# 3.0 Cape Verde

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| CAR | Central African Republic |
| CCAA | Climate Change Adaptation in Africa program |
| CV-MEA | Cape Verde Ministry of Environment and Agriculture |
| CV-MEAF | Cape Verde Ministry of Environment, Agriculture and Fisheries |
| DFID | Department for International Development (UK) |
| GEF | Global Environment Facility |
| GIS | Geographical Information Systems |
| IDRC | International Development Research Centre |
| IOC | Intergovernmental Oceanographic Commission |
| LDC | Least Developed Country |
| LDCF | Least Developed Countries Fund |
| NAPA | National Adaptation Program of Action |
| PANA II | Second National Environment Action Plan |
| PRSP | Poverty Reduction Strategy Paper |
| UNDP | United Nations Development Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |

**A. Adaptation Needs and Priorities**

Cape Verde, an archipelago country of volcanic origin, has a highly fragile ecosystem that is vulnerable to extreme natural phenomena. This current level of vulnerability will be compounded by climate projections that depict a hotter, drier future for Cape Verde—up to a 4°C rise in temperature and a decline in rainfall of up to 20 per cent by 2100. Recent models for sea level rise, which take into account melting of the Greenland ice fields, point to an increase of up to 1.4 meter on average across the globe in the same period (Turner, 2009). In the more immediate planning horizon (next 10-20 years), climate induced changes in Cape Verde include seasonal water shortages and an increase in climate variability that is likely to result in more storms, floods, droughts and a shorter rainy season.

As a Small Island Developing State and former least developed country (LDC), Cape Verde faces specific challenges associated with its small size, inadequate infrastructure and lack of natural resources. Barriers to the effective implementation of adaptation action include:

limited technical capacity to develop and implement specific measures; the lack of complete data and of instruments for modeling and developing of climate scenarios; and institutional limitations that makes legislation implementation difficult (e.g. the proliferation of institutions operating in the sector without an efficient coordination mechanism, a deficiency in the functioning of the regulatory entity, overlapping of attributions among State institutions, deficient knowledge of the law by the institutions and poor participation of the population) (UNDP, 2010a).

In 2000, Cape Verde submitted its first National Communication, which highlights key vulnerable sectors and adaptation strategies. The analysis of climate change impacts and coping strategies initiated in this report was further detailed in Cape Verde's National Adaptation Program of Action (NAPA) submitted in 2007 (CV-MEA, 2007). According to its content, the communities that will be most affected by climate change are those that already face social and economic challenges. This includes: communities that cultivate marginal and degraded land; those that live in poverty; those touched by HIV/AIDS and other infectious diseases; those facing conflicts related to natural resources; marginalized communities; and other communities whose voices weigh very little in the national decision-making processes (CV-MEA, 2007).

To address the country's vulnerability to climate change, particularly its communities at greatest risk, Cape Verde's NAPA identifies three priority sectoral objectives:

- 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;
- Developing the adaptability of agro-silvo-pastoral production systems in order to ensure and improve national food production; and
- Protecting and preventing degradation of the coastal zones, caused by extreme climatic events and tourism.

The NAPA also identified 16 priority actions that address some of the above three sectoral objectives. These priority actions are:

1. Construct infrastructures for collection, supply and storage of water and recharge of aquifers
2. Reinforce actions to protect watersheds in order to improve food security
3. Diversify income-generating activities in rural areas
4. Modernize and diffuse localized irrigation technologies
5. Invest strongly in environmentally sustainable production techniques
6. Use varieties and species that are adaptable to changing climatic conditions

7. Diversify activities and measures to support the populations that live off the exploitation of coastal resources
8. Support diversification of alternative activities to artisanal fishing (e.g. training, equipment, micro-credit)
9. Continue the actions of preservation and management of protected areas
10. Rehabilitate and/or construct infrastructures for protection of coastal zones
11. Strengthen equipment and modernization of artisanal fishing
12. Support implementation of initiatives to use renewable energies (solar and wind) in particular at the level of rural communities
13. Modernize the network of climate and maritime monitoring station
14. Stimulate production and establishment of endemic plants
15. Conserve and sustainably use medicinal species
16. Promote research on species that are threatened and vulnerable to the climate change

Moreover, the NAPA recommends that Cape Verde's adaptation efforts be implemented through four cross-cutting strategic approaches:

- Information, education and communication campaigns for stakeholders on the risks due to climate change and climate variability;
- Capacity development for stakeholders regarding adaptation to climate change and climate variability at the institutional, organizational and individual level. Capacity building activities are further detailed for each sectoral objective and include, for example: training of stakeholders; technical, material and organizational support to institutions and community-based organizations; rehabilitation and transformation of rainfall stations into climatological or agro-meteorological stations; and qualification of the decentralized and communitarian governmental structures;
- Increased investment in adaptive conservation and soil protection measures; and
- Action-research in order to improve the resilience of the population and ecosystems.

**B. National Level Policies and Strategic Documents**

On account of the insularity and vulnerability that characterize the country, the development strategy of Cape Verde has been elaborated with the aim of integrating environmental issues into planning processes and promoting sustainable development. Reflecting this commitment, Cape Verde's NAPA recommends that it be implemented in connection with the country's: 2006-2011 Government Program; Growth and Poverty Reduction Strategy (CV-MFP, 2010); National Program to Fight against Poverty; and second National Environment Action Plan (PANA II) 2004-2014 (CV-MEAF, 2004).

The needs of Cape Verde with respect to supporting the integration of adaptation into policy processes were further elaborated through the project "Integrating Climate Change Risks and Opportunities into National Development Processes and United Nations Country Programming: Cape Verde"[109] implemented in partnership with UNDP between 2008 and 2010. Through this project, UNDP led an assessment of climate change risk and opportunities related to Cape Verde's *"Documento de Estratégia de Crescimento e Redução da Pobreza–II"* (Poverty Reduction Strategy Paper II, or PRSP II, in English)[110] (Santos, 2010). Based on the review, a set of adaptation measures was identified for consideration by Cape Verdean authorities and development partners involved in the implementation of the PRSP (UNDP, 2010a). PRSP-II is to be updated prior to its conclusion in 2011 and it is hoped that the screening and workshop supported by this project will influence its content.

Through the project it also was recognized that significant potential exists to enhance integration of climate risk and adaptation opportunities in Cape Verde simply through promoting networking and contacts between information "providers" and "beneficiaries" on climate and development. Other recommended policy actions that could improve Cape Verde's adaptive capacities include (UNDP, 2010a):

- the introduction of a specific chapter on climate change in the National Environmental Action Plan (PANA-II) in its next revision process;
- the promotion of climate change as a priority theme for the National Environmental Counsel;
- the creation of a national, public database of experts in the different areas pertaining to climate change and its interaction with development;
- The creation of a climate change commission comprising of recognized technical and scientific experts in relevant fields;
- The introduction of a requirement for Environmental Impact Assessments for projects with significant potential impacts on the environment and ensure that recommendations and limitations by relevant supervisory bodies are enforced;
- Awareness raising of the Civil Protection Agency's National Platform on the issues of climate risk and associated disaster risk reduction and response;
- The development of conservation plans for corals, whales and birds, duly integrating climate change; and
- The reinforcement of the message to policy makers and executive agencies that plans and policies are necessary but insufficient alone: these must be enacted, inspected and their enforcement assured.

[109] http://www.adaptationlearning.net/project/integrating-climate-change-risks-and-opportunities-national-development-processes-and-unite-2
[110] PRSP-II is the development document with the broadest impact in the country since it provides key direction to national authorities on actions to be undertaken.

**Table 1: Key Government Policies and Reports reflecting Adaptation Needs, Priorities and Planned Actions**

| Name of Policy Action | | Government Division Responsible | Status | Summary description |
|---|---|---|---|---|
| 1. | National Communication on Climate Change (CV-MAFE, 2000) | Ministry of Agriculture, Food and Environment | Released in 2000 | This document describes the steps Cape Verde is taking and envisages undertaking to implement the UNFCCC. It underlines key vulnerabilities (agriculture/food security, coastal zones and marine ecosystems, water resources, terrestrial ecosystems and tourism) as well as potential adaptation measures. |
| 2. | National Adaptation Program of Action on Climate Change (CV-MEA, 2007) | Ministry of Environment and Agriculture | Released in 2007 | The NAPA identifies national and regional climate change impacts and climate change adaptation measures to address those impacts. A total of 16 priority interventions have been identified. |

## C. Current Adaptation Action

Since 2007, several adaptation projects have been undertaken under the guidance of international organization in Cape Verde that responded to the three priority sectoral objectives identified in its NAPA (i.e. promoting integrated water resources management; protecting and preventing degradation of the coastal zones; and developing the adaptability of the agro-silvo-pastoral production systems). Several of these projects focus on coastal management and water resources management. No current project directly targets Cape Verde's agriculture sector. However, the project "Building Adaptive Capacity and Resilience to Climate Change in the Water Sector in Cape Verde" funded through the Least Developed Countries Fund (LDCF)[111] may benefit to it sector as irrigation issues are common to both the agriculture and freshwater sectors.

**Table 2: Current Adaptation Actions in Cape Verde**

| Name | | Objectives | Funder(s) | Implementing Agency(s) | Type of project | Duration | Focus Area(s) | Geographic focus (if any) |
|---|---|---|---|---|---|---|---|---|
| **National Actions** | | | | | | | | |
| 1. | Building Adaptive Capacity and Resilience to Climate Change in the Water Sector in Cape Verde[112] | To increase resilience and enhance key adaptive capacity to address the additional risks posed by climate change to the water sector in Cape Verde. | LDCF | UNDP; National Institute for Water Resources Management | Capacity building | 2009 - ? | Freshwater supply | |

[111] The proposal for this project was submitted to the LDCF in 2007, prior to Cape Verde moving out of the LDC group in 2008.
[112] http://www.adaptationlearning.net/project/building-adaptive-capacity-and-resilience-climate-change-water-sector-cape-verde

| Name | | Objectives | Funder(s) | Implementing Agency(s) | Type of project | Duration | Focus Area(s) | Geographic focus (if any) |
|---|---|---|---|---|---|---|---|---|
| **Participation in Regional and Global Initiatives** | | | | | | | | |
| 2. | Adaptation to Climate Change: Responding to coastline change and its human dimensions in West Africa through Integrated Coastal Area Management[113] | The overall objective of the project is to mainstream adaptation to climate change into Integrated Coastal Area Management planning in the participating countries through the development and implementation of pilot adaptation activities in response to shoreline change. This will involve the development of strategies, policies and measures, based on technical/scientific information and appropriate policy instruments. A major preliminary objective will therefore be to pilot adaptation activities in a local to sub-regional context. There is a strong rationale for addressing the issue of adaptation and shoreline change not only at the national level but also through the development of a regional approach. | GEF Trust Fund | UNDP-GEF, UNESCO/IOC | Policy formation and integration; Field implementation | 2006 – 2010 | Coastal zone management | *Regional:* Cape Verde, The Gambia, Guinea-Bissau, Mauritania, Senegal |
| | | | *In Cape Verde: Not available* | | | | | |
| 3. | Interdisciplinary and Participative Research on Interactions between Ecosystems, Climate and Societies in West Africa[114] | The project will identify the relations between ecosystem vulnerabilities and human populations in order to scientifically support political responses to climate change. | France's Foreign Affairs Ministry | Agence inter établissements de la recherche pour le développement (Inter-institutional Research Agency for Development) | Research | 2007 – 2011 | Ecosystem conservation | *Regional:* Benin, Burkina Faso, Cameroon, Cape Verde, CAR, Chad, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Mali, Mauritania, |

[113] http://www.gefonline.org/projectDetailsSQL.cfm?projID=2614
[114] http://www.aird.fr/ripiecsa/index.htm.

| Name | | Objectives | Funder(s) | Implementing Agency(s) | Type of project | Duration | Focus Area(s) | Geographic focus (if any) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Niger, Nigeria, Senegal, Togo |
| | | | *In Cape Verde: Not available* | | | | | |
| 4. | Adapting Fishing Policy to Climate Change with the Aid of Scientific and Endogenous Knowledge[115] | This project aims to improve fishing practices and policies in the face of climate change in six countries. It will do so by facilitating twice-yearly meetings at three levels (sub-regional, national and local), bringing together political decision-makers, researchers, representatives of fisher associations and managers of projects and programs. The researchers will gather scientific and endogenous knowledge that will allow the participants to explore together various possible scenarios and evaluate different adaptation strategies. | Canada | IDRC; Environment and Development Action in the Third World | Capacity building; Policy formation and integration; Research | 2008 – 2011 | Fisheries | *Regional:* Cape Verde, Gambia, Guinea, Guinea-Bissau, Mauritania and Senegal |
| | | | *In Cape Verde:* Not available | | | | | |
| 5. | CapaSIDS: Capacity Building and Knowledge on Sustainable Responses to Climate Change in Small Island States[116] | This project aims to enable municipal governments in SIDS to incorporate climate change adaptation into their long-term planning and decision-making. Researchers will facilitate participatory scenario development and analysis in two municipalities, São Vicente in Cape Verde and São Tomé in São Tomé e Principe. Geographical information system tools will be used to help stakeholders visualize the impacts of their socioeconomic and climate change scenarios, and to appraise a number of adaptation options. | DFID and IDRC through the CCAA program | Instituto De Engenharia Mecanica | Research; Capacity building | 2009 – 2012 | Disaster risk management; Urban areas | *African:* São Tomé e Principe, Cape Verde |
| | | | *In Cape Verde:* Not available | | | | | |

[115] http://www.idrc.ca/en/ev-139740-201_104682-1-IDRC_ADM_INFO.html
[116] IDRC, http://www.idrc.ca/ccaa/ev-148720-201_105838-1-IDRC_ADM_INFO.html

| Name | | Objectives | Funder(s) | Implementing Agency(s) | Type of project | Duration | Focus Area(s) | Geographic focus (if any) |
|---|---|---|---|---|---|---|---|---|
| 6. | Integrating Climate Change Risks and Opportunities into National Development Processes and United Nations Country Programming[117] | The purpose of the project was to develop the capacity of UN staff and Government stakeholders to integrate risks and opportunities of climate change in national programming and development policies, such as their United Nations Development Assistance Framework, sectoral programs, and development plans. | Spain<br><br>*Budget:* US$1.2 million | UNDP | Policy formation and integration | 2008 – 2010 (closed) | Government | *Global:* Colombia, Cape Verde, El Salvador, Malawi and Nicaragua |
| | | | *In Cape Verde:* The project team undertook a risk screening analysis of the One UN Program (2006-2010) to identify climate risks, adaptation opportunities, risks of maladaptation, and potential adaptation measures to manage the risks. More recently, the second phase of the project related to government stakeholders and development plans was completed. The project team evaluated the PRSP and highlighted key adaptation measures for Cape Verde. | | | | | |

## D. Proposed Adaptation Action

The set 16 priority interventions identified in Cape Verde's NAPA are listed in Table 3 below. These priority interventions have been further developed into five project concepts, of which three are described below in Table 4 and identified in Table 3 with respect to the priorities it addresses (some priorities are not addressed by any specific projects). According to Cape Verde's NAPA, the remaining two projects that are not described in Table 4 are to be circulated for financial support at a later date.

Other projects were identified by UNDP as part of the project "Integrating Climate Change Risks and Opportunities into National Development Processes and United Nations Country Programming" and other initiatives.

[117] http://www.adaptationlearning.net/project/integrating-climate-change-risks-and-opportunities-national-development-processes-and-unite-2 and UNDP, http://www.undp.org/climatechange/integrating_cc_risks.shtml

**Table 3: Priority interventions identified in Cape Verde's NAPA (2007)**

| Priority interventions | | Project Responding | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| 1. | Construct infrastructures for collection, supply and storage of water and recharge of aquifers | ✓ | | |
| 2. | Reinforce actions to protect watersheds in order to improve food security | | ✓ | |
| 3. | Diversify income-generating activities in rural areas | | ✓ | |
| 4. | Modernize and diffuse localized irrigation technologies | ✓ | ✓ | |
| 5. | Invest strongly in environmentally sustainable production techniques | | ✓ | |
| 6. | Use varieties and species that are adaptable to changing climatic conditions | | | ✓ |
| 7. | Diversify activities and measures to support the populations that live off the exploitation of coastal resources | | | ✓ |
| 9. | Continue the actions of preservation and management of protected areas. | | | ✓ |
| 13. | Modernize the network of climate and maritime monitoring station | | | ✓ |

**Table 4: Priority projects identified in Cape Verde's NAPA and other sources**

| Name | | Objectives | Project Type | Priority Sector(s) |
|---|---|---|---|---|
| 1. | NAPA Project 1:<br>Mobilization and integrated water resources management[118] (MEA 2007) | The specific objectives of this project are to:<br>• Reduce the vulnerability of the water resources sector in face of the negative impacts of climate change and increased capacity for capture, provision and storage of surface waters;<br>• Contribute to sustainable development through integrated and participatory prioritization of natural resources and on the local socio-economic sector; and<br>• Contribute to the improvement of living conditions of target populations, with improvement and amplification of the productive basis of agro-silvo-pastoral and maritime resources | Capacity building<br>Research;<br>Field implementation | Freshwater supply |
| 2. | NAPA Project 2:<br>Modernization and diversification of agricultural production for food security improvement (MEA 2007) | To adapt the agro-silvo-pastoral production systems to the climate change and variability, aiming at reducing food insecurity.<br>Estimated duration: 5 years | Capacity building;<br>Research | Agriculture |

[118] Elements of this project may be addressed through the ongoing project *Building Adaptive Capacity and Resilience to Climate Change in the Water Sector* financed through the LDCF.

| Name | | Objectives | Project Type | Priority Sector(s) |
|---|---|---|---|---|
| 3. | NAPA Project 3: Integrated protection and management of coastal zones (MEA 2007) | Building upon the on-going project "Adaptation to Climate Change: Responding to shoreline Change and its human dimensions in West Africa, through integrated coastal area management," this planned action would seek to increase the capacity of resistance of coastal zones to climate change, through integrated management of the coastal resources, in order to invert the trend of established degradation.<br>Estimated duration: 5 years | Capacity building; Research | Coastal zone management; Marine management |
| 4. | Implement Integrated system for water management related to human settlements and agriculture, from artificial reservoirs, to distribution and irrigation (UNDP, 2010a) | This will prevent evaporative water loss from reservoirs, losses from distribution networks and inefficiencies in irrigation | Field implementation | Freshwater supply; Agriculture |
| 5. | Mapping of hazards and risk zones over the archipelago (UNDP, 2010a) | Such information can support appropriate urban, spatial and economic development planning, including road and other heavy infrastructures. This could result in reduced casualties, material damage, and ecosystem or biodiversity degradation. | Research | Disaster risk management |
| 6. | Capacity building, training and awareness-raising activities (UNDP, 2010a) | There is a need to enhance the technical, infra-structural and institutional capacities to identify and respond to climate change risks. This can include training of technical staff in relevant national authorities and agencies to become better familiarized with tools and methodologies for screening climate risks, and identify when such tools may be beneficial or necessary. | Capacity building; Knowledge communication | |
| 7. | West African Shorelines [119] | This is a five-country project focused on the interconnected coastal and marine environment. In order to maintain or strengthen ecosystem resiliency along the Canary Current coastline, this project will develop and pilot a range of effective coping mechanisms for reducing the impact of climate change induced coastal erosion in vulnerable regions in the five countries in West Africa (Mauritania, Senegal, Gambia, Guinea-Bissau, and Cape Verde) | Field implementation | Coastal zone management |

[119] http://www.undp-adaptation.org/portfolio/projectR.php?id=58

**E. Assessment**

Cape Verde's NAPA is quite detailed and is a great contribution to adaptation action planning for the country. The majority of the priority actions planned by Cape Verde are mainstreamed into three priority projects that are further detailed in the NAPA's Annexes. However, as Cape Verde exited the group of LDCs after completing its NAPA, it has lost some of the financing advantages attached to this designation. This transition may result in the country having greater difficulty in accessing financial resources and, as recognized in its NAPA, could result in budgetary support reduction in some sectors and the removal of incentives to invest in so-called "non-productive" projects.

It is anticipated that Cape Verde will focus its efforts on implementing adaptation action in connection with other policies, as mentioned in Cape Verde's NAPA. This includes integrating climate change adaptation in Cape Verde's Second National Environmental Action Plan, a key environmental piece of legislation, in its next revision process (UNDP, 2010). Institutional reforms, such as the creation of Climate Change Commission and the promotion of climate change as a priority theme for the National Environmental Council (UNDP, 2010), would also increase the capacity of the country to undertake integrated adaptation actions.

An important finding on Cape Verde's adaptation action is that several of the current projects focus on coastal management, fisheries and freshwater resources management, the majority through regional projects. There is no current project that directly targets the agriculture sector. Implementation of the country's two of its planned actions focus on this sector could assist Cape Verde in addressing it sectoral priority of developing the adaptability of agro-silvo-pastoral production systems in order to ensure and improve national food production. A further gap is the absence of gender as a focal point of any current adaptation project or proposed strategy, although these issues may be integrated into the activities of current projects.

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