

Development of dryland areas- Sida's response to the Convention to Combat Desertification

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Sida

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This series covers issues on agriculture and rural development from a development cooperation perspective. Sida's Department for Natural Resources and the Environment believes that the publications will be of interest to those involved in this field of work.

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Preface

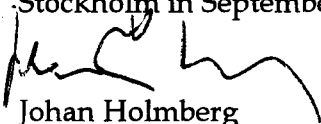
Most people in developing countries live in rural areas. Most rural people depend on what land provides. The productivity of land in a given climate depends on soil fertility and access to water. Management practices affect both. Poor management has negative impact on the environment (unsustainable land use), while good management can reverse land degradation, increase farmers' income and reduce the pressure on natural ecosystems. For these reasons, Sida supports natural resources management in most of its major partner countries.

This report has been compiled to display Sida's involvement in natural resources management in drylands, particularly in Africa. The reason is Sweden's commitment to implement the Convention to Combat Desertification – an important off-spring from the United Nations Conference on Environment and Development 1992. Development co-operation is crucial in this respect, since so many African countries are among those affected by drought and desertification.

During the last decade or so, a new view on how to achieve rural development has evolved. The managers 'themselves-female and male farmers – are the key actors in a participatory process. This approach characterises most programmes in this review. Sida's role is to facilitate farmers' own efforts; encourage exchange of information; develop institutions; help create policies; support collaborative research and technology development. This review shows the great variety of programmes that in one way or another touched dryland development. Some directly target drylands, while other include them as part of a wider coverage. Together they provide a picture of how Sida works towards sustainable development in dryland areas mainly in Africa, but also in other regions of the world. The report will form a platform for Sida's future support to the implementation of the Convention.

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Stockholm in September, 1997



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Summary

The United Nations Convention to Combat Desertification (CCD) entered into force on 26 December 1996. The Convention is a new and important instrument for the sustainable development of dryland areas, particularly in Africa, alongside with other international conventions following the United Nations Conference on Environment and Development (UNCED) in Rio 1992.

The fight against desertification has preoccupied affected countries and donors alike for more than 20 years. In spite of considerable efforts, the problem of land degradation in dryland areas by and large remain. Here, it should be pointed out that these problems occur not only in the vicinity of deserts, but also in semiarid and dry subhumid areas far away from the Sahara or Kalahari deserts. Many of Sweden's main partners in development cooperation are among the affected countries.

This desk study reviews Swedish development cooperation in dryland areas during the last decade, in the light of the Convention. The review covers two areas: agriculture, forestry, livestock and land husbandry; and water resources management including water supply and sanitation. The objective is to summarize what has been done, draw conclusions from these experiences, and to provide guidance for future action and policy development.

The review covers about 100 bi- and multilateral development and research programmes in 17 countries – 13 in Africa, 3 in Asia and 1 in Latin America. It also includes support to global and regional programmes and organizations, including Non-governmental organizations (NGO).

In summary, results of the review show that:

- ✧ Sweden has supported relatively few development programmes directly targeting arid and semiarid lands (ASAL). Among the exceptions are the Sahel Programme; the soil conservation programme in Tunisia, both ending in the early 1990ies; and the Hifadhi Ardhi Dodoma (HADO) soil conservation project in Tanzania, which is also terminated.
 - ✧ Sida's Department for Research Cooperation (SAREC) has been more active in ASAL, supporting a number of research initiatives and networks, both in Sahel and in Southern Africa. A few examples: the Somali Camel Research Project; the Dryland Husbandry Project-a research programme for the pastoral land-use system; and the Pastoral Information Network (PINEP) that deals with training, research and dissemination in East Africa. Another example is the East African Research Programme on Sustainable Use of Dryland Biodiversity (RPSUD). The support to the Consultative Group of International Agriculture Research (CGIAR) and other regional and international research organizations should also be mentioned.
 - ✧ Sweden has a long experience in soil conservation and land husbandry. Partly, these experiences include drylands. For example, national programmes in Kenya and Lesotho have contributed to develop sustainable agriculture, in symbiosis with the regional programmes the Regional Soil Conservation Unit (RSCU) and the Southern Africa Development Community Environment and Land Management Sector (SADC-ELMS). Technology development, dissemination
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- and networking have been important features of these programmes. Sida has been particularly involved in refining participatory methods in land husbandry.
- ⌘ In a number of African countries, Sida's support to the agriculture and forestry sectors has partly addressed **dryland** areas, although the emphasis has been on medium- and high-potential areas. Examples are Ethiopia, Tanzania, Zambia and **Mocambique**.
 - ⌘ Regional **programmes** in the agricultural sector play a strategic role in research, technology development, monitoring, and regional coordination. Examples are the Sida-supported AGROTEC (Agricultural Operations Technology for Small-holders in East and Southern Africa) and **FARMESA** (Farm-level Applied Methods in East and Southern Africa), as well as RSCU and SADC-ELMS.
 - ⌘ In Asia, **dryland** areas in China, India and Sri Lanka receive support.

Further conclusions drawn from the review include:

- ⌘ Animal husbandry receives less attention in the reviewed programmes, with a few exceptions, such as the earlier mentioned **Dryland** Husbandry Project.
- ⌘ Sida's support is heavily biased towards East and Southern Africa, while development cooperation in West Africa is at a low level.
- ⌘ A significant number of Swedish universities have worked in drylands, through SAREC-financed collaborative research programmes. The support has resulted in several **PhD** degrees. Many Swedish scientists therefore have experiences from arid, semiarid and dry **subhumid** areas.
- ⌘ A lesson learned from development programmes in **dryland** areas, i.a. in the Sahel Programme, is that community participation and priority-setting is essential, and that food security is one such priority. The complexity of the problems were underestimated, particularly the socioeconomic aspects, and policy issues.
- ⌘ Water supply and sanitation programmes have helped improve rural livelihood in **dryland** areas in Botswana, Ethiopia, Kenya, Tanzania, and Uganda. In recent years a wider view of the water sector has emerged within Sida. The Global Water Partnership and the Southern Africa Regional Water Resources Programme are interesting and innovative examples of regional cooperation and local 'ownership'.

The most pertinent observations and recommendations related to Sida's response to the Convention to Combat Desertification are:

- ⌘ The adjustment of Sida's work in relation to the CCD has already started with the Sida Policy on Sustainable Development.
- ⌘ Sida has emphasized agricultural and forestry production in soil conservation and land husbandry programmes. This approach goes well with the CCD.
- ⌘ Opposed to a top-down approach, Sida has encouraged and developed participatory processes and the collaboration of natural and social sciences. Here, Sida has probably a comparative advantage that should be further developed.
- ⌘ **Dryland** forestry is a strong Swedish field. While most donors are interested in humid tropical forests, a Swedish focus on **dryland** forest resources could be valuable.
- ⌘ Swedish support to research and to regional research networks is of considerable importance to African agriculture research, including drylands. The impression, however, is that the support would gain from better focus on key issues for **dryland** development, and from a more integrated approach.

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- Research and development should work closer together. This would improve the dissemination of research results and facilitate farmers' participation in technology development.
 - In some cases, there is room to review the balance between activities in **dryland** vs. higher productive areas. One example is seed improvement programmes, where relatively little is spent on **dryland** crops.
 - Animal husbandry, which is so important in **dryland** livelihood, is underrepresented in Sida's support.
 - West Africa, which is particularly stricken by desertification and drought, **receives** very little Swedish support. Increased attention to the Sahel region would strengthen the Swedish profile in combatting desertification.
 - Developing **drylands** is an interdisciplinary task. This should be reflected within Sida. Closer collaboration among departments is needed, in order to achieve a consistent response to the CCD; particularly among the Departments for Natural Resources and the Environment (NATUR), Research Cooperation (SAREC) and Cooperation with Non-Governmental Organizations and Humanitarian Assistance (SEKA).

Since this review targets natural resources management, little is said about macroeconomic and socioeconomic issues and about the policy framework that influences people of the drylands. This was not part of the Terms of Reference. Maybe this is a weakness in this review. Reversing land degradation in **drylands** will eventually depend on both the periphery and the centre. National leaders need to facilitate the process and show a genuine ambition to, i.a., enhance market mechanism, delegate power to rural districts, and review applicable tenure legislation. Many of these interventions fall outside the direct natural resources management.

Background

Over one third of the Earth's land areas is **drylands**—6,1 billion hectares. Of this area, 1 billion hectares are hyper-arid deserts. The remaining 5,1 billion hectares are more or less-productive arid, semiarid or dry **subhumid** areas. Close to one billion people worldwide live in areas affected by desertification and drought. In this environment, they need to fulfil their requirements for food, shelter, water and energy, as well as their social and cultural demands. Of the world's **drylands** used for agriculture, 70 % are affected by desertification. Each year, 6 million hectares of previously productive land loses its capacity to produce food (UNEP 1992).

A large number of African countries are affected by desertification, many of which are among the poorest in the world. Many of these countries have a rapid population increase. Climatic factors combined with human activities, notably overgrazing, deforestation and unsustainable agriculture, create pressure on the natural resources beyond its carrying capacity. The effects are all too well known — wind and water erosion and chemical and physical deterioration of soils, leading to decreased land productivity, poverty and environmental migration. However, the mechanisms are complex and not fully understood. There are also examples where increased pressure on land has resulted in improved management and reduced land degradation. Both macroeconomic and policy aspects and the rural/urban nexus is important to the understanding the mechanisms behind desertification.

The United Nation Conference on Desertification (UNCOD) in Nairobi 1977 put desertification on the international agenda. The Plan of Action to Combat Desertification that emerged from UNCOD was an important start to address the problems of sustainable development of dryland areas. A 1989 review of the Plan of Action put greater emphasis on socioeconomic factors. In spite of these efforts the severe problems of desertification remained. At the Rio Summit 1992, the international community—in particular the African countries—called for a renewed initiative to address the issue of the combat against desertification and drought. Chapter 12 of Agenda 21 asked the General Assembly to convene an intergovernmental negotiating committee for the elaboration of an international convention.

*The United Nations Convention to Combat **Desertification** in Countries Experiencing Serious Drought **and/or** Desertification, Particularly in Africa (CCD) was adopted on 17 June 1994, along with 2 resolutions: Resolution on **Urgent Action for Africa**; and Resolution on Interim Arrangements. Four regional implementation annexes are included in the Convention: one each for Africa, Asia, Latin America and the Caribbean, and the Northern Mediterranean.*

During the one year the CCD was open for signature, 114 countries, and the European Union (EU) signed. The CCD entered into force on 26 December 1996, following the fiftieth ratification. Sweden ratified the Convention on 12 December 1995 as the 18th country. To date (3 September 1997), 108 countries have ratified the CCD, among them most of Sweden's main partners in development cooperation.

The Convention to Combat Desertification is directly linked with development issues. It emphasizes sustainable and improved natural resources management, particularly at community level. This is why the Convention will have strong influence on Swedish development assistance, particularly in Africa, and on Swedish foreign affairs and international relations. The Swedish International Development Cooperation Agency (Sida) plays an important role in this effort.

Objective

The objective of this desk study is to review Swedish support to sustainable natural resources management during the last decade, in fields of relevance to the Convention. The aim is to

- summarize what has been done
- draw conclusions from successes and draw-backs
- provide guidance for future work

The review covers two main areas:

1. agriculture, forestry, livestock and land husbandry
2. water resources management, including domestic water supply and sanitation

Geographically, the study emphasizes Africa, while Asia and Latin America are briefly covered. The review includes Swedish-financed 'traditional' development projects as well as support to research and higher education. Both bilateral and multilateral development cooperation is embraced, including support through NGOs.

Desertification-causes and effects

Desertification is a gradual degradation of land, caused by human activities in combination with climatic factors. Three processes-often interacting-are the main culprits: overgrazing, deforestation and unsustainable agricultural practices. Population growth is linked to these processes. The resulting land degradation have both a quantity and quality dimension. Top soil is lost through wind and water erosion. Soil quality is reduced due to loss of nutrients and organic matter, compaction, salination and water logging. Less arable land of less productivity is the consequence. However, the cause-effect pattern is complex and involves both macroeconomic, social and policy issues such as tenure legislation and delegation of power.

Desertification — an example from Sahel

Sahel is closely associated with the problems of **desertification** and drought. Although the Convention deals with a much wider geographical spectrum, a closer look at Sahel could provide an understanding of how desertification works.

Roughly, Sahel covers a strip south of Sahara from Somalia in the east to Senegal in the West, inhabited by some 150 million people. Annual rainfall ranges from **100-1000** mm. The main land-use systems are nomadic pastoralism and sedentary **rainfed** agriculture. The northern limit for **rainfed** agriculture is approximately 300 mm annual rainfall. Seasonal nomadic grazing takes place north of that border.

After the rainy season, nomadic herds move south into the agricultural land. It should be observed that the traditional Sahelian livestock system is a high-performance system, thanks to protein-rich fodder in the semiarid Sahel during the rainy season, and the use of several niches (cows eating grass, goats browsing shrubs and camels, which browse the trees).

Sahelian farmers traditionally used a short-term fallow system to maintain soil fertility. Animal manure, provided by nomadic herders during the dry season, was also important. To deal with the fluctuating climate that always have been a reality in Sahel, farmers had to produce an excess in the good years.

The balance between nomadic herding and rainfed agriculture has been disrupted in the last decades. A severe and wide-spread land degradation (desertification) has occurred. In their book *Environmental Exodus*, Myers and Kent (1995) say that Sahel in recent decades has generated some of the largest numbers of environmental refugees in relation to total population. The following example from West African Sahel describes the main mechanisms (Denève 1994, UNDP/UNSO 1994):

- Denser populations-with the present growth rate, Sahelian countries double their population in 25 years.
- To feed the growing population, agricultural production has to be increased, either through area expansion, or intensified technologies. In Sahel both processes occur. The traditional fallow system is gradually abandoned, and new land – often nomadic herders' dry season pasture-is converted to agriculture.
- There has been a spectacular increase in livestock in the agricultural zone. These animals create a year-around pressure on the vegetation as they do not migrate.
- With shorter fallow periods and inadequate manure or fertilizer application, soils quickly deteriorate. This is accentuated by overgrazing. The increasing pressure on the natural resources also causes deforestation. Soils not protected by vegetation are easily destroyed by rain and wind erosion. Unsustainable agriculture and decreasing harvests is the result. This land degradation – desertification – often take place far away from the desert fringes.
- As rainfed agriculture expands, less space remain for nomadic herding. Dry-season forage in areas occupied by agriculture has become a limiting factor. Traditional nomadic movements gradually disappear. Conflicts increase.
- Socioeconomic aspects, policy aspects and the urban/rural links also affect land use in Sahel. These factors are complex indeed.
- Drought and erratic rainfall has worsened the situation. Annual rainfall 1967-92 was 20-40 % less than the average for 1931-60. In some very dry years agriculture has failed, causing famine and dependence on food aid.
- When the carrying capacity of the land has been exceeded, people have to migrate. Environmental refugees move to townships or abroad, particularly to Ivory Coast.
- Loss of vegetation cover affects the hydrologic cycle, resulting in increased surface run-off and reduced infiltration. It may also cause changes in the rain fall pattern.
- Land degradation leads to loss of biodiversity and genetic resources.
- The macroeconomic structure of Sahel provides few alternative incomes for farmers. Domestic markets are weak. Low income means little opportunities to investments in agriculture.

As this brief background shows, desertification in Sahel is the result of complex and interacting biophysical, socioeconomic, and climatic factors. There is an urgent need to reverse the poverty/land degradation spiral.

Development cooperation

The desertification problem of Sahel has been in focus for development cooperation for many years. A very large number of organizations deal with different aspects of Sahel issues.

The United Nations Sudano-Sahelian Office (UNSO) was established in 1973 to administer a fund for drought victims in the Sahel. United Nations Development Programme (UNDP) presented in 1977 a document *Plan of Action to Combat Desertification*. The same year the UN General Assembly gave the mandate to UNDP to support the development of National Plan of Action to Combat Desertification (NPACD). One disadvantage of these plans was that they were not always coordinated with national development plans, and therefore did not have the anticipated influence. UNSO have later promoted that these plans become an integrated part of the national development. Two closely related initiatives are the World Bank's Environmental Action Plan (EAP), and the International Union for the Conservation of Nature (IUCN) National Conservation Strategies (NCS).

Sweden has been active in the region through the Sahel Programme and support to UNSO, IUCN and a number of research projects as described later in this report.

In spite of considerable efforts in Sahel, desertification continues. In general terms, many projects started as technical fixes - tree planting to stop the expansion of the Sahara desert, and construction of wells to mitigate water scarcity. These technical solutions to desertification problems did not show anticipated results. Among the lessons learned are that farmers' first priority is food security, and that projects need a much wider scope than just tree planting. Farmers' participation and attention to socioeconomic factors are instrumental. Coordination among projects, willingness to learn from farmers and other actors, and research and development of new or improved technologies are also important.

The challenge is to improve people's standard of living, and at the same time reverse land degradation.

The Convention to Corn bat Desertification

Definitions and coverage

The United *Nations* Convention to Combat Desertification in Countries Experiencing Serious Drought and/or *Desertification*, Particularly in Africa (CCD) entered into force on 26 December 1996, along with its 4 Regional Implementation Annexes. This chapter summarizes the salient points of the Convention as a background to the review of Sida's project experiences.

First, what is desertification? The definition agreed by the world's leaders at the 1992 Earth Summit and adopted by the Convention is: *land degradation in arid, semiarid and **subhumid** areas **resulting from** various factors, including climatic variations and human activities.*

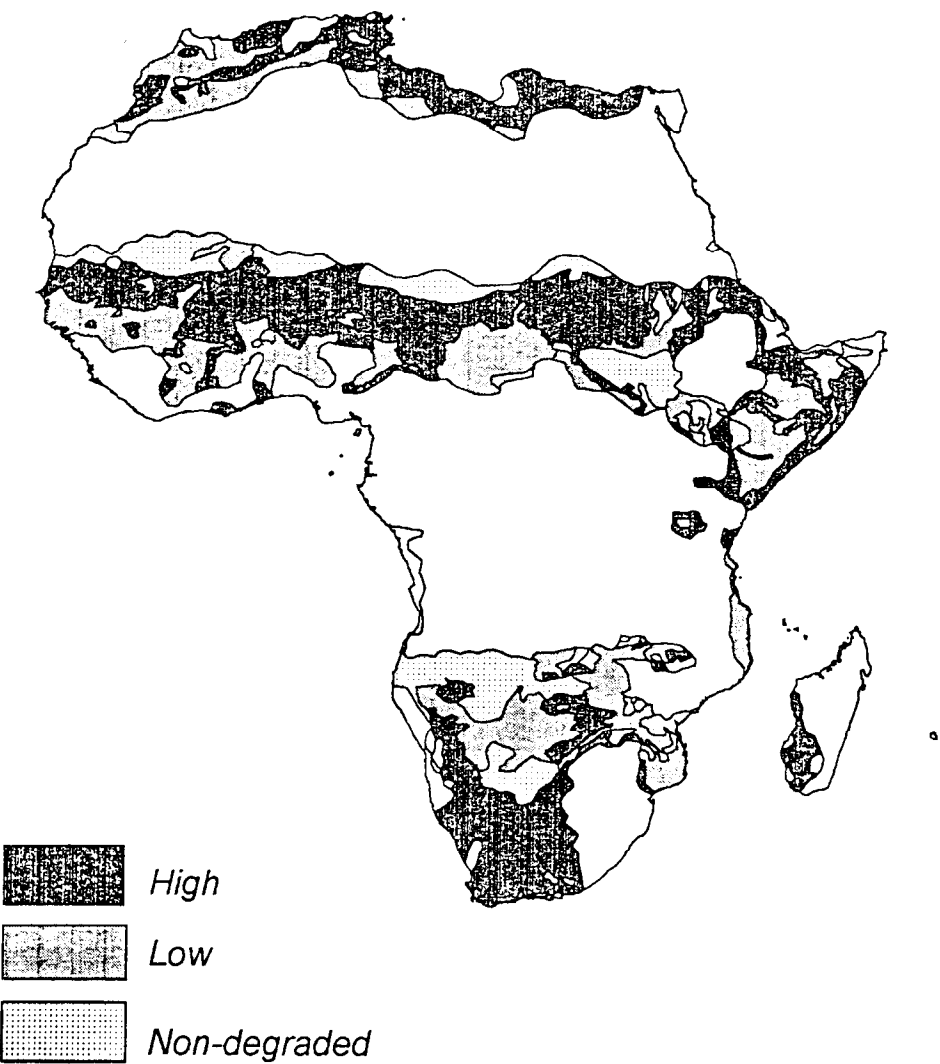


Figure 1 (up-dated in this reprint). Soil degradation severity in **drylands** in Africa. Source: International Crop Research Institute for the Semiarid Tropics 1996. Desert Margins Initiative.

Second, what areas are affected? The Convention covers *arid, semiarid and subhumid areas other than polar and subpolar regions, in which the ratio of annual precipitation to potential evapo-transpiration falls within the range from 0,05 to 0,65*. It is not possible to put a fixed precipitation figure to this definition, since rainfall patterns and sunshine-, temperature- and wind regimes also count.

With this wide definition, the CCD reaches far beyond the desert fringes of the Sahara and Kalahari deserts. Unfortunately, the Swedish common name for this convention — *ökenkonventionen* — leads our thinking in the wrong direction. The Convention deals with land husbandry in **dryland** areas in general, rather than just deserts or desert margins.

Africa is the continent most affected by desertification. This fact is recognized in the full title of the Convention. Many of the continent's 53 countries suffer from the effects of desertification, to greater or lesser extent (figure 1). But not only Africa — all continents have countries or areas with these problems, including Europe and North America

Objective and principles

The objective of the CCD is sustainable development in affected areas, in the spirit of Agenda 21. To achieve this, the Convention prescribes improved productivity of land and sustainable management of land and water resources (box 1).

The under-lying principles build on participation at local level, cooperation and coordination at subregional, regional and international levels, and involvement of all stakeholders in the process, including NGOs and communities.

Box 1. Objective of the Convention to Combat Desertification

Article 2, Objective

1. The objective of this Convention is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas.
2. Achieving this objective will involve long-term integrated strategies that focus simultaneously, in affected areas, on improved productivity of land, and the rehabilitation, conservation and sustainable management of land and water' resources, leading to improved living conditions, in particular at the community level.

General provisions

The Convention emphasizes the coordination of efforts and a coherent long-term strategy at all levels. These are key obligations, along with an integrated approach and an enabling international economic environment.

Affected countries shall establish long-term policies and action programmes, addressing the underlying causes of desertification. They shall facilitate the participation of local populations.

Developed countries shall support the efforts of affected countries, provide substantial financial resources and access to appropriate technology, knowledge and know-how.

Elements of the Convention

The central elements of the CCD are the National Action Programmes, updated through a participatory process and financially linked to Desertification Funds. Shared resources and cross-national issues are dealt with in Subregional Action Programmes and Regional Action Programmes. The action programmes should be encouraged by international cooperation. Coordination of these efforts is emphasized.

Integrated collection, analysis and exchange of data is needed to systematically observe land degradation. Technical and scientific cooperation should be promoted, and national, subregional and regional research capabilities strengthened. Research priorities should be included in all action programmes to increase the knowledge of the processes leading to desertification and drought. Research should also address the relationship between poverty and migration caused by environmental factors and desertification.

Traditional and local knowledge should be protected, promoted, improved and possibly integrated with modern technology. The CCD recognizes the significance of capacity building and institutional aspects. This includes research and training capacity, the extension service, public awareness, educational programmes and the full participation of local people. Networks of regional education and training centres should be established or strengthened.

Adequate financial resources should be made available, including innovative methods for funding. Developing countries should mobilize adequate financial resources. Financial mechanisms should be set up to channel financial resources rapidly and efficiently to the local level.

In summary, the Swedish chairman of the Intergovernmental Negotiating Committee on Desertification, Bo Kjellén (1997), says that the Convention:

- prescribe a pragmatic approach to achieve its objectives
- encourage affected countries to prepare and implement national action programmes
- stresses the need for a consultative process involving all entities concerned
- adopts an integrated approach, including the socioeconomic dimensions of the problem
- adopts a bottom-up approach
- recognizes the role of NGOs and includes them in the consultative process
- emphasize multisource funding. Activities should be funded by the affected countries, with bilateral and multilateral assistance
- establishes a new Global Mechanism to help identify sources of funds and promote the mobilization and channelling of funds.

Implementation

The Conference of the Parties (COP) will oversee the implementation of the Convention. The first COP will take place in Rome 29/9–10/10 1997. A Permanent Secretariat-its location still to be decided among the candidates Bonn, Montreal, and Murcia, Spain and New York-will be set up to coordinate and supervise the work. The Committee on Science and Technology (CST) will provide scientific advice and backstopping. A new Global Mechanism will help identify and channel funds.

But as earlier mentioned, the key elements for implementing the Convention are the National, Subregional and Regional Action Programmes – developed by the affected countries and supported by developed countries (figure 2).

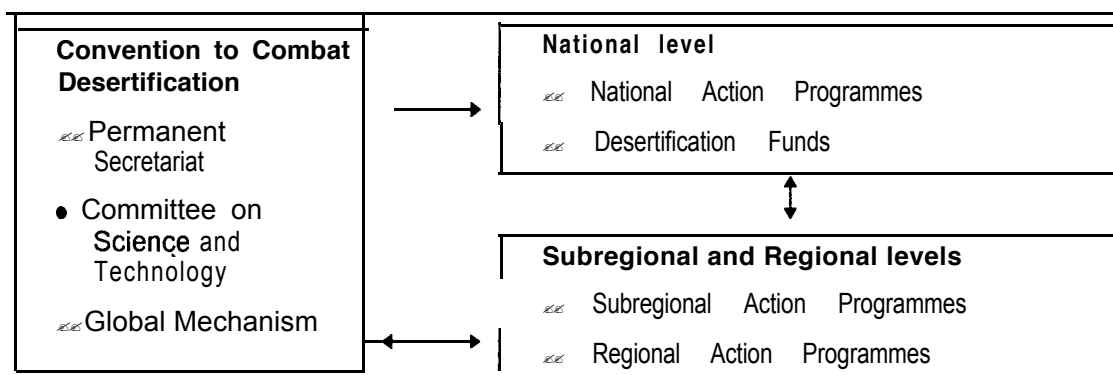


Figure 2. Key elements for implementing the Convention.

Sida and the Rio process

A starting point when studying Sida's experiences in relation to the CCD is to look at how Sida has integrated Agenda 21 in its work. Following the UNCED conference, the Swedish Government appointed an official Commission on development cooperation and the environment in 1994. The Commission's final report *Sustainable Aid – Swedish Development Assistance after UNCED*, Ds 1994:132, was circulated in 1995.

Based on this report, Sida prepared an Action Programme for Sustainable Development (Sida 1996). This document states that development and environmental protection are two sides of the same coin. The action programme contains more than 60 action points involving all areas of Sida's operations. These action points cover:

- ✧ Prioritized subject areas and methods
- ✧ Integration of environmental issues in Sida's activities
- ✧ Coordination with other actors
- ✧ Information work
- ✧ Organizational development
- ✧ Capacity building within Sida

Among the prioritized subject areas, several relate to the CCD. Such areas are: water resources; sustainable use of land and forest; soil conservation; environmentally sound production and consumption of energy; competence, capacity and institutional development. The adjustment of Swedish aid to the CCD has already started.

Among the 6 objectives for Swedish development cooperation, most apply to the Convention, particularly:

- ✧ Economic growth-dryland areas are among the poorest, and sustainable development in affected areas will contribute to economic growth
- ✧ Economic and social equality-the involvement of the community at all stages encourages equality and ensures that the needs at community level are met
- ✧ Environmental quality – the rehabilitation, conservation and sustainable management of land and water resources have a direct impact on the environmental quality
- ✧ Gender equality-sustainable development in dryland areas is closely linked to gender issues.

Review of Swedish support

Material and methods

This desk study was carried out during May-August 1997.

The review of project experiences covers the period 1986–present. However, I applied a flexible time limit to provide a better historical background to programmes. Often, this made it possible to follow changes in approach during a project life-cycle.

As mentioned earlier, the survey covers bi- and multilateral support within two subject areas: agriculture, forestry, livestock and land husbandry; and water resources management, including domestic water supply and sanitation.

Programmes in this study fall in the following three categories, in order of importance:

1. research and development programmes directly addressing dryland issues
2. agriculture, forestry, livestock and land husbandry programmes partly linked to drylands (e.g. national programmes in the agricultural sector)
3. water resources management, including domestic water supply and sanitation

Main sources of information were: 1) Documents on the CCD; 2) Sida project documents, evaluations and policy papers; 3) Project documents from multilateral organizations and NGOs; and 4) Interviews with people within and outside Sida (Annex 3).

For most programmes the survey was brief, while a few key programmes were subject for a deeper analysis. A database in dBase4-format was developed to organize the information.

Figures on Swedish financial contribution have variable degree of precision, depending on the type of sources and the limited time available for verification of figures.

Presentation of results

With the large number of programmes -close to 100 -follows that the presentation has to summarize and focus on main issues. However, for the interested reader, Annex 1 contains a short description of each programme.

The presentation is divided in two sections:

- The first part gives an overview including global programmes, as well as national and regional Swedish-funded programmes in East Africa, West and Northern Africa, Southern Africa, Asia and Latin America.
- The second section presents 6 key programmes in a more comprehensive analysis. These programmes represent particularly interesting experiences of Swedish involvement in African dryland development.

Programme overview

East Africa

Dryland research and development programmes

Directly addressing sustainable land use in dryland areas, SAREC supports a number of research projects in East Africa:

- ⌘ Several research projects in Ethiopia receive support—normally joint projects among Swedish universities and Ethiopian institutions. The projects target areas such as livestock breeding, indigenous trees and grain, integrated pest management, and restoration of degraded land.
- ⌘ In Somalia, SAREC supported the Somali Camel Research Project (11,4 mSEK 1981-1991). Research on camel husbandry was combined with postgraduate education resulting in 5 Somali PhD degrees.
- ⌘ In Sudan, a research project on sheep and goat diseases received support, as well as a project on climate change and policy implications in the Sahel.
- ⌘ In Tanzania, NATUR and SAREC supports the Man-Land Interrelations in Semiarid Central Tanzania (MALTISA) —a programme for environmental and socioeconomic research in the HADO project area (14 mSEK). Likewise, a programme for research and higher education on ruminants in semidry areas was supported (13,2 mSEK 1984-96).

An important programme, described in detail below, is the Hifadhi Ardhi Dodoma (HADO) soil conservation project, supported by Sida for almost 25 years, 1972-1995. The major objective was to reclaim depleted land in the severely degraded Kondoa Eroded Area, in the semiarid parts of Tanzania. The strategy was gully reclamation and drain constructions, support to reforestation, and extension on soil conservation in croplands. It also included support to livestock management through zero-grazing (livestock expulsion took place in 1979); training education and information. In average, Sida contributed approximately 1 mSEK per year.

Development programmes with dryland linkages

In Ethiopia, a country with severe land degradation, Sida has supported both the forestry and agricultural sectors for many years. Although primarily targeting high-potential areas, this sector support has also been linked to the drylands, particularly following the famine in mid-1980ies. The emphasis has gradually shifted to farm forestry, and to a holistic perspective on rural development. Current support to Region 3 is 43 mSEK 1997-99.

In Kenya, the national soil conservation programme has been very successful—and the show-case for the Regional Soil Conservation Unit (RSCU). The programme expanded to arid and semiarid areas in 1992. Sida support amounts to 225 mSEK. The VI Tree Planting Project, receiving around 10 mSEK annually, has one project in the pastoral community of West Pokot.

Sida's support to the agricultural sector in Tanzania goes partly to dryland areas. The Land Management and Environment Programme (LAMP) covers 4 districts in central and northern Tanzania, and focuses on local and district levels, close to the

target group. Strategically important work at national level complements the district support programme (105 mSEK 1997-2000).

Also in Tanzania, the **Soil** Conservation and **Agroforestry** Programme - Arusha (SCAPA) started as a pilot project in 1989. Agriculture, animal husbandry and soil conservation and agroforestry issues are addressed in an integrated, participatory approach. Training and extension is emphasized. RSCU has played an important role during the pilot phase.

The Uganda Land Management Programme (ULAMP) is a new initiative, where a pilot phase has been supported by RSCU. Currently, ULAMP is under preparation as a programme under the country frame.

Regional programmes

Some regional initiatives supported by Sweden has dryland connections. The most significant are:

- The **Dryland** Husbandry Project (DHP), is an action oriented research network on methods for improved land-use systems in drylands in Eritrea, Ethiopia, Kenya, Sudan, and Uganda (6,7 mSEK 1994-96)..
- The Pastoral Information Network (PINEP) is a network within the Intergovernmental Authority on Development (IGAD) subregion (Djibouti, Ethiopia, Eritrea, Kenya, Sudan, Uganda and Tanzania). Focus is on pastoral training research on pastoral production systems, and research results' dissemination (11,5 mSEK 1992-97).
- Since 1995, SAREC supports MSc education and research on dryland biodiversity in Ethiopia, Kenya and Tanzania -East African Research Programme on Sustainable Use of **Dryland** Biodiversity (RPSUD) (8,8 mSEK 1995-98).
- The Regional Soil Conservation Unit (**RSCU/RELMA**), described in detail below, supports methodology development and dissemination in land husbandry in Eritrea, Ethiopia, Kenya, Tanzania, Zambia, Uganda and Zambia (15 mSEK per year).
- The **MSc** and **PhD** programme in **soil** and water conservation at Nairobi University targets students from the region (29,5 mSEK since 1988).
- Regional environmental statistics is supported via DESO (Sida's Department for Democracy and Social Development). The aim is to train staff in environmental authorities in East and Southern Africa in environmental issues and to contribute to increased regional collaboration (2,5 mSEK per year).

Water and sanitation

Sida has since long supported water and sanitation programmes in both Ethiopia (terminated 1995), and in Kenya, Tanzania and Uganda. With time these programmes have evolved from technically-oriented to integrated projects with a high degree of village participation. Low-cost technologies, strengthening of local capacity, and health aspects get increased attention.



Southern Africa

Dryland research and development programmes

A planned support to the Desert Research Foundation of Namibia (DRFN) focusing on capacity building will assist DRFN to fulfil its role as a SADC-ELMS focal point for information, training and research in relation to the CCD (3,3 mSEK).

In Zambia, Sida supports the Drought Recovery Programme, in collaboration with other donors (WB, NORAD, FINNIDA and FAO). Its main aim is to rehabilitate farms and provide drought resistant quality seeds to farmers in Southern Zambia suffering from the effects of the drought 1992-93 (23 mSEK 1994-97).

A number of dryland research programmes in Southern Africa receive SAREC support:

- ⌘ Two research projects in Botswana studied regulatory mechanisms in woody vegetation in arid savanna, and the impact of browsing wild and domestic herbivores on food plant resources, respectively (0,4 and 0,9 mSEK).
- ⌘ Also in Botswana, SAREC supports capacity-building in Environmental Science at University of Botswana. This joint research and education project comprises of 3 parts: A PhD programme in geography; research on land use modelling; and research on rainfall run-off and water yield (9,7 mSEK 1988-95).
- ⌘ In Namibia, the Desert Ecological Research Unit of Namibia (DERU) received 0,3 mSEK to organize a regional conference.
- ⌘ The ecology and management of indigenous forests in Zimbabwe. The project intends to generate information on sustainable management, conservation and utilization of commercially important indigenous forests (5 mSEK 1993-96).

One of Sweden's long-term engagements in soil conservation has been the one in Lesotho. The current Production Through Conservation (PTC), further describes below, aims at increased production among rural communities on a sustainable basis. The strategy is to create a village planning procedure, supported by multidisciplinary teams of agricultural specialist. Sida's bilateral support ended in 1996, but Sweden continues the support indirectly via UNDP.

Development programmes with dryland linkages

Swedish involvement in the agricultural sectors of Zambia and Mozambique has been substantial.

In Mozambique, suffering from many years of war, there were less possibilities to address the problems of the southern dryland areas. However, at national level, the Mozambique-Nordic Agricultural Programme (MONAP) developed infrastructure and capacity in the agriculture sector, including livestock, seeds, and forestry. Marketing and mechanization were also important. Currently, Sida supports the national seed company, SEMOC (27 mSEK 1992-95). National capacity development in the field of seed improvement and production is an important part of the project. Focusing on maize, rice and beans, less attention is given to dryland crops such as millet.

In Zambia, a number of programmes are relevant to this review:

- ✧ The Farming Systems Research (FSR) received Sida support from 1983 to 1996. One important function of FSR was to provide a link between research and extension.
- ✧ Land Management and Conservation Farming (formerly SCAFE), has been supported by Sida since 1985. The programme operates in 20 districts in Zambia, some of them in dryland areas. The approach is education and awareness creation on a group, village or catchment basis, with extension workers as facilitators (28,9 mSEK 1994-97).
- ✧ the Food Crop Seed Research Project develops and improves planting materials of the major food crops. Training related to seed is also important. Research on sorghum and pearl millet helps develop dryland agriculture (32 mSEK 1994-97).
- ✧ A new initiative is Economic Expansion in Outlying Areas (EEOA). The programme aims at sustainable agricultural production, processing and marketing in 4 target district, 2 each in the Northern and Eastern Provinces (41 mSEK 1994-97).
- ✧ The Conservation Farming Unit under the Zambia National Farmers' Union is a strategic support targeting small-holder farmers (1 mSEK 1994/97).

Regional programmes

Sweden's long tradition of development cooperation in the SADC region has resulted in support to several regional programmes in agricultural research, development and networking:

- ✧ SADC Environment and Land Management Sector (ELMS) helps build the capacity of member States to address environmental concerns-see the analysis below. Located in Lesotho, SADC-ELMS coordinates activities related to environment, land management and, up to 1996, water resources management. The Sector has SADC's mandate to coordinate issues related to the CCD. Sweden has been the main donor (around 130 mSEK 1985-96).
- ✧ Cooperation with SADC Regional Plant Genetic Resources Centre (SPGRC) started 1989, jointly with other Nordic countries. Sida further supports national gene banks, via SPGRC.
- ✧ The Farm-level Applied Methods in East and Southern Africa, (FARMESA), is a subregional programme executed by United Nations Food and Agriculture Organization (FAO). The Coordination Unit is based in Harare. FARMESA is the product of 4 earlier regional programmes (also supported by Sida) dealing with aquaculture (ALCOM), small-scale technology development (AGROTEC), integrated pest management (PPIP), and farming systems (FSP). FARMESA is demand-oriented and supports development initiatives from the participating countries Kenya, Uganda, Tanzania, Zambia and Zimbabwe. Sweden has contributed 36 mSEK since 1993.

Water and sanitation

The Southern Africa Regional Water Resources Programme (SARWMP), was initiated in 1996, as a response to the increasing water scarcity in Southern Africa. The programme supports water related initiatives in the region. It is coordinated from Harare, and works closely with the newly established SADC Water Sector in Lesotho, and the Global Water Partnership (45 mSEK 1996-98).

Other Sida-supported activities in Southern Africa include:

- the rural village water supply programme in Botswana-a major component of the overall development cooperation between Sweden and Botswana. Ranging from 1971 to 1993, total spending was 884 mSEK in 1995 values.
- environmental projects within the water resources sector in Namibia. One important component is a study of the ephemeral rivers of Namibia, resulting in a monograph published in 1995. Continued support includes utilization of available water resources and effects of different types of land use (2 mSEK 1994/95).
- the Mvuramanzi Trust Fund, an NGO that supports a water and sanitation programme in rural Zimbabwe. The approach is innovative, low-cost and participatory (5,5 mSEK 1994-97).
- an INEC-financed pre-appraisal of an infrastructure project for water supply to Bulawayo/Matabeleland.

West and Northern Africa

Dryland research and development programmes

NATUR supports forestry research in Burkina Faso since 1993, Silviculture and management of dry forests-a part of the Forestry Research Regeneration Programmes (FOREP) programme. It consists of two components: research on sustainable and economically viable management of savanna forests, and a review and synthesis of current knowledge on the silviculture, productivity and management of dry forests, administered by FAO. The latter covers dry forests in general and is not restricted to Burkina Faso.

SAREC has also provided research grants to two Swedish doctorate projects in dryland Burkina Faso, dealing with the tree-crop interaction in agroforestry systems.

A large development project in a truly semiarid environment-the water supply and soil conservation project, Sidi Bouzid, Tunisia-received Swedish aid from 1974-92. The project, which is analysed below, dealt with water supply initially, but later changed into general soil conservation and land husbandry. The involvement of Swedish scientists was important to the project. From 1983-1992 the total funding was 31 m SEK. More recently, SAREC awarded a research grant to study transport of solutes in semiarid soils in Tunisia (1 mSEK 1994-96).

Regional programmes

From 1982 to 1994, Sweden supported the Sahel Programme, further described below. The support, channelled through the United Nations Sudano-Sahelian Office (UNSO), covered Burkina Faso, Senegal and Niger. The projects contained village afforestation, conservation of natural vegetation and dissemination of improved cooking stoves. Gradually, participatory processes evolved under the programme (250 mSEK).

A long-term research programme on sustainable management and control of desert locusts started in 1990. The focus is population biology and ecology, and control through the use of pheromones. A group of donors supports the programme, which is coordinated via International Fund for Agricultural

Development (**IFAD**), in collaboration with the International Centre for Insect Physiology and Ecology (ICIPE) and national research centres. The SAREC grant 1990-95 was **7,5 mSEK**.

Asia and Latin America

In Asia, Swedish involvement in **dryland** areas include China, India and Sri Lanka.

In China, SAREC has funded collaborative research **in semiarid rangelands in Inner Mongolia**, and **soil-water dynamics in arid zones**.

In India, several Sida-funded programmes cover drylands:

- ⌘ **The Social Forestry in Tamil Nadu and Orissa**, supported from 1981-96, promoted farm forestry on private land, and village **woodlots** on communal wasteland and erosion-prone areas. A new programme in Orissa is underway.
- ⌘ **Tree Growers Cooperative Societies** aims to create economically viable and **self-sustaining** cooperative organization of tree growers in the Rajasthan, Tamil Nadu and Orissa states. (50 **mSEK** 1992-97).
- ⌘ **The Integrated Wasteland Development Project** rehabilitates degraded environment in Rajasthan. Low **rainfall** and poor soils in combination with population growth has resulted in severe land degradation. The programmes has an integrated approach to solve problems related to natural resources management (87 **mSEK** 1991-96).
- ⌘ The Swedish Covenant Church supports **the Karamba Social Forestry** project via a small grant from SEKA (**0,3 mSEK** 1995-1998).
- ⌘ Sida has since mid 1985 supported two different United Nations Children's Fund (**UNICEF**) **Water Supply and Sanitation Programmes** (annual budget 60 **mSEK**),

The Anuradhapura Integrated Rural Development Programme (AIRDP) in Sri Lanka is part of a large rural development programme in the dry North Central Province, jointly financed with **IFAD**, among others. Agriculture and health are important components (11 **mSEK** 1995-98).

In Latin America, few programmes deal with **dryland**, an exception being a SAREC supported research on **the restoration of tropical dry forest in Guanacaste National Parc**, Costa Rica (**2,7 mSEK** 1987-92).

Global programmes

The Consultative Group of International Agriculture Research (CGIAR)

SAREC contributes 40 **mSEK** per year as core support to the **CGIAR**. In addition, some centres, mainly ICRAF, receive project support from NATUR. Some of the 16 Centres have a mission to address **dryland** problems:

- ⌘ **International Centre for Agricultural Research in the Dry Areas (ICARDA)** improves barley, lentil and faba bean. In West Asia and North Africa also work on wheat, chickpea, forage and pasture crops.
- ⌘ **International Crops, Research Institute for the Semiarid Tropics (ICRISAT)** works on sorghum, millets, chickpea, pigeon pea, and groundnut.

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- ⌘ **International Centre for Research in Agroforestry (ICRAF)** has a global mandate to develop agroforestry technologies. **Dryland** issues are mainly addressed in Southern Africa and the semiarid lowlands of West Africa.
 - ⌘ **The International Livestock Research Centre (ILRI)** conducts research in tropical crop-livestock systems, **dryland** systems included.
 - ⌘ **International Plant Genetic Resources Institute (IPGRI)** supports the conservation and use of plant genetic resources worldwide, with special emphasis on the needs of developing countries.
 - ⌘ **The Centre for International Forestry Research (CIFOR)** carries out research on biophysical and socioeconomic environments of forest ecosystems.

Research networks

African agriculture research systems are supported by Sweden in various ways:

- ⌘ **The International Foundation for Sciences (IFS)** provides research grants within a few key areas -aquatic resources, animal production, crop sciences, **forestry/agroforestry**, food science, and natural products. IFS also arranges workshops and training (138,7 mSEK 1982-94).
- ⌘ **The African Academy of Sciences (AAS)** has initiated a scholarship programme to advance forestry research in Africa. SAREC has contributed 13 mSEK since 1990.
- ⌘ A support to **3 African networks for agriculture research**: Special Programme for African Agricultural Research (**SPAAR**), Southern Africa Centre for Cooperation in Agricultural and Natural Resources Research and Training (**SACCAR**), and Association for the Strengthening of Agricultural Research in Eastern and Central Africa (**ASARECA**) is under preparation, as a complement to Swedish support to international and national agriculture research. Proposed funding is 7 mSEK 1997-99.
- ⌘ **International Centre for Insect Physiology and Ecology (ICIPE)** has the mandate to develop biological control methods for insect pests (59 mSEK 1983-93).
- ⌘ **The Forestry Research Regeneration Programme (FOREP)** was established 1993 to fill knowledge gaps on management of dry forests in natural and human affected ecosystems. Current budget is 6 mSEK per year.

UN and EU

Swedish grants to **the United Nation** system has contributed to UN's over-all work on **dryland** issues. Particularly active in this field are United Nations Food and Agriculture Organization (**FAO**), mentioned above; United Nations Development Programme (**UNDP**), United Nations Environmental Programme (**UNEP**), and United Nations Sudano-Sahelian Office (**UNSO**). The latter has now merged with UNDP. Under its new name, **UNSO-Office to Combat Desertification**, it has a coordinating role for the Convention work within UNDP.

Swedish project support via FAO goes to community forestry, and planning and policy in the forestry sector, and to development of small-holder agriculture. These programmes partly deal with drylands:

- ⌘ **The Forest Trees and People Programme (FTPP)** is an international **strategy-** and method development programme under **FAO**. FTPP promotes peoples' participation, local planning and networking, related to forestry. Important

issues are conflict management, tenure, participation methods, gender aspects, and farmer initiated research and extension (**10,3 mSEK** 1995-98).

- ⌘ The global **Forest Resources Assessment (FRA)**, managed by FAO, covers also **dryland** countries, largely via Swedish support. A new FRA also aims to include monitoring of changes (deforestation) through comparisons of remote sensing images (**9,3 mSEK** 1995-98).
- ⌘ Linked to FRA, Sweden has contributed to the development of national **Tropical Forestry Action Plans (TFAP)**, via UNDP. The TFAPs have covered **dryland** countries, i.a., Burkina Faso and Niger (**18 mSEK** 1994-96).
- ⌘ FAO also coordinates the earlier mentioned **Farm-level Applied Methods in East and Southern Africa, (FARMESA)**, developing methodologies and tools for working with farmers.

Sweden contributes approximately **1,55** billion SEK to **European Union** for development and humanitarian assistance during the 1997 budget year – **700 mSEK** for African, Caribbean and Pacific countries (via DC VIII); and **750 mSEK** to Asia and Latin America (DG I), and to humanitarian assistance via European Community Humanitarian Office (ECHO). A large proportion, often 15-25 %, of EU bilateral aid goes to the natural resources sector. The EU response to the CCD is tree-fold: Attention in bilateral and regional programmes to problems related to land degradation and the consequences of drought; integration of the objectives of the CCD in EU policy strategies; and donor coordination in specific countries.

International NGOs

The independent scientific organization **International Union for the Conservation of Nature (IUCN)** was founded in 1948. IUCN brings together governments, NGOs and individuals to help nations make the best use of their natural resources. Among others, the programmes aim at strengthen national and local capacity, and to develop National Conservation Strategies. The Swedish contribution is a core support to IUCN programmes in developing countries. **IUCN's** Sahel programme has also received support. The contribution 1994-96 is **62 mSEK**.

The objective of the **International Institute for Environment and Development, (IIED)** is to clarify the relation between environment and development, and to participate in method development for a sustainable utilization of natural resources in the South. Among the 6 research programmes, one targets **dryland** areas. Sida has provided both programme and core support to IIED since early 1980ies. SAREC supports an IIED programme on **dryland/** tenure issues. From 1991 to 1997, the Swedish funding is **9,7 mSEK**.

Water

Established in 1996, the **Global Water Partnership (GWP)** is a network open to all organizations involved in water resources management. Initially, GWP has two priority areas for its activities-water and sanitation, and irrigation and drainage. Within these areas, GWP seeks to facilitate collaboration for improved water management. Swedish funding is **5,7 mSEK**.

The **UNDP/WB Water and Sanitation Programme** started in mid-1970ies. It has 5 regional groups out of which Sida supports the Regional Water and Sanitation Group-Eastern and Southern Africa. The support, **6 mSEK** since 1993, goes via a

Trust Fund at the World Bank to activities in Eritrea, Ethiopia, Kenya, Malawi, Tanzania, Uganda and Zimbabwe.

Humanitarian assistance and disaster relief

Although not included in the terms of reference for this review, a few words should be said about disaster relief. The reason is two-fold: African drylands have in recent decades received massive humanitarian assistance- in Ethiopia 1983-85 and Southern Africa 1992-93, to mention but a few large operations. The second reason is the relief-development nexus.

Substantial Sida funds goes to disaster relief. In the mentioned case of Southern Africa, Sida contributed 291 mSEK from emergency funds and 180 mSEK from bilateral sources. The funds were mainly used for procurement of cereals, non-food aid (health and water etc.) and shipment and transport. In the context of disasters in drylands, it is also worth mentioning Sida's support to desert locust control. During the last 10 years, Sida has granted 49 mSEK for this activity, mainly implemented via FAO.

The links between relief and development are many and complex. Among the potential negative effects of food aid are i.e. distortion of local food production systems and dependency on aid as a coping mechanism for the local population. On the other hand, investments in prevention and mitigation could reduce the need for disaster relief. Linking disaster relief with development receives growing interest. One example is the Red Cross' 130 mSEK disaster prevention programme in Ethiopia's Wollo Province 1985-1991.

Analysis of 6 dryland programmes

This chapter analyses 6 Swedish-funded programmes linked to arid, semiarid and dry subhumid areas. They are chosen to represent a cross-section of geographic areas, project types and organizations involved. Three are regional programmes, SADC-ELMS, RSCU/RELMA, and the terminated Sahel Programme. Among bilateral programmes, three are selected for this analysis-soil conservation and land husbandry programmes in Lesotho, Tanzania and Tunisia.

The analysis aims at learning from earlier experiences-lessons that could be useful when integrating the Convention into Sida's work. The analysis summarizes what has been done, describes how the programme has evolved, and indicates how relevant the support has been, and what could be improved upon.

Regional programmes

SADC-ELMS

SADC-Environment and Land Management Sector (SADC-ELMS) has been supported by Sweden since 1985. (From 1985-1991 under its earlier name, Soil and Water Conservation and Land Use). In 1992, SADC-ELMS widened its scope from soil conservation to land management. Total support has been approximately 130 mSEK.

SADC-ELMS regional office is located in Maseru, hosted by the Government of Lesotho. Its mission is capacity building, methodology development, monitoring, assessment and reporting on environmental conditions and changes in the region, and coordination of cross-national issues related to the use of natural resources in the SADC region.

The 1996 evaluation concluded that ELMS is an unusually complex SADC sector, both subject matter wise and institutionally. There is also an imbalance between sector demands and available resources. Government of Lesotho has not been able to provide necessary personnel and capability to ensure effective management of the unit.

Training activities have had tangible impact on the targeted institutions, particularly in the fields of participatory techniques, land husbandry and policy analysis. For example, during 1991–1996, 194 persons from the 12 SADC countries participated in the course 'Integrating Conservation into the Farming Systems'. Between 1992 and 1995 SADC-ELMS organized 14 regional seminars and workshops in the field of environmental management and monitoring.

SADC-ELMS has had considerable impact on regional coordination. Examples are the Zambezi River Action Plan, issues dealing with shared water resources, and preparatory work related to the Convention.

Progress in the more novel environmental field has been slower. Information services, technical backstopping and advisory services have been less effective than the training. Gender considerations have not been adequately addressed. Looking at the organization of SADC-ELMS, there has been a heavy dependence on Swedish support, combined with weak staff capacity at the SADC-ELMS side. This has caused a reliance on technical advisors. Broader financial base and stronger regional staff is needed to secure sustainability.

The evaluation recommended that SADC-ELMS should develop closer links to the local level. Earlier training efforts should have made the message ready for dissemination to rural communities. Better monitoring and evaluation mechanisms should be put in place. The Swedish core support expires 1997. After that, coordination depends by and large on the Government of Lesotho. In future, Sida considers supporting specific projects under the SADC-ELMS.

Main part of the SADC region is an affected area, as defined in CCD. The implementation of the Convention cuts across a number of SADC sectors. SADC-ELMS has got the mandate to coordinate CCD activities in the region. There are opportunities to link Swedish support to these activities.

RSCU/RELMA

The Regional Soil Conservation Unit, RSCU (from mid-1997 the Regional Land Management Unit, RELMA) was set up in 1982 to communicate experiences from the Kenyan soil conservation programme to other countries in the region. Ethiopia, Kenya, Tanzania, Zambia, Uganda and later Eritrea, participate in the network. From 1992/93 to 1996, the total expenditure was 42,2 mSEK.

Main activities are training, production and distribution of information materials, technical backstopping and networking in the area of land husbandry. RSCU supports pilot projects at local level, with the aim to enhance participation of individual members in improving their livelihood. RSCU can act as a 'test laboratory' for land husbandry, thanks to its informal structure.

RSCU was last evaluated in 1996. The evaluation found that Sida has a successful working model of a new and different approach to development, on which other projects can be based. RSCU's work is highly appreciated in the participating countries. RSCU has operated efficiently since the 1992 evaluation, and has made good progress in all of its major activities. A few examples can be mentioned:

- ⌘ More than 1600 persons participated in training courses and study tours in the region, supported by RSCU.
- ⌘ 20 fellowships have been awarded to technicians and professionals in the region, and local consultants have been hired at more than 40 occasions.
- ⌘ 30 own publications have been produced, and 70 000 copies of various information material distributed. The publication activities have been particularly appreciated both within and outside the member countries.

In 1994 RSCU became an independent entity, located at ICRAF. Although the change was not without problems, the move was still a positive step. Without the formal tie to the Swedish Embassy, the Unit can work closer to the regional counterparts. Non- Swedish professionals can now be employed.

The original mission of RSCU has by and large been fulfilled, and the scope has widened from soil conservation to land husbandry. As a response to the report on Food Security in East and Southern Africa (Denninger et al 1996) RSCU evolved into RELMA as from July 1997. The new Unit will be stronger in technical subject matter such as water resources and animal husbandry, and will cover cross-cutting issues such as socioeconomy.

RSCU has mainly worked in medium- to high potential areas. Drylands have received less attention. This is gradually shifting. One reason is a response to increased migration from high-potential areas to drylands in the region, another is the inclusion of Eritrea in the mandate area. This development is in line with the CCD. So is RSCU/RELMA's expanded mission which include animal husbandry and water resources. RSCU/RELMA could play an important role in catalysing processes related to the Convention. It can also become a link between East and Southern Africa.

The Sahel Programme

The Sahel Programme is the most significant Swedish programme in a semiarid environment, stretching from 1982 to 1994. Total Swedish input was 250 mSEK, channelled via FAO and UNSO. The programme covered Burkina Faso, Senegal, Niger and, for a short while, Sudan. The projects contained village afforestation, conservation of natural vegetation, and dissemination of improved cooking stoves.

Initially, the Sahel Programme was a village forestry programme, with the objective to provide fuelwood and contribute to halting desertification. The improved cooking stove project aimed at reducing wood consumption and deforestation. With time, the understanding of farmers' priorities grew, and participatory

extension methods were gradually introduced. Different agroforestry technologies were added in response to farmers needs, such as fruit trees and live fences. Participatory processes for land management planning were developed. However, the project never grew to a truly multidisciplinary one, and was terminated in 1994. An independent research component still remain.

The programme was initially implemented by FAO, soon to be transferred to UNSO, in collaboration with three Swedish consultant companies. The absence of Swedish diplomatic presence contributed to this complex organization. One weakness was that technical backstopping was difficult within this set-up.

Maybe the most important achievement is that the programme contributed to developing a participatory process for land management planning in the three countries. Increased awareness in the forestry administration of farmers' participation, and increased demand for land husbandry measures at village level are other outputs. Improved stoves became popular in the cities. A large number of Swedish associate experts worked in the Sahel Programme during its 12 years. A reference group from Swedish Universities was created to support the project through seminars, studies, evaluations etc. The collective knowledge gained about semiarid areas is one of the main assets of the programme.

In hindsight, the project would have benefited from multidisciplinary approach, involving both agriculture, animal husbandry, water resources and social sciences. The research component could also have been closer linked to the project, at an earlier stage.

The view that a wider land use perspective was preferable came fairly late. One could probably argue that the project closed down too early. A new phase could have harvested a lot of what was planted during the 12 years.

One interesting aspect is that UNSO has become the focal point for UNDP's global work in relation to the CCD. It has been renamed UNSO-Office to Combat Desertification and Drought.

Bilateral programmes

Production Through Conservation, Lesotho

Sweden has supported land use among rural communities in Lesotho since 1981. Four projects with similar overall objective— increased production on sustainable basis among rural communities—were eventually merged into one integrated programme in 1989. The reshaped programme was named Production Through Conservation (PTC). The programme ended in 1996, but Swedish support continues via UNDP.

The strategy of PTC was to create a village planning procedure that involved the villagers already at the planning stage. Efforts at village level were supported by a team of agricultural specialist. The participatory and integrated approach demanded that the role of extension workers changed. Therefore, multipurpose training of extension staff and organizational aspects became important.

The 1993 evaluation was very positive: PTC dared to go out to the villagers-not only their representatives. It approached problems raised by farm families in an interdisciplinary way. Importantly, the District Agriculture Office had dared reorganize to fit the work of the programme.

The programme promoted institution-building from village level upwards, and was very democratic. It is a very interesting example of what can be achieved when different actors pull in the same direction and cooperate-villagers, project and government staff.

The final report mentions a large number of physical outputs: such as 2 820 participants in training in implementation of village plans; design of 120 Headman Village Development Plans (with approx. 8 400 villagers participating); and multidisciplinary training of 2 320 subject matter specialists and field staff at district level.

PTC has been successful in including social processes in land husbandry. It has managed to respond to general rural development needs in an integrated manner. This example is worth studying. The PTC project has the potential to become an important case study of local-level involvement in the CCD process.

Soil conservation in Sidi Bouzid, Tunisia

This project represents an important Swedish bilateral experience addressing the issue of desertification in an arid-semiarid environment (average rainfall in the project area is around 200 mm/year). Two characteristics worth mentioning are the close integration of research the programme, and the building of a Swedish francophone-competent resource base in dryland husbandry.

The project originated from an FAO/SIDA project from 1974, which resulted in 5-10 000 wells, increased areas under irrigation, and substantially improved agricultural production. The economic effect were tremendous. Farmer income boomed through sales of vegetables such as tomatoes, potatoes, onions and others. But the water level in the superficial wells dropped, and in depressions salination problems started to show. The problems of land degradation needed to be addressed. The system was not sustainable and called for soil conservation initiatives and productive alternatives to intensive irrigation.

The new project 1983-1992 widened the approach: Irrigation was restricted to the winter season; soil and water conservation was introduced in the surrounding hills; wind erosion control took place on the plains. In fact, this was the first Sida-supported agricultural project where soil and water aspects were integrated right from the start. Main components were permanent vegetation for fodder -both trees and cactus; check dams and terraces in the mountains to stop erosion and increase infiltration; grace lands within live fences; wind breaks; and support to improved sheep farming. Some achievements were 245 hectares of fruit trees, and 1400 hectares of cactus plantations; 140 km wind breaks, and physical soil conservation structures at 720 hectares.

An important feature was the involvement of Swedish and Tunisian scientists throughout the project. Research focused on 5 main areas:

- erosion and the effects of soil conservation

-
- ⌘ the relation between vegetation and infiltration
 - ⌘ effects of wind breaks
 - . sheep husbandry
 - socioeconomic issues

This resulted in several papers published in international scientific journals, as well as many other reports, including 9 Minor Field Study reports.

This project shows clearly how the approach to development changed within a short time. It started as a technical project for water supply, and shifted within a few years to a much more holistic view on how to utilize the natural resources. Animal husbandry, and a socioeconomic component were added to the agenda. A parallel research component provided relevant results that could be adopted by the project, and helped build capacity both in Tunisia and Sweden.

The Sidi Bouzid project also shows the difficulties in developing dryland areas. The initial focus on irrigated agriculture had its problems, particularly related to salination and over-use of the water resources. To have or to not have access to wells created large differences in income levels. The soil conservation methods applied were rather costly. This called for increased development of rainfed farming and grazelands, and for development of low-cost methods for land husbandry.

Hifadhi Ardhi Dodoma (HADO)-Dodoma Region Soil Conservation Project, Tanzania

From 1973 to 1995, Sida supported soil conservation in the semiarid Dodoma Region in Tanzania, through the HADO project. The major thrust was the Kondoa Eroded Area. Sida's support has been modest, around 1 mSEK per year, but the focus on a degraded semiarid environment, the problem of over-grazing, and the link to research-coupled with the long time frame-makes HADO an interesting case study.

The general objective was to prevent and arrest the advance of soil erosion and to reclaim depleted land. Main vehicles to reach the objective were:

- ⌘ support to the regeneration of degraded range lands (expulsion of all livestock took place in 1979). Drain constructions and planting in gullies was carried out by paid labour
- ⌘ reforestation on communal and private land-through the operation of tree nurseries and establishment of shelter belts, shade- and fruit trees, and woodlots
- ⌘ livestock management through zero-grazing
- ⌘ extension on soil conservation in croplands
- ⌘ education and information, and short- and long-term staff training

A parallel research effort has been the NATUR- and SAREC-supported Man-Land Interrelations in Semiarid Central Tanzania (MALTISA), established in 1989, in which several Swedish university departments have participated in collaboration with Tanzanian scientists. The programme, which is still on-going, receives around 2 mSEK annually.

HAD0 was evaluated in 1996.15 nurseries had distributed around 1,2 million seedlings per year (average 1986/87–1994/95). Other achievements were plantation of 3050 hectares of woodlots; construction of 744 km of contour terraces; and training of 1566 farmers, teachers and government officials (1986–1993).

The project had evolved from a narrow focus on trees and bee-keeping towards a more comprehensive support programme. The expulsion of livestock has presented opportunities to open up more land for cultivation, allowing incremental agricultural production. Vegetation returned to the severely degraded hills. HAD0 was well staffed by a forestry cadre with long experience of the local conditions.

On the negative side, the programme lacked a clear definition of the primary target group. HAD0 was oriented towards the land rather than the people-it addressed important productivity aspects only marginally. There was, until late in the project, little farmer participation. The removal of livestock was double-edged: on one hand it meant that eroded hill-sides were once again covered with vegetation, providing opportunities to open up more land for cultivation. On the other hand it deprived farmers of valuable manure, and there are increasing signs of declining soil fertility. The enclosure of the Kondoa Eroded Area was done against farmers' will, and not a sustainable intervention. The evaluation also concluded that the link could be stronger between HAD0 and the research component. This link would focus on participation in decisions on research priorities, and on routines for dissemination on research findings.

In conclusion, HAD0 represents a valuable source of information on the reclamation of heavily eroded land in a semiarid area. The almost 20 year enclosure from livestock makes the area rather unique. Some lessons learned in this project is that there should be

- focus on farmers instead of land
- more support to farmers on crop land husbandry; more farmers' participation in all stages of planning and implementation; and more and continued institutional building including staff training and education and information targeting local leaders and officials
- less focus on activities involving paid labour for soil conservation constructions; less project-managed reforestation; and less central nurseries, while private nurseries should be encouraged.

Conclusions and recommendations

Implementing the CCD

Implementing the Convention is a process that takes place simultaneously at several levels: the local, national, subregional and regional, and, finally, the international level. Swedish development assistance works at all these levels:

- Local level- through support to NGOs; participatory projects in rural districts; on-farm research.
- National level- through capacity building, training and education, and institutional support; policy support.
- Sub-regional and regional level — through networks in research and methodology development, catalysing collaboration among policy makers,

scientists and subject matter specialists; through support to communication and exchange of information.

- International level-through active participation in international fora of relevance for the Convention, emphasising poverty and gender issues in international organizations; through support to international agricultural research.

One challenge in making the Convention work, is that it is not as 'catchy' as the climate and biodiversity conventions. Deserts does not relate as closely to our own lives as the climate or biodiversity. The unfortunate Swedish common name '*ökenkonventionen*' contributes to this distance. However, the CCD is of great interest to anybody interested in development issues, and Sida has an important mission in informing those working with development assistance, as well as the general public about the Convention. Sida should bring the message forward that the CCD primarily is about land husbandry in dryland areas.

National Action Programmes

National Action Programmes (NAP) are keys for making the Convention work. It should be noted that NAPs are not plans. A plan could be static, top-down, and mechanic. A programme, on the other hand, is dynamic, action-oriented and continuous. The challenge is therefore to create an enabling environment, where stakeholders can meet and interact in a democratic process, to draw up, review and renew the NAPs.

Sub-Regional and Regional Action Programmes is the second leg on which the CCD stands. These programmes will handle issues concerning shared resources. As with the NAPs, these programmes need to be elaborated with the participation of all levels, including the local level. Again, their success lies in a good process for development and monitoring.

Realistic and well grounded action programmes are vital for the success of the CCD. Experiences from other plans in developing countries are not encouraging. For instance, the Tropical Forestry Action Plans have in most cases had little effect. One reason was the top-down process applied. Donor countries should facilitate a participatory process-Sida's experiences could be useful in this work. Donor coordination is also important, and coherence is vital, both within one single donor and among donors. For Sida, this primarily require coordination between NATUR, SAREC and SEKA. It also require presence in, or close collaboration with, multilateral organizations.

General observations

Sweden has supported few projects that explicitly target desertification in arid and semiarid areas. Two exceptions are the Sahel Programme and the soil and water conservation programme in Tunisia. Both terminated a few years ago.

While development programmes in ASAL are few, SAREC has funded a good number of research projects in semiarid areas in both East, West and Southern Africa. Often, Swedish Universities have been collaborated in these programmes. This has contributed to developing the Swedish resource base related to drylands.

There are many Sida-supported programmes that deal with land degradation in dry subhumid Africa. In fact, most national and regional programmes in agriculture, forestry, livestock and land husbandry, partly encompass dryland areas. The degree of dryland focus in these programmes varies, depending on the circumstances. National priorities in the collaborating countries is one of the factors behind this balance.

Swedish emphasis on economic and social equity in development cooperation favours projects in rural areas affected by land degradation.

Almost every long-term project described in this survey has changed faces one or twice during the project cycle. For instance, projects often used to focus on trees or soils rather than targeting the actual managers-the local community. Looking back, it is easy to criticize the earlier technical approach. Currently, we preach participation and integration. What parts of today's gospel will we find outdated 10-20 years from now?

Dryland areas are not isolated. They interrelate in many ways with medium- and high potential areas. People and cattle move. Agriculture and other products are traded. Increasing land degradation in rural drylands also relate to growing cities, through migration, market mechanisms, and policy aspects, among others.

Sida should initiate an information campaign about the Convention, targeting both embassies, other organizations involved in development work, environmental organizations, and the general public. Sida staff should participate in training on how to implement the Convention.

It is striking that evaluations of development projects contain so little information on financial matters. Rarely there is an estimate of the input/output ratio.

A database of Sida-financed programmes would facilitate future monitoring work in relation to the CCD. With the rapid change of staff at Sida, the institutional memory is sometimes short.

Many project documents lack information on other donors. This information is important for the coordination among donors, which is emphasized in the Convention.

Soil and water conservation

Soil and water conservation is closely linked to the CCD. This is an area where Sweden has a lot of experience, at least in dry subhumid areas. The combination of bilateral programmes such as in Kenya and Lesotho, and regional arrangements (RSCU, SADC-ELMS) has been successful. The emphasis has been on combining agricultural and forestry production with soil and water conservation. The method development in these programmes have been very important.

Many projects started as 'technical fixes' but have widened from soil conservation to land husbandry. Participatory methods have been increasingly used. Production has become the focus, and conservation a 'by-product'. This focus on production and participation goes very well with the intention of CCD. Sida should make use

of, and continue develop, this are of work in relation to the Convention. This is probably an area where Swedish contribution could be valuable.

The regional bodies RSCU and SADC-ELMS have the potential to become very important for the CCD, both concerning participatory methods, and for subregional coordination. They could also be instrumental in transferring information between the regions..

Agriculture

Sida supports, or have supported, large agriculture programmes in a number of countries, i. a. Ethiopia, Tanzania, Zambia, and **Mocambique**. These national sector programme all relate to drylands. All have also gradually become more integrated. Participatory methods have been developed that could be useful for future Convention-related work.

There is an impression that the Swedish support has emphasized medium to high potential areas, and not low-potential drylands. For instance, seed improvement programmes have to lesser extent worked with crops and varieties for drylands. In future, the balance could be better between low-potential and medium/high potential areas in a particular programme.

In the agricultural sector, animal husbandry seem to receive little attention in comparison with crop production, particularly in the bilateral development programmes. In research, some new initiatives address pastoral production systems-one example is the **Dryland** Husbandry Project. Since animal husbandry is so important in **dryland** land-use systems, Sida should consider increased support to animal husbandry.

Forestry

The earlier mentioned Sahel Programme was the start for a Swedish effort to address forestry issues in drylands. When the project closed, research has continued. One example is FOREP, the Forestry Research Regeneration Programme, a research programme for dry forests in Africa. When many donors focus on tropical rain forest, Sweden has the potential to be in the fore-front concerning dry forests. We should take advantage of this opportunity.

Following Sida's exit from Sahel, the fruitful combination between research and development has suffered. Sida should consider re-instating forestry components in integrated **dryland** programmes, and should continue support research in this area.

Different forms of agroforestry is instrumental is the **dryland** environment. The collaboration with **ICRAF's** regional programme in West Africa could be intensified.

Market-related issues are also of interest, for instance the importance of non-wood forest products, or sales of poles, **fuelwood** and construction wood.

Research

Monitoring desertification is an important part of the CCD. This involves collection and analysis of information. Scientific capacity, institutional development and mechanisms for collaboration are key words that come to ones mind in this context.

SAREC has supported a large number of research projects in dryland areas. Some projects are carried out by Swedish universities, others are implemented by institutions and networks in developing countries. Examples of the former are several research projects in Ethiopia and Botswana. The Pastoral Information Network is an example of the latter type. Substantial financial support also goes to dryland work within the CGIAR system. Few of the research projects are multidisciplinary-on the contrary, most are rather narrow in scope. Interdisciplinary research with a strong socioeconomic component would support the CCD.

Research and development projects are often separated. But there are exceptions, like the earlier mentioned project in Tunisia. Larger programmes should include an independent but parallel research component. A fruitful development/research interaction would, for instance, improve the dissemination of research results and enhance farmers' involvement in experimentation and development of traditional technologies.

A large number of Swedish scientists from several universities have experiences from work in dryland areas, for instance from Tunisia, Sahel, Tanzania, Botswana, China. Two Swedish professors Anders Hjort af Ornäs, and Eliel Steen are appointed to the Committee on Science and Technology.

Sida should convene a workshop with the objective to consolidate the Swedish dryland scientific capacity, and develop a plan for how the scientific community best could contribute to the implementation of the Convention.

Method development

Sida has put considerable efforts into method development at farm and community level in both East and Southern Africa. This is the case in soil and water conservation, agriculture and forestry alike, and with a strong link to extension. Participatory processes is the key word. Although not particularly emphasizing dryland areas, experienced gained could probably be applied in those areas.

The CCD means an opportunity to share these experiences. An interesting area for research and analysis would be how participatory processes developed in medium to high potential areas apply in dryland areas.

Higher education and capacity building

The semiarid areas and pastoral communities are often neglected in educational programmes. Colleges and universities in Africa have focused on high-input agriculture and traditional forestry.

The Sida-supported African Network for Agroforestry Education promotes an integrated and stakeholder-driven approach to natural resources education. Some of these institutions are in dryland areas, like the College for Dryland Agriculture

in Tigray, Ethiopia. Other relevant educational efforts are the Pastoral Information Network, providing pastoral training at Nairobi University; and the MSc and PhD programme in soil and water conservation at the same university. There is also a support to Environmental Science education in Botswana. A number of collaborative research programmes also have an educational component.

Many African educational institutions have little experience from integrated, holistic land use education. Institutional barriers can be considerable. Sida can, whenever possible, support such integrated efforts. Likewise, collaboration between education, development and research should be encouraged.

The various national institutions for research and development have often weak competence concerning dryland issues. Continued capacity building is important.

Water

Water and sanitation programmes provide better health status, which has a spin-off effect on productivity in agriculture. The water and sanitation programmes in Uganda, Kenya and Tanzania therefore support efforts made in the agricultural and forestry sectors in the drylands.

The Global Water Partnership (GWP) has an innovative way to address water issues. Its work relates to the CCD in several ways. In addition to subject-matter issues, the approach to regional collaboration and knowledge dissemination could be a useful example for those working to implement the CCD.

Water harvesting is important in dryland areas. Sida should give attention to the potential of water harvesting in its programmes.

The issue of irrigation in dryland areas should not be neglected. At the same time great care is needed to avoid salination in irrigation schemes. 'Wetlands in drylands' are also very important for both agricultural production and environmental conservation.

Multilateral organizations

Sweden is a large donor to the CGIAR organizations, some of which are working with dryland issues. No Swedish scientist is employed in these centres, and this hampers the feed-back and reduces the Swedish influence. There is a great potential for increased presence in the CGIAR system, and for new collaborative arrangements with Swedish Universities.

Sweden should actively support a Swedish candidate for a position within the Permanent Secretariat of the CCD. There are a number of arguments for this: the current Swedish chairmanship of the Intergovernmental Negotiating Committee; our emphasis on Africa in development cooperation; Sida's experiences from participatory work in dryland areas in both forestry and agriculture, and the innovative work of GWP and RSCU. Sweden should have a case for active participation in the Permanent Secretariat.

UNSO-Office to Combat Desertification is the coordinating body within UNDP for the Convention. Sweden should keep close contacts with this body.

The European Union is responsible for a large proportion of Swedish development aid. There is however, little Swedish influence on how this money is spent. The process seem to be rather top-down, as opposed to the participatory process advocated by the CCD. Sweden should actively promote CCD-related work, and Swedish embassies play an important role in planning and monitoring of EU's projects.

The Swedish resource base

Gradually, Sweden has built up a large resource base with experiences in land husbandry in dry subhumid areas and, to lesser extent, ASAL. For instance, many associate experts worked in the Sahel Programme. A large number of scientists in our universities (Swedish University for Agricultural Sciences (SLU) and the universities of Uppsala, Linköping, Lund, and Stockholm) have also worked in semiarid and dry subhumid areas. Environmental Policy and Society (EPOS) is an informal Swedish research network with considerable focus on drylands. Sweden has a considerable profile on both natural and social science aspects of ASALs. Integrating the two has been difficult but is starting to function better.

The emerging picture, however, is that these experiences are somehow scattered, and that there is a problem with the 'institutional memory'. In few cases does the same person follow a project for a long time, and when it happens it is not because of a conscious effort, but thanks to individual dedication. The International Rural Development Centre to some extent played this role before. When it closed down, no other body seem to have taken its place. The new Department for Rural Development Studies has an important but different mandate. Sida should develop a mechanism to continuously monitor and learn from programmes related to the CCD, and to inject these experiences wherever needed.

Organizational aspects

Integration at project level demands integration within Sida. In this survey very few projects have such integration. For instance, research projects supported by SAREC are in most cases not linked to particular development projects supported by NATUR. Sida should seek to make research and development come closer. This would make sure that research focuses on issues relevant to particular development problems, and that results reach the beneficiaries. Other areas for integration is disaster prevention, and NGO's work at local level. Sida should take this into account in its planning framework, primarily for NATUR, SAREC and SEKA.

However, when the trend is integration, it becomes important also to keep the focus on specific disciplines. Without strong individual disciplines the integration between these same disciplines can suffer.

Sida should consider creating an informal, multidisciplinary reference group on dryland research and development.

Subregional collaboration is another critical aspect of the Convention. The links between the African regions are weak. Sida should promote interregional exchange and collaboration. One way to catalyse the exchange of ideas is to allocate a budget item for international collaboration and exchange in the respective project budgets.

Annex 1. Review of programmes and projects

Africa is the main receiver of Swedish aid. The continent received 37% of the bilateral assistance in 1994/95 (3 464 mSEK). Particularly two sectors in the Swedish development cooperation relate to the Convention. One is agriculture, forestry etc. and the other water and sanitation. In 1994/95 these counted for 12,1% and 3,3% of the total aid, respectively (Sida 1996 a).

This review covers Sida's bilateral aid via the Department of Natural Resources and the Environment (NATUR); Department for Research Cooperation (SAREC); and the Department for Cooperation with Non-Governmental Organizations and Humanitarian Assistance (SEKA). Multilateral aid through UN, EU and other international organizations is also included to varying degree. However, accurate information on this category was often difficult to obtain.

The survey covered bi- and multilateral support within two subject areas:

- ⌘ agriculture, forestry, livestock and land husbandry
- ⌘ water resources management, including domestic water supply and sanitation.

Programmes fall in the following three categories, in order of importance:

1. research and development programmes directly addressing **dryland** issues
2. agriculture, forestry, livestock and land husbandry programmes partly linked to **drylands** (e.g. national programmes for the agricultural sector)
3. water resources management, including domestic water supply and sanitation

Below follows summaries of these programmes.

East Africa

Ethiopia

A number of **dryland research projects in Ethiopia** are supported by SAREC. These are normally joint projects among Swedish universities and Ethiopian institutions:

- ⌘ Livestock breeding research at **Alemaya** University, through a **PhD** programme
- ⌘ The ecology and production of *Ensete ventricosum* (**teff**), an important indigenous grain
- ⌘ A study of the effects of **tillage** practices on moisture conservation in semiarid zones in Ethiopia and Kenya
- ⌘ Integrated pest management on major crops in south-western Ethiopia, studying different species of stem borers
- ⌘ A genetic study of Ethiopian **landrace** populations of tetraploid wheat
- ⌘ Landscape ecology and ecological restoration of Central Ethiopia, a study of seminatural vegetation types, grasslands and forests. The project also studies enclosures of hillsides
- ⌘ Development of methods for rapid propagation of economically important indigenous tree species

In total, SAREC granted **17,6 mSEK** to these projects up to 1993.

The long-time sector support to agriculture and forestry has a link to dryland natural resources management, although emphasis has been on high-potential areas:

Ethiopia's forestry sector has received Swedish support since the mid-1970ies. Forestry education has been, and still is, the base for this support. Main components are institutional development, vocational training and a temporary MSc programme. Increasingly, the focus has shifted from traditional to farm forestry, and earlier support to industrial forestry has terminated. Since 1993, 80 mSEK has been granted.

An innovative new project is the Shewa Joint Forest Management Pilot Project, through Farm Africa. Forest conservation in Ethiopia has by and large neglected the people living in the forest margin. This project involves them. Collaboration with education and research in Alemaya University and Wondo Genet Forestry College is important part of the project, that will contribute to disseminating the experiences. The project started in 1996 and 2 mSEK has been allocated.

Building on earlier long-time experiences from cooperation in the rural sector, a new rural development project in Ethiopia's Region 3 (the Amhara National Regional State) was launched in 1995, with 30 mSEK for the period 1995-1996. The overall approach is to strengthen the capacity of the local government. The programme focuses on agricultural productivity from a holistic perspective. The scope is wide: institutional support and project activities, agricultural research, rural extension, livestock husbandry, rural roads, agricultural marketing, etc.

South-Eastern Agricultural Development Zone (SEAD) was the third stage (CADU and ARDU being the other two) of more than 20 years of Swedish development cooperation in Arsi region of Ethiopia. It entailed most components of agricultural development including crop production, animal husbandry, soil conservation, research, extension and training and administrative support. The programme ended in 1989.

A rural water supply programme in eastern Ethiopia received Sida-support from during a 20-year period from 1975-1995. The initial approach was rather high-tech, with motorized pumps. From 1990 more 'appropriate technologies' were introduced and communal participation encouraged. The major achievement was that half a million people got access to safe water.

Kenya

The VI Tree Planting Project works in Kenya, Uganda and Tanzania since the early 1980ies. Sida support amounts to around 10 mSEK per year. The vision is to create a green belt around the Victoria Lake. The approach is seedling production, extension on tree planting and agroforestry, and regeneration of trees through direct seeding. One of VI's projects in Kenya targets the pastoral community in semiarid West Pokot. Here, VI promotes enclosures to restore degraded land for improved and controlled grazing.

Sweden has supported the Soil and Water Conservation Branch of the Ministry of Agriculture since 1974. The programme has a catchment approach and operates through Divisional Soil Conservation Officers. Initially focusing on high potential

areas, the programme expanded to arid and semiarid districts in 1992, as a result of increased population pressure in these areas. It has officers in all districts. Important activities include extension in soil and water conservation, courses and workshops including farmers' training, and information work. The Swedish support cover 95% of the total budget. About 225 mSEK has been paid under this programme.

The Kenya Indigenous Forest Project, a small pilot project, received Sida support during 1996-97.

The rural water supply and sanitation programme in Kenya, supported since 1970, covers partly dryland areas. Since the 1980ies, there has been a gradual shift from capital intensive towards smaller and demand-driven support, with consumer ownership and management. Strategic and policy issues play an increasingly important role. The current agreement 1995/96-1998 covers 62 mSEK, and comprises support to the implementation of water supplies, self/help groups and NGOs, and two area programmes (Kwale and Tharaka).

Somalia

During 1981-1991, SAREC supported the Somali Camel Research Project (11,4 mSEK). Components were improvement of the life as camel herdsman; less labour intensive forms of camel husbandry; camel diseases; increased milk production. Capacity building and scholarships were included in the project. Five Somali students carried out PhD research within the project. The Nordic Africa Institute was the Swedish partner.

Sudan

Two Swedish research project in Sudan received SAREC support 1994-1996: One dealt with reliable **diagnostic** methods and an effective vaccine for malignant sheep and goat theileriosis (a killer disease for small ruminants), carried out by the National Veterinary Institute, Uppsala. The second was research on climate change and policy implications in the Sahel (Lund University, Department of Physical Geography).

Tanzania

In Tanzania, Sweden has a long history of research and development cooperation on dryland issues:

For almost 25 years, 1972-1995, Sweden supported the Hifadhi Ardhi Dodoma (**HADO**) soil conservation project in two semiarid rural districts, Kondoa and Mpwapwa, and from 1986 also in Dodoma. The major objective was to reclaim depleted land in the severely degraded Kondoa Eroded Area, in the semiarid parts of Tanzania. The strategy was gully reclamation and drain constructions, support to reforestation and extension on soil conservation in croplands. It also included support to animal husbandry through zero-grazing (livestock expulsion took place in 1979); training education and information. Sida contributed approximately 1 mSEK per year. A parallel joint Swedish and Tanzanian research component, MALTISA, studied the biophysical and socioeconomic environment in the area.

Man-Land Interrelations in Semiarid Central Tanzania (MALTISA) is a university-based research programme. Since 1991 it is jointly run by the Institute of Resource Assessment, University of Dar es Salaam, and the Environment and Development Studies Unit (EDSU) of Stockholm University. The research analyses natural and human induced processes of environmental change, and consequences of de-stocking in the Kondoa area. Swedish and Tanzanian MSc and PhD students are trained under the programme. Total funding is approximately 14 mSEK.

A joint programme for research and higher education on fodder for ruminants in semidry areas has been supported by SAREC, and carried out by the Swedish University for Agricultural Sciences and the Ministry of Agriculture in Tanzania. A PhD scholarship programme for Tanzanians was included. During 1984–1996, 13,2 mSEK was allocated.

The support to the agricultural sector in Tanzania is partly linked to the drylands:

A Land Management and Environment Programme (LAMP) covers 4 districts in central and northern Tanzania—largely dryland areas. LAMP focuses on work at local and district level, close to the target group. Strategically important work at national level complements the district support programme. The programme, which builds on a conglomerate of earlier projects, among them SCAPA, mentioned below, started in 1989. The current agreement 1997–2000 comprises 105 mSEK.

The Soil Conservation and Agroforestry Programme – Arusha (SCAPA) started as a pilot project in 1989. Experiences from Kenya in soil conservation was communicated to the project through RSCU. The project works through the regular extension service at village level. Agriculture, animal husbandry and soil conservation issues are addressed in an integrated approach. Training, extension and agroforestry play important roles. Assistance is based on requests from farmers, village leaders or government officials. Most work has been in the high-potential areas in Arusha, but the surrounding drylands are also addressed. From 1993/94 SCAPA was included in the Tanzania country frame. SCAPA is part of the Land Management Programme since 1995.

The National Environment Management Council (NEMC) provide advice to the Government of Tanzania on all matters related to the environment, and coordinate such activities. NEMC's mandate span over a wide range within natural resources management, pollution prevention and control, environmental education and information, environmental economics, general capacity building, and environmental law. The Council has been instrumental in the preparation of the National Conservation Strategy for Sustainable Development. Sweden has supported NEMC almost since its inception in 1989. A new phase is currently under preparation – the main aspects related to the CCD being development of land use and tenure systems, and environmental education and information.

An NGO, *Pingsfmissionens Ulandshjälp*, is implementing a tree planting and erosion control project in Arusha with Sida-support.

Sweden has supported water supply in Tanzania since 1965. The current Health through Sanitation and Water (HESAWA) programme focus on 3 regions in the Victoria Lake area: Kagera, Mara and Mwanza. These regions are partly dryland areas. The approach is integrated, with a high degree of village participation.

Health education, environmental sanitation, water supply, and capacity building are key words. Since 1985, more than 800 000 people have benefited from the programme. Current agreement is 200 mSEK for 3 years.

Uganda

Uganda Land Management Programme (ULAMP) is a new initiative, where a pilot phase has been supported by RSCU. The proposed support 1997-98 is 6 mSEK.

Sweden has supported the water and sanitation development in Uganda since 1985 in a project managed by UNICEF. This national programme covers 30 out of 38 districts in the country, some of which are dryland districts. Objectives are improved public health and general socioeconomic development. The programme is carried out at district and subdistrict level, jointly with the villages. The strategy is to develop the districts' long-term capacity to, practically and economically, solve its water and sanitation problems. The total Swedish funding totals to 350 mSEK.

Regional programmes in East Africa

In East Africa a number of regional programmes receive Swedish support. Some of these have a direct dryland focus:

The **Dryland Husbandry Project (DHP)**, is an action oriented research programme on methods for improved land-use systems in drylands in Eritrea, Ethiopia, Kenya, Sudan and Uganda. The programme is managed by the Organization for Social Science Research in Eastern and Southern Africa (OSSREA), in collaboration with Environmental Policy and Society (EPOS), Linköping University. DHP maintain close links with IGAD and PINEP. The approach is participatory research through interaction between researchers, extension personnel, pastoralists and agropastoralists. During 1994-1996, the budget was 6,7 mSEK.

The **Pastoral Information Network (PINEP)** is a network within the IGAD subregion (Djibouti, Ethiopia, Eritrea, Kenya, Sudan, Uganda and Tanzania). PINEP has a regional office in Nairobi. The programme consists of 3 subprogrammes: 1) Pastoral Training; 2) Research on pastoral production systems; and 3) Information. University of Nairobi, Kenya and EPOS, Linköping University, provides technical backstopping. Swedish funding 1992-1997 is 11,5 mSEK.

Since 1995, SAREC supports regional MSc education and research on dryland biodiversity – the East African Research Programme on Sustainable Use of **Dryland Biodiversity (RPSUD)**. Institutions in Ethiopia, Kenya and Tanzania participate, coordinated by the Biodiversity Centre, National Museums of Kenya. Department of Plant Biology, Uppsala University provide technical support. Priority areas are inventory, sustainable use and protection of biodiversity, including cultural and social aspects (8,8 mSEK 1995-98).

SAREC also supported the research project Pastoral land tenure in Africa during 1991-1992. The aim was to contribute to the debate on, and finding solutions for, sustainable use of dry areas in Africa, particularly about pastoral land tenure systems and how they are organized and institutionalized. The project, which was coordinated by International Institute for Environment and Development (IIED) covered Kenya, Sudan, Tanzania and Uganda. The total grant was 2,8 mSEK.

Other regional initiatives mainly address high potential areas, but have important linkages to **dryland** issues:

Since 1982, the Regional Soil Conservation Unit (RSCU) supports methodology development and dissemination in land husbandry in Eritrea, Ethiopia, Kenya, Tanzania, Zambia, Uganda and Zambia. It started as a mechanism for sharing within the region experiences from the Kenyan soil conservation programme. Through contact institutions in the member countries, RSCU supports pilot projects at local level. RSCU has mainly concentrated on medium to high potential areas, but is increasingly working in drylands. As from mid-1997, RSCU was renamed the Regional Land Management Unit (RELMA), with a widened mission, including animal husbandry, water resources and a number of cross-cutting issues, among them socioeconomic aspects. Annual budget for RELMA is 15 mSEK.

A support to gene banks in East Africa facilitates regional collaboration on plant genetic resources in East Africa. It includes countries with bilateral support (Kenya, Ethiopia, Uganda) but also other countries (i.e. Sudan, Djibouti). The support, 0,5 mSEK for 1997, goes via IPGRI, the International Plant Genetic Resources Institute.

SAREC supports a regional **MSc** and **PhD** programme in soil and water conservation at the University of Nairobi. The programme provides scholarships and research funds for training in soil science, and offers basic training up to **MSc** level. It has also initiated **PhD** training. A soil laboratory and a field station is built within the programme. Since 1988, Sweden has contributed 29,5 mSEK. Mainly addressing high-potential areas, it is expanding to dryland production systems.

Regional environmental statistics is supported via DESO. The aim is to train staff in environmental authorities in East and Southern Africa in environmental issues: environmental statistics, development of environmental indicators and 'green' national accounting. A second objective is to contribute to increased regional collaboration. Initiated in 1995, the budget allocation is 2,5 mSEK per year.

The Nordic Africa Institute conducted the research programme, Human Life in Arid Lands, during 1987-93. The programme contained research in drylands and exchange of regional expertise; cooperation between social and natural sciences and indigenous knowledge; and policy research. Of the total budget of 5 mSEK, Sida provided a smaller amount.

West and Northern Africa

Burkina Faso

SAREC supports a research project within FOREP, Silviculture and management of dry forests, since 1993. It consists of two parts: One is a research project on sustainable and economically viable management of savanna forests in the centre of Burkina Faso, implemented by the Department of Silviculture, SLU. The other is a review and synthesis of current knowledge on the silviculture, productivity and management of dry forests, administered by FAO. The latter covers dry forests in general and is not restricted to Burkina Faso.

SAREC has also supported some smaller research projects in **dryland** Burkina Faso. One was 'water, nutrient and light resources in agroforestry systems in

semiarid Burkina Faso', receiving 0,7 mSEK 1991-1994. Another was 'the onset and nature of tree-crop interaction in a Sahelian parkland system', (0,4 mSEK 1994-95).

Tunisia

One of Sweden's few larger bilateral development projects in a truly semiarid environment-the water supply and soil conservation project, Sidi Bouzid, Tunisia-received Swedish aid from 1974-92. Initially, the project improved water supply to increase irrigated agricultural production. In the second phase the project addressed soil conservation from a much wider perspective: permanent vegetation for fodder; check dams and terraces to stop erosion and increase infiltration; grazelands within live fences; support to improved sheep production. The involvement of Swedish scientists was important part of the project. From 1983-1992 the total funding was 31 m SEK.

A SAREC's research grant to study the transport of solutes in shallow semiarid agricultural soils under unsaturated conditions was provided 1994-1996 (1mSEK). The objective of was to investigate the solute transport for a typical semiarid, unsaturated soil through field experiments and simulation studies in Tunisia.

Regional programmes in West and Northern Africa

From 1982 to 1994, Sweden supported the Sahel Programme. The total contribution was about 250 mSEK. In collaboration with first FAO and later the United Nations Sudano-Sahelian Office (UNSO), the programme had activities in 4 countries: Burkina Faso, Senegal, Niger and, to some extent, Sudan. The projects contained village afforestation, conservation of natural vegetation, dissemination of improved cooking stove, and, in Sudan, management of grazing resources around permanent water supplies. Development of a participatory process became important later in the programme. A large number of Swedish associate experts worked under the Sahel Programme, building the Swedish resource base.

A long-term research programme on sustainable management and control of desert locusts started in 1990. The focus is population biology and ecology, and the use of pheromones in the control of the desert locusts. A group of donors supports the programme, which is coordinated via IFAD, in collaboration with the International Centre for Insect Physiology and Ecology (ICIPE) and national research centres. The SAREC grant 1990-95 was 7,5 mSEK.

Southern Africa

Botswana

SAREC has financed two dryland research projects in Botswana:

- Uppsala University studied regulatory mechanisms in woody vegetation in arid savanna during 1991-1993. 0,4 mSEK was granted.
- The Department of Wildlife Ecology, SLU, studied the impact of browsing wild and domestic herbivores on food plant resources 1993-95 (0,9 mSEK).

SAREC has also funded a larger capacity-building activity in Environmental Science. This joint research and education project comprises 3 parts: A PhD programme in geography; research on land use modelling; and research on rainfall run-off and water yield. Stockholm University's Department of Physical Geography and University of Botswana collaborated under this project (9,7 mSEK 1988-1995).

The rural village water supply programme has been a major component of the overall development cooperation between Sweden and Botswana. Ranging from 1971 to 1993, the total spending over the years was 884 mSEK in 1995 values. The objective was to develop water supply in major and rural villages, serving in total 700 000 people. Capacity building and institutional support were integrated parts. A water hygiene education component was added late in the programme.

Lesotho

One of Sweden's long-term engagements in soil conservation has been the one in Lesotho -a country severely affected by land degradation. The programme has operated since 1981. The current Production Through Conservation (PTC) programme originates from 4 earlier projects. The objective is to increase production among rural communities on a sustainable basis. The strategy is to create a village planning procedure, supported by multidisciplinary teams of agricultural specialist. This requires a changing role of extension, and the staff is offered multipurpose training. A reorientation of the District Agriculture Office is part of this process. Sida's bilateral support ended in 1996, but Sweden continues its support indirectly via UNDP.

Mocambique

Agriculture in Mocambique has received substantial Swedish support for 20 years. Direct dryland projects have not been on the agenda, although the sector support has a link to these areas:

The Mocambique-Nordic Agricultural Programme (MONAP) which stretched over 3 Phases from 1976 to 1990, was for many years among Sida's largest bilateral agricultural programmes. MONAP covered a great number of diverse activities, located all over Mocambique. Being a national sector programme, drylands were indirectly but not specifically covered. MONAP dealt with both agriculture, animal husbandry, forestry and fisheries. An important component was institutional building. The presence of foreign technical advisors was high, due to the acute lack of experiences personnel in the country. The main projects were within livestock, seeds, the peasant sector, and forestry. Investments in agricultural marketing and mechanization was also considerable. Of a total project budget of 1200 mSEK, Sweden contributed 44%.

At present, Sida supports the national seed company Sementes de Mocambique Lda. (SEMOC), originating from the former MONAP programme. SEMOC produces improved seeds of mainly maize, rice and beans. National capacity development in the field of seed improvement and production is an important part of the project, as well as development of institutional aspect within SEMOC. However, less attention is given dryland crops such as millet. During 1992/93-1994/95 the Swedish contribution was 27 mSEK.

Sweden also provides general support to the natural resources sector in Mocambique. The support consists of a number of subprogrammes, among them: 1) capacity building within the Ministry of Agriculture; 2) establishment of a land survey system; 3) support to the departments of agricultural economics and agricultural engineering at University Mondlane. From 1993 to 1995, 27 mSEK was paid under this programme.

A new province support to 1-2 provinces in Mocambique is currently under preparation. The province is still to be selected but the programme may partly address dryland areas. Poverty reduction is the aim. The approach is integrated rural development with components related to extension, marketing of agricultural produce, research on farming systems, seeds, water, health, among others.

Namibia .

An important new programme is the planned support, via NATUR, to the Desert Research Foundation of Namibia (DRFN), an NGO dedicated to appropriate research, research training, environmental education and awareness. SADC-ELMS has recently nominated DRFN the focal point for information, training and research as required to comply with the CCD (3,3 mSEK).

The Desert Ecological Research Unit of Namibia received SAREC support (0,3 mSEK). The aim was to organize a regional conference to develop a working plan on how the institute could be better used by Namibian researchers and students.

During 1994-97, the Africa Groups has a small grant via SEKA, to an integrated tree planting project in Onankali, Namibia. The objective is seedling production of trees and plants to fulfil the needs in the area.

Sweden supports a number of environmental projects within the water resources sector. The support is directly linked to drylands, since water scarcity is a central issue in Namibia. Several publications on the utilization of the water resources have been produced and support provided to applied environmental research. One of these studies was on the ephemeral rivers of Namibia, resulting in a monograph published in 1995. The environmental projects involve policy makers, local organizations as well as the Swedish resource base. Continued support includes utilization of available water resources and a study of effects of different types of land use. (In 1994/95, the support was 2 mSEK).

Zambia

In collaboration with other donors (WB, NORAD, FINNIDA and FAO), Sida supports the Drought Recovery Programme. Its main aim is to rehabilitate farms and provide quality and more drought resistant seeds to farmers in Southern Zambia suffering from the effects of the drought 1992/93. The support is managed via the Programme Against Malnutrition (PAM). The support amounts to 23 mSEK 1994-97.

A number of programmes in the agriculture sector are partly linked to the drylands of Zambia:

The Farming Systems Research (FSR) project originated from the Adaptive Research Planning Teams project, which received Sida support since 1983. One important function of FSR was to provide a link between research and extension. From 1994, FSR included technology development and dissemination; methodological development and backstopping; and agricultural capacity building. Activities in the field were carried out by multidisciplinary farming systems research teams. The project was terminated in 1996.

The project Land Management and Conservation Farming (formerly SCAFE), has been supported by Sida since 1985. The programme operates in 20 districts in Zambia, some of them in dryland areas. The approach is education and awareness creation on a group, village or catchment basis; training of farmers groups; mobilization for the construction of off-farm structures; and on-farm implementation of land management and conservation farming. At district level, multidisciplinary teams with staff from several Ministries are key actors. Individual farmers of farmer groups, are the implementors, with extension workers as facilitators. Budget for 1994-97 is 28,9 mSEK.

The Zambian agricultural sector also receives Swedish support to the Food Crop Seed Research Project. It originates from a plant breeding and seed project that has been supported by Sida since the early 1980ies. The project develops and improves planting materials of the major food crops, carries out seed quality control, as well as multiplication and distribution of improved planting materials. Training related to seed is also important. Research on sorghum and pearl millet helps develop dryland agriculture. Total budget is 32 mSEK for the period 1994-1997.

Economic Expansion in Outlying Areas (EEOA).The programme aims at sustainable agricultural production, processing and marketing in 4 target district, 2 each in the Northern and Eastern Provinces. Training, infrastructure support, and savings mobilization are among the activities. After a pilot phase, EEOA is now moving into an operational phase. 41 mSEK is budgeted for 1994-97.

The Conservation Farming Unit is an executive arm of the Conservation Farming Liaison Committee, established under the Zambia National Farmers' Union. The Committee has representatives from all organizations promoting sustainable agricultural systems in Zambia. Its main task is the exchange of information and experiences, to ensure standardisation of methods and approach, to recommend research priorities and maintain liaison with national and international organizations involved in conservation farming. The target group is small-holder farmers. This is a small strategic support, 1 mSEK during 1994/97.

Zimbabwe

SAREC supports research on the ecology and management of indigenous forests in Zimbabwe. The project intends to generate and provide information on sustainable management, conservation and utilization of commercially important indigenous forests in Zimbabwe, out of which a large part is located in dryland areas. Expected output is growth and yield models for major timber species, and information on the genetic variation in selected species. The budget during 1993-96 was 5 mSEK.

Sweden supports the Mvuramanzi Trust Fund, an NGO working to support a water and sanitation programme in Zimbabwe. The aim is improved domestic environment through upgraded wells and sanitation facilities, particularly in rural areas. The approach is innovative, low-cost and participatory. The wells and latrines are built by families themselves, supported by the Trust Fund and in collaboration with the District health authorities (5,5 mSEK 1994-97). Sida's health programme also provides support in this area.

INEC has financed a pm-appraisal of an infrastructure project for water supply to **Bulawayo/Matabeleland**. The study was technically oriented, with recommendations to build dams and pipelines, leading water from the Zambesi river. Since the project deals with the most important shared water resource in Southern Africa, it has implications beyond the infrastructure sector. During 1997, the pre-appraisal will be complemented by a study on a general aspects on water resources (1 mSEK).

Regional programmes in Southern Africa

A number of regional initiatives in Southern Africa, receives Swedish aid. Non is a specific **dryland** initiatives, while all have a connection to problems related to rural livelihood in **dryland** areas:

SADC Environment and Land Management Sector (ELMS). SADC-ELMS mission it to help build the capacity of member States to address environmental concerns. Since 1985, SADC-ELMS, located in Lesotho, coordinates activities related to environment, land and, up to 1996, water resources management. Sweden has been the main donor to SADC-ELMS, with a total contribution of around 130 mSEK since 1985. Important activities are capacity building and methodology development; monitoring, assessment and reporting on environmental conditions and changes in the region; and issues related to the use of shared natural resources in the **region**, including activities related to the Convention.

The cooperation with SADC Regional Plant Genetic Resources Centre (SPGRC) started 1989. The work is financed by the 5 Nordic countries, with Sida as coordinator via the Nordic Gene Bank. SACCAR represents the SADC. Parallel to this support, Sida provides bilateral support to national gene banks in Southern Africa (1.5 mSEK per year), channelled via SPGRC. The aim is to strengthen the SADC member countries in caring for, and renewing older collections of plant materials.

The Farm-level Applied Methods in East and Southern Africa, (FARMESA), is a subregional programme executed by FAO. The Coordination Unit is based in Harare. FARMESA is the product of 4 earlier regional programmes dealing with aquaculture (ALCOM), small-scale technology development (AGROTEC), integrated pest management (PPIP), and farming systems programme (FSP). FARMESA is demand-oriented and supports development initiatives from the participating countries Kenya, Uganda, Tanzania, Zambia and Zimbabwe. Other countries can be associated. It develops methodologies and tools for working with farmers. It strengthens human and institutional capacity and disseminates information through networking. Sweden has contributed 36 mSEK since 1993.

Agricultural Operations Technology for Small-Holders in East and Southern Africa (AGROTEC) started in 1989. The approach was to integrate technical-biological systems with socioeconomic aspects. Uganda, Tanzania, Kenya, Zambia, Zimbabwe and Lesotho participated. Focal areas were small-scale mechanization and transport, rural structures, crop processing and storage, and on-farm energy. From 1996 AGROTEC is part of the FARMESA programme. Sweden contributed 24 mSEK to the programme.

The regional Farming Systems Programme (FSP) became operational in 1989. Activities focus on training research and development, and networking. The programme emphasized a multidisciplinary and farmer participation approach. It provided financial and technical support to innovative proposals to solving problems among small-scale farmers. Research in extension technologies was supported. From 1996 FSP forms part of FARMESA. Swedish contributed 30 mSEK.

To increase the capacity in crop protection in Botswana, Zimbabwe and Zambia, NATUR has, since 1991, supported the Plant Protection Improvement Programme (PPIP). Now part of FARMESA, the approach was promotion of Integrated Pest Management in training and research, and development of appropriate crop protection methods. An additional objective was to promote safe practises for pesticide use.

The Aquaculture for Local Community Development Programme (ALCOM), tested and demonstrated small-scale fish-culture methods and reinforces local development institutions in SADC. ALCOM worked both at regional and national levels. The organization used innovative and practical pilot projects to develop, test and promote fish culture methods, integrated with farming systems. Supported by Sweden since 1986, ALCOM became part of FARMESA 1996.

Southern Africa Regional Water Resources Programme (SARWMP), was initiated in 1996, as a response to the increasing water scarcity in Southern Africa. The programme supports water related initiatives in the region. It is coordinated from Harare, and works closely with the newly established SADC Water Sector in Lesotho, and GWP. Among its duties, SARWMP supports management of shared water resources, such as the Zambesi River Action Plan and Okavango River Commission. The Sida budget for 1996-98 is 45 mSEK.

Asia and Latin America

China

SAREC funded the collaborative research programme Vegetation dynamics in semiarid rangelands in Naiman Banner, Inner Mongolia from 1987-93, with 2,7 mSEK. The research focused on ecosystem change and dynamics, particularly related to changes following overgrazing in temperate drylands. Uppsala University and the Institute of Desert Research Academic Scinica were implementing the project.

Lund University received 0,8 mSEK from SAREC 1991-93 to study soil-water dynamics in arid zones in China. The main objective was to analyse the influence by vegetation cover and management practices in a desert area.

India

Partly targeting drought-prone areas, Sida has funded Social Forestry in Tamil Nadu and Orissa, since 1981 and 1983, respectively, as part of the Swedish forestry sector support to India. The projects promoted farm forestry on private land, as well as village woodlots on communal wasteland and erosion-prone areas. Reforestation and rehabilitation of degraded or depleted forest was also part of the project. The Village Social Forestry Committees provided a link with the Forestry

Department. The Project in Orissa has since it closed in March 1996 been subject to an intensive dialogue between Sida and the Orissa Forest Department. An 18 month preparatory phase for support channelled towards such local initiatives will begin in October, 1997 amounting to 13 mSEK.

Tree Growers Cooperative Societies. The purpose of the programme is to create economically viable and self-sustaining cooperative organizations of tree growers in the Rajasthan, Tamil Nadu and Orissa states. This is done through support to the establishment, or strengthening of tree growers cooperative societies. Swedish support amounts to 50 mSEK 1992-97. The agreement was recently extended to 1999 but with no additional funds. The States of Mahadra Pradesh and Uttar Pradesh (near the Nepalese border) have been added to the Programme.

Sida has, since 1991, supported an Integrated Wasteland Development Project, to rehabilitate degraded environment in Rajasthan. Low rainfall and poor soils in combination with population growth has resulted in severe land degradation. The programmes has an integrated approach to solve problems related to natural resources. Both physical and supporting activities are included: soil conservation, forest management and animal husbandry; training and institutional development. The project involves concerned Ministries and local NGOs. 87 mSEK has been provided 1991/92-1995/96. The Project has been extended twice (March 1997 and March 1998) with marginal funds added. A 2nd phase is scheduled to start in April 1998 with an indicative annual budget of 20 mSEK over a 5 year period.

The Swedish Covenant Church supports the Karamba Social Forestry project via a grant from SEKA (0,3 mSEK 1995-1998). The project plants trees, including fruit trees, and carries out agricultural activities in the drought prone North Solapur district. Most beneficiaries are women and marginalized farmers, and landless labourers.

Sida has since mid-1985 supported two different UNICEF Water Supply and Sanitation Programmes. The larger was a national programme between 1985-1995 with an annual budget of approximately 50 mSEK. The second focused on Rajasthan and was successful in eradicating guineaworms. The annual budget was approximately 10 mSEK. UNICEF India has recently approached Sida for renewed national support. The project proposal amounts to 100 mSEK over an 18 months period. Sida has agreed to positively review the proposal but no formal decision is taken yet.

Sida has also received a formal request from the Government of Rajasthan to begin a bilateral Integrated Water Resources Management Programme with its base in Jaipur.

Also in Rajasthan, Sida has recently entered an agreement with ODI for the 'Rajasthan initiative' (agriculture). The amount is 2,9 mSEK over a 2 year period.

Sri Lanka

The Anuradhapura Integrated Rural Development Programme (AIRDP) is part of a large rural development programme in the North Central Province since 1992. It is jointly financed with IFAD, among others. The Sida support started 1992 through

social mobilization and an agriculture programmes. A health component is also included, mainly to combat malaria. Peoples participation at local level is a key feature of the project. 1995-1998 the agreement covers 11 mSEK.

Costa Rica

SAREC supported 1987-92 research on the restoration of tropical dry forest in Guanacaste National Park, Costa Rica. The total contribution was 2,7 mSEK.

Global and regional programmes

The Consultative Group of International Agriculture Research (CGIAR)

Sweden is an important donor to the CGIAR, consisting of 16 international research centres. Some of these have a mandate to work exclusively with dryland production systems, while others partly deal with arid, semiarid and dry subhumid areas. SAREC contributes 40 mSEK per year 1996-1997 as core support. In addition, project support to some centres, i. a. ICRAF is provided by NATUR:

- ✧ International Centre for Agricultural Research in the Dry Areas (ICARDA). ICARDA has a world responsibility for the improvement of barley, lentil and faba bean. In West Asia and North Africa it also improves wheat, chickpea, forage and pasture crops. Emphasis is on rangeland improvement and small ruminant nutrition, and of the farming systems associated with these crops. Swedish contribution, via SAREC was 56 mSEK 1982-1994.
- ✧ International Crops Research Institute for the Semiarid Tropics (ICRISAT). ICRISAT works to increase the yield and quality of sorghum, millets, chickpea, pigeon pea, and groundnut. It improves farming systems in the seasonally dry semiarid tropics through technological and institutional changes. ICRISAT also assist in the development and transfer of technology to the farmers. Swedish contribution 1982-1994 was 112 mSEK.
- ✧ International Centre for Research in Agroforestry (ICRAF). ICRAF's research and dissemination is carried out in 6 geographical regions: 4 in Africa, and one each in Latin America and Southeast Asia. Dryland issues are mainly included in the regional programmes in Southern Africa and the semiarid lowlands of West Africa. Swedish project support of approx. 27 mSEK per year goes mainly to on-farm research (in Kenya and Zambia), agroforestry education in Africa, and information activities. Core support via SAREC 1986-1994 was 13,8 mSEK.
- ✧ The International Livestock Research Centre (ILRI) conducts research in tropical crop-livestock systems, dryland systems included. Ruminant genetics, health and feed resources is part of the agenda. ILRI began operations in 1995 with the merger of the International Laboratory for Research on Animal Diseases (ILRAD) in Kenya, and the International Livestock Centre for Africa (ILCA) in Ethiopia. Both have received Swedish support. Between 1982 and 1994, 72 mSEK was granted.
- ✧ International Plant Genetic Resources Institute (IPGRI). IPGRI's mission is to support the conservation and use of plant genetic resources worldwide, with

special emphasis on the needs of developing countries. Swedish contribution **1982-1994** was 41 **mSEK**.

- « **The Centre for International Forestry Research (CIFOR)** began its operations in 1993. CIFOR carries out research on biophysical and socioeconomic environments of forest ecosystems; sustainable improved productivity of forest systems; policy on forests and land use. CIFOR also aims at increasing national forestry research capacity. Its headquarters is located to Indonesia, but activities are carried out in a wide range of countries and climate zones. Swedish contribution up to 1994 was 6 **mSEK**.

United Nations

Swedish grants to **the United Nation** system has contributed to UN's over-all work on **dryland** issues. Particularly active in this field are United Nations Food and Agriculture Organization (**FAO**), United Nations Development Programme (**UNDP**), United Nations Environmental Programme (**UNEP**), and United Nations Sudano-Sahelian Office (**UNSO**). The latter has now merged with UNDP, and has been renamed UNSO-Office to Combat **Desertification**. It has an overall coordinating role for Convention-related work within UNDP.

The Forest Trees and People Programme (FTPP) is an international strategy- and method development **programme** under **FAO**. FTPP promotes peoples' participation, local planning and networking. Important issues are conflict management, tenure, participation methods, gender aspects, and farmer initiated research and extension. Sweden has had the responsibility for the global programme (since 1996 together with **Norway**) and the East African Programme. Recently Sida has also contributed funds to the West African Programme. 1995-98 Sweden grants **10,3 mSEK** to FTPP.

Partly linked to the monitoring of deforestation in **drylands** is the global **Forest Resources Assessment (FRA)**, managed by **FAO**, largely via Swedish support. The 1980 assessment mainly covered tropical areas, while the 1990 assessment more seriously included forest resources in **dryland** countries. **Dryland** forests are more difficult to define, which creates a problem. A new FRA 2000 is currently underway which also aims to include changes through comparisons of remote sensing images. Current Sida-contribution is **9,3 mSEK** 1995-98.

FAO also executes **the Farm-level Applied Methods in East and Southern Africa, (FARMESA)**, mentioned above.

Of relevance for the national planning process in **dryland** countries is the support to the development of national **Tropical Forestry Action Plans (TFAP)**. The **TFAPs** have covered also **dryland** countries, including Burkina Faso and Niger, for example. However, since forestry is such small part of the GNP in such countries, it is difficult to separate forestry in the planning framework. Swedish contribution 1994-1996 18 **mSEK**, channelled via UNDP.

The UNDP/WB Water and Sanitation Programme started in mid-1970ies. It has 5 regional groups out of which Sida supports the Regional Water and Sanitation Group-Eastern and Southern Africa. The support, 6 **mSEK** since 1993, goes via a Trust Fund at the World Bank. The Regional Group has an office in Nairobi and has

concentrated its efforts to Eritrea, Ethiopia, Kenya, Malawi, Tanzania, Uganda and Zimbabwe. The programme is being linked to the Global Water Partnership.

Other regional or global organizations and initiatives

The International Foundation for Sciences (IFS) was founded in 1972. Its main activity is to provide research grants within a few key areas - aquatic resources, animal production, crop sciences, forestry/agroforestry, food science, and natural products. To support the research, IFS also arranges workshops and training events, provides travel grants, purchases scientific equipment and literature, etc. and supports the build-up of e-mail facilities. Further, IFS promotes institutional linkages with a number of organizations. During 1982-94, the Swedish contribution was 138,7 mSEK.

African Academy of Sciences (AAS) has initiated 2 programmes to advance forestry research in Africa: A scholarship programme for young African forestry researchers for them to undertake projects at their home institution, some of which deal with dry forests. A grant programme enhances forest policy research at national and regional levels. Since 1990, 13 mSEK has been allocated.

Support to African networks for agriculture research is under preparation. This programme, which is a complement to Swedish support to international and national agriculture research, goes to 3 African networks:

- ✧ Special Programme for African Agricultural Research (SPAAR)
- ✧ Southern Africa Centre for Cooperation in Agricultural and Natural Resources Research and Training (SACCAR)
- ✧ Association for the Strengthening of Agricultural Research in Eastern and Central Africa (ASARECA)

Target group is partners in agriculture research, mainly in East and Southern Africa, including national research centres, universities, the private sector and farmers. The aim is to better utilize the scarce resources available for agriculture research in the region. Proposed funding is 7 mSEK 1997-99.

International Centre for Insect Physiology and Ecology (ICIPE) has the mandate to develop biological control methods for insect pests. ICIPE has 5 main programmes: research on ticks; the tsetse fly; insects acting as vectors on human and veterinary diseases; and postgraduate PhD training. Swedish funding 1983-1993 was 59 mSEK.

The Forestry Research Regeneration Programme (FOREP) was established 1993 to fill knowledge gaps on management of dry forests in natural and human-affected ecosystems. The programme analyses plantations, natural regeneration and restoration of degraded dry forests. Natural regeneration is of particular interest. FOREP compiles earlier experiences, carries out pilot projects, and disseminates information. It is also building a network for cooperation between research institutions in both industrial and developing countries. Current budget is 6 mSEK per year.

Established in 1996, the Global Water Partnership (GWP) is a network open to all organizations involved in water resources management. Initially, GWP has two priority areas for its activities -water and sanitation, and irrigation and drainage.

Within these sectors GWP seeks to facilitate collaboration for improved water management. Swedish funding is 5,7 mSEK.

The independent scientific organization International Union for the Conservation of Nature (IUCN) was founded in 1948. IUCN brings together governments, NGOs and individuals to help nations make the best use of their natural resources. Among others, the programmes aim at strengthen national and local capacity, and to develop National Conservation Strategies. The Swedish contribution is a core support to IUCN programme in developing countries. IUCN's Sahel programme has also received support. The payment 1994-96 is 62 mSEK.

The objective of International Institute for Environment and Development, (IIED) is to clarify the relation between environment and development, and to participate in method development for a sustainable utilization of natural resources in the South. Among the 6 research programmes is one for dryland areas. Sida has provided both programme and core support to IIED since early 1980ies. From 1991 to 1997, the contribution is 9,7 mSEK.

Sweden contributes approximately 1,55 billion SEK to European Union for development and humanitarian assistance during the 1997 budget year: 700 mSEK for African, Caribbean and Pacific countries (via DG VIII); and 750 mSEK to Asia and Latin America (DG I), and to humanitarian assistance via ECHO. A large proportion, often 15-25 % of EU bilateral aid goes to the natural resources sector. The EU response to the CCD is three-fold: Attention to problems related to land degradation and the consequences of drought in bilateral and regional programmes; integration of the objectives of the CCD in EU policy strategies; and donor coordination in specific countries.

Humanitarian assistance

Humanitarian assistance to victims of drought is the other side of the desertification problem. African drylands have in recent decades received massive humanitarian assistance- in Ethiopia 1983-85 and Southern Africa 1992-93, to mention but a few large operations. Over the years, Sida has contributed huge figures through various NGOs and the United Nations High Commission for Refugees. In the mentioned case of Southern Africa, Sida contributed 291 mSEK from emergency funds and 180 mSEK from bilateral sources. The funds were mainly used for procurement of cereals, non-food aid (health and water etc.) and shipment and transport. Another example: according to SEKA's November 1995 report, Sida granted 7,3 mSEK to drought victims in 1995/96, mainly for food aid and seeds in Burkina Faso, Ethiopia, Kenya, Mauritania, Mocambique, Somalia, Tanzania and Zimbabwe.

In the context of disasters in drylands, it is also worth mentioning Sida's support to desert locust control. During the last 10 years, Sida has granted 49 mSEK for this activity, mainly implemented via FAO.

Among organizations working with humanitarian assistance, there is a growing interest to prevent rather than cure the negative effects of drought. This calls for an understanding of the under-lying socioeconomic and biophysical factors of the communities in drought-prone areas. One such study is currently planned by Sida for the Turkana District in northern Kenya.

Annex 2. The European Union

Sweden contributes approximately **1,55** billion SEK to **EU's** development and humanitarian assistance for the 1997 budget year.

For **African, Caribbean** and Pacific countries, assistance is channelled through Directorate General VIII, via the European Development Fund (EDF), in accordance with the **Lomé IV** Convention. Sweden adds 700 **mSEK** to the EDF for 1997. Development Assistance to Asia and Latin America goes via DG I. Humanitarian assistance is handled by European Community Humanitarian Office (ECHO). In **1997, 750 mSEK** goes to these units.

For this survey, development assistance via EDF is the most relevant, although issues related to desertification and the effects of drought also feature under DG I and ECHO, particularly as humanitarian aid as result of drought disasters. However, the latter are not included in this brief survey.

Within the framework of this study, it has not been possible to trace to what extent DG VIII projects directly respond to the CCD. Instead, I tried to relate **EU's** general planning framework to the Convention. The main instruments for planning **EU's** development cooperation with African, Pacific and Caribbean countries are the Regional Indicative Programmes (RIP) and National Indicative Programmes (NIP). During 1996, these were negotiated for the coming 5-year period. The total budget frame for the **5-year** period is approximately **6,2** billion ECU. A very rough estimate is that, in most countries, 15-25% of the EDF cooperation goes to agriculture, rural development and environment.

EU and the CCD

The starting point is that EU is among the signatories of the CCD. As stated by the EU representative in the **10th** session of the Intergovernmental Negotiating Committee of the CCD, 'EU has over a long period of time been the largest external source of finance to combat desertification, particularly in Africa' (Hoogeveen 1997). The EU response to the CCD is three-fold:

- ✧ Attention in bilateral and regional aid programmes to problems related to land degradation and the consequences of drought
- ✧ Integration of the objectives of the Convention in EU policy strategies
- ✧ Donor coordination in specific countries

However, in spite of the **EU's** general policy as related to the CCD, there are surprisingly little reference to the CCD in both **RIPs** and **NIPs**. For instance, the RIP for the SADC region does not at all mention desertification or the CCD. The East African RIP has one sentence on support to the regional implementation of the CCD. Other international conventions of the Rio-process are equally neglected in these EU documents.

There seems to be a situation where **NIPs** from a general point of view include food, agriculture, rural development and the environment, where problems of desertification and drought are included, but not specifically referred to. Some examples of 'Areas of Concentration' linked to the CCD are:

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- Botswana – policies and strategies to encourage improved livestock management and reduce pressure on communal grazing land
 - Burkina Faso – restoration and preservation of the equilibrium of the ecosystem.
 - Ethiopia – food security
 - Kenya – remote sensing for crop forecasting and environmental monitoring
 - Mali – develop selective livestock farming methods, especially in grazing areas in the north
 - Namibia – improved level of household food security

In the EDF committee, Sweden has particularly argued to strengthen poverty and gender aspects in the NIPs (jointly with the 'like-minded' countries UK, Germany, the Netherlands, Denmark and Finland.) This group has also emphasised environmental aspects and capacity building.

One problem with the EU planning framework in relation to the CCD is the aspect of participation of local communities and other stakeholders. While acknowledging the importance of an integrated bottom-up approach, the EU process has many top-down elements. There are at present obstacles to involve the community level in this process.

Swedish Embassies play an important role in planning EU projects in the spirit of the CCD. They can link Swedish experiences, particularly in participatory mechanisms and land husbandry, with the EU project planning process. Sida's long-term soil conservation programmes in Kenya and Lesotho, and the corresponding regional networks RSCU, and SADC-ELMS could make important contributions in this respect. It is equally important that Sida's experiences from the field consistently reach personnel from Sida, the Foreign Ministry and the Swedish Delegation to Brussels, who are involved in EU negotiation process. Increasing integration between disciplines puts new demand on this feed-back mechanism.

The Lomé VI Convention expires on 29 February 2000. Negotiations for the renewal will start in September 1998. It is important that the implementation of the CCD and other Rio-linked conventions is part of this process.

A forthcoming joint EU/DANIDA/FINNIDA/Sida study on policies and practices supporting sustainable development in Sub-Saharan Africa can be one useful element in EU's future efforts. Another study of similar interest could be the one on macroeconomic reforms and sustainable development in Southern Africa carried out by WWF on behalf of EU and Sida, among others.

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Annex 5. List of acronyms

AAS	African Academy of Sciences
AGROTEC	Agricultural Operations Technology for Small-Holders in East and Southern Africa
AIRDP	Anuradhapura Integrated Rural Development Programme
ALCOM	Aquaculture for Local Community Development Programme
ASAL	Arid and semiarid lands
ASARECA	Association for the Strengthening of Agricultural Research in Eastern and Central Africa
CCD	Convention to Combat Desertification
CGIAR	Consultative Group of International Agriculture Research
CIFOR	Centre for International Forestry Research
COP	Conference of the Parties
CST	Committee on Science and Technology
DANIDA	Danish International Development Agency
DESO	Sida's Department for Democracy and Social Development
DG	Directorate General
DHP	Dryland Husbandry Project
DRFN	Desert Research Foundation of Namibia
ECHO	European Community Humanitarian Office
EDF	European Development Fund
EDSU	Environment and Development Studies Unit
EEOA	Economic Expansion in Outlying Areas
EPOS	Environmental Policy and Society (Linköping University)
EU	European Union
FAO	United Nations Food and Agriculture Organization
FARMESA	Farm-level Applied Methods in East and Southern Africa
FINNIDA	Finnish International Development Agency
FOREP	Forestry Research Regeneration Programme
FRA	Forest Resources Assessment
FSP	Farming Systems Programme
FSR	Farming Systems Research
FTPP	Forest Trees and People Programme
GWP	Global Water Partnership
HAD0	Hifadhi Ardhi Dodoma soil conservation project, Tanzania
HESAWA	Health through Sanitation and Water
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICIPE	International Centre for Insect Physiology and Ecology
ICRAF	International Centre for Research in Agroforestry
ICRISAT	International Crops Research Institute for the Semiarid Tropics
IFAD	International Fund for Agricultural Development
IFS	International Foundation for Sciences
IGAD	Intergovernmental Authority on Development
IIED	Institute for Environment and Development
ILRI	International Livestock Research Centre
IPGRI	International Plant Genetic Resources Institute
IUCN	International Union for the Conservation of Nature
LAMP	Land Management and Environment Programme
MALTISA	Man-Land Interrelations in Semiarid Central Tanzania

MONAP	Mocambique-Nordic Agricultural Programme
mSEK	million Swedish Crowns
NAP	National Action Programme
NATUR	Sida's Department for Natural Resources and the Environment
NEMC	National Environment Management Council
NGO	Non-governmental organization
NIP	National Indicative Programmes
NORAD	Norwegian Agency for Development Cooperation
NPACD	National Plan of Action to Combat Desertification
OSSREA	Organization for Social Science Research in Eastern and Southern Africa
PINEP	Pastoral Information Network
PPIP	Plant Protection Improvement Programme
PTC	Production Through Conservation
RELMA	Regional Land Management Unit
RIP	Regional Indicative Programmes
RPSUD	East African Research Programme on Sustainable Use of Dryland Biodiversity
RSCU	Regional Soil Conservation Unit
SACCAR	Southern Africa Centre for Cooperation in Agricultural and Natural Resources Research and Training
SADC	Southern Africa Development Community
SADC-ELMS	SADC-Environmental and Land Management Sector
SAREC	Sida's Department for research cooperation
SARWMP	Southern Africa Regional Water Resources Programme
SCAI'A	Soil Conservation and Agroforestry Programme-Arusha
SEAD	South-Eastern Agricultural Development Zone
SEKA	Sida's Department for Cooperation with Non-Governmental Organizations and Humanitarian Assistance
SEMOC	Sementes de Mocambique Lda.
Sida	Swedish International Development Cooperation Agency
SLU	Swedish University for Agricultural Sciences
SPAAR	Special Programme for African Agricultural Research
SPGRC	SADC Regional Plant Genetic Resources Centre
TFAP	Tropical Forestry Action Plan
UNCED	United Nations Conference on Environment and Development
UNCOD	United Nation Conference on Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNICEF	United Nations Children's Fund
UNSO	United Nations Sudano-Sahelian Office
ULAMP	Uganda Land Management Programme
WB	the World Bank

**TERMS OF REFERENCE - STUDY OF SIDA EXPERIENCES OF SUPPORT TO
PROGRAMMES/PROJECTS IN DRYLANDS IN AFRICA**

1. Background

Desertification is a major world-wide problem. It is a process of progressive soil and vegetation degradation in drylands, to which both human and climatic factors contribute. It does not necessarily mean conversion of drylands to desert. Degradation is most extensive and severe in the arid and semi-arid areas in sub-Saharan Africa, where one third of the entire world area of dryland soil degradation is to be found.

Desertification became a major issue following the disastrous droughts in the Sahel during the early 1970s. During the United Nations Conference on Desertification (UNCOD) held in Nairobi in 1977 a plan of action to combat desertification was formulated. During the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992 the Agenda 21 was adopted and this includes a chapter specifically dealing with desertification and drought.

At UNCED it was agreed to draw up an International Convention to Combat Desertification (CCD) which was elaborated and agreed in June 1994 by the Intergovernmental Negotiating Committee on Desertification. Sweden is amongst the approximately 70 countries that have signed the CCD so far. Attached to the Convention are regional implementation annexes for Africa, Asia, Latin America and the Caribbean as well as the Northern Mediterranean

Desertification is currently perceived as the degradation of drylands, which occurs as a subtle, dispersed and continuous process, mainly far away from the desert fringes. Only rarely does fertile land become desert. Major processes at work are loss or reduction of vegetation cover and species diversity, loss of soil structure, which may lead to erosion and dust storms, decrease in soil fertility, an altered hydrological cycle, and reduced crop yields and livestock production.

The opposite of land degradation is a situation in which the biological and economic potential of an area is conserved or improved, which in essence is the concept of sustainable natural resource management. Sida's Plan of Action for Sustainable Development subscribes to this concept.

The drylands in Africa support a variety of interlinked land-use systems including pastoralism; rainfed farming with tree, crop and livestock production; and natural woodlands. Sweden has in the past and is at present supporting a number of programmes and projects in Africa to sustainable use and improve these systems. The support also includes research and higher education.

After ratification of the CCD, Sweden has a new imperative to support sustainable natural resource management and to live up to what is stated in the Convention. It is therefore important to make a survey of the experiences gained in Swedish financed programmes and projects in African drylands, carried out in the past and at present.

2. Purpose and Scope of the Study

The purpose of the study is to: 1) Review experiences of Swedish financed programmes and projects in African drylands over the past ten years and see to what extent they have met the objectives of the Convention to Combat Desertification. 2) Analyse the experiences of the relevant programmes and projects in order to draw conclusions for future Swedish aid to sustainable natural resource management in support of the CCD.

3. The Assignment

The desk study will involve a review of Swedish support to sustainable natural resource management in dryland areas in Africa during the past 10 years, i.e. the period 1986-1996, including aid through multilateral, bilateral and non-governmental organisations.

The first phase of the study will review what has been and is being done of relevance to the CCD. A summary of the programmes/projects carried out shall be made including their main characteristics. Also relevant programmes/projects in other regions than Africa shall be listed and appended to the report.

In the second phase of the study an analysis should be made on how relevant the support has been and is and what can be improved upon. This could preferably be done through in-depth studies of some programmes/projects in order to focus the study on the major

issues on support of sustainable natural resource management and the lessons learned.

The following areas should be covered, although the study should not be limited to these:

- Physical and biological causes to problems
- Socio-economic causes to problems
- Problem identification at local level
- Socio-economic solutions to problems
- Technology, policy and institutional solutions to problem

The study shall give recommendations based on the review on future bilateral Swedish aid to sustainable natural resource management in support of the Convention to Combat Desertification. The study shall also give recommendations on potential areas for Swedish multilateral assistance (including EU).

4. Methodology, Consultant and Time Schedule

The review shall characterise the relevant programmes/projects by objectives, area of intervention, geographical location, time period, total funding and Swedish part of it, executing agency, relative success/failure of project if evaluated and any other comments that may be deemed appropriate

In-depth reviews should be made of six to eight programmes/projects representing a sample of the projects reviewed. These reviews shall focus on the major issues perceived to be of importance to the success or failure of the programme/project.

The study should be carried out by consultant familiar with dryland problems in Africa and support to sustainable natural resource management, and preferably also with Swedish aid.

The consultant shall carry out the study in close collaboration with relevant departments within Sida.

The study should be carried out by consultant during a period of eight to ten weeks and should preferably be completed by June 15, 1997

5. Reporting

The Consultants shall present the findings to Sida in a report to be written in English which should not exceed 30 pages, excluding annexes. Three copies of the draft report shall be submitted not later than June 15, 1997.

Sida

Within two weeks after receiving Sida's comments on the draft report, a final version in three copies and on diskette shall be submitted to Sida. The report shall be written in Word 6.0 for Windows or a compatible format and should be presented in a way that enables publication without further editing.

Sida may require the Consultants to present the findings at a seminar arranged by Sida in Stockholm as part of the overall consultancy assignment.

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Lars Leander and Ray Purcell
3. Regional Soil Conservation Unit, RSCU:
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