

**NATIONAL REPORT OF BELGIUM
2000**

**TO THE
UNITED NATIONS CONVENTION
TO COMBAT DESERTIFICATION
(UNCCD)**

**DIRECTORATE GENERAL FOR INTERNATIONAL COOPERATION
DGIC**

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SUMMARY

After having participated in the INCD process from the very beginning in 1992, Belgium became a Party to the UNCCD on June 30, 1997. Belgium has a long-standing history of activities in combating desertification, particularly in Africa. Now the CCD offers an international legal framework for a renewed attention towards the desertification problem and Belgium stands ready to continue and improve its actions in this field.

In accordance with the Convention text and Decision 11/COP.1, developed country Parties shall report, at each session of the Conference of the Parties, on measures taken to assist action programs of those affected developing country Parties reporting for the session, and submit this report at least six months prior to the session at which they are to be reviewed. This means that for the present year Belgium will report on its desertification activities in Asia, Latin America and the Caribbean, and other affected country Parties.

In order to understand how these activities have taken place in the past and ongoing projects are being executed at present, a brief overview of the former general framework for development cooperation in which they operate(d) is hereby given, including a list of those projects and the related financial resources. More importantly, some space has been reserved for the explanation of the policy plan for the Belgian international cooperation as it now stands, following a thorough rethinking and reorganization. After all, this plan will be the framework within which all future actions regarding the combat of desertification will be conceived and implemented.

From this plan it is clear that the main principles of CCD coincide with the broad policy outlook and specific strategies of the Belgian international cooperation. The CCD emphasis on national action programs, the participatory approach and the action at grass root levels (bottom-up approach) all have a direct bearing on the Belgian vision about international cooperation.

The same can be said in relation to the sectoral priorities where care for the environment and gender issues are among the main themes. On the other hand, the geographical priorities insure a worldwide presence while at the same time limiting the Belgian interventions to a fixed number of partner countries within each region. The geographical priorities, with the number being reduced to 25 nations, also explain the difference between the past actions, as well as the present ongoing activities and the directions for the future.

The bulk of this report is dedicated to Belgium's specific actions, past and ongoing, in the combat of desertification. In order to get an easy access to the information, according to the individual interest, a separation has been introduced between the geographical areas mentioned above. For each region the listed activities include both research and development projects and pure development projects. The latter ones cover initiatives executed by the government as well as by NGOs.

In a way the first group of activities is related to the concerns and the work of the Committee on Science and Technology (CST) of the Convention and intends to demonstrate the Belgian expertise, while at the same time showing the possibilities for future response to the developments within CST.

OVERVIEW OF THE BELGIAN PROJECTS

ASIA		Period	mio BEF	US \$
BANGLADESH	Penchibari Canal and Irrigation Project	94-98	11,2	280.000
BANGLADESH	Women in Development	91-96	2,4	60.000
CHINA	Use of the soil conditioner TerraCottem in Chinese agriculture and forestry	94-99	2,1	52.500
CHINA	Integrated socio-economic development program for poverty stricken areas in Shaanxi Province	99-02	115,0	2.875.000
CHINA	Reforestation and vegetable production with TerraCottem in Inner-Mongolia (Dalate)	97-99	1,6	40.000
CHINA	Influence of a dam on a semi-arid environment	p.m.	p.m.	p.m.
CHINA	Vegetable production in traditional greenhouses in Central China	95-99	5,1	127.500
CHINA	Sustaining soil and water conservation research at Soil and Fertilizer Institute, CAAS	98-01	12,6	315.000
CHINA	Afforestation, forestry, research, planning and development in Three North Region	91-02	272,0	6.800.000
INDIA	Monitoring of desertification in a natural 'protected' area in arid pastoral environment	89-93	p.m.	p.m.
INDIA	Tizit: Agri-pastoral training and production centre	94	4,7	117.500
INDIA	Construction of 5 dams in the Dharmapuri District	90-97	6,9	172.500
INDONESIA	Integrated rural system, alternative for deforestation in Tulungrejo - Java	94-98	6,8	170.000
INDONESIA	An integrated rural system in Gagaksipat, Subdistrict Ngemplak	94-96	6,1	152.500
INDONESIA	Wonogiri - Dryland farming	95-97	5,3	132.500
INDONESIA	Integrated Regional Development Kei-Islands	89-97	14,5	362.500
INDONESIA	Agroforestry in Tana Toraja			
PHILIPPINES	PEGA Integrated Water Resources Development	94-95	0,2	5.000
PHILIPPINES	Paraclete: integral development and reforestation	98	1,5	37.500
SRI LANKA	Biological Dinitrogen Fixation project	91-97	19,5	487.500
VIETNAM	Développement des activités agricoles et de l'élevage à Tan Lap	96	0,2	5.000
VIETNAM	Social Forestry in Can Gio District	93-97	8,4	210.000

LATIN AMERICA AND THE CARRIBEANS

BOLIVIA	Irrigation	93-94	3,6	90.000
BOLIVIA	Regional development in Vallegrande (Santa Cruz) by support of local organizations	95-97	18,3	457.500
BOLIVIA	Rural Development in the Gran Chaco Tarijeno	93-97	2,5	62.500
BOLIVIE	Programme de gestion globale des bassins versants, Cordillère du Tunari	99-05	214,0	5.350.000
BRAZIL	Promotion of women in Curitiba	92-98	1,9	47.500
CHILE	Integrated rural development of the region of Rengo (Cacapoal Province)	91-97	14,2	355.000
CHILE	Regional and physical geography of Mediterranean and tropical regions	p.m.	p.m.	p.m.
CHILE	Agricultural development Iquique/OCAC	98-99	5,4	135.000
CHILE	Sustainable development in the Rio Simpson Valley	97	1,8	45.000
CHILE	Sustainable development in the Rio Simpson Valley	98-99	4,5	112.500
CHILE	Sustainable rural development in Quemchi	98-99	4,9	122.500
CHILE	Institutional support to the Institute for Ecology	98-99	4,5	112.500
CUBA	Improving soil salinity management under sugar cane	99-	6,1	152.500

	using Geoinformatica			
GUATEMALA	Projet de gestion d'espaces forestiers, de création de viviers et de reforestation	91-96	14,9	372.500
GUATEMALA	Forestry in San Marcos	98	1,7	42.500
HAITI	Soutien à l'agriculture de subsistance à Vallières	94-98	6,3	157.500
NICARAGUA	Stimulating rural production of small farmers - Nicaragua Rivas/Ometepe	97	16,9	422.500
PERU	Renforcement institutionel de l'Assoc. Développement. et Recherche forestière Cajamarca	90-01	33,0	825.000

OTHER PARTIES

ISRAEL	Water supply to the Occupied Territories	93-	14,2	355.000
PALESTINE	Al Far'ah rehabilitation project	98-99		
SYRIA	Looking for archaeological sites and assessment of desertification	p.m.	p.m.	p.m.

GRAND TOTAL			864,8	21.620.000
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INTRODUCTION

After having participated in the Intergovernmental Negotiating Committee for the elaboration of an international convention to combat Desertification in those countries experiencing serious drought and/or desertification, particularly in Africa (INCD), from the very beginning, Belgium was able to accede as a Party to the United Nations Convention to Combat Desertification (UNCCD) on June 30, 1997.

During this process and in the three Conferences of the Parties (COP) thereafter, the Ministry of Foreign Affairs, the Belgian Agency for Development Cooperation (BADC) and a representative of the Belgian scientific society have represented Belgium. On the national level all meetings have always been prepared through a close coordination of these actors, including recently all interested Non Governmental Organizations (NGO).

On the international level Belgium was present in the preparatory and coordination meetings of both the European Union (EU) and the group of like-minded countries within the Organization for Economic Cooperation and Development (OECD), where ideas were and are being exchanged and, if possible, common positions defined.

Belgium has a long-standing record of activities in the combat of desertification, covering a wide range of application categories, depending on the criteria used for their classification. From an institutional viewpoint, Belgium, through BADC, is active on the direct bilateral level (government cooperation), the indirect bilateral level (NGOs), the bilateral/multilateral level (actions implemented by multilateral institutions for earmarked contributions) and the multilateral level (core funding).

The Belgian Official Development Aid is currently undergoing a thorough reorganization. It is being structurally incorporated into the Ministry of Foreign Affairs as the "General Directorate for International Co-operation" (DGIC), which performs all policy related functions. A state-owned company, the "Belgian Technical Co-operation", is responsible for the execution of the direct bilateral projects in the field.

In accordance with article 26 of the Convention, which provides that each Party shall communicate to the COP at its ordinary sessions, through the Secretariat of the Convention, reports on measures which it has taken for the implementation of the Convention and that the COP shall determine the timetable for submission and the format of such reports, COP-1 in Rome took Decision 11/COP.1 which defines the procedure to be followed in this matter.

Thus, developed country Parties shall report, at each session, on measures taken to assist action programs of those affected developing country Parties reporting for the session, and submit this report at least six months prior to the session at which they are to be reviewed.

The report of developed country Parties should focus on:

- The consultative processes and partnership agreements in which they are involved;
- Measures taken to support the preparation and implementation of action programs at all levels, including information on the financial resources they have provided, or are providing, both bilaterally and multilaterally.

As a result of the review of the 1999 reports that was conducted in relation to COP-3 in Recife, some additional recommendations for reporting by developed country Parties were issued. The 2000 reports should be organized geographically (Asia, Latin America and the

Caribbean, other affected country Parties) and subdivided into Part A and Part B. The present report has been structured accordingly but some explanation regarding the interpretation of the latter subdivision may be warranted.

Under Part A, Belgium is reporting the measures taken to implement the Convention on all levels, i.e. the Belgian national level and the international level. For the time being, Belgium is not involved in the planning process of developing country Parties with regard to actions to combat desertification. It is not assuming the role of “chef de file”, nor is it collaborating in the set-up of National Action Programs. However, Belgium is coordinating nationally on the level of the government (DGIC), the academic and scientific community and the NGOs in order to build awareness for the UNCCD, which may ultimately lead to more effective and efficient actions in the field.

With regard to Part B, the present report lists all the desertification-related projects that have been carried out or are in progress. The nature of these activities can be characterized:

- as purely scientific when specific research is conducted on desertification topics that occur worldwide,
- as research and development activities when scientific research is being directly applied in development projects or,
- as specific development projects when field projects use long-known techniques.

POLICY PLAN FOR THE BELGIAN INTERNATIONAL COOPERATION

In order to understand past and present activities in the combat of desertification, as well as future directions on this topic, a brief outline will be given of the general policy that has guided the Belgian development cooperation in the past and is still guiding ongoing interventions. However, the major part of this chapter will be dedicated to the current policy plan as it represents the framework within which all future actions regarding the combat of desertification will be conceived and implemented.

Not unlike the situation in many other countries, the Belgian development cooperation has its roots in the colonial past and the special relation that originated after the independence of Congo, now the Democratic Republic of Congo, Rwanda and Burundi. Thus traditionally it has been oriented towards Sub-Saharan Africa. Over the years its action radius extended worldwide, first to other regions of Africa, later to the rest of continents.

Regarding priority sectors most actions were oriented towards agricultural development, public health and education. Development cooperation in the field was planned on a three year basis through a system of mixed commissions (recipient country -Belgium) during which specific projects were proposed by the recipient country and accepted by Belgium according to availability of expertise and funds.

Over the years, as geographical presence extended, activities increased and procedures became ever more complicated and difficult. Under the present government a lot of rethinking has been done and a thorough reorganization is under way. By 1997 the general vision, objectives and strategies had been worked out and have been formulated as the policy plan for the Belgian international cooperation .

The cornerstones of this Belgian international cooperation have been defined as:

- Attention for human rights, democratization and good governance
- Building partnerships
- Combating poverty.

The objectives can be summarized as:

- Strengthening the socio-economic basis
- Strengthening the community-building
- Awareness-raising at home.

In order to achieve the above and taking into account the particular situation of Belgium, all actions are governed by the following strategic approaches:

- Relevance for development, based on the seven criteria as established by the Development Assistance Committee (DAC) of the OECD.
- Geographical concentration, on the basis of several criteria such as the poverty level of the country, the relationship with Belgium, the local political will, evidence of good governance, among others.
- Sector concentration, with a view of combating physical poverty and preventing violence, limited to health care and family planning, education and training, agriculture and food security, basic infrastructure and community-building, as well as the trans-sectoral issues of male/female equality, environment care and social economy.

¹ **Cabinet of the State Secretary for Development Cooperation, Policy Plan for the Belgian International Cooperation. Speaking out, Brussels, 1998. Copies can be obtained by writing to:
The Cabinet of the State Secretary for Development Cooperation
45-46 Regentlaan
B-1000 Brussels**

- New cooperation models, starting with a thorough reorganization of the governmental cooperation towards more transparency, followed by paying more attention to the social dimension in structural adaptation programs, giving support for the balance of payments and counterpart funds, practicing debt relief, granting micro-credits, among others, as well as involving more closely the other actors in the international cooperation arena (scientific institutions, NGOs, the private sector) and rationalizing the partnership with multilateral organizations, emphasizing in all cases an untied aid.
- Coherence, by enhancing the coordination among all Belgian actors through the Interdepartmental Working Group for Development Cooperation, consultative bodies of indirect actors, the Federal Council for Sustainable Development and the Women and Development Commission.
- Volume, by reversing the downward trend in Official Development Aid (ODA), currently (1998) at 0,36 % of the GNP, towards the goal of 0,7 % by the year 2000 or as soon as possible thereafter.

From the above it is clear that the main principles of CCD coincide with the broad policy outlook and specific strategies of the Belgian international cooperation. The CCD emphasis on national action programs, the participatory approach and the action at grass root levels (bottom-up approach) all have a direct bearing on the Belgian vision about international cooperation.

The same can be said in relation to the sectoral priorities where care for the environment and gender issues are among the main themes. On the other hand, the geographical priorities insure a worldwide presence while at the same time limiting the Belgian interventions to a fixed number of partner countries within each region. The geographical priorities, with the number being reduced to 25 nations, also explain the difference between the past actions, as well as the present ongoing, activities, and the directions for the future.

In the Asian region Belgium is active in the Philippines, Cambodia, Laos and Vietnam. Regarding Latin America and the Caribbean its presence is limited to Bolivia, Ecuador and Peru. While development co-operation activities on the bilateral level are limited to these partners, multilateral agreements and programs, and NGO activities often cover a wider geographical setting.

ASIA

PART A

NATIONAL BELGIAN LEVEL

At the national level the Belgian Administration for Development Cooperation functions as the focal point for desertification issues. It organizes periodic meetings with the scientific and academic society, as well as with all interested NGOs of Belgium in order to prepare upcoming international meetings or to discuss the outcome of past ones. In this way professional colleagues are kept informed while having the opportunity to provide their input to the negotiating process. At the same time this group represents the Belgian network of desertification experts and specialists, that is continuously updated and connected to other networks worldwide. Many members of this group are included in the CCD's Roster of Independent Experts.

Through BADC's administrative channels, geographical desks at headquarters, development cooperation offices overseas and Belgian embassies abroad have been informed about the existence of CCD and its current situation, as well as about the Belgian activities in the field of combating desertification. Through this mechanism Belgium intends to contribute to making the CCD known to an ever-increasing public, within its own administrative structure and outside of it. As a result it is hoped that more attention will be paid to the CCD and more importantly, to the problem of desertification and drought itself, when programming future bilateral cooperation actions.

The rich experience and expertise that Belgium has accumulated over the years, has partially been compiled and edited into a little document which has been distributed during COP-2 and has been sent overseas. This document is now in the process of being completed with more information on projects and their results, in order to become a data base from which best practices and lessons learned can be drawn. These will, at their turn, be used to guide future activities in the field of combating desertification so as to repeat positive experiences and avoid negative ones.

INTERNATIONAL LEVEL

Belgium is also active on the international level when it comes to matters of science and technology through its participation in the (informal) Expert Group on Desertification (EGD) of the European Union. The broader objectives of this group can be summarized as follows:

- To fulfill the provisions of the EU Treaty and Council Resolutions on coordination, complementarity and coherence of European aid programs.
- To bring together experiences from around Europe and brainstorm together to implement commitments under the CCD.
- To occupy the middle ground between formal diplomatic coordination (which takes place in the Council), and country-specific coordination.

Another field of action currently underway is the set-up of the European network of desertification experts and specialized institutions. Until now a total of 276 experts, academic, scientific and technical organizations have signed up and the list is continuously being updated. Through this mechanism the fulfillment of the broad objectives will be greatly facilitated. In addition to this, coordination and cooperation regarding the more technical and scientific issues of the combat against desertification will be enhanced.

GLOBAL ENVIRONMENT FACILITY PHASES 1 – 2 (GEF)

Being a Participant to the Global Environment Facility since its restructuring after the Pilot Phase, Belgium has contributed to both replenishment periods. Under GEF-1 the Belgian participation amounted to 1.100.000.000 BEF, for GEF-2 it increased some 10 %, to a total of 1.248.000.000 BEF, representing 1,66 % of the current replenishment level.

Under its present mandate, as expressed by the Instrument for the Establishment of the Restructured GEF, the agreed incremental costs of activities concerning land degradation, primarily desertification and deforestation, as they relate to the four focal areas are eligible for funding. Up to now this represents some 350 million US\$ of GEF funding, complemented by more than double this amount in additional cofinancing.

If one wants to calculate Belgium's contribution to the GEF funded activities on land degradation and desertification, then its share amounts to 1,66 % of the 350 mio US\$ funded so far, or 5,81 mio US\$ (232,4 mio BEF).

PART B

BANGLADESH

Penchibari Canal and Irrigation Project: 1994-1998

(280.000 US \$)

The project aims at rehabilitation of an unusable irrigation canal, with subsequent implantation of landless families along the canal, through introduction of vegetable cultivation, fish and duck rearing and reforestation.

The Penchibari Canal, constructed in 1970, had become useless, because political and economical constraints made termination impossible. Reconstruction of the Canal and installation of the necessary infrastructures could lead to the set-up of an effective irrigation system and an increase of food production and annual income for the farmers. The project aimed at an increase of the rural activities of the population after irrigation of more than 1200 ha. Formation of a cooperative organization for 140 families would lead to horticulture, fishery and duck production. Before the Project, shallow and deep tube-wells and diesel pumps did most irrigation. Water table lowered and drinking water was lacking in dry summers. The Canal would retain monsoon rainwater, an inexpensive source of surface water for irrigation in winter. Water from the Bangali River would be used to supply the Canal in dry summer season. Fishing practices mainly relied on catching/collecting fish brought to the area by floods. Due to drought and effect of chemical fertilizers and pesticides, there has been a decline in the overall productivity of this important source of proteins. A series of metal nets in the canal would be used for fishing. There has also been widespread deforestation in the area (firewood and timber). The banks of the canal can be used for tree plantation.

RESULTS

- Re-excavation of approximately 4.4 km of irrigation canal, protected by a dike
- Construction of two concrete bridges
- Introduction of fish and duck rearing
- Reforestation: 6450 trees
- Plots attributed to 130 landless families.

BANGLADESH

Women in Development: 1991-1996

(60.000 US \$)

Strengthening of the informative base for women in development and socio-economic development of landless women and children by the Grameen Bank. This project promotes:

- The participation of women in programs for social development.
- The increase of annual income for women by enhancement of food production.
- The development of leadership and group formation.

CHINA

Use of the soil conditioner TerraCottem in Chinese agriculture and forestry: 1994-1999

(52.500 US \$)

The Chinese Ministry of Agriculture (National Center for Quality Supervision of Chemical Fertilizers) and the Beijing Agricultural University (Department Plant Nutrition), in cooperation with the TC Foundation (TerraCottem) and the University of Ghent, have set up in 1994-1996 a research program. It concerns the use of the soil conditioner TerraCottem in Chinese agricultural production in different provinces. All results are very positive: production improvement ranges from 22 % (cotton), 38 % (eggplant), 62 % (tomato and sweet pepper) to 75 % (beans). Extremely high increase was found at the Beijing Agricultural University (Prof. YANG Zhifu) with 3225 % higher production for rapes at an irrigation scheme of 40-60 % field capacity. The Ministry of Agriculture in Beijing concluded that TerraCottem is an excellent soil conditioner for dry sandy soils and that it enhances yield considerably. It is seen as a good solution for improvement of food production in China. The Bank of America Beijing funded a three years project for reforestation and vegetable production with TerraCottem. Different tree species were planted on very poor soils on windy mountain slopes outside Beijing (Yanqing), using different dosages of the soil conditioner and different irrigation schemes. The results were very conclusive. The soil conditioner is also used in greenhouses to enhance vegetable production with less water and fertilizer. In 1997, it was shown that introduction of TerraCottem in the plant pits in April-May (dry season) offered the possibility of preparing the reforestation site long time before the rainy season. Thus, a lot of time was saved and the number of trees that can be planted in one year increased significantly.

CHINA

The integrated socio-economic development program for poverty stricken areas in Shaanxi Province: 1999-2002

(2.875 .000 US \$)

The project area is situated in the middle and western part of China. The northern part of Shaanxi Province belongs to the loess plateau and the Maowusu desert. It is located in a warm temperate zone with semi-arid and continental monsoon climate. This area suffers of severe soil erosion. The 4 years program includes 4 components: Women's Development, Water Supply, Health and Agriculture.

The Women's Development component includes different field activities: anti-illiteracy campaigns, setting-up of an agro-demonstration base (combat of desertification) through advanced agricultural techniques, greenhouses building and training in agricultural fields (main component). The total budget for this component is 66 mio BEF.

The Agricultural component aims to develop at the farmer's level kernel apricot (*Prunus armeniaca*) and Chinese date (*Ziziphus jujuba*) varieties, suitable to geographical and climatic conditions in order to increase the farmer's income. Fruit tree plantation on barren soil will reduce soil erosion. On slopes trees will be planted on the contour lines. The total budget for this component is 40 mio BEF.

The Agricultural component includes a second part: the setting-up of a demonstration area in Jingbian. This area will act as a model for scientific control of sandy land and will allow a long-term reclamation of fixed and semi-fixed dunes. It will show the farmers that new techniques, such as leveling land, improving soil, planting economic crops, can be profitable. The budget for this second part is 11 mio BEF.

CHINA

Reforestation and vegetable production with TerraCottem in Dalate County (Inner Mongolia): 1997-1999 (40.000 US \$)

In 1998, the authorities of Dalate County, in cooperation with the Belgian TC-DIALOGUE Foundation set up a project. The global objective is to show the positive effect of the soil conditioner TerraCottem on rainfed systems used for tree growth and vegetable production in semi-arid conditions. In this desertlike region a very sandy test site was chosen. Trees were planted with and without TerraCottem during the rainy season. No supplementary irrigation is provided to study the differences in growth between the treated plants and the control ones. During the dry season these remarkable differences are clearly shown, the TerraCottem-treated plants growing significantly better because of their roots pumping water and fertilizers from the waterabsorbent hydrogels in TerraCottem.

Aiming at an increase in agricultural production, small fields were also treated with TerraCottem and seeded with different species of vegetables. With a minimum of irrigation water, crops can also be grown during the dry season. They even show an interesting increase in production versus the non-treated ones. This water and fertilizer saving technology can easily be combined with traditional culture methods and one single application offers positive effects on water and fertilizer retention in the rooting zone for several years. It can contribute to secure food availability in the most adverse conditions.

CHINA

Influence of a dam on a semi-arid environment

In the Ningxia Region in China, the Department of Physical Geography of the University of Liège is studying the influence of a dam on the semi-arid (sub-desertlike) environment. Interesting conclusions will be drawn for a wider application of some irrigation techniques.

CHINA

Vegetable production in traditional greenhouses in Central China:

1995-1999

(127.500 US \$)

The TC-DIALOGUE Foundation (TerraCottem) and the University of Ghent, in cooperation with the Bureau of Agriculture and Animal Husbandry of Lanzhou (northwest of Gansu Province, south of the Gobi Desert), realize a five years project (1995-1999) in the semi-arid region of Yongdeng City (elevation 2.400 m). The main objective is to improve the living standards of the local population, constructing each year 15 traditional Chinese greenhouses with thick clay walls. In these greenhouses, the soil conditioning mixture TerraCottem is used to improve the capability of the poor soil to retain irrigation water and fertilizers and to stimulate vegetable production with a strict minimum of irrigation water and fertilizer application.

Since 1995, this project has documented a lot of successes, providing the traditional farmers with a modern solution for the desertification problem. Before, they only produced wheat, beans and potatoes. Now they are also growing onions, cucumbers, eggplants, tomatoes, cabbages and other vegetables in large quantities, not only offering possibilities to eat themselves fresh vegetables, even in winter time, but also to increase their annual incomes by selling vegetables in the nearby town all year long.

In 1997, it was decided to introduce the production of new crops in the greenhouses. Almond trees and grapevines are now growing with tremendous success, even in wintertime, due to the positive effects of the soil conditioner TerraCottem. Production of almonds and grapes is really spectacular and even a combination with strawberry production is now experimented. It was fully shown that the combination of traditional knowledge and skills (construction of traditional Chinese greenhouses with heat absorbing clay walls) and a new technology (TerraCottem to stock irrigation water and fertilizer in the upper rooting zone and to activate microbiological activities in the soil) led to successful achievements:

- Increase of food security and the level of nutrition through increased production.
- Improvement of the incomes and living standards of the small farmers.
- Strengthening of the regional institutions, like the Bureau of Agriculture and Animal Husbandry of Lanzhou.
- Provision of a technological base to improve agricultural productivity and to limit environmental degradation.

CHINA

Sustaining soil and water conservation research at the Soil and Fertilizer Institute, CAAS: 1998-2001 (315.000 US \$)

This project is realized at the Soil and Fertilizer Institute of the Chinese Academy of Agricultural Sciences in Beijing and in Luoyang. The general objective is the development and evaluation of soil conservation techniques on field and micro-watershed scale for efficient soil and water management in the eastern loess plateau of China (Henan Province). The additional objectives are:

- Study of the basic principles governing the soil erosion processes in the loess plateau on field scale (sheet and rill erosion) and micro-watershed scale (gully erosion).
- Training technicians and researchers in soil conservation techniques at the SFI (CAAS).
- Sustaining regional research on efficient soil and water conservation techniques and chemical fertilizers application under different soil management systems at the Agricultural Science Institute of Luoyang.
- Sustaining the transfer of the most efficient techniques with respect to soil, water and fertilizer conservation to the local community.

Research topics are:

- Study of water saving techniques for plant growth.
- Evaluation of soil and water conservation techniques.
- Improvement of the physical fertility through the application of organic waste products, especially with respect to soil conservation against wind and water erosion and reduction of water losses.

CHINA

Afforestation, Forestry research, Planning and Development in the Three North region of China: 1991-2002 (6.800.000 US \$)

The first phase of this FAO-project started in 1991, the second phase in 1998. The main objective of phase 2 is to continue to support the afforestation programs of the Three North Bureau concentrating during phase two project activities in the Naiman Branch, which includes ecologically difficult sites of the Korqin sandy area. It aims to continue its research activities, data collection and demonstrations on mechanized afforestation, shelterbelt design, fodder production for grazing animals, the introduction of improved and hardy clones and varieties of poplars and pines and to promote improvements in the local economy of the region.

PROJECT RESULTS

Following a project evaluation held during 1996, a recommendation was made to prepare a second phase of 5-years duration. The major project results to date have been the collection and establishment of an impressive number of poplar clones resistant to frost, drought and disease. An important ex-situ collection of *Populus simonii* has been undertaken. The project has designed and continues to improve techniques, equipment and methods for site preparation and afforestation. A substantial data base has been established on numerous parameters involving poplars and pines and cost data on mechanized afforestation which will permit the project to extend its information and expertise to other areas as well as to prepare a long-term investment plan for the Three North region.

A tree breeding program and plan has been prepared and the plan is continuously monitored and updated. The establishment of multi-purpose tree species is underway to provide a variety of forest products including fodder. A Draft research and Development Plan was prepared by the Afforestation Section.

The Research Plan focuses on Silvicultural Research and Development, including the introduction of diverse species and pilot plantations suited to local requirements and needs. Pilot demonstrations are being continuously monitored and data are collected and recorded in the project's impressive database.

A land classification map of the Korqin area will be finalized. This will permit planning for the expansion of revegetation and reforestation. The map will contain basic data on soils, topography, microclimate, groundwater depth as well as other information. Given the gap between the phases, some national staff could not continue with the project. New staff is being trained and local in-service training is continuing in all sectors. Study tours have been undertaken in Canada and Australia. A two-day workshop was held by the project to standardize data collection of costs and their analysis.

INDIA**Monitoring of desertification in a natural 'protected' area
in arid pastoral environment: 1989-1993**

In the framework of reforestation programs to stabilize active dunes in the Thar Desert in northwestern India, a digital approach has been used to detect active dune areas, using Landsat-MSS data. Textural parameters and contrast enhancement techniques were applied and evaluated, using the Kappa-coefficient and the Z-statistics of the classification results. Furthermore, a vegetation study has been carried out to detect if significant differences in amount of biomass, present in stabilized dunes, in active dune areas and in the interdunal planes could be found by means of Landsat-MSS data. This research was conducted in 1989-1993 (TELSAT II/10/02 Program - Partner: Belgian Science Policy Office).

INDIA**Tizit – Agri-pastoral training and production centre: 1994
(117.500 US \$)**

Material infrastructure for a training centre was provided. Training facilities in animal husbandry and agriculture, specifically aimed at the ecological conditions of Nagaland in the NorthEast of India, were created.

INDIA**Construction of 5 dams in the Dharmapuri District: 1990-1997
(172.500 US \$)**

Five dams are constructed to create a large reservoir and to raise the groundwater level, in order to have small wells at relatively long distance of the reservoir containing a sufficient volume of water to enable simple irrigation for agriculture. This project also prevents soil erosion and brings a solution for drinking water. It leads to an increase of rural production and eradicates poverty. Local population (2200 people) participated in the construction of the dams. Special village committees were created. Living standards of the women were improved. A positive effect on local flora and fauna was registered.

The evaluation report confirms:

“The situation in Natrapalayam panchayat had drastically changed; undoubtedly these changes can to a large extent been attributed to the IVDP (Integrated Village Development Project) programs that have influenced positively the lives of the majority of the local population. (...)

“IVDP has further succeeded to identify and work out an adequate answer to the enormous agricultural constraints the people were faced with. The watershed development program conceived gradually in dialogue with the people and with appropriate technical support from outside, has brought tremendous changes in the area. Whereas the harvest used to be insufficient to cover local needs in the past, people are now able to use a big part of their land for cash crops. The sharp increase in income has led on its turn to drastic changes in the social and cultural pattern of the village communities”.

INDONESIA

An integrated rural system as an alternative for existing uncontrolled deforestation in Tulungrejo-Java: 1994-1998 (170.000 US \$)

The general objective of this project is the increase of the annual income of the Tulungrejo village in a period of 4 years. Specific objectives were:

- Increase in production of animal husbandry.
- Increase in agricultural production.
- Reforestation through social forestry.

INDONESIA

An integrated rural system in Gagaksipat, Subdistrict Ngemplak: 1994-1996 (152.500 US \$)

The general objective of this project is the increase of the annual income of the Gagaksipat village in a period of 3 years. Specific objectives were:

- Application of new techniques and management in agriculture and animal husbandry.
- Improved soil management.
- Fertilization.
- Selected seeds.
- Phytosanitarian techniques.
- Water management.

Furthermore, the project contributed to the strengthening of the local NGO.

INDONESIA

Wonogiri - Dryland farming: 1995-1997 (132.500 US \$)

Project to increase annual income of the population by improving production in agriculture and animal husbandry. Farmers have to plant trees belonging to 6 economically interesting species. Different species of grasses are serving as fodder or organic fertilizer. These limit erosion and evaporation. Training and follow-up are oriented towards integrated rural development.

INDONESIA

Integrated Regional Development Kei-Islands: 1989-1997 (362.500 US \$)

The project aims at stimulating the belief in own capacities of the population and at sustainable use of the natural resources. It wants to increase the annual income by promotion of activities in agriculture and animal husbandry. In cooperation with the University PATTIMURA of Ambon, scientific know-

how and traditional knowledge of the local population are combined. This population is strongly “project-oriented”. Through an integrated rural system the project wants to stop environmental degradation. Formation and empowerment of the farmers is a valuable topic. The option was taken to work with individuals rather than with groups of farmers. On the island Small Kei most of the farmers were sticking to the “slash and burn” system. The project introduced “alley cropping” as a new technique for keeping up soil fertility. On the island Big Kei the construction of terraces was introduced, which was a new technique for the farmers. Vegetables and fruit trees are also introduced as new crops.

INDONESIA

Agroforestry Development in Tana Toraja (Sulawesi)

The general objective is to increase of the farmer’s income. The specific objectives are:

- To increase the livestock production.
- To increase the dryland agricultural production.

The following results and activities have been planned:

- The increase of livestock has to be stimulated through the provision of buffaloes on a credit basis for fattening and reproduction, the promotion of fodder grasses and extension of live stock and veterinary care.
- The increase of agricultural production is aimed at through the utilization of uncultivated land, the increase of soil fertility (through terracing, the use of compost, the application of dolomite on acid soils,) and the increase of seasonal and perennial crops.

Another important result the project wants to achieve relates to the development of farmer groups, the improvement of project management, the strengthening of a local NGO and the upgrading of the project staff, which are all considered as important means to achieve the objectives.

PHILIPPINES

PEGA Integrated Water Resources Development: 1994-1995

(5.000 US \$)

This Micro Intervention Program was located in Baguio City. The target group was the Maeng Tribe, whose average income per capita per annum was below the poverty line. The specific goal of this Rural Water project was to supply potable water for every household in Sitio Pega, so that incidence of diseases will be greatly minimized.

PHILIPPINES

Paraclete integral development and reforestation project: 1998

(37.500 US \$)

The project aims at training of local people in forest management techniques and protection of the environment. At least 820 ha of forest have to be managed.

SRI LANKA

Biological Dinitrogen Fixation project: 1991-1997

(487.500 US \$)

The overall objective of this project was to replace part of the imported nitrogenous fertilizers by the efficient use of nitrogen fixing techniques. Strategies followed in the 1st phase are:

- To use efficient bacterial strains for improving nitrogen fixation and to improve nitrogen fertilizer recommendations.
- To introduce less known nitrogen fixing trees.
- To substitute chemical fertilizers by organic residues.

The specific objectives defined in the first phase were:

- A study of the associative dinitrogen fixation in the rhizosphere of rice ;
- A study of the distribution, occurrence, performance and nitrogen fixation of less known nitrogen fixing plants and their mycorrhiza ;
- A study of aspects of soil fertility in soil conservation systems, using nitrogen fixing plants.

It was concluded that significant amounts of nitrogen fertilizer can be saved by the use of bacterial inocula, that a number of trees can be promoted among nitrogen fixing plants and that soil fertility and sustainable agricultural production can be improved by the judicious combination of chemical fertilizers with biological and organic matter. In the consolidation phase (1995-1997) vulgarization of these results was produced.

VIETNAM

Développement des activités agricoles et de l'élevage à Tan Lap (Création d'emplois pour les femmes) – 1996 (5000 US \$)

Les objectifs de ce micro-projet étaient de créer des emplois parmi les femmes, d'augmenter les revenus des familles les plus pauvres, de lutter contre la malnutrition en favorisant notamment la consommation de viande dans ces familles, et enfin de former les femmes à la gestion d'un système d'épargne et de crédit. Ces objectifs sont atteints notamment par la formation et par la mise à disposition d'une centaine de femmes, sélectionnées parmi les plus pauvres du village et sans emploi, d'un capital leur permettant d'acquérir les animaux et le matériel de base nécessaire aux activités prévues. Ce capital fut un prêt, géré par l'Union des Femmes du village, que les femmes remboursaient chaque mois, avec un taux d'intérêt juste suffisant pour maintenir la valeur réelle du capital de départ, à l'aide des bénéfices résultant de leur travail, et ceci pendant un an. Lorsque le capital fut restitué, il permettait la mise au travail de 100 nouvelles femmes.

Parmi les activités on note:

- Identification du groupe cible (100 familles pauvres).
- Constitution d'un Comité Local et un Comité de Gestion.
- Formation des bénéficiaires en matière de gestion de crédit et d'épargne.
- Formation technique liée aux activités agricoles et d'élevage.

VIETNAM

Social forestry in Can Gio district: 1993-1997 (210.000 US \$)

The main objective was to reclaim destroyed mangrove woods and repartition amongst landless farmers. Not less than 1400 ha were reforested and 140 families were allocated woodland. The improvement of wood production has lead to enhancement of charcoal production.

LATIN AMERICA AND THE CARRIBEANS

PART A

See under ASIA – PART A

PART B

BOLIVIA

Irrigation: 1993-1994

(90.000 US \$)

BOLIVIA

Regional development in Vallegrande (Santa Cruz) by support of the local organizations: 1992-1997

(457.500 US \$)

The objective was strengthening of the local organizations towards rural development by realizing productive micro-projects. The project was aiming at creation of associations of small producers (ACPs) and associations of rural women (AMCs).

BOLIVIA

Rural Development in the Gran Chaco Tarijeno: 1993-1997

(62.500 US \$)

The project aimed at an integrated development of the rural population of 36 communities. Activities were grouped in 3 different programs:

- Public health.
- Agriculture.
- Capacity building.

BOLIVIE

Programme de gestion globale des bassins versants de la Cordillère du Tunari, Département de Cochabamba: 1999-2005 (5.350.000 US \$)

L'érosion dans les bassins versants de la cordillère du Tunari, qui domine la ville de Cochabamba, est responsable de pertes continues de terre arable dans les parties hautes et moyennes de la montagne. Les terres entraînées obstruent les canaux de drainage dans la vallée, provoquant de graves inondations ou menaçant directement les quartiers urbains en contrebas.

L'objectif global du programme est le développement rural durable par l'introduction de la conduite globale des bassins versants contribuant à l'amélioration de l'environnement. On attend les résultats suivants:

- Disposer de l'information de base au niveau social, biophysique, environmental et économique nécessaire.
- Augmenter le revenu agricole grâce à la gestion durable des ressources naturelles, en incorporant des pratiques adéquates d'utilisation et de conservations des sols.
- Atténuer les risques et les effets des inondations.
- Diminuer les processus de dégradation et en particulier la perte des sols par érosion.
- Responsabiliser les municipalités représentatives des bénéficiaires pour qu'elles participent à la gestion et à la conservation des investissements du programme.

Comme volets complémentaires ont été identifiés:

- La gestion des bassins versants ou "cuencas".
- L'approvisionnement en eau (potable et agricole).
- La scolarisation des enfants.
- La formation des agriculteurs.

BRAZIL

Promotion of women in Curitiba: 1992-1998

(47.500 US \$)

This project provided support to an association of women in S.W.Brasil through an educational program. Meetings and practical exercises in the field were organized to build awareness and spread knowledge about medicinal plants and herbs. Traditional methods to extract oils or to dry plants in a proper way were not practiced anymore. Women were introduced in the set-up of fields and in the production of syrups and pomades.

CHILE

Integrated rural development of the region of Rengo

(Cacapoal Province): 1991-1997

(355.000 US \$)

The project was coordinated by INPROA (Instituto de Promocion Agraria) in cooperation with ACT, Belgian Association for Technical Cooperation. Its objectives were:

- Reinforcement of the agro-economic activities with technical and economic contributions and credits.
- Reinforcement of the existing organization and creation of new forms of organization.
- Implementation of a formation program for farmers and women.
- Reinforcement of rural women's participation.

In the first year, special attention was paid to technical assistance and demonstration of early crops. In the second year, credits were attributed to 32 farmers for the culture of tomatoes, melons, watermelons and choclo. In the third year, more farmers (46) and new crops were incorporated. Groups of women received 48 funds during the last 2 years to construct little ovens. The project team provided follow-up for the crops. Different groups of farmers had sessions to get acquainted with the new crops and techniques, advantages and possibilities of horticulture, forms of organization, rentability of different crops, culture under plastic, seeding, setting-up a nursery, preparation of soil, transplantation of seedlings, irrigation, use of pesticides, harvesting, quality control, commercialization, evaluation. Meetings on reinforcement of organization and solidarity were held. Meetings for women and youngsters on very practical topics had a lot of success and enhanced the self-esteem of women. The new association AGFER became the forum where rural women are looking for solutions to their problems.

CHILE AND BRAZIL

Regional and physical geography of Mediterranean and tropical regions:

The research unit has a yearlong experience in regional studies about physical geography and geomorphology in Mediterranean and tropical regions. Special attention is paid to the detection and monitoring of environmental degradation and of soil salinity based upon field observations in combination with the interpretation of aerial photographs and space remote sensing data and the integration in a geographical information system (GIS). In the frame of the Less Favored Areas-projects of the European Commission, a study is made for soil- and environmental degradation in Greece (Peloponessos). This research is continued in the frame of the Global Change program (OSTC, Brussels). The environmental degradation and soil erosion are studied using remote sensing techniques and a GIS for study areas in Greece (Euboia and Peloponessos), Spain (Almeria and Central Ebro-plain), Turkey (Central-Anatolia), Jordan (Wadi Mujib) and Iraq (Mesopotamia). Moreover, the influence of vegetation degradation on soil erosion susceptibility, especially due to vegetation fires, is investigated. This research is mainly done in Greece and Congo.

The research unit has also built a sound experience regarding detection and modeling of soil salinity by means of remote sensing and GIS. This is mainly done in the frame of 3 TELSAT-projects:

1 research project and 2 pilot projects (OSTC, Brussels). Two projects are executed in Egypt: the research project focused on the Nile delta and the pilot project on the Ismailia province. These projects aimed to develop models for the simulation of soil salinity and to make predictions in case of human interactions on the physical environment. These models allow evaluating the waterlogging and soil salinity ensuing digging of irrigation and drainage canals, leveling of the terrain and filling up of sebkhaís.

A second pilot project (OSTC, Brussels and Haecon, Gent-Drongen) is executed during the period 1997-1998. This project aims to study the salt intrusion, land use and rice crop production in the coastal plain of the Mekong delta (Viet Nam), based upon field work, remote sensing and GIS. The pilot project fits in a case study of the Mekong delta where large-scale public works are foreseen a/o. to boost rice production and to improve the accessibility of the area by deepening of the estuary. It is asked to what degree the planned deepening of the Bassac will influence the saltwater intrusion. This project is related to the sustainable development of tropical regions (e.g. control of water supplies, monitoring and management to avoid environmental degradation) and to the methodological contribution to environmental impact studies regarding the execution of large scaled public works. The general aim of this project is to develop a user-friendly procedure for the detection and the modeling of salt-water penetration in macro-estuaries and delta regions characterized by a tropical hydrology. This procedure will be applied in other areas having similar problems.

Other soil salinity studies (including the detection by means of remote sensing data) were done for the Fayoum depression (Egypt), the plain of Tigris and Euphrates (Iraq), the kavirs of Esfahan and Yazd (Iran) and Euboia (Greece). For some years, the environmental degradation is also studied in its historical context. A number of geo-archaeological studies are made in collaboration with archaeologists. Projects are executed in Greece (Euboia), Turkey (Pessinus, Anatolia), Jordan (Lehun), Egypt (Nubia), Sudan (island of Sai, Nubia), Chile (Easter Island) and Madagascar. Regional geomorphologic studies, especially as a tool for more efficient soil mapping, were executed in Cameroon (Extreme Nord and West-Province), Congo (Katanga, Lower Congo), Malaysia and Brazil.

CHILE

Agricultural development Iquique/OCAC: 1998-1999
(135.000 US \$)

CHILE

Sustainable development in the Rio Simpson-valley / Coyhaique: 1997
(45.000 US \$)

CHILE

Sustainable development in the Rio Simpson-valley: 1998-1999
(112.500 US \$)

CHILE**Sustainable development in Quemchi: 1998-1999
(122.500 US \$)****CHILE****Institutional support for the Institute of Ecology: 1998-1999
(112.500 US \$)****CUBA****Improving soil salinity management under sugar cane using Geoinformatica in
Cuba: 1999-
(152.500 US \$)**

The overall objective of the project is to strengthen the scientific research capacity and the technical infrastructure of the Higher Institute of Agricultural Sciences of Havana; to improve soil salinity management using Geoinformatica (integration of a salt/water balance simulation model, Geostatistics and Remote Sensing with the analytical capacity of a GIS).

The direct results expected from the project are:

- Improved capacity to use modern technology for the management of land and in particular of sugar cane cultivation on salt affected soils.
- Up-to-date infrastructure for laboratory and field determinations of soil and water characteristics and for data processing using Geoinformatica.
- High-level scientific knowledge due to the intensive interchange between staff members and Ph.D students and the Flemish promoters.
- Increased pedagogic quality of courses related to Geoinformatica currently given by the Cuban staff members, strengthening the position of Cuban internationally oriented post-graduate programs.
- Wide distribution of the project results among different institutes all involved with land management and sugar cane production, due to a closing workshop.

GUATEMALA

Projet de gestion d'espaces forestiers, de création de viviers et de reforestation pour la Région sud-occidentale de Guatemala: 1992-1996 (372.500 US \$)

Les objectifs généraux de ce projet étaient:

- Faire de la gestion forestière un moyen de contribuer à la conservation des ressources naturelles et de fournir des revenus à la population.
- Exploiter les ressources naturelles de manière rationnelle et en accord avec la vocation des différents types de sol.
- Générer des sources de travail.
- Contribuer à la formation d'entreprises d'exploitation du bois.
- Générer les conditions propices pour unir le secteur forestier au développement économique et faire des terres forestières une source de richesse.

Les objectifs spécifiques s'orientaient autour de 3 axes:

- Composante de gestion forestière (former 1000 personnes par an dans des aspects de gestion forestière et donner un appui technique à 270 groupes ou personnes individuelles).
- Composante de création d'entreprises productrices de plants (former 60 entreprises productrices, améliorer les revenus de 1800 familles, produire 12 millions de plants dans une période de 5 ans).
- composante de reforestation (contribuer à la reforestation de 6000 ha, donner un appui technique au reboisement).

GUATEMALA

Forestry project San Marcos: 1998 (42.500 US \$)

Stimulation of forest and environment management in a rational way.

HAITI

Soutien à l'agriculture de subsistance à Vallières: 1994-1998

(157.500 US \$)

Ce projet a contribué à l'amélioration durable de la situation économique et nutritionnelle des paysans de cette région. Les objectifs spécifiques étaient:

- Analyse agro-économique approfondie pour déterminer les possibilités de production optimale.
- Formation des paysans dans la pisciculture.
- Formation et suivi technique.
- Amélioration des méthodes traditionnelles d'agriculture.

NICARAGUA

Stimulating rural production of small farmers by taking fundamental ecological measures - Nicaragua Rivas/Ometepe: 1992-1997

(422.500 US \$)

The poor population of Moyogalpa (17.000 people) suffers from volcanic ashes and erosion at the volcano Concepción. The objectives of this project were:

- Execution of an integral ecological plan to protect the natural resources of the island and to create a new equilibrium.
- Introduction of sustainable and ecologically more acceptable production techniques to recuperate and conserve agricultural areas.
- Promotion of the farmers participation.
- Increase of production and productivity.

The following activities were organized:

- Multidisciplinary and participatory research.
- Soil protection.
- Reforestation.
- Introduction of ecologically valuable techniques.
- Formation of the population around these themes.

PERU

**Renforcement institutionnel de l'Association pour le Développement et la
Recherche forestière à Cajamarca: 1990-2001
(825.000 US \$)**

Le projet vise à promouvoir les activités forestières dans le Département de Cajamarca et, à long terme, dans la Sierra du Pérou.

Les résultats intermédiaires sont:

- Consolider ADEFOR (Association Civile pour le Développement Forestier, asbl) par des investissements en biens et équipements.
- Installer une recherche forestière orientée en priorité vers les applications industrielles.
- Fournier des services pour la gestion et la rentabilité des plantations industrielles.
- Assurer une formation spécialisée du personnel engagé dans la recherche et le développement forestier.
- Mettre en place l'infrastructure nécessaire à la fourniture de semences et produits requis par le développement forestier.

Actuellement le projet ne comprend plus que l'octroi à des ressortissants du Pérou, de la Bolivie et de l'Equateur de bourses régionales de formation aux techniques forestières.

OTHER PARTIES

PART A

See under ASIA – PART A

PART B

ISRAEL

Water supply to the Occupied Territories (West Bank): 1993

(355.000 US \$)

The objectives of this project were:

- Supply of drinking water (improving small scale water supply systems).
- Supply of water for drip irrigation and animals.
- New irrigation techniques after rehabilitation and upgrading of natural springs (quality control).
- Protection of the environment and of the springs against contamination by stocking water in clean cisterns (water storage facilities).
- Supply maintenance (replace damaged pipe work for potable water supply).

PALESTINE

Al Far'ah Rehabilitation Project: 1998-1999

The project aims at improving the social, economic and environmental situation of the local community in Al Far'ah area through:

- Improving the income of the society and farmers due to the protection of water and increasing the percentage of water discharge to 75% (reduces the evaporation and losses or through tourist activities).
- Improving the environmental situation through increasing the percentage of cultivated land and struggling against desertification.
- Providing clean water for more than 35.000 citizens through protecting the spring from pollution.
- Strengthening the role of the local community in the management of water resources for agricultural and domestic purposes.

The technical objectives are:

- To protect the spring from pollution
- To provide a sufficient water source for agricultural and domestic purposes.
- To strengthen the role of the local community through establishing a committee for water management.
- To provide sufficient water for drinking and protect water from loss.

SYRIA AND JORDAN

Looking for archeological sites and assessment of desertification

In the Euphrates region of Syria, the Laboratory of Geomorphology and Remote Sensing of the University of Liege is looking for some archeological sites thank to field surveys, remote sensing analysis and GIS. In the meanwhile, a number of desertification phenomena are assessed.

Similar research is undertaken on the Dead Sea banks of Jordan.