 1. Not specific program on water issues; 2. Ownership limitation for project activities for the community; 3. Limited technical capacity by NGOs for environmental issues. | 1. Involvement of civil society in project activities; 2. Improvement of ownership process for planned interventions. | 1. Knowledge management and awareness raising at the community level; 2. Support in community-based approach. |
| Ministry of Planning | 1. Currently revising planning laws to include environmental principles; 2. Local planning schemes being discussed to determine best environmental planning practices. | 1. Improve drought preparedness; 2. Capacity building for environmental planning. | 1. Capacity Building for climate change adaptation and territory planning; 2. Capacity Building for environmental policy development. |
| UNICV  (Cape Verde University) | 1. No specific program for water resource management, only independent research; 2. Cultural project for water management in Santiago; 3. Collaboration with Brazil for water scarcity. | 1. Improve water management practices among institutional and local communities; 2. Monitoring of existing water bodies. | 1. Potential mobilization of civil society, and support for research. |
| Spanish Cooperation | 1. Supports the creation of a hydroponics schools in partnership with DGASP. | 1. A good synergy with the project objectives to integrate capacity building for water management. | 1. Physical interventions for water distribution and storage, some capacity building for water management issues. |
| FAO (UN’s Food and Agriculture Organisation) | 1. Water recycling as a mean for agriculture use in Sao Vicente; 2. Rainwater is a resource not properly used; 3. Water tax and water management system are not clearly defined. | 1. Improved integrated water management; 2. Encourage/support residual water treatment plan; 3. Improve rainwater retention efficiency; 4. Establish an integrated example for water management as climate change adaptation; 5. Need to establish sustainability for water management (water tax, agriculture vs. human use). | 1. Technical support for physical interventions; 2. Coordination support for water management board/advice. |
| Ministry of Environment, Land use and Housing -General Director | 1. Sustainable management of superficial waters; 2. Coastal zones need conservation and protection interventions to prevent salt intrusion into freshwater reservoir; 3. INMG and INGHR organically depend of the ministry | 1. Integrated water management with clearly defined responsibility and institutional role; 2. Environmental awareness raised as regards to ecosystem preservation and water availability; 3. Improved coordination and collaboration among water-stakeholders. | 1. Coordination role for environmental awareness raising; 2. Experience for broader environmental climate change issues in relation to water management. |
| ICIEG | 1. Responsibly for gender mainstreaming at the national policy level | 1. Gender equity promotion through the project interventions 2. Gender sensitive assessments and interventions | 1. Key for designing a gender sensitive land tenure and food insecurity assessment 2. Support capacity development for gender mainstreaming in rural development policies. |
| French Development Agency | 1. Water considered as a priority intervention; 2. Project in Assomada for WASH project (until 2011); 3. Small scale project in rural community for reservoir management and household water use (Santiago, Santa Catarina); 4. WASH project, water distribution and management in São Nicolau; 5. Potential future interventions will include strengthening infrastructure for existing water facilities. | 1. Integrated water management with clear defined responsibility; 2. Introduction of water tax/ system to ensure water management sustainability; 3. Awareness raised and built adaptive capacity for different climate change scenarios in Cape Verde; 4. Encourage research/studies regarding climate change effects/ adaptation options; 5. Introduction of new ‘clean’ technologies for water. | 1. Integration of capacity building for climate change adaptation in planned water interventions; 2. Development of cohesive role with other international partners to promote climate change adaptation. |
| European Commission | 1. Climate change program in relation to energy and water (supported by regional office in Dakar). Activities include boreholes drilling, management and water recycling in Santiago and São Nicolau, support for the establishment of GIS system for surface waters, support drip irrigation introduction in different islands; 2. Water infrastructure development in urban areas (Praia), recycling plant (Mindelo), residual water treatment; 3. Support the climate change program development for energy policy in Cape Verde; 4. Establishment of a coordination committee among different international cooperation partners (Austria, Luxemburg, France, Spain) interested in water-related issues. | 1. A good synergy between capacity building and physical interventions in the project proposal; 2. Introduction of new technology for water capture and recycling; 3. Awareness regarding climate change, capacity building regarding climate change adaptation should aimed at hand-on activities; 4. Coordination role for international partners as regards to climate change and water issues. | 1. Institutional support for climate change; 2. Integration of climate change adaptation issues in foreseen intervention project. |
| MCA | 1. WASH ( water, sanitation and hygiene) program, supporting sector-wide reform 2. Land tenure program | 1. Coordination with project interventions 2. Knowledge sharing on best practices |  |
| Luxemburg  Cooperation. | 1. Very focused and interested in water issues in Cape Verde, investing significant amounts 2. Investments in water issues particularly in capacity building for water management, clean energy and water investment, support national strategy for IWRM; 3. Water related projects: family irrigation and water management in Santo Domingo, institutional support for municipality water management in Fogo, food-aid fund for water related projects at community level. | 1. Better coordination among different partners for water management and climate change awareness; 2. Integration of capacity building for IWRM in their current interventions projects; 3. Development of clear policies for water management and responsibility. | 1. Integration climate change adaptation issues in their current and future projects; 2. Capacity building support for institution and municipality. |

### [Project Strategy](#_Toc235425218)

**PROJECT GOAL, OBJECTIVE, OUTCOMES AND OUTPUTS/ACTIVITIES**

The project’s goal is to ensure that water availability, supply and quality are maintained in the face of changed climatic conditions and subsequently reduce the impact of climate change on food security. This goal is in line with MDG Goal 7, Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and as demonstrated by numerous scientific studies, is strongly correlated to the achievement of other MDGs.

The project objective is to increase resilience and enhance key adaptive capacity to address the additional risks posed by climate change to the water sector in Cape Verde.

In order to achieve the above objective, and based on a barrier analysis (see Section VI), which identified: (i) the problem being addressed by the project; (ii) its root causes; and (iii) the barriers that need to be overcome to address the problem and its root causes, the project’s intervention has been organized in three components, under which three ‘outcomes’ are expected from the project:

Outcome 1: **Climate change risks and adaptation measures integrated into key national policies, plans and programs for water resource management**.

***Ongoing measures*:** LDCF project has allowed to raise technical staff and decision-makers awareness on climate change risks and adaptation alternatives. International expertise on climate change risk analysis and adaptation policy was brought in to support climate-proofing of national water sector policies and plans. Moreover, municipal land-use plans are being reviewed for climate change risk mainstreaming. In order to improve water resources management at the national level the project is working to develop national and local institutional capacity to make informed decisions. Informed decision-making process requires improved availability of climate data and adequate national capacity to collect and analyze this data. To this purpose, international expertise was mobilized to strengthen technical capacity to analyze climatic data, develop climate forecasts, projections and climate change scenarios and monitor climatic variability.

The international consultancy identified and prepared new analyses and products on climate risk and vulnerability analysis. The consultants produced technical recommendations and provided guidelines for local institutions and technicians on the production and use of analytical tools. Technical orientations and methodological tools to treat and analyze climate data and to prepare climate scenarios were provided to INMG and INGRH.

Additionally, national climate observation network, managed by the National Institute of Meteorology and Geophysics are being reinforced through the installation of five (5) new automatic weather stations to be installed in selected sites.

***CIDA Contribution:*** Additional CIDA funding will contribute to further develop capacities for mainstreaming climate change risks. Analysis of the entry points for adaptation measures and risks identified in the first revision will be further developed in view of developing concrete tools that will allow for the translation of these risk assessments and identified adaptation alternatives into budgeting process and investment planning.

Climate-proofing of policy and strategic documents will be scaled up to target Rural Development sector planning, especially Agriculture investment planning and the Food Security Strategy. Currently the National Food Security Strategy acknowledges the existence of climate vulnerabilities of the agriculture sector but hardly identifies adaptation strategies and explores further risk analysis.

Technical staff from relevant local and national institution will be supported to develop and apply tools for economic valuation of climate change-related losses and adaptation measures. These tools will serve to appraise the financial needs for adaptation and risk mitigation as well as the cost-efficiency of adaptation alternatives.

The assessments planned under this new phase will allow to better target extended demonstration activities to the communities which are most affected or at risk of food insecurity, while putting a strong emphasis on gender equity to access the technologies and practices demonstrated in this project. The land tenure analysis and gender-sensitive socio-economic assessment will enable the consideration of differentiated gender needs and roles in the design and implementation of adaptation practices, and ensure that gender-disaggregated data is available for future monitoring and strategic purposes.

Gender disaggregated data and analysis of agriculture systems and food security will also be made available to other development partners and stakeholders to feed into the formulation and design of local adaptation and food security strategies.

Building on a strengthened national observation network, the CIDA contribution will support the integration of data analysis and forecasting and their use for issuing warnings to extension workers, local authorities, farmers and other concerned stakeholders.

In this regard, the project will pilot implementation of crowd-sourcing approaches and the use of information and telecommunications technologies to enable early detection of pests and warning systems to extension workers and farmers.

**Expected outputs with additional funding are:**

**Capacity of relevant agencies to assess climate change impacts in food security is reinforced**

**In order to achieve this output, some key activities are proposed:**

* Training of municipal and sector technical staff ( Water & sanitation autonomous services; municipal land-use planning and environment technical staff, line-Ministries and Institutes’ planning, budgeting and analysts’ central and decentralized staff) in “mainstreaming climate change risks and opportunities” approaches and concrete tools for sector and municipal planning and implementation.
* Technical support to the Ministry of Rural Development to climate-proof the National Strategy of Food Security and to develop climate screening tools for programs and plans of action.
* Assessment of climate-smart agriculture potential in high vulnerable areas identified through the Food (in)-security analysis and cartography.
* Gender-sensitive socio-economic assessment of livelihoods and land tenure schemes that determine food insecurity ( availability, accessibility and nutritional dimensions), is conducted in order to better target pilot interventions to improve resilience of the most vulnerable groups to climate change and food insecurity.
* Project intervention sites-specific detail and update of food security assessment and mapping
* Technical assistance to sector-specific and national statistics departments to reinforce design and monitoring of food security and nutritional indicators.

**Awareness of climate change impacts on food security is raised among rural development and health sector decision-makers, technical officers and stakeholders, community associations, farmers, NGO players and the media.**

**In order to achieve this output, some key activities are proposed:**

* Technical training to rural development decision-makers and technical officers and key stakeholders (farmer associations, cooperatives, agro-products business)) on “climate change risk, vulnerability & adaptation and food security interlinks”.
* Community Radio and local TV programs on climate change adaptation strategies addressing water use efficiency, climate-smart agriculture and food insecurity.
* Nutritional assessment of communities’ consumption practices, diet and locally produced crops and locally available food
* School community and public health stakeholder’s awareness raising campaign on food utilization and nutrition value of agriculture products locally available.

**Establishment of climate change early warning system for the water sector to support national and municipal development planning and implementation**

**In order to achieve this output, some key activities are proposed:**

* Technical assistance for capacity reinforcement on climate data analysis ( downscale and forecasting)
* Analysis of pest prevalence in the context of climate change ,review of IPM ( Integrated pest management) practices’ and proposal of adjustments
* Development of crowd-sourcing applications for pest early detection and warning system.

Outcome 2: **Small and medium scale climate change adaptation practices for water resource management are demonstrated and implemented in selected hydrographical basins.**

***Ongoing measures:*** the ongoing project has put a great emphasis on piloting adaptation projects aiming at increasing water availability, promoting efficiency in water use and building resilience of the agriculture sector through erosion control measures and the rehabilitation or construction of water conservation infrastructures.

Drip-irrigations systems have been installed on pilot sites in farmer’s horticultural fields and school gardens and local farmers and extension workers were trained on installation and management of drip-irrigation systems. During this phase, drip irrigation techniques have been demonstrated and promoted with children and school communities; these techniques were installed on a primary school horticultural garden and contributed to improve child nutrition by supplementing school feeding programs (school canteens serving 240 students and 8 teachers) with a variety of fresh micronutrients.

During the current phase new materials and techniques have been tested and extension workers’ capacities have been reinforced for dissemination, installation and maintenance of the introduced systems and techniques. In order to monitor water savings and performance of materials and techniques ( protected crops associated with drip irrigation systems coupled with water meters, etc.) a Memorandum of Understanding was signed with National Agriculture Development Research Institute ( INIDA) who is currently monitoring soil and water quality parameters and crops performance associated with the new techniques introduced.

***CIDA Contribution:*** this additional funding willsupport the scale-up and replication of water-use efficiency measures already demonstrated onto the communities most affected by food insecurity. Family farms and school horticultural gardens will be targeted and retained crops will be drought-resilient and high added nutritional value. In addition to the scale up of current practices, this new phase will entail the preparation of a strategy to customize technologies and techniques to local conditions and to design financial mechanism to ensure financial sustainability and to create the necessary conditions for replication of demonstration projects by local communities and their partners.

Interventions in this component are intimately associated with the outputs of the applied-research planned under outcome 3.

Under the additional phase, some demonstration projects on improved water mobilization and wastewater recycling and reuse will be implemented. Again, these activities will be coupled with applied-research and policy development to ensure that safety and quality standards are applied for water reuse and that crops irrigated with recycled water do not present any contamination risks.

Concerning water mobilization through renewable energies and cloud harvesting the purpose is not only to replicate previous initiatives, but also to test new materials and implementation approaches identified through detailed technical and financial feasibility studies, capture lessons learned and develop simplified technical guidelines to facilitate the replication of best practices. Through the application of renewable energies-based pumping systems adaptation practices and mitigation measures are brought together to address climate change’s challenges.

The detailed cost-benefit and feasibility studies will enable the assessment of the cost of maintenance and operation of different alternative systems so as to ensure these costs can be taken up by and included in the respective institutional budgets or private operators business plans to guarantee sustainability of the planned interventions.

**Associated expected outputs with additional funding will be:**

**Measures and practices to improve water availability are demonstrated in areas highly vulnerable to food insecurity.**

* Replication of water use efficiency measures and practices and associated with high nutritional value and climate-resilient crops production.
* Demonstration projects on water recycling and safe use of treated wastewater for agriculture production
* Implementation of renewable energy-based water mobilisation projects demonstrated in targeted areas.
* Demonstration project of cloud water harvesting for agricultural production and domestic consumption on mountain areas

**Enabling conditions for replication and sustainability (social, environmental and economic) of targeted interventions are created**

* + Detailed costing and feasibility analysis of site-level activities and assessment of potential impacts on food availability dimensions of demonstration project
  + Capacity development for participatory project’ identification and formulation in support of customized technologies and development of social technologies

Outcome 3: **Lessons learned and best practices from pilot activities, capacity development initiatives and policy changes are disseminated.**

***Ongoing measures***

In order to raise community awareness on best adaptation practices, radio and TV productions and emissions, as well as theatre performances have been produced and are currently being broadcasted.

Moreover, the lessons learned from pilot projects and trainings were capture and shared through the UNDP Adaptation Learning Mechanisms (ALM).

***CIDA Contribution***

Additional funding will support the strengthening of the applied-research program on climate-smart agriculture. This emphasis will support the decision-making process, at the macro-level (policy) but also mezzo (programs) and micro (community-level), to become evidence-based.

The development of water balance analysis is essential to ensure an improved monitoring of the water pumping systems and their sustainability. This will feed into components 1 and 2 both in terms of decision making with regards to water use allocation and in terms of informing the on-going institutional reform process.

Additionally, materials and technologies will be tested to ensure appropriateness to the local context and all best practices and lessons learned will be documented through the production of technological packages. Those packages will be a tool for replication, that will be coupled with the design of policy and program level financial and fiscal incentives for water efficient systems in the agriculture sector and for integrated pest management.

**Applied research program on climate-smart agriculture and food security is strengthened :**

* Research program on wastewater reuse in agriculture from a public health perspective and agro-production system sustainability perspective.
* Technical assistance for regulations and safeguards design for wastewater reuse in agriculture sector ( review of suitable crops and planting methods)
* Identification of traditional knowledge on climate-resilience agriculture practices and integration into Agriculture extension/awareness/training programs and deployment in pilot areas
* Review of policy and financial incentives and financing systems than hinder successful adoption, replication and scale-up and/or local appropriation of water use efficiency measures
* Review of materials and technologies adequacy and development of technological packages and how-to guides targeted to farmers, extension workers, etc.
* Development of a water monitoring system to measure water savings at local level and to control and monitor water pumping according to water balance

**Risks and Assumptions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Title** | Building adaptive capacity and resilience to climate change in the water sector in Cape Verde | No. |  | Team Leader |  |
| **Country/Region/Institution** | Cape Verde | Budget |  | Duration |  |

| **Risk Definition** | | | |  | **Risk Response** | | |  |  | | **Investment LM Result Statement** | | | **Residual Risk Level – Very Low/ Low/High/Very High** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | |  | | | |  | | |  | | | Date 1 | | Date 2 | Date 3 |
| **Operational Risks** | |  |  | | |  | | | |  | |  | | |  | | |
| OP1 – HR | Since project implementation will be embedded in the national institutions (to avoid parallel structures) there is a risk of staff involved in the project giving lower priority to the project responsibilities. | | | While the project objective is one of high priority to the government of Cape Verde, the implementation of project activities is not part of the TORs and work plans of civil servants. However, implementation arrangements will ensure integration of project management within institutions and national systems and tools for program execution (for instance by including its components in the Ministry’s annual workplan). Public institutions staff capacities will be reinforced to ensure effective implementation of expected results and compliance with national procedures and policies.  To ensure staff does not give project responsibilities lower priority, there will be a careful choice of the level of staff that will be involved in the project, ensuring that staff with management responsibilities only have oversight functions as opposed to implementation functions. Project coordination will monitor performance and accountability of all staff involved in the project implementation and set up a system of professional development and capacity building to encourage staff to stay on the project | | | | | | | Whole project | | | L = 1  I = 1 | | L =  I = | L =  I = |
| Difficulties finding the required technical assistance with the required technical and language skills (Portuguese) could delay implementation and delivery. | | | To mitigate the risk of delays in mobilizing quickly the required technical assistance the project will prepare a procurement plan together with the annual work plan where detailed and focused terms of reference will be prepared and reviewed by technical committee to ensure the needed expertise is identified in advance and procurement process is conducted effectively.  Concerning international technical assistance with the required set of technical and language skills the project will ensure promoting or utilizing existing collaboration agreements with Portuguese-speaking leading research institutions (PALOP countries). | | | | | | | Whole project | | | L = 1  I = 1 | |  |  |
| Turnover of technical staff at the public institutions could undermine sustainability of the capacity development strategies. | | | Embedding project implementation in the national institutions owns’ structure is a way to disincentive turnover. Technical staff is given the opportunity to directly engage in project implementation without leaving their institution to work in a special project management unit. Institutions propose their own incentives’ mechanism to compensate additional time required to participate in project implementation. | | | | | | | Whole project | | | L = 1  I = 1 | |  |  |
| OP2 – Perfomance Management | Limited capacities at the national institutions level to systematically monitor and evaluate projects. | | | Through LDCF implementation national institutions have already acquired some capacities on adaptive management and M&E. Any additional tools needed to monitor new pilot projects will be designed in alignment with national M&E tools ( Cape Verde e-GOV M&E module for project management and SIGOV system for financial management) to ensure strong national ownership and strengthening of national systems and capacity for M&E. | | | | | | | Whole project | | | L = 2  I =1 | | L =  I = | L =  I = |
| Limited capacities for knowledge management. | | | Involvement of national research institution will be designed to ensure capitalization of best practices and knowledge sharing. New information and communication technologies will be used to ensure larger dissemination of project lessons learned. | | | | | | | **Outcome 3**: Lessons learned and best practices from pilot activities, capacity development initiatives and policy changes are disseminated. | | | L = 2  I =1 | |  |  |
| OP3 –Business-critical Information | Data sharing among national institutions and stakeholders is not an institutionalized practice. Capacities of some institutes responsible for meteorological and hydrological data collection and analysis are low which could imply data gaps or data quality issues that affect strategic decision-making processes | | | Data sharing will be ensured through direct involvement of relevant institutions on project technical committee and working groups.  Capacity development of national institutions for climate, hydrological and pest data analysis is planned within the project strategy and simple tools and methods will be advocate that require operations and maintenance efforts commensurate with the financial and technical capacities available on the island.  To ensure durability of this approach on institutional capacity development, cost of operations (to collect data and perform analysis) and maintenance of equipments will be appraised before procurement is conducted through the cost assessment and cost-benefit analysis planned. The project will ensure that those costs are taken into consideration within the institutions budgeting process. | | | | | | | Whole project | | | L = 2  I = 2 | | L =  I = | L =  I = |
| **Financial Risks** | |  |  | | |  | | | |  | |  | | |  | | |
| FIN1 – Funding | Delay in disbursements of funds could slow down project implementation. Absorptive capacities of national institutions are moderate which could imply some delays on delivery. | | | Planning process will be done in a timely and anticipatory manner to ensure disbursement are submitted, reviewed and processed smoothly to ensure funds are received normally to implement work plans.  Implementation modality will follow UNDP HACT model (harmonized approach to cash transfer) under which cash-advances are made against UNDP approved work plans and justified within a 3 months periods which will ensure no absorption issues will arise. | | | | | | | Whole project | | | L = 1  I = 1 | | L =  I = | L =  I = |
| FIN2 - Fiduciary | The risk that funds will not be used for their intended purposes, funds will not be properly accounted for, and/or services delivered will not be commensurate to funds transferred | | | UNDP will assure fiduciary integrity through internal control and quality assurance mechanisms. In addition, through periodic monitoring, audit and evaluations, UNDP will guarantee that funds are appropriately managed.  Audits conducted yearly of UNDP Cape Verde implementing partners have proven that no particular issues have arisen in terms of financial accountability and transparency. Moreover, Cape Verde track records in terms of low corruption level ensure that no fund diversion issues would arise. According to Corruption Perception Index by the international NGO Transparency International, Cape Verde was ranked 39th (out of 176 countries surveyed) on the list of countries with least corrupted public sector. | | | | | | | Whole project | | | L = 1  I = 1 | | L =  I = | L =  I = |
| **Development Risks** | |  |  | | |  | | | |  | |  | | |  | | |
| DEV1 - Strategic | No risk | | | No risk | | | | | | |  | | L =  I = | | | L =  I = | L =  I = |
| DEV2 – Socio-pol-economic, GE | Conflicts could arise between resources’ (water, land) users when designing water pumping systems or deciding on the infrastructures’ sitting.  Tensions could arise among communities because those who did not directly benefit from project intervention could feel they have been excluded. | | | In order to mitigate potential conflicts and tensions the Project has been designed with a conflict-sensitive approach. To guarantee all resource user’s interest and needs are taken into account, local participation will be ensured in designing the demonstration projects. Local civil society organizations and community leaders are associated to the project decision-making process through their participation in the local consultative committees.  Also to avoid tensions among communities who directly benefit from some project interventions and those who did not, the project has planned to work on the enabling conditions for replication of demonstration projects: extension workers’ capacities will be reinforced to disseminate best practices and measures supported by the project; policy and fiscal incentives will be analyzed to support replication; and fiscal schemes will be developed to support scale up in the communities who did not directly benefit from project activities. | | | | | | | **Outcome 1**: Climate change risks and adaptation measures integrated into key national policies, plans and programs for water resource management. | | L = 1  I = 2 | | | L =  I = | L =  I = |
| DEV3 – Institutional Capacity | Lack of clear definition of the institutional model that will be adopted for the water sector in Cape Verde as a result of the ongoing water and sanitation reform | | | The Millennium Challenge Corporation is already supporting the sector reform through its WASH program. UNDP has been contributing to the strategic thinking of the sector reform.  Implementing partners chosen for this project will keep their current responsibilities in relation with agriculture and food security independently from the outputs of the water sector reform. Nevertheless, UNDP will ensure that the outputs and outcomes planned for this project remain relevant and are aligned with the national policy whatever direction the government takes on the institutional framework. | | | | | | | Whole project | | L = 2  I = 2 | | | L =  I = | L =  I = |
| DEV4 - Modality | No risk | | | No risk | | | | | | |  | | L =  I = | | | L =  I = | L =  I = |
| DEV5 – Disasters, Environment | Climate change risk imply increase prevalence of extreme events such droughts, flash floods, storms, torrential rains, etc. | | | The whole project strategy is designed to increase resilience and build adaptive capacity to cope with those climate change risks. Moreover, UNDP is currently working with National Environment, Land use and Housing ministry on a risk reduction project that will develop a multi-risk national hazard and vulnerability assessment. | | | | | | | Whole project | | L = 1  I =1 | | | L =  I = | L =  I = |
| **Reputation Risks** | |  |  | | |  | | | |  | |  | | |  | | |
| REP1 - Reputation | Existing climate data for Cape Verde is relatively scarce and not too precise. The general public’s perception is that climate analysis should be able to predict changes with precision. In case climate trends do not coincide with the project’s forecasts and adaptation proposals, there may be an impression of lack of professionalism. | | | The project will endeavor to clarify that it is nearly impossible to predict weather behavior specifically, and that it is a trend more than a specific prediction. Furthermore, some of the proposed adaptation measures have immediate development and environment dividends and will be promoted as such to the local communities with a forward looking adaptation measure. | | | | | | | Overall project | | L = 1  I = 3 | | | L =  I = | L =  I = |
| **Overall Risk Level** | | | |  | | |  | | | |  | |  | | |  |  |

Sustainability and Replicability

In order to ensure replication and diffusion of adaptation practices and technologies demonstrated the project will adopt a threefold strategy:

1. The project will put a great emphasis on applied-research in partnership with the lead national agencies, especially the National Agriculture Development Research Institute (INIDA) : testing practices and documenting best practices; monitoring results and performance of materials, equipments and crops under specific local conditions and feeding the results back onto the national system of rural extension. To this purpose, technological packages will be designed, updated and published.
2. Also, the project will implement a comprehensive capacity development strategy. At the upstream level, it will raise awareness and develop capacities of planners and decision-makers to use concrete tools for climate screening of policies, programmes, plans and budgets. At the downstream level it will make use of demonstrative projects, from its design to its implementation and evaluation, to train rural technicians and extension workers on climate-smart agriculture practices.
3. Moreover, a project expected output is especially geared towards identifying and proposing specific financial mechanism to support replication and determining key incentives to be incorporated in water and agriculture policies, management plans and regulations. To ensure appropriation of proposed approaches and technologies the project has planned to conduct some technology adequacy assessments and adopted a participatory approach for project implementation.

Learning and Knowledge Sharing

Learning and knowledge sharing is conceived as an intrinsic element of this project as it supports replication and sustainability. To this purpose best practices and lessons learned during project implementation will be captured through case studies and technological packages.

Moreover, this knowledge will be disseminated through different channels. At the community level, radios, TV and school associations will be used to raise awareness not only on the climate risk to the agriculture and water sector, but especially on the strategies to build resilience, enhance water use efficiency and to improve food security through increased food availability, food and water safety and diet diversification.

Knowledge sharing will be also promoted through farmer-to-farmers activities to disseminate best practices demonstrated, research exchange activities and participation on national and international communities of practice on food security and climate smart agriculture.

### STRATEGIC RESULTS FRAMEWORK

### Indicator framework as part of the SRF

| **Objective/ Outcome** | **Indicator** | **Baseline** | **End of Project target** | **Source of Information** |
| --- | --- | --- | --- | --- |
| Objective – To increase resilience and enhance key adaptive capacity to address the additional risks posed by climate change to water sector in Cape Verde. | *Original INDICATOR:*  Water management plans for municipalities on Santiago and Santo Antão Islands where the project is active explicitly consider climate change risks and opportunities (e.g. counts on a technically sound and widely endorsed *‘climate change adaptation annex’* or *‘addendum’*) | Plans are not climate-proof | Plans are climate-proof | Verification by independent mid-term and final evaluations of the project |
| Incidence( % of population) of food insecurity in the communities targeted by project interventions | To be determined through assessment | Reduction in 25% the incidence of food insecurity in the communities targeted by project interventions |  |
| Dietary diversity indicator of the communities targeted by project intervention | To be determined through assessment | Increase in 25% of the population who present diversify diet in the communities targeted by project intervention |  |
| Percentage of non-external state budget allocated to manage climate change risk ( data collection and analysis, risk assessment and climate change adaptation programs) |  |  | Development of assessment guidelines for budget review…  Monitoring of State non-external budget |
| % of water mobilization investment’s decisions and authorizations based on water balance monitoring system on the target zones  Water availability for agriculture production on the target communities…. |  |  |  |
| Outcome 1 – Climate change risks and adaptation measures integrated into key national policies, plans and programs for water resource management. | 1. Key policy frameworks, programs and investments plans relevant for the agriculture, food security and water sector effectively incorporate climate risk consideration and adaptation measures as assessed through the  UNDP Climate Screening Methodology  # of planning department ( at line-ministries and local level) that apply climate-proofing tools on their planning and budgeting process. | Superficial level of incorporation | Increase by 50% over baseline | Application of the UNDP Climate Screening Methodology. Key policies include the PNIA, ENSA, |
| Climate-related pest and diseases’ early warning system fully operational at local and central level  # policy and program documents which diagnosis are based on climate data analysis | There is no early warning system in place; and IPM policies do not consider climate change risk | Increase by 50% over baseline | Qualitative surveys covering selected agencies with results vetted independently by UNDP/GEF upon inception, and by the evaluators by mid-term and project end |
|  |  |  |  |  |
| Outcome 2 – Small and medium scale climate change adaptation practices for water resource management are demonstrated and implemented in selected hydrographical basins | # of farmers who co-participate on implementation of water use efficiency projects  % of families who benefit from demonstration projects that increase yield    Surface ( in Ha) of irrigated land within project intervention sites using water efficiency techniques and measures  % of farmers within targeted communities that introduce new drought-resistant and diversified crops | Utilization measure to be determined by sectoral experts during  inception | Target measure also t.b.d. | Project site maps in Annex 2 provide measure of water availability. Detailed water utilization data needs to be collected. |
| 2. | . |  |  |
| Outcome 3 – Lessons learned and best practices from pilot activities are disseminated, and integrated in national plans and policies. | # of Technical packages produced from demonstration projects which are used by rural extension workers nationwide |  |  |  |
| # of strategic documents and plans( for agriculture, water and food security) which integrate water efficiency incentives’ mechanism |  |  |  |
| # of water management institutions ( local and central level) that use water monitoring system to control groundwater pumping |  |  |  |

### TOTAL BUDGET AND WORKPLAN

|  |  |
| --- | --- |
| **Award ID** | 00058318 |
| **Project ID** | 00087149 |
| **Award Title:** | 4091 NAPA follow up project in Cape Verde |
| **Business Unit:** | CPV10 |
| **Project Title:** | Building adaptive capacity and resilience to climate change in the water sector in Cape Verde |
| **Implementing Partner** | Cape Verde Government |
| **Lead Coordinating Agency** | DGADR- MDR (Ministry of Rural Development) |
| **Other Implementing Partners** | INIDA (National Institute of Agriculture Research and Development); DGPOG-MDR; DSSA (Service Directorate of Food Security); INGRH/ANAS (National Institute of Water Resources Management) |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Outcome 1** | **Outcome 1: Climate change risks and adaptation measures integrated into key national policies, plans and programs for water resource management** | | | | | | | | | | | | | |  | |
| **Output 1.1. Capacity of relevant agencies to assess climate change impacts in food security are reinforced** | | | | | | | | | | | | | |  | |
| **Responsible Party/ Implementing Agent** | | **Fund ID** | **Donor Name** | **ERP / ATLAS Budget Code** | **Atlas Budget Description** | **Amount Yr1(USD)** | | **Amount Yr2 (USD)** | | **Amount Yr3 (USD)** | | **TOTAL Amount (USD)** | | **Budget notes** | |
| DGADR | | 62040 | CIDA | 71200 | International Consultants | - | | 58,514 | | 38,336 | | 96,850 | | a | |
| DGADR | | 62040 | CIDA | 71300 | Local Consultants | 26,400 | | 12,600 | | 4,200 | | 43,200 | | b | |
| DGADR | | 62040 | CIDA | 71600 | Travel | 18,000 | | 11,800 | | 4,500 | | 34,300 | | c | |
| DGADR | | 62040 | CIDA | 72500 | Supplies | 4,000 | | 2,000 | | - | | 6,000 | | d | |
|  | | 62040 | CIDA | 75700 | Trainings, workshop & conference | - | | 4,500 | | 4,500 | | 9,000 | | e | |
| DGADR | | 62040 | CIDA | 74200 | Audio Visual&Print Prod Costs | 2,000 | | 4,000 | | 4,000 | | 10,000 | | f | |
| ***Total Output 1..1*** | | | | | | **50,400** | | **93,414** | | **55,536** | | **199,350** | |  | |
| **Output 1.2. Awareness of climate change impacts on food security is raised among rural development and health sector decision-makers, technical officers and stakeholders, community associations, farmers, NGO players and the media.** | | | | | | | | | | | | | |  | |
| DGADR | | 62040 | CIDA | 71200 | International Consultants | | - | | - | | - | | - | g | |
| DGADR | | 62040 | CIDA | 71300 | Local Consultants | | 8,800 | | 5,600 | | - | | 14,400 | h | |
| DGADR | | 62040 | CIDA | 72100 | Contractual Services-Companies | | 10,000 | | 15,000 | | 15,000 | | 40,000 | i | |
| DGADR | | 62040 | CIDA | 71600 | Travel | | 6,000 | | 6,600 | | 3,000 | | 15,600 | j | |
| DGADR | | 62040 | CIDA | 72400 | Communic & Audio Visual Equip | | 3,000 | | - | | - | | 3,000 | k | |
| DGADR | | 62040 | CIDA | 75700 | Trainings, workshop & conference | | - | | 4,000 | | 4,000 | | 8,000 | l | |
| DGADR | | 62040 | CIDA | 74200 | Audio Visual&Print Prod Costs | | 4,000 | | 8,000 | | 8,000 | | 20,000 | m | |
| ***Total Output 1.2*** | | | | | | | **31,800** | | **39,200** | | **30,000** | | **101,000** |  | |
| **Output 1.3. Establishment of climate change early warning system for the water sector to support national and municipal development planning and implementation** | | | | | | | | | | | | | |  | |
| DGADR | | 62040 | CIDA | 71200 | International Consultants | | - | | 45,580 | | - | | 45,580 | n | |
| DGADR | | 62040 | CIDA | 71300 | Local Consultants | | - | | 25,200 | | - | | 25,200 | o | |
| DGADR | | 62040 | CIDA | 71600 | Travel | | - | | 5,000 | | 3,000 | | 8,000 | p | |
| DGADR | | 62040 | CIDA | 72100 | Contractual Services-Companies | | - | | 3,000 | | 4,000 | | 7,000 | q | |
| DGADR | | 62040 | CIDA | 72800 | Information Technology Equipmt | | 2,000 | | 7,000 | | 7,000 | | 16,000 | r | |
| ***Total Output 1.3*** | | | | | | | **2,000** | | **85,780** | | **14,000** | | **101,780** |  | |
|  | ***Total Outcome 1*** | | | | | | | **84,200** | | **218,394** | | **99,536** | | **402,130** |  | |
| **Outcome 2** | **Outcome 2: Small and medium scale climate change adaptation practices for water resource management are demonstrated and implemented in selected hydrographical basins** | | | | | | | | | | | | | | | |
| **Responsible Party/ Implementing Agent** | **Fund ID** | | **Donor Name** | **ERP / ATLAS Budget Code** | **Atlas Budget Description** | | **Amount Yr 1(USD)** | | **Amount Yr2 (USD)** | | **Amount Yr3 (USD)** | | **TOTAL Amount (USD)** | **Budget notes** | |
| **Output 2.1.Measures and practices to improve water availability are demonstrated in areas highly vulnerable to food insecurity** | | | | | | | | | | | | | | | |
| DGADR | | 62040 | CIDA | 71200 | International Consultants | | - | | - | | - | | - | s | |
| DGADR | | 62040 | CIDA | 71300 | Local Consultants | | 2,900 | | 3,400 | | 4,400 | | 10,700 | t | |
| DGADR | | 62040 | CIDA | 71600 | Travel | | 3,000 | | 5,000 | | 5,000 | | 13,000 | u | |
| DGADR | | 62040 | CIDA | 72100 | Contractual Services-Companies | | 50,000 | | 100,000 | | 100,000 | | 250,000 | v | |
| DGADR | | 62040 | CIDA | 72300 | Materials & Goods | | 70,000 | | 100,000 | | 100,000 | | 270,000 | w | |
| DGADR | | 62040 | CIDA | 75700 | Trainings, workshop & conference | | - | | 6,000 | | 10,000 | | 16,000 | x | |
| DGADR | | 62040 | CIDA | 74200 | Audio Visual &Print Prod Costs | | - | | 8,000 | | 8,000 | | 16,000 | y | |
| ***Total Output 2.1*** | | | | | | | **125,900** | | **222,400** | | **227,400** | | **575,700** |  | |
| **Output 2.2.Enabling conditions for replication and sustainability ( social, environmental and economic) of targeted interventions are created** | | | | | | | | | | | | | | | |
| DGADR | | 62040 | CIDA | 71200 | International Consultants | | - | | 19,168 | | 29,266 | | 48,434 | aa | |
| DGADR | | 62040 | CIDA | 71300 | Local Consultants | | - | | 4,200 | | 4,200 | | 8,400 | ab | |
| DGADR | | 62040 | CIDA | 71600 | Travel | | - | | 6,000 | | 6,000 | | 12,000 | ac | |
| DGADR | | 62040 | CIDA | 72100 | Contractual Services-Companies | | 4,000 | | 6,000 | | 6,000 | | 16,000 | ad | |
| DGADR | | 62040 | CIDA | 72500 | Supplies | | - | | 2,000 | | 2,000 | | 4,000 | ae | |
| DGADR | | 62040 | CIDA | 74200 | Audio Visual & Print Prod Costs | | - | | 4,000 | | 4,000 | | 8,000 | af | |
| DGADR | | 62040 | CIDA | 75700 | Trainings, workshop & conference | | - | | 4,000 | | 4,000 | | 8,000 | ag | |
| ***Total Output 2.2.*** | | | | | | | **4,000** | | **45,368** | | **55,466** | | **104,834** |  | |
|  | ***Total Outcome 2*** | | | | | | | **129,900** | | **267,768** | | **282,866** | | **680,534** |  | |
| **Outcome 3** | **Outcome 3. Lessons learned and best practices from pilot activities, capacity development initiatives and policy changes are disseminated** | | | | | | | | | | | | | | | |
| **Output 3.1.Applied research program on climate-smart agriculture and food security is strengthened** | | | | | | | | | | | | | | | |
| **Responsible Party/ Implementing Agent** | | **Fund ID** | **Donor Name** | **ERP / ATLAS Budget Code** | **Atlas Budget Description** | | **Amount Yr 1(USD)** | | **Amount Yr2 (USD)** | | **Amount Yr3 (USD)** | | **TOTAL Amount (USD)** | **Budget notes** | |
| DGADR | | 62040 | CIDA | 71200 | International Consultants | | - | | 19,168 | | 19,168 | | 38,336 | ah | |
| DGADR | | 62040 | CIDA | 71300 | Local Consultants | | 4,000 | | 6,000 | | 6,000 | | 16,000 | ai | |
| DGADR | | 62040 | CIDA | 71600 | Travel | | - | | 4,500 | | 4,500 | | 9,000 | aj | |
| DGADR | | 62040 | CIDA | 72100 | Contractual Services-Companies | | 20,000 | | 220,000 | | 140,000 | | 380,000 | ak | |
| DGADR | | 62040 | CIDA | 72300 | Materials & Goods | | 5,000 | | 15,000 | | 20,000 | | 40,000 | al | |
| DGADR | | 62040 | CIDA | 72500 | Supplies | | 5,000 | | 5,000 | | 5,000 | | 15,000 | am | |
| DGADR | | 62040 | CIDA | 72800 | Information Technology Equipmt | | 5,000 | | 6,000 | | 6,000 | | 17,000 | an | |
| DGADR | | 62040 | CIDA | 74200 | Audio Visual &Print Prod Costs | | - | | 8,000 | | 14,000 | | 22,000 | ao | |
| **Total Outcome 3** | | | | | | | **39,000** | | **283,668** | | **214,668** | | **537,336** |  | |
| **Project Management, Monitoring and Evaluation** | | | | | | | | | | | | | | | |
| DGADR | | 62040 | CIDA | 71400 | Contractual Services – Individ. | | 10,000 | | 32,500 | | 32,500 | | 75,000 | aq | |
| DGADR | | 62040 | CIDA | 71600 | Travel | | 6,000 | | 7,000 | | 7,000 | | 20,000 | ar | |
| DGADR | | 62040 | CIDA | 72300 | Materials & Goods | | 4,000 | | 5,000 | | 5,000 | | 14,000 | as | |
| DGADR | | 62040 | CIDA | 72100 | Contractual Services-Companies | | 3,000 | | 8,000 | | 8,000 | | 19,000 | at | |
| DGADR | | 62040 | CIDA | 72500 | Supplies | | 2,000 | | 6,000 | | 6,000 | | 14,000 | au | |
| DGADR | | 62040 | CIDA | 72800 | Information Technology Equipmt | | 10,000 | | 2,000 | |  | | 12,000 | av | |
| DGADR | | 62040 | CIDA | 73400 | Rental & Maintenance of Other Equip. | | 4,000 | | 7,000 | | 7,000 | | 18,000 | aw | |
| DGADR | | 62040 | CIDA | 74500 | Miscellaneous Expenses | | 2,000 | | 3,000 | | 3,000 | | 8,000 | ax | |
|  | | | | | | | **41,000** | | **70,500** | | **68,500** | | **180,000** |  | |
|  | ***Total Outcome 4*** | | | | | | | 41,000 | | 70,500 | | 68,500 | | 180,000 |  | |
|  | **GMS** | | | | | | | | | | | | | | | |
|  |  | | 62040 | CIDA | **75100** | Facility and Administration | | **31,300** | | **68,750** | | **79,950** | | **180,000** | |  |
|  | **Total Project** | | | | | | | **325,400** | | **909,080** | | **745,520** | | **1,980,000** | |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Budget Note** | **Account** | **Account Description** | **Description** | **Y1** | **Y2** | **Y3** | **Total** |
| **Output 1.1.Climate change risks and adaptation measures integrated into key national policies, plans and programs for water resource management** | | | |  |  |  |  |
| a | 71200 | International Consultants | (*Year 2*) International consultant to support design of tools for mainstreaming CC risk on sectorial planning, programming and budgeting. 1 international consultant in two missions (capacity building & technical assistance).30 days by mission @$650/effort day + Living allowance ($257/ calendar day) *(Year 3)* International Technical assistance to reinforce design and monitoring of food security and nutritional indicators. 2 mission of 20 days mission @ $650/effort day + Living allowance ( $257/ calendar day) |  | 58,514 | 38,336 | 96,850 |
| b | 71600 | Local consultants | *(Year 1)*.Technical assistance for design, coordination and analysis support on the gender-sensitive socio-economic assessment of livelihoods and land tenure schemes that determine food insecurity. ( 20 days @ $140/effort day) *(Year 1)*.Technical assistance for sites-specific detail and update of food security assessment and mapping (GIS basic training & support). (40 days @ $140/effort day) *(Year 1)*. Field surveyors for assessments. 20 surveyors by island (ST & SA) \* 15 days @ $30/effort day *(Year 2)*.Local consultant to support design of tools for mainstreaming CC risk on sector planning, programming and budgeting and conduct training. 2 local consultants (45 days each @ $140/ effort day) *( Year 3)* National assistance to sector-specific and national statistics departments. 1 consultant 30 days @ $140/effort day) | 26,400 | 12,600 | 4,200 | 43,200 |
| c | 71600 | Travel | *(Year 1).*Travel & field mission allowance for local surveyors. 20 persons by 2 islands per 15 days @ $30/day *(Year 2 & 3)* Travel associated with international & national consultancies Travel associated with training participants from other islands (10 participant by training \* 4 trainings @ approximately $220/return domestic ticket between islands. | 18,000 | 11,800 | 4,500 | 34,300 |
| d | 72500 | Supplies | Supplies for field inventory Supplies ( material for trainings) | 4,000 | 2,000 |  | 6,000 |
| e | 75700 | Trainings, workshop & conference | Catering for training and workshops |  | 4,500 | 4,500 | 9,000 |
| f | 74200 | Audio Visual & Print Prod Costs | Edition of mainstreaming manuals/ guidelines/ technical briefings Cartography production and edition | 2,000 | 4,000 | 4,000 | 10,000 |
| ***Total Output 1.1.*** | | | | **50,400** | **93,414** | **55,536** | **199,350** |
| **Output 1.2. Awareness of climate change impacts on food security is raised among rural development and health sector decision-makers, technical officers and stakeholders, community associations, farmers, NGO players and the media.** | | | |  |  |  |  |
| g | 71200 | International Consultants |  |  |  |  | - |
| h | 71300 | Local Consultants | *(Year 1)* Local consultant to support design & monitoring of nutritional assessment. 1 consultant for 20 days @ $140/effort day (*Year 1*) Field surveyors on nutritional assessments of target communities. Additional days for surveyors listed on output 1.1. 20 surveyors by 2 islands, 5 additional days @$ 30/day (*Year 2*). Local trainers for technical officers and key stakeholders training. 2 consultants by 20 days each @ 140/effort day | 8,800 | 5,600 |  | 14,400 |
| i | 72100 | Contractual Services-Companies | MoU with local radios for programs and spots (awareness raising); Technical training & awareness raising with Parliamentarians members; journalists; sector planners | 10,000 | 15,000 | 15,000 | 40,000 |
| j | 71600 | Travel | (*Year 1*). Travel+ field mission allowance associated with Field survey 20 persons by 2 islands per 5 days @ $30/day (*Year 2*). Travel associated with training participants from other islands (10 participant by training \* 3 trainings @ approximately $220/return domestic ticket between islands. Travel associated with awareness raising campaigns | 6,000 | 6,600 | 3,000 | 15,600 |
| k | 72400 | Communic & Audio Visual Equip | Equipments to support awareness raising campaigns & documentation | 3,000 |  |  | 3,000 |
| l | 75700 | Trainings, workshop & conference | Catering for training and workshops |  | 4,000 | 4,000 | 8,000 |
| m | 74200 | Audio Visual & Print Prod Costs | Awareness raising tools design & education materials  Documentaries production/ emission | 4,000 | 8,000 | 8,000 | 20,000 |
| ***Total Output 1.2.*** | | | | **31,800** | **39,200** | **30,000** | **101,000** |
| **Output 1.3.Establishment of climate change early warning system for the water sector to support national and municipal development planning and implementation** | | | |  |  |  |  |
| n | 71200 | International Consultants | International consultancy to reinforce national capacities on climate data analysis (downscale & forecasting). 45 days @ $700/effort day and living allowances associated with lump sum contract |  | 45,580 |  | 45,580 |
| o | 71300 | Local Consultants | Local technical assistance for IPM practices review and adjustments proposals. 3 local consultancies for 60 days @ $140/effort day |  | 25,200 |  | 25,200 |
| p | 71600 | Travel | International Travel associated with international consultancy Local travel associated with local consultancy |  | 5,000 | 3,000 | 8,000 |
| q | 72100 | Contractual Services-Companies | Development of crowd-sourcing applications for pest early detection and warning system. |  | 3,000 | 4,000 | 7,000 |
| r | 72800 | Information Technology Equipmt | Equipments to support early warning system | 2,000 | 7,000 | 7,000 | 16,000 |
| ***Total Output 1.3.*** | | | | **2,000** | **85,780** | **14,000** | **101,780** |
| **Total OUTCOME 1** | | | | **84,200** | **218,394** | **99,536** | **402,130** |
| **Output 2.1.Measures and practices to improve water availability are demonstrated in areas highly vulnerable to food insecurity** | | | | | | | |
| s | 71200 | International Consultants |  |  |  |  | - |
| t | 71300 | Local Consultants | (*Year 1 & 2*) Technical design and sizing of water pumping system and RE energy systems. 3 consultants for 20 days @ $140  (*Year 1, 2 & 3*) Capacity development for systems design, sites identification for pilot cloud harvesting and RE system maintenance | 2,900 | 3,400 | 4,400 | 10,700 |
| u | 71600 | Travel | (*Year 1*) Domestic Travel associated with local consultancy (*Year 2*)Travel associated with international consultancy . Travel associated with technical training | 3,000 | 5,000 | 5,000 | 13,000 |
| v | 72100 | Contractual Services-Companies | (*Year 1*)Cloud harvesting system installation in mountain areas (*Year 2 & 3*) Research & capacity development protocols with INIDA on most appropriate crops for water recycling use (*Year 2 & 3*) Research protocols with INIDA on high nutritional value and climate-resilient crops | 50,000 | 100,000 | 100,000 | 250,000 |
| w | 72300 | Materials & Goods | Renewable energy (solar & wind) pumping systems equipments | 70,000 | 100,000 | 100,000 | 270,000 |
| x | 75700 | Trainings, workshop & conference | Catering for Technical training for water boards & farmers associations on water recycling; RE based pumping systems |  | 6,000 | 10,000 | 16,000 |
| y | 74200 | Audio Visual&Print Prod Costs | Technical training manual and materials edition |  | 8,000 | 8,000 | 16,000 |
| ***Total Output 2.1.*** | | | | **125,900** | **222,400** | **227,400** | **575,700** |
| **Output 2.2.Enabling conditions for replication and sustainability ( social, environmental and economic) of targeted interventions are created** | | | | | | | |
| aa | 71200 | International Consultants | Capacity development of financial schemas design for scale up RE pumping system. 1 consultant for 20 days @ $650/effort days and living allowances associated with contract Capacity development for participatory project’ identification and formulation in support of customized technologies and development of social technologies 1 consultant for 30 days @ $650/effort days and living allowances associated with contract |  | 19,168 | 29,266 | 48,434 |
| ab | 71300 | Local Consultants | Technical assistance for costing and feasibility analysis. 2 local consultants for 30 days each @ $140/efforts day |  | 4,200 | 4,200 | 8,400 |
| ac | 71600 | Travel | Travel associated with international consultancy Travel associated with national technical assistance Travel associated with technical training |  | 6,000 | 6,000 | 12,000 |
| ad | 72100 | Contractual Services-Companies | Financial schemas design for system scale up & technical training on customized technologies | 4,000 | 6,000 | 6,000 | 16,000 |
| ae | 72500 | Supplies | Materials for technical training |  | 2000 | 2000 | 4,000 |
| af | 74200 | Audio Visual & Print Prod Costs | Edition of technical guides & materials |  | 4,000 | 4,000 | 8,000 |
| ag | 75700 | Trainings, workshop & conference | Catering for Technical training |  | 4000 | 4000 | 8,000 |
| ***Total Output 2.2.*** | | | | **4,000** | **45,368** | **55,466** | **104,834** |
| **Total OUTCOME 2** | | | | **129,900** | **267,768** | **282,866** | **680,534** |
| ah | 71200 | International Consultants | International assistance for capacity development on water monitoring system design. 1 international consultant for 2 missions of 20 days @ $650/efforts day + living allowances associated with lump sum contract |  | 19,168 | 19,168 | 38,336 |
| ai | 71300 | Local Consultants | Technical assistance for materials & technologies adequacy review Technical assistance for lessons learned systematization & capitalization | 4,000 | 6,000 | 6,000 | 16,000 |
| aj | 71600 | Travel | Travel associated with international consultancies Travel associated with national consultancies |  | 4,500 | 4,500 | 9,000 |
| ak | 72100 | Contractual Services-Companies | Research programme on wastewater reuse in agriculture from a public health perspective and agro-production system sustainability Capacity development to monitor underground water & prepare water balance | 20,000 | 220,000 | 140,000 | 380,000 |
| al | 72300 | Materials & Goods | Materials needed to improve water monitoring systems | 5,000 | 15,000 | 20,000 | 40,000 |
| am | 72500 | Supplies | Supplies for capacity development activities | 5,000 | 5,000 | 5,000 | 15,000 |
| an | 72800 | Information Technology Equipmt | Equipments needed to improve monitoring systems | 5,000 | 6,000 | 6,000 | 17,000 |
| ao | 74200 | Audio Visual&Print Prod Costs | Lessons learned publication |  | 8,000 | 14,000 | 22,000 |
|  | **Total OUTCOME 3** | | | **39,000** | **283,668** | **214,668** | **537,336** |
| **Project Management** | | | |  |  |  |  |
| aq | 71400 | Contractual Services - Individ | Coordinator, technical follow up at partner level & admin/financial support staff salaries | 10,000 | 32,500 | 32,500 | 75,000 |
| ar | 71600 | Travel | Monitoring & evaluation related travel Coordination related travel | 6,000 | 7,000 | 7,000 | 20,000 |
| as | 72300 | Materials & Goods | Materials for project coordination | 4,000 | 5,000 | 5,000 | 14,000 |
| at | 72100 | Contractual Services-Companies | Cost for project board meetings | 3,000 | 8,000 | 8,000 | 19,000 |
| au | 72500 | Supplies | Office supplies | 2,000 | 6,000 | 6,000 | 14,000 |
| av | 72800 | Information Technology Equipmt | Computers, printers & office equipments for project coordination | 10,000 | 2,000 |  | 12,000 |
| aw | 73400 | Rental & Maintenance of Other Equip. | Rental of cars for coordination/ rental of transport for goods & materials | 4,000 | 7,000 | 7,000 | 18,000 |
| ax | 74500 | Miscellaneous Expenses | Other expenses associated with coordination | 2,000 | 3,000 | 3,000 | 8,000 |
|  | **Total OUTCOME4** | | | **41,000** | **70,500** | **68,500** | **180,000** |

### IMPLEMENTATION ARRANGEMENTS

The water and sanitation sector in Cape Verde is undergoing a sector-wide institutional reform. The reform is spearheaded by the Ministry of Environment, Land use and Housing, through a National Commission of the Reform supported by the MCA (Millennium Challenge Account) WASH program. As an output of the reform, the national partner INGRH (National Institute of Water Resource Management) responsible for the LDCF project implementation will be extinct and a national agency for water and sanitation will be created.

Considering the ongoing reform and the additional expertise required by the new focus on food security brought in by the CIDA Climate Change Fast Start financing, the implementing partner will shift to the Directorate General of Agriculture, Forestry and Animal-Husbandry ( DGASP) as part ofthe Rural Development Ministry. This DG is responsible for the rural extension systems and has the largest decentralized representation across the islands.

DGASP has the responsibilities over the definition, implementation and coordination of policy for agriculture, forestry and animal husbandry, engineering and rural extension and has implemented other large project in partnership with international development agencies.

The DGASP has also competencies over combating desertification; regulation of pesticides and agriculture inputs’ use; forest management; water and soil conservation programs, etc.

Some of the programs implemented with international partners include crops diversification program with the European Union; watershed management with JICA, agro-business development with the Canary Cooperation and hydroponics’ promotion with FAO and Spanish International development cooperation agency ( AECID).This General Directorate counts with technical expertise in the areas of rural engineering, watershed management, pest management, soil and water conservation.

The research activities will be lead by the INIDA (National Agriculture Research Institute) under an implementation contract/agreement with the lead implementing partner who will be responsible for monitoring the implementation of all project components.

As most of the UNDP projects in Cape Verde, this project will be implemented under the NIM (National implementation) modality that follows national procedures to ensure appropriation, alignment with national priorities and reinforcement of public administration management systems.

Project management will be embedded in the national institutions, in order to avoid parallel structures and inefficiencies and duplication associated with them. Technical staff from the implementing partner will be assigned to the project and external technical assistance will be mobilized whenever need. Coordination will be ensured by a project coordination which will be placed at the implementing agency level and will ensure performance of the staff assigned. Financial and fiduciary capacities, disbursement and accounting, audits and inventories will be conducted per UNDP standards based on a detailed assessment of the capacities of the implementing partner.

The composition of the LDCF project technical committee will be slightly reviewed to take into consideration the focus on food security proposed for this new phase. In this sense, the following institutions will be invited to join this committee: i) Service Direction of Food Security of the Ministry of Rural Development; ii) Directorate General of Planning, budget and management of the Ministry of Rural Development; iii) National Institute of Gender equity and equality (ICIEG); iv) FAO (Food and Agriculture organization). The INGRH will be substituted by ANAS, whenever the new agency will be established and operational. From the list of previous members the following will be maintained:

1. United Nations Development Program ( UNDP)
2. INGRH/ANAS: National Water Resources Management Institute/ National Agency of water and sanitation
3. Directorate General of Environment
4. Directorate General of Agriculture, forestry and animal husbandry
5. Directorate General of Planning, budget and management of the Ministry of Environment, Land use and Housing
6. National Institute of Agriculture Research and Development (INIDA)
7. National Meteorological and Geophysics Institute ( INMG)
8. National Civil Protection Service ( SNPC)
9. National NGO Platform
10. Directorate General of Basic and Secondary Education
11. National Association of municipalities of Cape Verde (ANMCV)
12. National Directorate of External affairs and cooperation
13. Directorate General of Health
14. Directorate General of Plan of the Ministry of Finances and Planning

For the steering committee, the composition will remain the same, since it integrates already both the Ministry of Rural Development, the Ministry of Environment and UNDP (at the country and regional office level).

### M&E FRAMEWORK

Standard UNDP quarterly, half-year and annual reports, budget revisions and assessments will be conducted. Technical and progress reports will encompass both the LDCF and CIDA funding. Auditing and financial reports will be conducted per UNDP rules and regulations and an independent evaluation will be conducted at the end of the project lifetime.

1. National Growth and Poverty Reduction Strategic Paper III [↑](#footnote-ref-2)