

Method Brief

Tunisia: Climate Proofing of the Agriculture, Forestry and Livestock Production System at the Saouef Farm

Method

The Climate Proofing (CP) methodology used for the Saouef farm in Zaghouan, Tunisia, is adapted from the Climate Proofing approach developed by GIZ. It is a systematic analysis of risks caused by climate change and for suggesting appropriate adaptation measures. It was implemented in 2011 in order to take account of the climate change dimension when planning farm activities (dedicated to sheep breeding and to fodder seed production).

Scope and entry points

The overall aim was to apply the method at local level (project, action plan). The entry point for integrating adaptation measures into the farm management plan was the revision of the farm management plan that mainly focuses on agriculture, forestry and livestock production systems. The method was implemented at the request of the Office de l'Elevage et des Pâturages (OEP) in October 2011. The resulting model can be replicated in similar regions.

How it works

The method was implemented with OEP officials and farm managers, within a training/action workshop, during which the methodology and tools were presented and practically applied to the situation of the farm. This covered the first two steps of CP (see figure), which were simplified in order to facilitate their use. The process has been partly completed, for a limited number of exposure units.

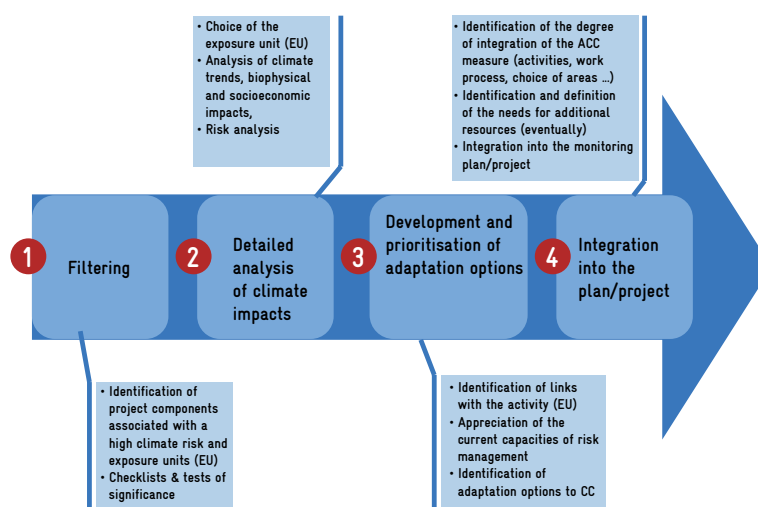


Figure: Climate Proofing steps

Step 1: Superficial screening/filtering

The screening involved the two following sub-steps:

- 1 Identification of the plan components and expected targets of these components (in the case of the farm this refers to production/development components).
- 2 Identification of activities and exposure units (EU). EU refer to anything that can be assessed through a climate stimulus, e.g. a target group, a productive activity, a geographic entity, natural resource or ecosystem linked to the climate stimulus. Every activity is checked against the degree of exposure (scoring from 0 to ++++) by answering the following four questions:

On behalf of

- **Does the Saouef farm plan include measures in the following fields:** rural economy, rural development, forest, natural resources, water, and disaster prevention?
- **Does the Saouef farm plan include measures in one of the following natural areas:** coastal, flood prone, mountain zones, areas often devastated by cyclones, arid zones?
- **Are the planned expected development outcomes dependent upon important climate factors:** temperature, rainfall, wind, extreme events?
- Would it be possible, within the framework of the plan, **to improve the adaptation capacity of target groups or eco-(agro-)systems?**

Step 2: Detailed analysis

The analysis of biophysical and socioeconomic impacts of climate trends was carried out for three priority EUs with regards to farm productions (stock breeding and production of fodder, cactus and alfalfa).

The relevance of these effects on planning has been assessed while taking into account the probability that such effects would occur and the importance of their impacts on EU targets.

Climate stimulus	Biophysical impacts	Socioeconomic impacts	Risk analysis as per objectives	Current capacities to manage risks	(Additional) CCA alternatives
<ul style="list-style-type: none"> • Decrease in rainfall + variability combined with more frequent drought • +2°C • Floods 	<ul style="list-style-type: none"> • Drop in yields • Variability in production • Development of weeds • Biomass degradation 	<ul style="list-style-type: none"> • Instability in farm income • Drop in investment capacities • Loss of occasional employment • Reduction in performance bonus • Resorting to imports (outflow of currency) • Reduction in EU inputs at national level 	High risk with regard to achievement of targets established in the field of seed production	<ul style="list-style-type: none"> • Conservation farming • Development of phytosanitary treatments • Data sheet by species (requirements) 	<ul style="list-style-type: none"> • Irrigation possibilities • Improving the level of organic material in the soil • Developing the modification and seed collection programme • Follow-up system for production/ yield in relation to climate conditions • Consolidation of CES work

Table: Preliminary analysis for the exposure units: alfalfa seeds production (extracts)

Step 3 and 4:

Adaptation alternatives and integration into the plan

Steps 3 (analysis of adaptation options) and 4 (integration in the management plan) were only carried out for the most relevant effects. An action plan was developed within the context of the workshop so as to finalise the CP application, while proceeding with training/action.

Specifics of application

Stakeholders and institutional set-up

The method was implemented as part of a workshop designed to introduce the actors to the use of the CP method. The workshop was facilitated by experts from the CCC/GIZ project, who had already experimented with CP within the framework of other initiatives (see 'Sources' below). The OEP was represented by central level representatives, in addition to farm management officers. Representatives of general departments in charge of farm production and development/conservation of agricultural lands (Ministry of Agriculture) also took part in the works. This enabled the project, on one hand, to take advantage of the technical-economic knowledge that needed to be fed into the

analyses, and on the other hand to facilitate the integration of the CC dimension into the management planning of the OEP farms.

Inputs

The most important input is current land data of this state-owned farm, which needed to be collected, and which benefits from the presence of experienced technicians. The need for technical expertise could be met thanks to the participation of OEP staff and of the Ministry of Agriculture. The duration required to apply the approach is difficult to estimate, as the process is still on-going. Approximately 6 months will be required in order to obtain a validated updating of the management plan and achieve internal agreement on its implementation.

Products

At this stage the results can be summarised in a preliminary sensitivity analysis of the 3 EU (stock breeding, cactus fodder production, alfalfa) with an initial identification of adaptation alternatives. The final product would be a restructured management plan integrating adaptation measures to CC.

Required capacities and ease of use

The application of the method requires:

- The availability of basic and reliable data over a sufficient period. At local level, this often represents a challenge, especially in terms of continuity in recording and storing the data.
- An initiating training, the involvement of the concerned actors, who are able to work in team and to take charge of this task.
- The existence of a planning system that is sufficiently developed to allow for easy identification of the CCA entry points.
- In addition, the management plan implementation system must be consolidated in order to ensure CCA follow-up, in particular the impact of adaptation alternatives to be applied.

Conclusions for future applications

Outcome and added value

The process is still on-going but the initial outcomes demonstrate the integration of CCA in the management of state farms under the responsibility of OEP.

- The training/action, although short, will continue throughout the stages of CP and the OEP will therefore have access to a pool of resources capable of carrying out this diagnosis.
- Analysis tools have been made available to participants to proceed with the exercise on other EU.

Cost-benefit ratio

Assessment is not yet possible as the method has only been partly tested. We can assume a positive ratio, since the establishment of CCA measures in the management plan could ensure greater sustainable productivity among the various speculations, while avoiding the degradation of soil and water resources in particular.

Potential for replication

The underlying approach of this CP method is relatively simple and could easily be adapted by actors on the ground. Furthermore, the OEP is operational throughout the regions of Tunisia thanks to a well-developed structure. The coaching activities for farmers (through awareness-raising and grouping professionals) and the support for research and development (hosting and tutoring of students in agronomy studies) in the field of stock breeding and grazing make for a good replication method and for a CCA integration method.

Sources

Documents

- 1 Report of the CP workshop – Saouef farm – Zaghouan – July 2012 (CCC/GIZ project, PIK, OEP)
- 2 Other previous experiences of the method testing (PNO4, PGRN)
 - Report of the CP workshop - ODEPSYPANO – Béja – December 2010 (CCC/GIZ project, MEDD, MARH)
 - Presentations of a CP application example (CCC/GIZ project)
 - Documenting the application of the CP tools in the regional plan of Jendouba, the PGRNII project, the PNO4 project, for various exposure units, dry grain farming, forests, cattle breeding, underground water, irrigated farming
- 3 Climate Proofing for Development (GIZ publication) – March 2011
- 4 Climate Proofing for Development: a Training Toolkit <http://climatechange.dcnr.gov.ph>

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