

# For Better Contribution to the United Nations Convention to Combat Desertification

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## Abstract

“United Nations Convention to Combat Desertification (CCD)” entered into force on December 26, 1996, with an aim at contributing to the achievement of sustainable development in dryland areas experiencing serious drought and/or desertification, particularly in Africa, through effective actions at all levels, particularly at local community level. For promoting a better commitment to this new strategy, research gaps and action priorities have been reviewed in light of the objective of the CCD, with an emphasis on the Japan’s contribution in the Sudano-Sahelian region of Sub-Saharan Africa. Major key issues needing reinforced commitment are : monitoring and assessment at local site level, study of socio-economic dimensions, support of activities of NGOs and CBOs, study of local variations both in physical and socio-economic conditions, coordination of existing and planned projects, investigation of climate change and food security, triangular cooperation in relevant indigenous technology and know-how transfer, training of able experts and connecting science with local community actions.

**Key words** : Convention to Combat Desertification, desertification, Japan’s better contribution, land degradation, priority issues, Sudano-Sahelian Region

## 1. Introduction

“Desertification,” which is defined as land degradation in drylands, i. e., arid, semi-arid, and dry sub-humid areas (UN, 1994), is the most serious global environmental issue in the world’s drylands, which occupy one-third of the Earth’s land surface. Coupled with the adverse effects of human activities and climatic variations, particularly severe and persistent drought, this process has increasingly threatened human survival in many parts of the world’s drylands, particularly in developing countries, by destroying life-support systems, i. e., food production, water and energy supply systems, and even socio-economic systems. Great drought has often aggravated these and has resulted in human tragedies, as evidenced in the Sudano-Sahelian Region of Africa in 1972 and 1984.

For this reason, the effects of desertification/land degradation and drought deserve particular attention as major environmental constraints of sustainable development in developing countries in the world’s drylands.

Various programmes and projects have been planned and implemented since the late 1970s to stop and/or reverse desertification/land degradation in Africa, particularly in the Sudano-Sahelian Region on the south side of the Sahara, based mainly on the Plan of Action to Combat Desertification (PACD) adopted at the United Nations Conference on Desertification (UNCOD) held in Nairobi in 1977 (UN, 1978).

However, most of the projects have failed and reported success stories were very limited (e. g., Timberlake, 1991 ; Pons, 1992). Among others, most

of all the large-scale, top-down, costly projects, such as the construction of large-scale dams, irrigation canals, etc., failed. Technology-oriented projects, which avoided the participation of local populations and needed high technological skills and involved maintenance costs, could not be rooted in the affected local communities. Success stories can only be found among small-scale projects carried out by NGOs in close connection with integrated rural development.

By reviewing the past unsatisfactory efforts to combat desertification/land degradation since the United Nations Conference on Desertification (UNCOD) in 1977, the international community agreed to elaborate a “United Nations Convention to Combat Desertification”, as a follow-up of the “Chapter 12 : Managing Fragile Ecosystems : Combating Desertification and Drought” of Agenda 21, adopted at the United Nations Conference on Environment and Development (UNCED) in 1992 (UN, 1992).

“United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (CCD)” (UN, 1994), was adopted and signed in 1994, and entered into force on December 26, 1996.

On December 10, 1998, Japan became one of the developed country Parties to this Convention and has been obliged to provide both technological and financial assistance to the affected developing country Parties, particularly those in Africa.

The objective of the CCD is to combat desertification and mitigate the effects of drought, with the priority for Africa through effective actions 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.

The *CCD* stresses the importance of local community-level "bottom-up" approach and socio-economic dimensions, including involvements of local people, land tenure, decentralization, and the role of science and technology in implementing action plans. The successful implementation of the *CCD*-based action plans are expected to be a key to solving desertification/land degradation problems and assuring sustainable development of affected areas.

Although Japan's past experiences in scientific and technological cooperation in drylands, have revealed high potentialities for promoting the implementation of *CCD*, there still remain some important gaps and shortcomings to be fulfilled in order to gain a better commitment to this new strategy (Kadomura, 1999). This paper reviews research gaps and action priorities, particularly in Japan's contribution, in the case of the Sudano-Sahelian Region of tropical Africa, in light of objective of the *CCD*, as an attempt to search for ways to connect science with local community actions.

## 2. Paradigm Shift and Prerequisites for Better Commitment

### 2.1 Understanding the reality of desertification/land degradation problems

Proper and deep understanding of the reality of causes, processes, consequences, and effects of desertification/land degradation should be the starting point for a better commitment to combat this problem. Desertification/land degradation can be recognized as an "ecological disease" destroying the biological productivity of the land and caused by the coupled effects of adverse human activities such as overgrazing, excessive cultivation, etc., and climate variations, particularly severe and persistent drought. It is true that the processes of desertification/land degradation appear as an "ecological disease" caused by the loss of vegetative cover, wind and water erosion of soil, soil salinization, etc.

But, more importantly, desertification/land degradation should be understood as a "social disease" in drylands caused by deep-rooted, various socio-economic constraints such as poverty, population growth and migration, land tenure problems, marginality in international trade and marketing, civil strife, etc. It is these socio-economic constraints that have driven human-induced degradation of life-support systems and have hindered people living in the world's drylands, particularly in developing countries, from achieving sustainable development.

### 2.2 Attention to changing socio-economic environments in affected countries

Today, most dryland rural communities in developing countries affected by desertification/land degradation, if they are located in marginal areas, have

increasingly experienced rapid changes in macro socio-economic environments, as exemplified by the penetration of market economy, the reduction of external aids in the form of interruption or withdrawal of international and bi-lateral aid programmes due both to the world-wide economic depression and the changes in development aid policies. Affected developing countries have also been experiencing national political and institutional changes in relation to democratization, decentralization, etc.

This is also true in the Sudano-Sahelian Region of Africa (e. g., Egg and Gabas, 1997 ; Stacy and Snrech, 1997). To tackle the above-mentioned root causes of desertification/land degradation, i. e., human dimensions of this problem, calls for thorough investigation into these kinds of socio-economic conditions in targeted countries and regions.

### 2.3 Attention to the effect of drought

As evidenced by the great drought in the Sudano-Sahelian Region on the south side of the Sahara in 1972 and again in 1984, the impact of a severe drought event, through the destruction of life-support systems consisting of food production, water and energy supply, has often resulted in dramatic human tragedies involving massive loss of lives of humans and domestic animals due mainly to starvation and massive migrations of environmental refugees.

It should be emphasized that the effects of severe droughts have inevitably aggravated the processes and consequences of desertification/land degradation. For this reason, the *CCD* has given a greater attention to mitigating the effects of drought.

### 2.4 Review and assessment of past and existing programmes and projects

In planning desertification/land degradation control activities in a certain area, review and assessment of past and existing projects and programmes in the adjacent areas should not be limited to success stories but also be extended to failed ones.

Based on understanding of physical, ecological, economic, political, and cultural conditions of the targeted areas, a detailed review and assessment of past efforts should be carried out on the effectiveness and technical sustainability of land and water conservation, socio-cultural adaptability, economic sustainability, and applicability to other areas. Through this process, the lessons for success may be clarified.

In addition, after the finalization of a project, the sustainability and flexibility of the project against medium to long term changes in climatic and socio-economic conditions need to be repeatedly reviewed over time. This follow-up may be an essential procedure to achieving an objective assessment of projects, even for those designated as "success stories" under the present circumstances.

For this purpose, the report of Club du Sahel (Pons, 1992), that gave critical comments on some 20 existing projects in the Sahel of the late 1980s-early 1990s has provided a useful reference from the viewpoint not only of technological possibility but also of post-

project sustainability and durability of land use, as well as resources management by local population, and economic duplicability to other areas.

### 3. Priority Issues

#### 3.1 Monitoring and assessment at the local site level

The CCD has stressed the importance of a bottom-up approach at the local community level in planning and implementing action programmes. For this purpose, establishment of the following monitoring and assessment systems should play a vital role, including :

1) Multi-level temporo-spatial monitoring systems combined with ground-aerial-satellite observations, on the basis of site- and local-level ground truth observations, and linked with both drought/famine early warning and long-term ecological monitoring systems.

2) Methodologies and techniques for site- and local-level monitoring, mapping and assessing land degradation patterns and processes, taking into account dynamic natures of relations between land use/human activities, morpho-pedological conditions, and rainfall variations.

3) Guidelines and handbooks for monitoring, mapping and assessing land degradation at site and local levels, which can be used by local officers, extension workers, CBO leaders, and even local populations, for planning and implementing local action plans to combat and reverse land degradation, and to assure sustainable use of natural resources. Local indigenous know-how and technologies, with some innovative but appropriate technologies, which can be effectively utilized, should be incorporated into the action plans.

4) Clarification of physical and socio-economic indicators for monitoring and assessing land degradation processes and patterns at site and local levels, and also for assessing the effects of implemented measures on environmental recovery and rural development.

5) In-site training of local leaders, farmers and pastoralists, for achieving site- and local-level monitoring and assessment.

#### 3.2 Socio-economic dimensions

Successful implementation of a plan to combat desertification/land degradation, which should be integrated into a comprehensive rural development programme pursuing the sustainable development of rural communities can only be realized through deep commitment to socio-economic problems in affected areas such as the promotion of local participation and decentralization, reformation of land tenure, improvement of traditional know-how and skills, reinforcement of the role of NGOs, CBOs (community-based organizations) and women, development and acceptability of alternative livelihoods and energy, etc.

In addition, such transboundary problems as desertification/land degradation-driven long-distance

massive migration, the relationship with regional and international trade and marketing, the arrangement of information and infrastructure systems, and the strengthening of food security systems also need urgent socio-economic commitment.

Greater strengthening of the commitment to these socio-economic dimensions, to which little attention has been paid so far in previous programmes and projects, particularly in Japan, are of crucial importance for a better contribution to the CCD.

#### 3.3 Assistance of activities of NGOs and CBOs

The nucleus of the bottom-up approach at the community level is the grass-root activities of NGOs giving service to local populations. The Japanese NGOs began their project to combat desertification/land degradation in the drylands of Africa in the late 1980s and now more than ten NGO groups have carried out projects. Among others, Association Sahel (Mali), Action for Greening Sahel (AGS) (Chad and Burkina Faso), Association pour Cooperation l'Autogestion Rural en Afrique de l'Ouest (CARA) (Mali), and Japan International Volunteer Center (JVC) (Ethiopia) are the main Japanese environmental NGOs that have concentrated their activities on combating desertification/land degradation in relation with rural development.

All these Japanese NGOs are, however, small in scale when compared with the forerunning NGOs' projects of other developed countries, and need greater consolidation in both financial and human resources.

In relation to the recent changes in development and aid policies in Sub-Saharan Africa, the main project actors have been shifting from international and external NGOs to domestic/local NGOs of affected countries, and even to CBOs such as farmers' organizations, cooperative groups, etc. Bearing this change in mind, the role served by NGOs activities should be reassessed from the viewpoint of who are the real stakeholders and how to realize a bottom-up approach.

Limited success stories have clearly revealed that the existence of a local CBO and its subjective actions are the key to achieve success from a project.

The two well-known success stories in Africa are :

1) The "6 S" (*Se servir de la saison sèche en savane et au Sahel*) programme in the Mossi Plateau of northwestern Burkina Faso, which has been supported by the action of a community organization, Federation des Unions des Groupement NAAM (e. g., Perelli, 1992), and 2) the success in the Machacos Hills of Central Kenya, which is often quoted as "*More People, Less Erosion*" (despite the rapid population increase, formerly degraded hillslopes are being rehabilitated and becoming more productive lands, bringing increased income) (Tiffen et al., 1994), is the result of cooperative group activities, mainly by women's groups.

These stories clearly demonstrate that CBOs are the core of stakeholders who have played a vitally important role in the bottom-up approach. From this,

it should be emphasized that if a project will be planned in an area without any CBOs, the creation of a CBO is a prerequisite for initiating a project, in parallel with investigation into local needs.

### 3.4 Careful attention to local diversities

In planning and implementing an action programme at the local level, including technology and know-how transfer, local diversities in both the dynamic nature of the physical environment and socio-economic conditions should be given the first priority in consideration. As stated in Article 10-2 of the *CCD*, "*The programmes should be sufficiently flexible at the local level to cope with different socio-economic and physical conditions*". In this context, special attention should be paid to ensure that a project menu which has made remarkable achievements in one area is not necessarily always applicable to and successful in other areas with different physical and socio-economic conditions.

### 3.5 Coordination and arrangement of programmes and projects

A variety of programmes and projects have already been implemented to combat desertification/land degradation in the drylands of Sub-Saharan Africa, by various donors and NGOs, including those well concordant with the objective of the *CCD*.

Critical review and effective coordination of existing programmes and projects, among donors and various sectors and levels, are essential to avoid duplication and maintain their continuity to and/or integration into National Action Plans (NAPs). Article 14 of the *CCD* has required this process for the elaboration and implementation of national action programmes.

The effective use of limited financial resources also requires this process. In this respect, consultation and coordination of on-going programmes and projects at the national level should be expected to play an important role. Japan's contribution to this process is strongly important, as it is one of the major developed country Parties providing technological and financial assistance.

The Government of Japan needs to establish a central institutional mechanism, in order to coordinate and arrange programmes and projects, including ODA-based national projects, NGOs projects and scientific and technological research, to avoid duplication and to promote a really integrated, multi-disciplinary approach at the local community level, in consistent with the objective of the *CCD*.

### 3.6 Capacity building and indigenous know-how and technology transfer

The *CCD* has stressed that the exchange and transfer of relevant indigenous know-how and technologies, including innovative but appropriate ones, between affected areas, countries, subregions, and regions are of importance for promoting capacity building of affected populations.

Study tours and in-site training of groups of

farmers and pastoralists at some model project sites of other areas and countries having similar physical and socio-economic conditions to those of the areas where the visitors live will be effective not only for capacity building but also for the transfer of indigenous know-how and technologies.

For assisting this type of exchange and transfer programmes among Southern countries, i.e., South-South cooperation, Japan needs to restructure its institutional and financial foreign aid frameworks for realizing "triangular cooperation" in addition to existing bi- and multi-lateral cooperation.

### 3.7 Climate monitoring and food security

Food insecurity is one of the major constraints threatening the survival of affected rural populations. In drylands, such climate anomalies as serious drought and flooding have often resulted in acute food insecurity. For this reason, to predict and mitigate the effects of acute climate anomalies are indispensable strategies for achieving food security of affected rural communities.

For this reason, to establish operational climate monitoring and assessment systems linked with drought/famine early warning and emergency food relief systems is a matter of urgent necessity.

For the Sahelian region of CILSS countries of West Africa, the following hierarchical monitoring and assessment systems (the Network for the Prevention of Food Crises in the Sahel) have been in operation since the tragic Sahelian drought of 1984 (Egg and Gabas, 1997) :

**International Level :** GIEWS (SMIAR) (Global Information and Early Warning System for Food and Agriculture)/FAO, FEWS (Famine Early Warning System)/USAID (United State Agency for International Development), and INTERFAIS (International Food Aid Information System).

**Regional Level :** AGRHYMET (Regional Centre for Training and Operational Application of Agrometeorology and Hydrology Information and Analysis)/CILSS and DIAPER (Projet Diagnostique Permanent)/CILSS.

**National Level :** e.g., SAP (Système d'Alerte Précoce) (Early Warning System) of Chad, Burkina Faso, and Mali.

This Network has made a substantial contribution to the reduction of food crises in Sahelian countries for more than ten years, but now is required to find new ways to respond to changes in both aid policies of donors and socio-economic environments of Sahelian countries (Egg and Gabas, 1997).

One of the important issues relating to this Network may be greater strengthening of effective and timely utilization of warning information at the local community level. For this purpose, the introduction of a community-level Internet-based information system needs to be realized, including provision of detailed information on rainfall prediction, relevant farming methods and timing, production estimation, cereal stock and market price changes, and emergency relief and infrastructure arrangements.

For a longer time scale, networks for long-term ecological monitoring of desertification/land degradation, including monitoring the impact of human-induced climate change and "global warming" on desert margins, should be established in close connection with such existing systems as SSO/ROSELT of the Sahara-Sahel Region (SSO, 1994) and the START Regional Network of Africa-Wide Programmes of IGBP (Fuchs, 1996).

### 3.8 Training of able experts

In Japan, the number of experts, who can commit to actions to combat desertification/land degradation, has been limited so far, in the fields of both scientific research and field operations. In view of this, acceleration of education, training and capacity building of able experts, particularly those with expertise in a multi-disciplinary, integrated approach, is strongly required.

Training of experts, who have broad perspectives and are able to participate in the planning and coordination of programmes at various spatial levels, including subregional, national, district, and local-site levels, also needs to be accelerated.

## 4. Concluding Remarks

All the necessary arrangements and actions mentioned above are not only valid to the Sudano-Saharan Region, but should also be extended to all other affected areas of Africa, the Asian-Pacific, Latin America and Caribbean regions while paying close attention to spatial diversities in physical, ecological, and socio-economic conditions. This proposal should also be extended to all the Parties of the CCD.

The principles and objectives of the CCD should be fully utilized to find ways to link science with community actions in order to make sustainable rural development a reality (e. g., Mouat et al., 1998), by combating desertification/land degradation and mitigating the effects of drought.

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