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An Introduction to Adaptation Technologies

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Publication date:
2011

Document Version
Publisher's PDF, also known as Version of record

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Citation (APA):
Trærup, S. L. M. (Author). (2011). An Introduction to Adaptation Technologies. Sound/Visual production (digital)

Technology Needs Assessments

A GEF funded project under the
Poznan Strategic Programme
on Technology Transfer

An Introduction to Adaptation Technologies

Stakeholder information meeting

February 9, 2011

Mauritius

Sara Trærup,
National focal point, URC

Context and definitions

➢ **Adaptation** is defined as "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities." (IPCC)

➢ **Technologies for adaptation**:

"All technologies that can be applied in the process of adapting to climatic variability and climate change"

(UNDP Handbook)

Context and definitions
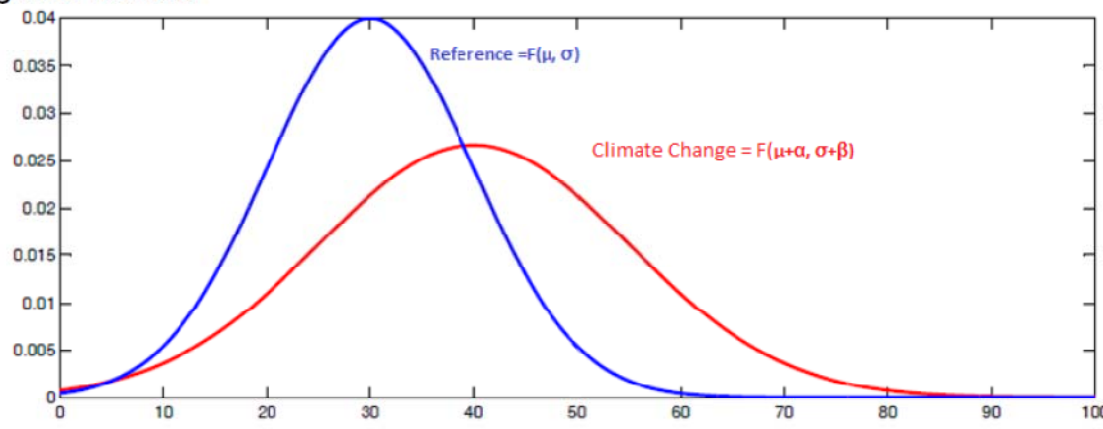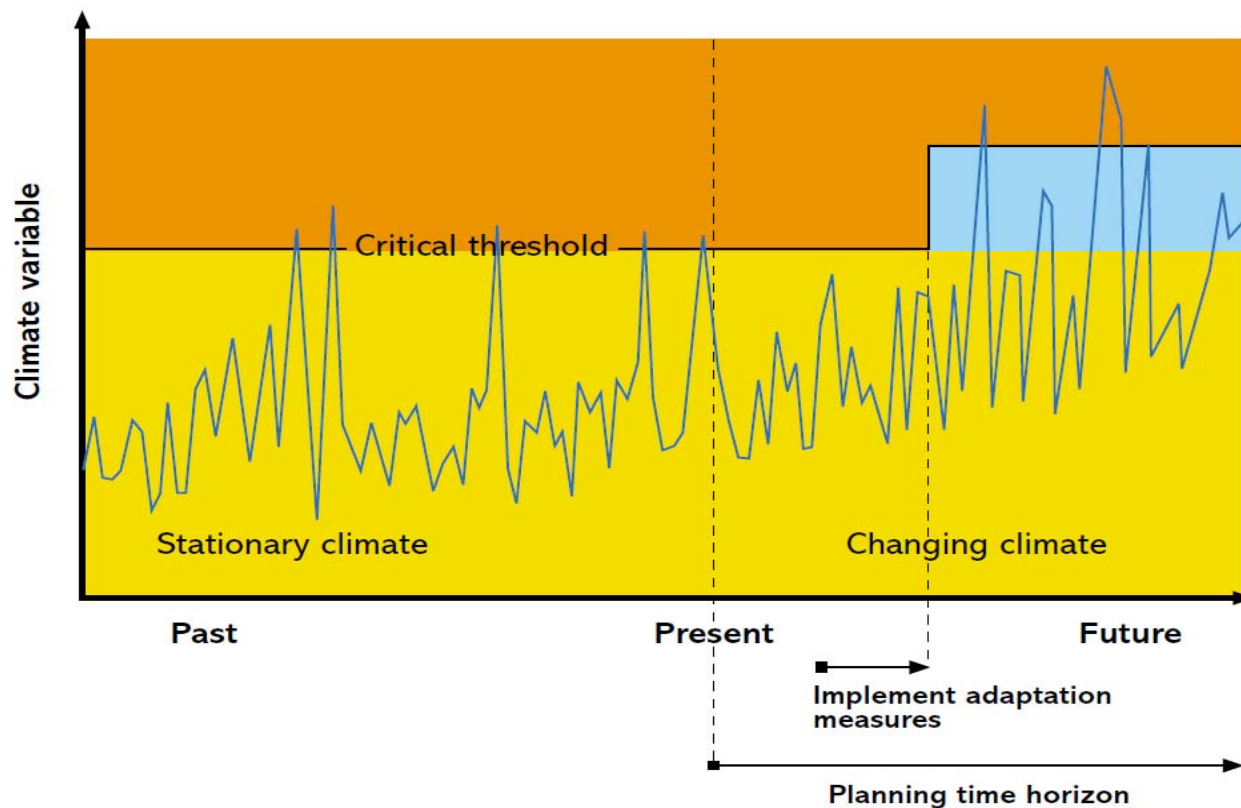
Context and definitions

Different types of adaptation technologies

- **Hard technologies / hardware:** the tangible aspects, such as equipment and products.
- **Soft technologies / software:** the processes associated with the production and use of the hardware, i.e. know-how, experiences and practices
- **Orgware:** the institutional framework, or organization, involved in the adoption and diffusion process of a new technology

Sectors commonly used (IPCC AR4):
- **Agriculture,**
- **Coastal systems,**
- **Health,**
- **Freshwater resources,**
- **Forests and ecosystems**

Characteristics of Adaptation Technologies

- ❑ **Climate adaptation is often the continuation of an ongoing process where the same techniques have been used for generations (e.g. houses on stilts);**

- ❑ **Few technologies are specifically designed for adaptation, rather they respond to broader sustainable development needs (e.g. improved water quality);**

- ❑ **Adaptation technologies are generally less capital intensive, suitable to small-scale interventions and local variations and context;**

- ❑ **The effects/outcomes of adaptation cannot be measured by a single indicator (such as CO_2e emissions), are dependent on future projections;**

- ❑ **Transfers of adaptation technologies does not necessarily follow a north-south approach of equipment exports. Technologies may already be in place but face barriers to implementation and use.**

Demands for Adaptation Technologies (National Communications)
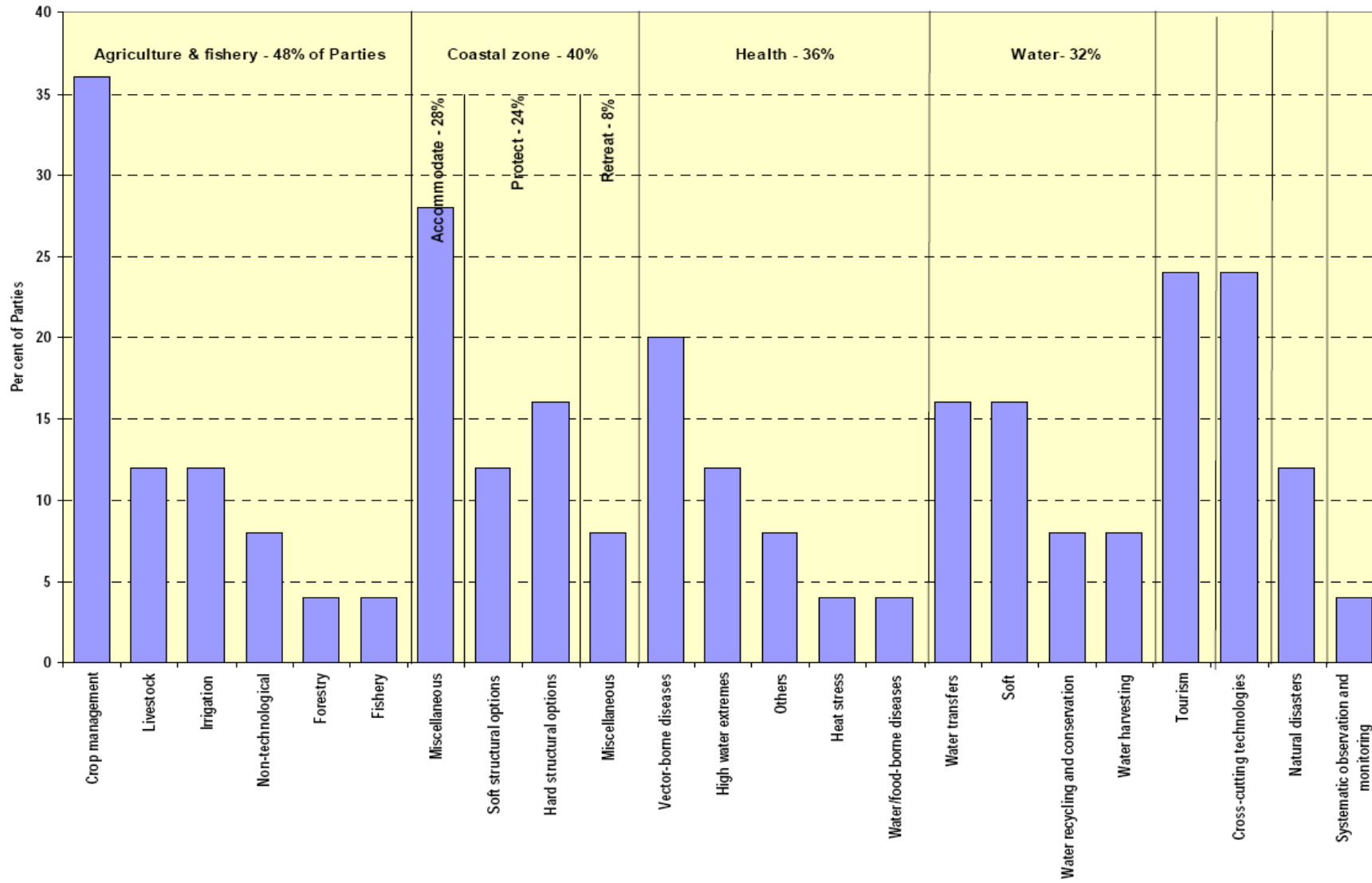
Source: UNFCCC (2006)

Examples of Adaptation Options

Sector	Hardware	Software	Orgware
Agriculture	Crop diversification, introduce new crop type, irrigation, drainage	Research in new (e.g. drought resistant) crop varieties, adjustment of planting dates, training	Local Institutions (e.g. microfinance, seed banks), local warning systems
Fresh water resources	Desalination, increase water reservoir capacity, rainwater harvesting,	Water recycling, monitoring of water resources	Water associations
Infrastructure	Climate proofing bridges, roads, buildings, etc.	Awareness raising & know-how	Urban and rural planning, establish appropriate building codes and standards
Health	Vaccinations, protection of drinking water	Health education, handling of drinking water	Disease monitoring and prevention and treatment planning

Categorization of adaptation technologies

- **When** in the adaptation process they are implemented; technology needs for *anticipatory adaptation (diversification, early warning systems etc)* may be different from the ones suitable for *reactive adaptation* (emergency response, disaster recovery, etc)

- The **climatic zone** in question: tropical, arctic, floodplain, mountains etc.

- The **actors** involved: individuals, community organizations, private sector, local government, international donors

- The **innovation level** of the technology including: (i) *traditional technologies (ii) modern technologies* (iii) *future technologies*

Starting Point

- **National Communications under the UNFCCC: Vulnerability and Adaptation Assessments (V&A)**
    - Address baseline socio-economic scenarios, climate change scenarios, coastal resources, water resources, agriculture, human health etc.
    - Provide essential information on their vulnerability to adverse effects of climate change, and on adaptation measures arising from these effects.

- **Technology needs assessment under the Nairobi Work Program (2006-2010)**
    - Synthesis report prepared by SBSTA on technologies for adaptation identified in the submissions from Parties and relevant organizations

- **CCAP - Climate Change Action Plan, Mauritius (1998)**

- **Technology Needs Assessment and Maintenance and Enhancement of Capacities for Climate Change Activities, Mauritius (2004)**

- **Other activities**
    - **Africa Adaptation Programme, The Republic of Mauritius**
    - **Coastal Zone Management projects**

Guiding Principles - TNA Adaptation Framework

❑ **Practical, comprehensive and adaptation specific approach;**

❑ **Clear, operational definitions/classifications of technologies for adaptation;**

❑ **Flexible and based on national development priorities;**

❑ **Elaborated by partner countries with support from URC and ENDA;**

❑ **Focus on to tackling barriers and provide incentives to the implementation and diffusion of adaptation technologies.**

Thank you

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