



Cabo Verde Transformation Agenda: Integrating Climate Change & Sustainable Development

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Climate Change & Sustainable Development

WS 4.4 Sustentabilidade Ambiental e Mudanças Climáticas



Presentation Outline

- **Key challenges for Sustainable Development**
- **What is Climate Change?**
- **Impacts in Africa & Cabo Verde from climate change and unsustainable development**
- Importance of **integrating Climate Change and Sustainable Development** in Cabo Verde's Transformation Agenda, Plans, Budgets
- **Measures to reduce impact and vulnerability:** sustainable and climate smart agriculture, tourism and economic transformation



Key environmental Challenges

- Cape Verde is undergoing an **economic and demographic transition**
- This includes **growing population and urbanisation** which leads to increased stress on land and water resources for domestic use, industry and agriculture
- Expansion of **human settlements and tourist infrastructure** leads to damage to coastal and marine systems
- The use of **wood for fuel** leads to deforestation and land degradation
- A significant proportion of water for drinking and other purposes is produced from **high energy intensive desalination processes** – dependence on fossil fuels at high cost and external dependency

Sustainable development means taking into account the demographic, economic, social and environmental trends in national, sectoral and sub-national development plans, budgets and monitoring systems so *that development is resilient* in the face of long term climate change.



What is Climate Change?

Climate change is now a scientifically established fact. The exact impact of greenhouse gas emission is not easy to forecast and there is a lot of uncertainty in the science when it comes to predictive capability. **But we now know enough to recognize that there are large risks, potentially catastrophic ones...**

(UNDP, HDR 2007/8)

“Climate change is the defining issue of our time. If we do not take urgent action, all our plans for increased global prosperity and security will be undone,”

(UN Secretary General at “Abu Dhabi Ascent”, in May 2014, ahead of UN SG Climate Summit, set for 23 September in New York)

“the consequences of climate change are already being felt, and while present action is insufficient, there are still pathways towards a low carbon future that could minimize the phenomenon's impacts....

Action now is necessary in order to avoid much higher costs in the future.

UN Intergovernmental Panel on Climate Change (IPCC)



What is Climate Change?

- **Climate variability is not new:** the natural variability and the climate fluctuations of the climate system have always been part of the Earth's history
- **BUT:** The rapid build-up of greenhouse gases in the Earth's atmosphere (due to human activity) is fundamentally changing the climate forecast for future generations -- Global warming.

The problem:

- Stocks of **greenhouse gases that trap heat** in the Earth's atmosphere are accumulating at an unprecedented rate due to use of **fossil fuels, land use, and agriculture**
- Current concentrations have reached 380 parts per million (ppm) of carbon dioxide equivalent (CO₂e) exceeding the natural range of the last 650,000 years.
- The earth's average temperature has risen by 0.8 degrees in the period from 1906 to 2005 (IPCC)
- In the course of the 21st Century, average global temperatures could increase by more than 5°C



Impacts of Climate Change?

In General:

- **Rising temperatures** will bring varied changes in weather patterns, ocean currents, regularity of natural habitats and thus biodiversity
- **Sea-level rise** -- leads to salinisation and an intrusion of seawater into freshwater sources, flooding and loss of land, erosion, loss of wetlands and mangroves etc
- **Extreme Weather Events** –
 - Droughts will become more common
 - More intense/ heavier rainfall and flooding
 - Hurricanes, more frequent and more intense
- **Ecosystems** – loss of biodiversity, species loss



Impacts of Climate Change?

Africa is extremely vulnerable due to poverty and low adaptive capacity

Agricultural production and food security:

- **Changes** in rainfall patterns and intensity, temperature and water availability has a significant impact of **poor farmers who depend on rainfed agriculture**, operating with limited resources in fragile environments that are sensitive to shifts in temperature and rainfall patterns.
- In **Cabo Verde**: the **wet season has shortened** in the past decades, along with an annual decrease in rainfall. In addition there is increased **soil erosion from extreme high precipitation events** which affects agricultural production and causes siltation of dams (makes it more expensive to maintain).
- There is **potential for reduced agricultural productivity, increased food insecurity, and adverse impact on livelihoods** that could drive poverty and rural-urban migration.



Impacts of Climate Change?

Water stress and water insecurity:

- Changed run-off patterns and glacial melt will compromise flows of water for irrigation and human settlements.
- Even **modest temperature increases** could dramatically change **water availability**.
- In **Cabo Verde**, average temperature has increased by 0.6°C since 1960 and droughts are more common and more protracted since 1970 – there potential for increased water stress and scarcity.

Rising sea levels and exposure to climate disasters:

- In **Cabo Verde** changes to coastal currents and sea level rise leads to increased **coastal flooding and accelerated erosion** and compromise the future of the **tourism and fisheries sector**.
- Rising sea level could lead to degradation of water resources via saline intrusion.
- **Warming seas** will also fuel more intense **storms** and **torrential** rains with devastating consequences on **infrastructure – roads, dams etc.**



Impacts of Climate Change in Africa?

Ecosystems and biodiversity:

- While some animal and plant species will adapt, for many species the pace of climate change is too rapid: climate systems are moving more rapidly than they can follow.
- With 3°C of warming, 20–30 percent of land species could face extinction and some 277 medium or large mammals in Africa would be at risk.

Human health:

- The greatest health impacts will be felt in developing countries because of high levels of poverty and the limited capacity of public health systems to respond. Major killer diseases could expand their coverage.
- For example, an additional 220–400 million people could be exposed to malaria—a disease that already claims around 1 million lives annually.
- In Cape Verde there could be adverse impact on health, and changes in pest and diseases.



Climate Change Vulnerability in Africa



Why Integrate Climate Change and Sustainable Development in Planning?

- The impact of Climate Change will depend on the rapidity of Climate Change and the **underlying vulnerability** of the population and systems exposed to Climate Change hazards.
- There is a strong link between **poverty** and vulnerability to climate change
- **Livelihoods** – climate change impacts on natural resources on which the livelihoods of many poor people depend (agriculture, fisheries, forestry)
- **Social and economic Welfare** -- food and water supply, health, costs to the economy of recovering from extreme events, lost productivity, unsustainable systems of production
- **Climate Change has the potential to undermine human development through adverse impact on resource availability, food security, infrastructure, health and disaster risk.**



Response to Climate Change

CC Mitigation: Reducing the rate and magnitude of CC hazards.

Mitigation is about transforming the way that we produce and use energy i.e. it is about living within the bounds of ecological sustainability.

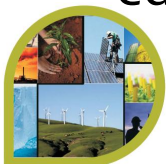
- Set credible targets linked to global mitigation goals as the starting point for the transition to a sustainable emissions pathway.
- More use of renewable energy – wind, solar - (but this won't be sufficient to meet energy needs)
- Improve energy efficiency and reducing pollution – a win win situation as it cuts emissions and costs). Also a significant opportunity for countries that currently have low levels of energy efficiency
- Transport sector -- automobile sector accounts for about 30 percent of greenhouse gas emissions in developed countries—and the share is rising
- Alternative fuels – bio-fuels that are less polluting
- Use of low-carbon technologies in industry/agriculture
- Reduce deforestation – forests act as carbon sinks and also maintain important ecosystem services particularly for the poor



Response to Climate Change

CC Adaptation: *Reducing the consequences of Climate Change hazards. Adaptation is about addressing vulnerability to climate change*

- Develop **national strategies to prepare** for more extreme and less certain future weather patterns (disaster response).
- Responding to climate change will require the **integration** of adaptation into all aspects of policy development and planning for poverty reduction and additional financing. **No regrets**
- Improve access to **meteorological information** and **appropriate technology** (e.g. drought resistant crops etc) is critical for poor rural farmers who depend on rainfed agriculture in Africa to adapt
- **Reduce vulnerability** by climate variability – crop and income diversification, weather linked insurance
- **Infrastructure for water harvesting** can reduce vulnerability and empower people to cope with climate risks.
- **Social protection programs** to help poor people cope with increased risks while expanding opportunities for employment, nutrition and education.



Response to Climate Change

While the uncertainties associated with climate change make strategic planning more difficult, they also make such planning more urgent....

Strategic planning should make use of a range of climate change 'scenarios' to identify resilient development strategies and options that will be viable under a range of conditions.

(Climate Change and Development in Cabo Verde, UNDP)



Thank you for your attention

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