

Morocco: Adaptation monitoring as part of the Regional Environmental Information System

Context

► Policy context

In 2009 the Government of Morocco (GoM) adopted its National Plan to Combat Climate Change (PNRC) and currently, the National Climate Change Strategy is being finalised and approved. At the regional level, there is no uniform way of adaptation planning yet. In climate change policy development, GoM initiated a process of decentralising environmental policy planning in 2010 with the launch of the Environmental Charta. Since then, **Regional Observatories on Environment and Sustainable Development (OREDDs)** have been established in each region. They are responsible for the **Regional Environmental Information Systems (SIRE)** where environmental information is being produced and disseminated. In addition, GoM also prepared a law, which is currently under validation, on the right for general information access.

► Purpose of the M&E System

There are three main objectives of the adaptation monitoring system which is currently being set up in two regions: Marrakech Tensif Al Haouz (**MTH**) and Souss Massa Drâa (**SMD**): Firstly, the system aims to assess changes in vulnerability in key sectors. Secondly, it helps monitoring adaptation interventions in the two regions and aims at giving orientations for their improvement and at recommending additional measures. Thirdly, the system is designed for acquiring and systematizing experiences. Thereby, it will contribute to the elaboration of a regional climate change strategy.

► Level of application and aggregation

The system operates at the regional level. It is currently being piloted in the most **vulnerable sectors** (water, agriculture and biodiversity/forests) of the two regions mentioned: MTH and SMD.

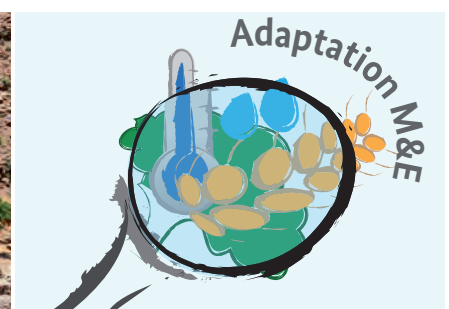
► Status as of October 2013

Since early 2013, the OREDDs – with support from GIZ – have been leading a multi-stakeholder process in MTH and SMD at regional level, also involving the Environmental Department of the Ministry of Energy, Mines, Water and Environment at national level. So far, the methodology for integrating adaptation monitoring into the SIRE has been elaborated and a set of indicators has been identified. The monitoring of adaptation has currently started becoming operational: indicators are being included in the web-based SIRE and the first vulnerability and adaptation report will be produced in early 2014.

Process

► Institutional arrangements

At national level, the Environmental Department in the Ministry of Energy, Mines, Water and Environment is responsible for climate change adaptation and mitigation. The **OREDDs** are, according to their statute, independent from the Ministry. They have the role of monitoring the state of the environment





in their region, of developing tools to support decision-making and finally of managing environmental information through the SIRE and with support from the **Regional Network of Exchanging Environmental Information (RREIE)**. The RREIE is mainly composed of representatives from deconcentrated sectoral services. These representatives from sectors like e.g. water, agriculture and tourism, support the OREDDs with regard to data collection, analysis and communication of monitoring information. Since monitoring vulnerability and adaptation will be integrated into the existing environmental monitoring system, institutional structures for the definition of indicators, data collection and sharing etc. remain the same. Potential **users of the information provided by SIRE** will be, next to the deconcentrated services themselves, also research and development institutions, universities, as well as local development associations, cooperatives and the wider public. The degree of access to information depends on the user types. Access will be granted via the web-based platform.

► Establishment process

In Morocco, the process of integrating adaptation monitoring into the SIRE of the two selected pilot regions comprises **eight steps** in the following three consecutive phases: the **phase of conceptualising** the system, the **phase of operationalization** and the **phase of re-adjustment** (see figure 1). During the first phase, studies were carried out that summarise the vulnerability to climate change in the two regions based on existing literature and research. Therefore, existing M&E systems and the information these systems have produced have been assessed. Additionally, user and user needs for monitoring of adaptation have been identified, and furthermore, the monitoring methodology has been developed. In the second phase, indicators were elaborated based on climate change impact and vulnerability chains, which had been developed for each sector considered (see an example for agriculture in figure 2). The indicator selection was based on a multi-stakeholder dialogue with OREDDs and representatives from the RREIE network. For the initial phase of the system, it was decided to consider only indicators which could be **informed through existing data**. Other relevant indicators where data was currently not available were classified into a B-list of indicators. For the region SMD, for example, a set of approximately 30 indicators was validated. A couple of additional indicators were retained in a B-list to be considered at a later stage. Similar to the

German M&E system for adaptation, factsheets were elaborated for each of the indicators, containing information on the indicator itself, modalities and responsibilities for data collection, baseline values and interpretation. As soon as the system is integrated into the web-based platform, results can be accessed through the Internet. The system shall be fully operational by mid-2014. The third phase, a review process, will allow for re-adjusting or widening the system to other sectors, if necessary or desirable.

Figure 1 Establishment process for setting up the adaptation monitoring in two Moroccan regions.

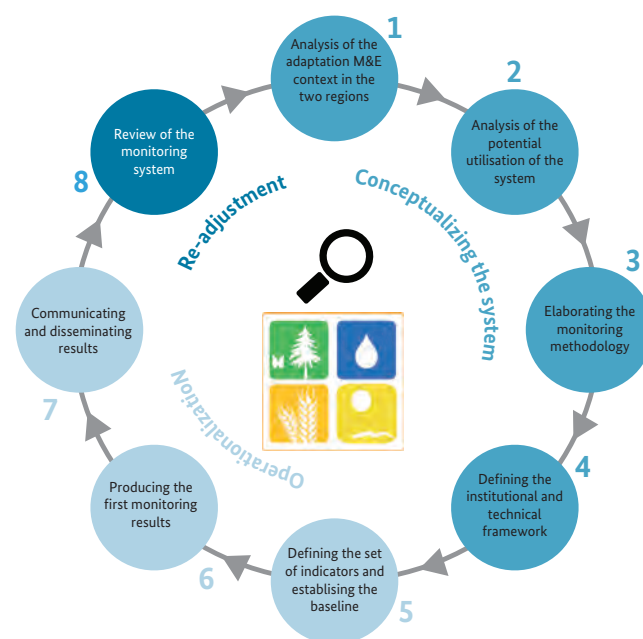


Figure by Youssef Jaouhari.

► Implementation process

This paragraph outlines how the implementation will be realised from around mid-2014 onwards according to what has been agreed upon by those responsible for the SIRE and other key stakeholders. Based on the indicator factsheets, the sector representatives of the RREIE network will provide the data for each indicator. Depending on the data availability, not all of the indicators will be assessed annually. Monitoring information will be accessible through the Internet.

Content

► Approach

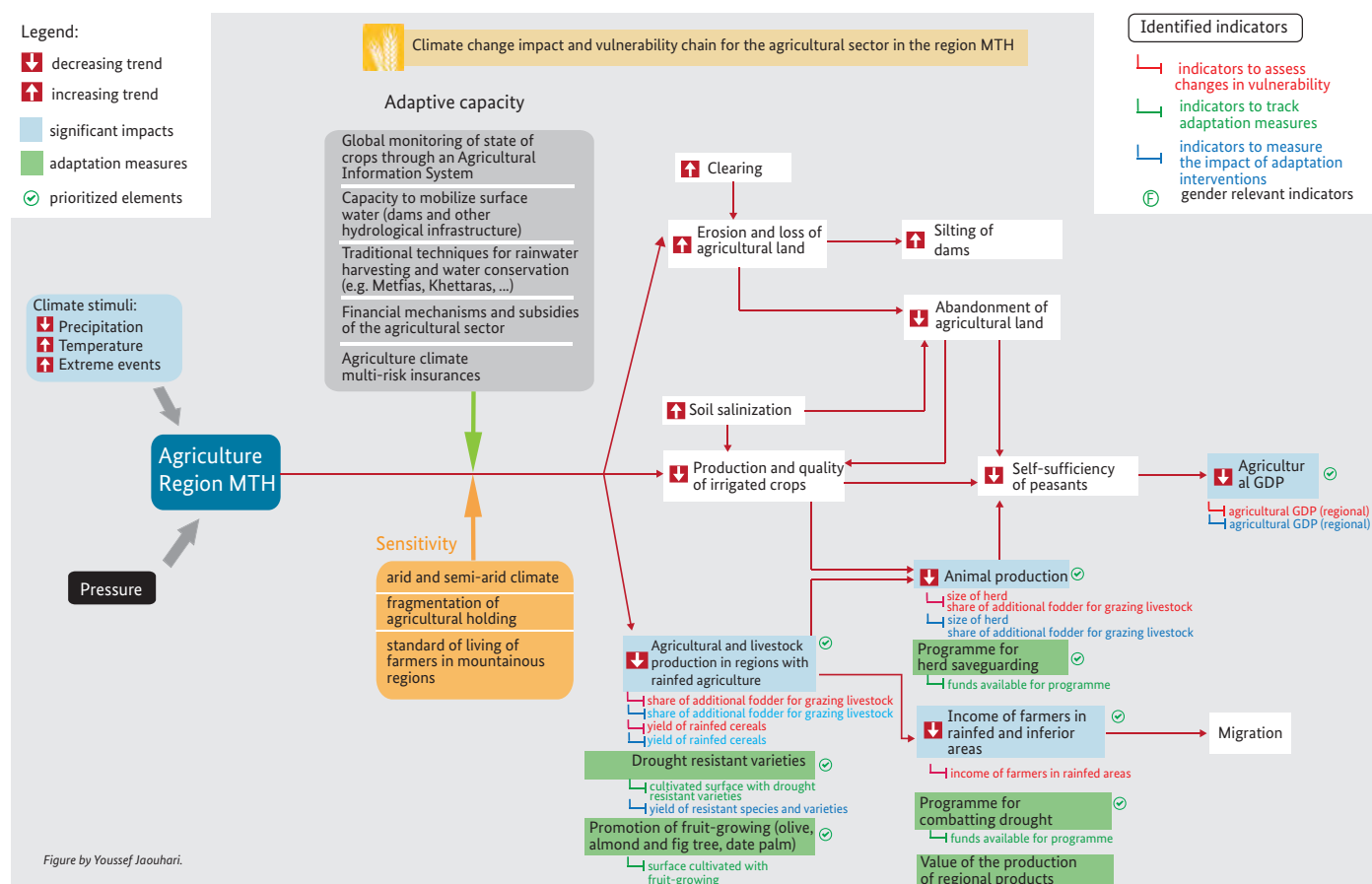
Morocco has chosen to integrate monitoring of adaptation into an existing system, the SIRE. Existing structures and procedures for the definition and selection of environmental indicators in the context of the SIRE were used according to the respective field of adaptation. The approach can be summarised as an **indicator-based system** using a participatory consultation process in order to select indicators and create ownership for data sharing. The indicators are used to monitor changes in vulnerability, adaptation measures and their impacts in two pilot regions. Changes in vulnerability and adaptation at the national level are not measured. So far, Morocco has no coherent adaptation planning process at regional level (e.g. Regional Plans to Combat Climate

Change rarely exist and Regional Climate Change Strategies are only planned in a couple of regions). Therefore, it was not possible to establish a results-based monitoring system. The current system is focusing on changes over time.

The adopted approach contains:

- the pre-selection of vulnerable sectors on which the monitoring system should focus,
- the analysis of the context for monitoring of adaptation,
- the definition of the conceptual framework of vulnerability and the establishment of climate change vulnerability and impact chains (see figure 2) as a basis for the indicator definition and selection and
- the web-based documentation of indicators with the support of indicator factsheets.

Figure 2 Example of a climate change impact and vulnerability chain for the agricultural sector in the region Marrakech Tensift Al Haouz which served as the basis for the indicator development.



► Indicators

Indicators have been developed based on **climate change impact and vulnerability chains**. For each of the pre-selected vulnerable sectors in the two regions such a chain has been developed. Gender aspects have been considered while developing the chain in order to make sure to have gender-sensitive indicators. Figure

2 shows an example of such a chain for the agricultural sector in the MTH region. There are three types of indicators used in the system: (1) indicators to assess **changes in vulnerability**, (2) indicators to **track adaptation measures** and (3) indicators to **measure the impact of adaptation interventions** in the region.



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► Data and information requirements

The data for monitoring adaptation actions is extracted from decentralized sectoral services by representatives who are part of the RREIE network, e.g. from existing M&E systems. In this initial phase, the emphasis is on **easy-to-access data and simple information**. There is a list of B-indicators which are relevant to measure, but where the data is not yet available or not easily accessible. These can be included into the system at a later stage.

► Output and reporting

The main output produced by the OREDDs is the **Annual Report on the State of the Environment** at regional level. Once the integration of adaptation monitoring into the SIRE is completed, the OREDDs will include a chapter on vulnerability and adaptation into this report. Furthermore, the data will be accessible through the **web-based information system** which has been currently set up for the SIRE and in which the adaptation monitoring will be included.

Lessons to date

Morocco has opted for integrating monitoring of adaptation into **an existing system**, the SIRE. It has chosen a pragmatic and cost-efficient way to gather data through existing networks using inter-sectoral exchange platforms which have already been established. The approach has the advantage of being **relatively inexpensive**. This is also reflected by the selection of indicators: only indicators where data is already available have been chosen for the system in order to avoid high costs and to allow for the system to become quickly operational. A list of B-indicators and the planned review phase make sure that, at a later stage, the system can become more complex.

Sharing data is a big challenge in Morocco like in most other countries. The next couple of years, when the system will be operational, will show if and to what extent this will hinder the system in providing useful information for decision-makers and the wider public at regional level.

For further information

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► Reference

Website of the Moroccan Ministry of Energy, Mines, Water and Environment:
<http://www.minenv.gov.ma/index.php/fr/etat-env>

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