



Third Project Workshop
**“Sustainable Management of
 Marginal Drylands (SUMAMAD)”**
 Medenine (Tunisia), 12-14 December, 2004

Workshop Report

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Introduction

The third international workshop of the joint UNESCO-UNU-ICARDA-Flanders Project on “Sustainable Management of Marginal Drylands (SUMAMAD)” was held in Medenine (Tunisia) from 12-14 December 2004. The workshop was organized by the Institut des Regions Arides (IRA) within the context of the UNESCO Man and the Biosphere Programme and the UNESCO International Hydrological Programme (IHP), and in collaboration with the United Nations University – International Network on Water, Environment and Health (UNU-INWEH) and the International Centre for Agricultural Research in Dry Areas (ICARDA). The workshop began with a one-day field trip to a number of study sites within the Zeuss Koutine Watershed, and to NGO activities in the neighboring mountain areas. The following two days of presentations and discussion of the SUMAMAD project were held on the nearby island of Djerba.

Workshop Objectives

The workshop brought together the designated project coordinators and the members of the Core Management Group of the SUMAMAD project. The main objectives of the workshop were to:

- Review the implementation of the SUMAMAD Project in 2004
- Discuss the major objectives and workplans for implementing the SUMAMAD Project in 2005

Workshop Content

During the workshop, the Project Coordinators from the nine SUMAMAD project study sites presented the achievements that they had made during 2004. These presentations were preceded by overview presentations on dryland research from Belgian experts, and on progress within the SUMAMAD project by the management team.

List of Participants

The following participants attended the workshop:

a) Field Project Coordinators

- Dr Wang Tao (China: Heihe River sub-project);
- Dr Gao Jiangming (China: Hunshandake Sand/Xilin Gol Biosphere Reserve subproject);
- Dr Boshra Salem (Egypt: Omayed Biosphere Reserve sub-project);
- Prof. Sayyed Ahang Kowsar (Islamic Republic of Iran: Gareh Bygone Plain sub-project);
- Mr Mohammad S. Al-Qawabah (Jordan: Dana Biosphere Reserve sub-project);
- Dr Richard Thomas (Syria: Khanasser Valley sub-project);
- Mr Mohamed Ouessar (Tunisia: Zeuss-Koutine Watershed Area sub-project);
- Dr Muhtor G. Nasyrov (Uzbekistan: Karnab Chul sub-project).

Note: Dr Muhammad Akram Kahlowan (Pakistan: Lal Suhanra Biosphere Reserve sub-project) was denied a visa to attend the workshop despite his own best efforts and those of the organizers. His absence was felt during the workshop.

b) Project Core Management Group

- Dr Richard Thomas (ICARDA Headquarters, Aleppo);
- Dr Thomas Schaaf (UNESCO Headquarters, Paris);
- Prof. Iwao Kobori (UNU Headquarters, Tokyo);
- Dr Zafar Adeel (UNU-INWEH, Hamilton);
- Dr Rudy Herman (Flemish Government of Belgium, Brussels).
- Ms Cathy Lee (UNESCO Headquarters, Paris);
- Ms Caroline King (UNU-INWEH, Hamilton);

c) Experts from Belgium

- Prof. Donald Gabriels (Ghent University);
- Prof. Dirk Raes (K.U. Leuven).

d) Other participating experts

- Dr Houcine Khatteli (Director-General, IRA, Tunisia);
- Dr Mongi Sghaier (IRA, Tunisia);
- Dr Houcine Taamallah (IRA, Tunisia);
- Mr Peter Torrekens (FAO);
- Mr Luohui Liang (UNU Headquarters, Tokyo).

Overview Presentations

SUMAMAD project overviews

The SUMAMAD project was introduced by Dr. Thomas Schaaf (UNESCO, Paris). Dr. Schaaf reviewed the integration of the project aims and objectives as follows:

The project aim to elaborate an overall and integrated dryland management concept will be achieved by the project objective regarding assessment of the integration of conservation of natural resources, community development and scientific information.

The project aim to combat environmental degradation will be achieved through the project objective for the identification of practices for sustainable soil and water conservation with local communities involving traditional knowledge, modern expertise or a combination thereof.

The project aim to support capacity building for dryland research will be achieved through identification of training needs for data collection, inventory techniques and other purposes.

Dr. Schaaf highlighted the importance of connecting up the nine participating biosphere reserves and research sites within the SUMAMAD project through information exchange, staff exchange and joint training activities.

Dr Zafar Adeel (UNU-INWEH, Canada) focused on the first objective, and the need for the further development of a comprehensive assessment methodology within the project. Such a methodology would enable changes in management effectiveness to be mapped over time, to compare progress amongst the study sites, and to evaluate the progress made within the project as a whole. Dr. Adeel proposed that the data collection parameters identified for the project during its first year should be refined for use during subsequent years in order to focus on the results of improvements in management. Based on the findings of the Millennium Ecosystem Assessment, Dr. Adeel argued that these results should be quantifiable as improvements in the production of ecosystem services to human well-being. He therefore called on the project to consider the use of indicators quantifying the effects of selected ecosystem services. Participants discussed the selection of indicators relating to the biophysical, social and management effects of ecosystem services, such as food, freshwater and biodiversity. Dr Adeel stressed the need for indicators that would be quantifiable, simple to monitor, robust and conform to recognized methods. Participants discussed this proposal, suggesting the additional use of land quality indicators, such as productivity, land use and degradation.

Ms Caroline King (UNU-INWEH, Canada) reviewed progress already made by the project on the collection of data according to the parameters agreed in December 2003. Levels of progress varied amongst the list of parameters, and across the study sites. Around 50% of the total required information had been collected. Particular gaps were identified in the provision of maps, economic data and assessment of the provision of services such as health and education facilities, water and sanitation at the sites. Considerable variation was identified within the management approaches under investigation at each of the study sites.

Overviews on drylands research

Two presentations were made by experts from Belgium, highlighting the achievements of dryland research within the study sites of the SUMAMAD project. Prof. Dirk Raes (K. U. Leuven) made a presentation on the use of terraces for soil water conservation, based on research undertaken at the Gareh Bygone Plain, Islamic Republic of Iran. The aim of this research is to study the effect of terraces on the recharge of an aquifer and on the water resources that are retained for crop production. This will enable the formulation of guidelines for the water management system layout and crop production. Prof. Raes proposed the creation of a model in order to simulate changes within the system, and discussed the data requirements of the model, calibration and simulations to be undertaken. This modeling technique is likely to be of interest for at least three of the other study sites within the project where groundwater recharge activities have been proposed.

Prof. Donald Gabriels (U. Ghent) presented a Tunisian case study of water harvesting in dryland farming. The case study site, where rain-fed farming is sustained by the Jessr technique had been visited by the workshop participants during the field trip on the previous day. In order to assess the impacts of the water harvesting technique on the evapotranspiration of olive trees, three years of rainfall data were examined, and two scenarios were constructed:

- scenario 1: no runoff from the impluvium
- scenario 2: calculated runoff from the impluvium based on TCA and the measured infiltration characteristic on a dry soil

A water balance technique was used to assess the different scenarios. The estimation of the optimal crop cover ratio for crop production was found to depend to a large extent on the estimated runoff coefficient. The jessr was found to have considerable beneficial impacts on water availability during dry years, but a rather minor impact during wet years.

Modern techniques for groundwater recharge were also examined in this presentation, such as a specially constructed intake unit. However, the current design of the unit was found to lack sustainability over the long term, due to problems of sedimentation and blockage.

Review of Implementation of the SUMAMAD Project during 2004

Project schedule: progress in 2004

The SUMAMAD project received official endorsement from the Flemish Government in April 2004. Following this process, and the subsequent allocation of funds and preparation of contracts, only half a year remained for the completion of project research activities. Although the reduced time available resulted in the compression of some activities during 2004, participants agreed that it was possible for the project schedule to proceed. At a number of locations, national seminars were held during 2004 to involve and inform local people of the project activities. The workshop presentations and discussions highlighted these and other achievements during the year.

Alignment of methodologies for site assessment

The methodology for site assessment within the project comprises the following three elements: state of existing natural resources; characterization of stresses; and description of indigenous, adaptive and innovative approaches.

During the workshop, three common denominators were identified within the assessments that are of relevance to all project site assessments:

- land degradation
- rehabilitation
- water management

However, approaches to site assessment within the project differ widely. Participants concluded that the variation in current parameters of data collection is due to a series of factors. These factors are as much a strength within the project as they are a challenge, and may be effectively managed as follows:

1. Differing priorities and objectives of each site within the project:

Workshop discussions focused on the need to reinforce the basis for comparison and exchange between related activities at each site. This may be achieved within the project,

both through increased opportunities for thematic discussions during future workshops, and through focused training and exchange activities within common areas of interest for some or all project sites. The identification of the three common denominators, listed above, will facilitate the thematic approach.

2. Varying scales and populations of sites under observation within the project:

The pursuit of common research approaches is complicated by the varying land areas currently designated as project study sites. Common activities may be best designed on a manageable scale, perhaps including several villages. In some countries within the project, activities are taking place on a number of different scales e.g. in-depth participatory research at the household level within a limited number of villages, combined with relevant macro-level observations of trends in regional land-use, policy context and market conditions.

3. Range of long- and short-term data needs addressed by the project:

The research themes of the project as they relate to land degradation, rehabilitation and water management concern the management of long-term processes that will be observable far beyond the timeframe of the SUMAMAD project. However, to contribute to wider research efforts on dryland ecosystems, much-needed baseline data on these issues can be collected within the project. On the other hand, the project also seeks to map changes in management within its own 4-year timeframe. For this purpose, relevant short-term indicators are required for immediate development. Workshop discussions suggested that these indicators should focus on the provision of ecosystem services, immediate changes in income generation and other changes in socioeconomic conditions that can be related to project activities.

Project reporting for 2004

Each site will submit a substantive report on activities undertaken in 2004 by January 14th 2005. The report will focus on:

- environmental and socioeconomic assessment activities conducted at the study site
- selected practices for soil and water conservation
- income generating activities
- national capacity building needs and training activities conducted

This report will include an appropriate level of methodological information to be of use to other researchers and scientists. Methodological information should include information regarding the design and selection of project teams, including their composition of soil scientists, social scientists and outreach workers. Guidelines concerning the formatting of the report were distributed by UNESCO during the workshop.

During the workshop, participants agreed that the report may be submitted separately from the activity report that is required in the contract, which is to be submitted as soon

as possible. The project reports will be published as proceedings of the Djerba SUMAMAD workshop.

Objectives and Workplans of the SUMAMAD Project for 2005

Project implementation in 2005

In order to streamline the disbursement of funds within the project, UNESCO proposes to hand this task over to UNU from 2005. This change in project implementation is to be made following the signature of a Letter of Agreement between the two institutions in early 2005. UNESCO will continue to be the main implementing agency for the project, organize international SUMAMAD workshops on a rotational basis in the SUMAMAD countries, produce the SUMAMAD project workshop proceedings and liaise with the Flemish Government of Belgium with regard to reporting on policy and financial issues related to SUMAMAD.

Improvement of project reporting for 2005

UNU and UNESCO will coordinate the production of guidance for improvements to reporting from the project sites. This will enable increased consistency. During the workshop, the following requirements for improvements in reporting were identified:

1. Clarification of static and dynamic elements of reporting: many elements of site characterization need not be repeated each year.
2. Identification of key data for site characterization within the project to facilitate comparison between sites: the workshop included discussion of refinements to the common parameters that were identified during the previous year.
3. Identification of key data to be used as a baseline for wider research on conditions and trends in dryland ecosystems: this should be considered in light of wider research efforts, such as the Millennium Ecosystem Assessment.
4. Identification of indicators of changes within the project time-period: important factors in the selection of indicators should be international recognition of methods and significance, as well as practical considerations of feasibility of data collection.

Project coordinators wishing to send further suggestions to UNU and UNESCO concerning the improvement of project reporting within 2005 are invited to do so by email as soon as possible.

Identification of training needs

The project Core Management Group reaffirmed their intention to respond to national capacity development and training needs identified within the project. These needs may concern needs identified within the project teams. For example:

- additional training for data collection and inventory needs at particular sites
- staff exchange between study sites
- study trips for researchers to other locations, such as to Belgian universities.

Support may also be provided by the project for activities that address wider capacity needs within each country. National workshops should be used to extract what these capacity needs are. Proposals for additional activities and related support should be made in writing by the Project Coordinators to the Management team.

Existing training opportunities with project partners

A number of training opportunities are already available within the project. The following opportunities were identified by the project Core Management Group during the workshop:

ICARDA: 2-week training course on water management, funded by JICA – brochure will be forwarded to participants by Richard Thomas in May 2005.

Flemish Government: Series of international training courses, including grants to support Masters Degrees and PhDs for candidates from various countries as well as research projects by Belgian Professors abroad and inter-university cooperation. See www.vlir.be.
- Prof Dirk Raes is responsible for the inter-university programme on Water Resources Engineering.

UNU: 2-week training course on land degradation at the University of East Anglia. UNU offers one full fellowship and three partial fellowships. –see www.odg.uea.ac.uk

UNU-IRA-CAREERI-INAT: Masters Degree Program in Integrated Land Management. Up to five fellowships per year will be available. – see <http://www.inweh.unu.edu/inweh/drylands/MS.htm>

Future project meetings

Existing opportunities for training activities during the annual workshops for the project will be pursued by the organizers. This may be done through:

- thematic sessions for information exchange within the project
- contributions of training and methodological guidance from project coordinators on selected research techniques (as proposed during the 2003 SUMAMAD workshop, held in Shiraz)
- dedicated training activities involving external expertise
- involvement of additional study team members to benefit from training opportunities where financially possible.

In the locations where the workshops are held, considerable opportunities may be available to involve a wider circle of researchers, both within structured training activities attached to the workshop, and as observers during the discussions. These opportunities should be maximized.

A number of venues were proposed for the fourth project workshop, to be held towards the end of 2005. Pakistan was provisionally selected as the first choice, pending approval from the Project Coordinator. In the event that Pakistan is unable to host the fourth workshop, Dr Jiang Gaoming expressed an interest to host the workshop in China.

A Science conference will be organized by UNESCO in 2006, to observe the International Year of Deserts and Desertification. Representatives of the SUMAMAD project will be invited to attend.

Outreach activities

An overview of information and communication management issues within the SUMAMAD project was presented by Ms Cathy Lee (UNESCO, Paris) and discussed by participants. Information and communication management are key to outreach activities, and may be identified within the project at the individual study sites, as well as those undertaken on behalf of the project as a whole.

a) Sub-project level

Within the sub-projects, outreach activities concerning work with local communities on the one hand, and policy-makers on the other ('upstream and downstream') are handled in a number of ways. Particularly important are the national workshops which involve local stakeholders, government officials and scientists. A number of these activities were referred to during the workshop. Communications materials for use during workshops and for distribution locally were highlighted during the discussions as an important part of the project activities. Some project materials have already been translated into Arabic for use in Egypt. The production of leaflets with text in local languages was proposed.

Project coordinators were further called upon to:

- Identify a person responsible for collating and communicating information
- Identify information needs relevant to each site
- Maintain regular contact with the Core Management Group defined by a timetable of reporting
- Develop a specific (localized) Communication and Information strategy

b) Collective project activities

The SUMAMAD project document states that 'Dissemination of scientific findings through a publication which will be diffused globally through the networks of UNESCO, UNU and ICARDA, thus ensuring a transfer of knowledge to other arid and semi-arid regions of developing countries.' Currently, the outreach activities consist of websites, proceedings and events. Discussions included the possibility of a newsletter to be developed for the project. The further development of a project website was also recognized as a priority. The above tasks will be coordinated and managed by UNESCO (Ms Cathy Lee).

The Core Management Group was called upon to develop an overall Communication and Information strategy, including the following elements:

- Identify the global coordination needs and associated information flows
- Coordinate and organize the input of information
- Explore possible communication opportunities
- Promote and publicize the SUMAMAD project at other related or relevant events