

DESERTIFICATION

# PAFAGE

## Support to Training and Assistance in the Field of Environmental Management

# Niger

› CAPACITY BUILDING

› ENVIRONMENTAL  
MONITORING

› NETWORKING





*Ader Doutchi Maggia, the check dams form water impoundments that last several months after the rainy season and can even extend until the following season, a valuable asset for farmers and livestock*

## Background and rationale

The Technical Unit of the Department of the Environment (UTA/DE) of the *Ministère de l'Hydraulique de l'Environnement et de la Lutte contre la Désertification* (MHE/LCD) in Niger was established in 1992.

It serves to separate the normative and institutional activities of the Direction Department, which deals with the study, analysis and monitoring of the environment, from implementing and operational responsibilities. In 1996, the Executive Secretariat of the National Council for Sustainable Development (CNEDD) was also established, with the main task of finalising the National Environment Programme for a Sustainable Development (PNEDD). This Programme has enhanced the coordination between national actions and policies in the field of the three United Nations environmental instruments stemmed from the Rio Conference in 1992: the Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (UNCBD) and the Convention to Combat Desertification (UNCCD). Through this Programme, the role of the UTA has been strengthened, and its activities with other national services working in the environmental sector have been improved. Other relevant National Programmes referring to UTA are the Programme to Face Poverty (1998) and the National Action Programme for Combating Desertification and Natural Resources Management (PAN/LCD-GRN, 2000), elaborated according to the UNCCD directives.

The latter is particularly important, as it is one of the six priority sub-programmes of the PNEDD and is the outcome of a consensus-building process, which involved all national stakeholders engaged in the Country development effort. Also the actions carried out under the umbrella of this Programme have proven very effective in tackling the desertification problem, by alleviating the effects of drought and food insecurity and ensuring the sustainable management of natural resources. Furthermore, UTA is also responsible for the implementation of the actions promoted by the PAN-LCD/GRN and the UNCCD. This task will be carried out through the definition of a set of Desertification Impact Indicators and will also include the production of thematic cartography. During the last fifteen years, the Technical Unit has participated in many different programmes in cooperation with Italy and other international partners for the implementation of national environmental policies. In particular, from 1995, the UTA has been involved in the following projects:

- the Italian Cooperation Project for the Evaluation of the Environmental Conservation and Recovery Interventions (PEICRE), executed under the framework of the Rural Development Programme in the Ader Doutchi Maggia (Projet Keita, Italian Cooperation/FAO);
- the World Bank Programme for Natural Resources Management (PGRN);

- the *Mercure* United Nations Development Project;
- the ROSELT Initiative promoted by the Sahara and Sahel Observatory (OSS), for the establishment of a Long Term Environmental Observatories Network, with two sites in Niger (Keita and Banizoumbou).

The PAFAGE Project has been conceived and developed according to the guidelines and principles expressed in all the documents mentioned above, which promote a sustainable development for the Country. The Project is carried out within a framework of collaboration between the Italian Government and Niger and contributes to strengthen the Country's capacity in producing real time and readily available information for natural resources monitoring and management. The Project will contribute to upgrade UTA to be a technical centre specialised in timely, accurate and readily available information for natural resources management. This will ensure its ability to continue its current established tasks (gathering, managing and distributing environmental resources data and information) and to provide new services without having to depend on external help. Similar experiences were already carried out in Burkina Faso, in support of the National Geographic Institute, and in Senegal, in support of the Environment Monitoring Centre. Total funds amount to more than 660,000 euros, for the period 2001-2004. The Project is coordinated by UTA in cooperation with the Centre of Studies for Computer Science in Agriculture Ce.S.I.A – *Accademia dei Georgofili*, Florence, Italy.



## Goal, objectives and expected outputs

This initiative is aimed at enhancing the technical and operational capacity of UTA staff in managing new information technology tools. It also aims at improving the quality of their information products (cartography, analysis, reporting, indicators), which are used to support the decision-making process when developing sustainable environmental and socio-economic programmes, measures and policies. In particular:

- products according to its mandate, such as the State of the Environment Report;
- products requested by the Department of the Environment Administration, or through additional financing (such as the ROSELT project);
- commercial consulting services for external clients, for example providing cartography for individual projects.



The main goal of PAFAGE is to develop an integrated National Environment Information System (SIEN) for data collection and management, information production and consolidation. This will produce immediate, useful and diversified information, according to different end-users' needs, and will strengthen communication mechanisms among all national institutions and services. The SIEN will pull together human resources and information technology

tools to describe the state and dynamics of the environment with particular emphasis on environmental issues and socio-economic development impact associated with them. From a technical point of view, this system can be viewed as a tool capable of ensuring proper management and utilisation of biophysical and socio-economic data of a particular territory. This system will enable monitoring and assessment of the environmental and socio-economic dynamics in order to prevent natural resources degradation and impoverishment.

SIEN will be developed on the basis of the Early Warning Integrated System, which was developed in the framework of the AP3A Project (Agrhymet Centre, Niamey, Niger) financed by the Italian Cooperation. SIEN will be composed of a management system and various thematic databases to be updated through the exchange of information with other national institutions, such as the Agrhymet Centre. Different types of data at different levels (regional, national and second/third administrative level) will be the primary source of information used to elaborate final products according to different end-users' needs.

The SIEN structure will be able to update its methodology and technological expertise according to the international context, and will become the national and accurate instrument to store natural resources information, to perform change



*Ader Douchi Maggia, a forest worker notes with satisfaction the progress of a seedling in a trench, built through SWC works*

detection analysis and to envisage future development scenarios. Implementation will focus on three main activities:

- the production of the National Environmental Report;
- the implementation of the Keita Site Observatory;
- the development of a set of Desertification Assessment Indicators according to the National Environment Programme directives.

## Implementation and results

The Project adopts a methodological approach based on theoretical-practical training activities and technical assistance. Different training modules will be developed to strengthen UTA technical staff know-how and application capacity in the following main fields:

- Data Base Management
- Geographical Information Systems
- Data Collection and Analysis
- Natural Resources Management
- Desertification Monitoring.



Target of the main training activity will be the UTA's Sub-Technical Units, corresponding to SIEN components: GIS Unit, Data Base Unit, Remote Sensing Unit, Analysis, Assessment and Monitoring Unit.

Activities are organised by means of theoretical and applied training modules and long-term internship. The Italian experts will execute the first set of activities at UTA in Niamey, whereas the long-term internship will take place in Florence, at the CeSIA Centre.



**Scheduled training modules are:**

- Tabular data base management I
- Tabular data base management II (theoretical and practical)
- Geographical base management I
- Geographical base management II (theoretical and applied)
- Data collection field work and analysis (theoretical and applied)
- Satellite Images Analysis (theoretical and applied)
- Natural Resources Management
- Desertification Monitoring: Environmental and NAP Indicators (theoretical and applied)
- Environmental Programmes monitoring and assessment (theoretical and applied).

The long-term training abroad will benefit the Head of SIEN and both Data Base Unit and Remote Sensing Unit Heads.

Since the beginning of the Project activities, important steps have been made.



- The institutional framework has been defined.
- Training activities with a Module on Informatics Instruments Management have been opened and the relevant educational manual produced.
- A new Intranet and Internet project has been developed.
- Four training modules on Tabular database management and GIS management have been implemented.
- The UTA database inventory has been checked, reorganised and validated, so as to create a consistent data-set that will be integrated into the National Information System.
- The SIEN architecture and functionality has been defined and a Data Management System Interface has been drafted and tested.

The SIEN's Data Management System Interface will be finalised and transferred in September 2002, and its functionality will be verified for the

production of Arab Gum and the Protected Forest Classification cartography, as specified by the second year operational plan and the priority expressed by the Department of the Environment, MHE/LCD.

