

# LAND DEGRADATION ASSESSMENT IN DRYLANDS – LADA PROJECT



Global Mechanism  
of the UNCCD



**LAND DEGRADATION ASSESSMENT  
IN DRYLANDS – LADA PROJECT**

**Meeting report  
23–25 January 2002**

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## Executive summary

The goal of the United Nations Convention to Combat Desertification (UNCCD) is the identification, promotion and implementation of effective responses to land degradation in dryland areas. However, the countries participating in this Convention have recognised for sometime now that not enough is known of the nature, extent and severity of the different kinds of land degradation or of their causes on which remedial actions could be based. Presently available assessment methods have been based on expert estimates and, although valid, are not well reproducible across countries or regions.

The project on Land degradation Assessment in Dryland Areas (LADA) aims to develop and validate quantitative, reproducible assessment methods, to make them widely available and to demonstrate and build capacity for their application in the dryland areas of the world.

The Global Environment Facility (GEF) funded a Project Development Framework (PDF), enabling UNEP and FAO to initiate the development and validation of methodologies through pilot activities to be undertaken in two or three countries over a two-year period. A stakeholders' meeting was convened in Rome, 23-25 January 2002, to discuss priorities, strategy and technical aspects of the LADA work, with emphasis on this initial period.

The first plenary sessions discussed papers on various land degradation perspectives and existing national and regional approaches to land degradation assessment, and reviewed the PDF implementation strategy. The meeting then dealt with technical and policy aspects in parallel sessions.

The technical advisory group explored conceptual and methodological issues in the light of the outputs specified for the PDF, and reported to the final plenary session on:

- which information should become available to meet the priorities of the different stakeholders, and how this should be integrated;
- the process and procedures to be followed;
- which capacities should be strengthened locally and nationally;
- how the institutions should build linkages with local communities and among themselves.

The Steering Committee session established a provisional Steering Committee comprising GEF/UNEP, FAO, UNCCD, the Global Mechanism of the UNCCD and UNDP; the donor community; national representatives; technical experts, institutions and organisations; the NGO community; regional organisations linked to the UNCCD; as well as observers. The session agreed on terms of reference for the steering committee and provided a summary of its views to the final plenary session, focusing on policy, information and partnership aspects as well as the geographical scope of the LADA activities.

In its final plenary session the meeting discussed the two reports from the parallel sessions. Recalling that LADA hinges on the underlying principle of attaining global environmental

benefits (in terms of international waters, carbon sequestration and biodiversity), the main conclusions from the meeting were:

- The LADA PDF and full project concept were well focused.
- Methodologies of land degradation assessment should cover social and economic as well as direct biophysical causes through ensuring a balanced analysis of ecological and economic parameters as well as social dynamics, in order to improve understanding of the complex land-livelihood interactions.
- Cases of successful improvement of land conditions should be identified and assessed as well as degradation, in order to focus attention on effective response options.
- A particular focus should be placed on technical partnerships at all levels and with the wide range of stakeholders, including close feedback with knowledgeable people in local communities.
- Information exchange and capacity building will be underlying thrusts of the project, including methodological development for monitoring and assessment of land degradation and rehabilitation, awareness raising and empowerment at local levels.



**Women working on land reclamation in Niger**  
*FAO/18875/F. Paladini and R. Carucci*

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BACKGROUND PAPER FOR THE PLENARY SESSIONS

BACKGROUND PAPERS FOR THE TECHNICAL ADVISORY GROUP SESSIONS

#### **System requirements to use the CD-ROM:**

- PC with Intel Pentium® processor and Microsoft® Windows 95 / 98 / 2000 / Me / NT / XP  
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- 64 MB of RAM
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- Internet browser such as Netscape® Navigator or Microsoft® Internet Explorer
- Adobe Acrobat® Reader (included on CD-ROM)

## Presentations and background documents (available on CD-ROM)

### KEYNOTE PAPERS

1. Philosophy and history of land degradation and rehabilitation. *M. Stocking*
2. The components of land and the LADA project. *P. Koochafkan*
3. Socio-economic causes of land degradation. *C. Lilin*
4. The Terrestrial Ecosystems Monitoring System. *G. Servin*
5. Data sources and land degradation assessment methodology. *R. Oldeman*
6. World Overview of Conservation Approaches and Technologies. *P. Liniger*
7. The role of remote sensing in LADA. *D. Lantieri*

### COUNTRY EXPERIENCES IN LAND DEGRADATION AND REHABILITATION

8. Some aspects and methodology of desertification monitoring in China. *Sun Siheng*
9. Land degradation and restoration in India – an overview. *M. Velayutham*
10. Land degradation assessment in Brazil. *S.R. Vieira*

### REGIONAL APPROACHES

11. PAP/RAC erosion mapping methodology in the Mediterranean region.  
*J-C. Griesbach*
12. Landcare (Australia): a community-based approach to sustainable development.  
*B. Lloyd*
13. The European land degradation monitoring system. *L. Montanarella*

### BACKGROUND PAPER FOR THE PLENARY SESSIONS

14. LADA and its associated activities: an extended implementation strategy. *P.J. Mahler*

### BACKGROUND PAPERS FOR THE TECHNICAL ADVISORY GROUP SESSIONS

15. Issues for consideration in the technical advisory group and questions to help structure the discussions. *LADA secretariat*
16. Shifting views on land degradation. *T.F. Shaxson*
17. From soil conservation to conservation agriculture. *J. Benites*
18. Participatory and multi-stakeholder processes to assess pressures, impacts and identify response options to land degradation in dryland areas. *R. Brinkman*
19. Land degradation and low external input sustainable agriculture. *C. Reijntjes*

## Acronyms

CBD	Convention on Biological Diversity
CCD	Convention to Combat Desertification
CG, CGIAR	Consultative Group on International Agricultural Research
CILSS	Comité permanent Inter-états pour la lutte contre la sécheresse dans le Sahel
DFID	Department for International Development (UK)
ESA	European Space Agency
ESB	European Soil Bureau
GEF	Global Environment Facility
GEO	Global Environmental Outlook (UNEP)
GHG	Greenhouse gas(es)
GIWA	Global International Waters Assessment.
IFAD	International Fund for Agricultural Development
IPCC	Intergovernmental Panel on Climate Change
ISCO	International Soil Conservation Organisation
ISRIC	International Soil Reference and Information Centre
LADA	Land Degradation Assessment in Dryland Areas
NAP	National Action Programme (against desertification)
NGO	Non-Governmental Organisation
PAP/RAC	Priority Action Programme/Regional Action Centre (UNEP)
PDF	Project Development Framework
SADC	Southern African Development Community
SARCCUS	Southern African Regional Commission for Conservation and Use of the Soil
STAP	Scientific and Technical Advisory Panel
TOR	Terms of Reference
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
WAICENT	World Agricultural Information Centre (FAO)
WOCAT	World Overview of Conservation Approaches and Technologies





# Meeting report and recommendations

## INTRODUCTION

The goal of the United Nations Convention to Combat Desertification (UNCCD) is the identification, promotion and implementation of effective responses to land degradation in dryland areas. However, the countries participating in this Convention have recognised for some time now that not enough is known of the nature, extent and severity of the different kinds of land degradation or of their causes on which remedial actions could be based. Presently available assessment methods have been based on expert estimates and, although valid, are not well reproducible across countries or regions.

The project on Land Degradation Assessment in Dryland Areas (LADA) aims to develop and validate quantitative, reproducible assessment methods, to make them widely available and to demonstrate and build capacity for their application in the dryland areas of the world.

The Global Environment Facility (GEF) funded a Project Development Framework (PDF), enabling United Nations Environment programme (UNEP) and FAO to initiate the development and validation of methodologies through pilot activities to be undertaken in two or three countries over a two-year period. A stakeholders' meeting was convened in Rome, 23-25 January 2002, to discuss priorities, strategy and technical aspects of the LADA work, with emphasis on this initial period.

## Structure of this report

This section summarises the structure of the sessions and of this report, and refers to the presentations, background papers and documents in the Annexes and on the enclosed CD-ROM. Annex 4 comprises the agenda and timetable of the sessions; Annex 5 the list of participants.

In the opening session, Ms Louise O. Fresco, Assistant Director-General, Agriculture Department, welcomed participants and provided guidance to the discussions (Annex 1). Ms A. Tengberg (UNEP/GEF), Mr A. Cissoko (UNCCD) and Ms Ana T. Saez (Global Mechanism of UNCCD) gave introductory statements on behalf of the respective agencies (UNEP-GEF and Global Mechanism statements in Annexes 2 and 3). Parviz Koohafkan summarised the objectives and organisation of the workshop. This and the next plenary sessions are summarised in section 2 of this report.

The first plenary working session was devoted to seven keynote papers, informing participants on several past and current approaches, methods and systems relevant to land degradation assessment, and a brief discussion. The papers covered the philosophy and history of land degradation and rehabilitation (M. Stocking); the components of land and the LADA project (P. Koohafkan); socio-economic causes of land degradation (C. Lilin); the Terrestrial Ecosystems Monitoring System (G. Servin); data sources and land degradation assessment methodology (R. Oldeman); the World Overview of Conservation Approaches and Technologies (P. Liniger); and the role of remote sensing in LADA (D. Lantieri).

In the next plenary session, country and regional or inter-country experiences in land degradation assessment and rehabilitation were presented, comprising China (prof. Sun Siheng); Senegal (F. Planchon); Tunisia (M. Farhat and H. Chourabi); India (M. Velayutham); Brazil (S.R. Vieira); the Mediterranean region (J-C. Griesbach); Australia (B. Lloyd); and Europe (L. Montanarella). Mr Koohafkan then presented the project objectives and implementation strategy.

The meeting then divided into parallel working sessions. The Technical Advisory Group discussed technical and tactical aspects of the LADA project and related activities. Section 3 of this report comprises a summary of their discussions and section 4, issues and recommendations. Five background papers were submitted to the technical advisory group.

The sessions on the LADA Steering Committee discussed its terms of reference and its intended composition, as well as policy and strategic aspects of the LADA project. Section 5 of this report comprises the Minutes of their discussions, conclusions and recommendations.

The final plenary session (section 6) briefly discussed the reports of the parallel sessions and adopted the Minutes of the Steering Committee sessions.

This meeting report and all documents on the enclosed CD-ROM are also available on-line, with other background information on the project and on the earlier (2000) LADA workshop, at: <http://www.fao.org/ag/agl/agll/lada/>

## PLENARY SESSIONS

Mr K. Yoshinaga, Director, Land and Water Division, FAO, opened the meeting and welcomed the participants. In her welcome address, Ms Louise O. Fresco, Assistant Director-General, Agriculture Department, provided some guidance for the discussions (Annex 1). Ms A. Tengberg, on behalf of UNEP-GEF, Mr A. Cissoko, on behalf of UNCCD secretariat and Ms A. Saez on behalf of the Global Mechanism, traced the genesis of the project to this stage and their expectations with regard to the outputs during the first two years (Annexes 2–4).

It was expected that LADA would build partnerships with other ongoing regional and global initiatives such as the Millennium Assessment and the National Action Plans of countries participating in the UN Convention to Combat Desertification. At the same time, the need for capacity building of the technicians and stakeholders of land management was stressed. The focus on global environmental implications (international waters, biodiversity and climate change, notably carbon sequestration/GHG emissions) was emphasised and, in this regard, attention was drawn to the cross-cutting issues across the UN Convention on Biological Diversity and the UN Framework Convention on Climate Change and its International Panel on Climate Change. The need for a linkage between regional networks on desertification monitoring (particularly TPN1 in Asia) and LADA was emphasised.

The objectives and practical organisation of the Workshop were explained by Mr P. Koohafkan and the agenda of the workshop (Annex 4) was adopted.

During the second plenary session, chaired by Mr P. Koohafkan, seven keynote papers were presented (documents 1–7 on the CD-ROM), informing participants on several past and current approaches, methods and systems relevant to land degradation assessment, and a brief discussion. The papers covered:

1. The philosophy and history of land degradation and rehabilitation (M. Stocking)

2. The components of land and the LADA project (P. Koohafkan)
3. Socio-economic causes of land degradation (C. Lilin)
4. The Terrestrial Ecosystems Monitoring System (G. Servin)
5. World Overview of Conservation Approaches and Technologies (P. Liniger)
6. Data sources and land degradation assessment methodology (R. Oldeman)
7. The role of remote sensing in LADA (D. Lantieri).

Mr Koohafkan then presented the global scenario of the state of land and water resources, the objectives of this stakeholders' meeting and the implementation strategy of the PDF-B phase of the LADA project.

The main objectives of the full LADA project are:

- To develop and implement strategies, tools and methods to assess and quantify the nature, extent, severity and impacts of land degradation;
- To build national, regional and global assessment capacities to enable the design and planning of interventions to mitigate land degradation.

The objectives of the PDF-B phase of the LADA project are to develop and test novel integrated approaches and methods for assessing land degradation in dry areas for application in the full LADA project. Specifically this phase is to:

- Establish an International Technical Steering Committee with representatives of FAO, UNEP/GEF, and UNCCD Secretariats, donors, NGOs and key countries and technical experts on land degradation.
- Carry out a number of reviews and syntheses on, among others: data sources and assessment methods at different geographical scales; on key factors and indicators on land degradation; on the link between biophysical and socio-economic data and their combined effect on land degradation; on the institutional capacities in pilot countries; on the development of partnership modalities and cofinancing sources (the latter two in close cooperation with UNCCD).
- Carry out a number of thematic studies, partly generic and partly local, on links between land degradation and the economic valuation of land, the influence of macro politics, the issue of incremental costs and global benefits, the use of participatory approaches.
- Develop, test and revise land degradation assessment methods in 2 to 3 pilot countries.
- Develop a network on land degradation involving all stakeholders to test and discuss the proposed novel approaches. Set up a LADA Web site and disseminate information.
- Enhance capacity development through the organization of regional workshops.
- Develop a cofinancing strategy together with executive partnership to implement the full LADA project.
- Develop a full LADA project document.

In a brainstorming discussion on the keynote papers it was noted that lessons from past experiences and studies and a stock-taking review should assist in filling the gaps. Pilot studies and thematic reviews would lead to the assessment of degradation, but also to setting priorities for rehabilitation and monitoring the pace and trends of degradation. Mr Shaxson emphasized

that land degradation concerns sustainability of livelihoods. Manipulating water retention, soil porosity and biological activities of the soil in a positive way is crucial for soil recuperation and resilience against soil degradation. Mr Pretty remarked that the multi-functional soil services in farming systems should be kept in view for promoting attention to soil health. Ms. Farvar emphasised the importance of community-driven projects as the best approach for land management programmes.

Country experiences in land degradation assessment and rehabilitation were presented by representatives of China, Senegal, Tunisia, India and Brazil, demonstrating the variety of methods and approaches to land degradation assessment and rehabilitation actually in use. This was followed by overviews of regional approaches in the Mediterranean Region (Priority Action Programme/RAC), the European Union (The European Soils Bureau) and Australasia (Landcare Organisation, Australia).

#### **TECHNICAL DISCUSSIONS**

The Technical Advisory Group explored conceptual and methodological issues, in the light of the outputs specified for the PDF-B. The Chair provided a brief introduction and an indicative outline of issues and questions requiring consideration. Further background papers submitted to the group dealt with shifting views on land degradation; soil conservation and conservation agriculture; participatory and multi-stakeholder processes; and low external input agriculture.

The very broad scope of the mandate for the two half-days of discussion precluded attempts to address the wide range of issues in depth or to discuss working modalities in detail. It was suggested that an electronic discussion be opened among participants to further develop specific technical issues after FAO will have made available a draft procedure and work plan. This will allow a wide range of expertise and partnerships to contribute to the development of specific aspects of the LADA programme.

The hazards of working along the lines of one implicit paradigm (market liberalisation) and using a relatively mechanical concept (the pressure-state-response model) was raised in discussion. It was agreed that complementary approaches will be required to provide a balanced analysis – including ecological and economic parameters as well as social dynamics – in order to do justice to the complex situation on the ground. This includes the cultural, social, economic, policy, institutional, physical and technological interactions and the diverse nature of the range of stakeholders – particularly land users and their communities – and decision-making processes. The Group pointed out the wide range of information and issues that would need to be explored from global to local levels.

It was recalled that LADA hinges on the underlying principle of global environmental benefits (in terms of international waters, carbon sequestration and biodiversity). It was noted that degradation assessment should look at positive aspects such as stability, resilience and equity as well as at negative trends, it should make reference to specific agro-ecological/farming/land use systems (for example pastoral, rainfed and irrigated systems) and also consider social dynamics such as social organisation and self-empowerment (e.g. participation and decision-making).

In reviewing information issues a particular focus was placed on pilot sites and partnership with knowledgeable people in local communities, as this, it was felt, would minimise risks of

misleading mechanistic analyses and assumptions. It was suggested that the list of issues and recommendations should be provided to CCD committees in the pilot countries with a view to obtaining feedback from different levels and stakeholders (local to national) that would help guide LADA development.

There was general agreement that the work should be based on existing, proven technologies and approaches of assessment and development, and that testing and validation should focus on their applicability and effectiveness for LADA. The five groups of capital, as used in the sustainable livelihoods concept (natural, human, social, physical, and economic), were felt to be a useful basis for structuring and analysing the several kinds of information to be collected.

**Four categories of issues and questions** were discussed by the Technical Advisory Group:

- Which **information** should become available to meet the priorities of different groups of stakeholders (global, including GEF and the Conventions; national, both Governments and governmental and other institutions; and local authorities, farmers' associations and civil society), and how should such information be integrated?
- Which **process and procedures** should be followed in implementing the PDF-B and guiding LADA?
- Which **capacities** should be strengthened, locally; at subnational and national levels and regionally?
- **Linkages**: How would the institutions work with each other and together with local communities or land users' associations?

### **Information**

It was noted that the assessment would cover **two complementary general kinds of information**, with dissimilar characteristics and modes of aggregation and generalisation: a) stratified or quantitative outputs and b) conceptual, issues-based information which is generally more qualitative, complex and multifaceted.

- a. *Stratified or quantitative outputs*, in large part geo-referenced (map-type), such as degradation type, severity and trends, land cover and use, soils information, AEZ and hydrological data. For these, a choice of well-tested acquisition, aggregation and interpretation methods is available, and the meeting discussed the merits of two contrasting approaches. Either, mapping the various elements of the desired variables, and then tuning their interpretation, taking into consideration interactions, on the basis of more in-depth study in the field. Or, first studying the operative mechanisms and impacts and then generalising the information using mapping techniques.

Besides mapping and stratified sampling, there are examples of random and grid-based sampling which could provide information on those variables that have proved most useful. Examples include the US Natural Resources Inventory, where local sites reportedly located at random have been visited and revisited every 5 - 10 years; and the 16 km<sup>2</sup> monitoring grid in the EU that has 20 years of calibrated datasets. The value of models was also recognised to make better predictive use of observed data, for example, on land cover change and on links between above- and below-ground carbon.

Past surveys, both remote and on the ground, have produced much information that may be usable and relevant for the identification of time trends. Examples include the large collection of aerial photographs of different dates, and maps and reports by the Soil Survey Section and the Land Husbandry Branch in Malawi; and information obtained by the member countries of the Southern African Regional Commission for Conservation and Utilisation of the Soil (SARCCUS).

- b. *Qualitative, multi-faceted information*, which should be acquired through participatory dialogue and exploration, jointly by a local or national LADA team with knowledgeable people in local communities representative of significant areas in each country. This would include information and knowledge on: the reasons underlying observed land degradation status and historic trends; on land use and management practices; and on food security, livelihood and coping strategies of different social groups; as well as identification of possible response options (taking into account the socio-economic, institutional and infrastructure conditions, and the local or wider constraints that would need to be overcome to make an effective response possible). Such information, linked with the stratified or quantitative information for the same area, would need to be aggregated and distilled into a form useful to national decision-makers and eventually, international fora, for example CCD and CBD meetings. During the pilot phase, methods to link such representative local information, issues and options to national policy issues should be developed and tested.

On the question of how LADA could meet the **interests and priorities of local land users**, the discussion identified the need to enable and empower communities to look at and analyse their resources, conditions and objectives in relation to wider environmental concerns, and to help them look at their longer-term and communal interests and opportunities. In this regard, capacity building and conflict resolution mechanisms were considered important. Participatory rural appraisal and other participatory diagnostic methods supported by a multi-disciplinary team would also be essential to better understand constraints, opportunities and perspectives of the range of local stakeholders (including for example, local and wider power relations). Immediate feedback of the results of any interpretation by the team to the local counterparts is considered a prerequisite to build trust, to retain interest and empower those holding local knowledge, to strengthen local stewardship mechanisms and support continued stakeholder cooperation. Once a LADA method of participatory diagnosis will have been tested and validated, appropriately trained teams including members from an advisory or extension service and, for example, a soil survey institute could extend the coverage over more sites in a country.

Discussing what kinds of information would be useful to **global stakeholders**, the meeting recognised that the GEF process, for example, should be served by information on the links between land degradation or rehabilitation and global environmental benefits, in particular in regard to international waters, carbon sequestration (above- and below-ground) and biodiversity, including soil biodiversity.

Various biophysical and socio-economic examples of **indicators** were discussed, applicable at different resolutions (scales).

- Emphasis was placed on water as a major consideration in land resources degradation, including surface, soil and groundwater and hydrological regime. Suggested indicators closely related to land degradation and its causal factors were, *inter alia*: streamflow regime in relation to the rainfall regime; water quality (especially solids and nutrient charges) (ref. Global Plan of Action on Protection of marine based environments from Land based activities); flooding and drought frequency and hazard; as well as use of wastewater in dryland irrigation (e.g. as an indicator of salinisation risk).

- The presence and severity of soil crusting, which may even be recognisable by some forms of remote sensing, and a selection of other erosion indicators (ref. Stocking Field Assessment of Land Degradation) including those of wind erosion, and indicators of soil biological activity (ref. GEF Tropical Soil Biodiversity and Fertility Programme-TSBF).
- Ground cover data (ref. FAO Africover data), as well as the two decades now available of the NDVI-vegetation index (although its limited accuracy in drylands was noted), NPP (Net Primary Productivity) and other interpreted variables from remote sensing data could be further manipulated to provide proxies for above-ground biomass and biodiversity trends, and can contribute to the estimation of land cover changes, as used on a global scale for several parts of the world.
- It was noted that the land cover classification system developed by a number of partner institutions, and recently published by FAO, is scale-neutral, widely accepted as a standard and useful to link local, national and global land cover information.
- Regarding socio-economic indicators, suggestions for identifying serious human-induced land degradation include, for example, trends in number of hours per day spent on collecting fuel or water; or prevalence of malnutrition or diarrhoeal diseases of children observed in hospitals.
- Besides indicators on population pressure, land tenure information and so forth, there is a need for insights regarding sustainability, for example from comparative studies (local and subnational) of land uses and their sustainability, current response strategies of local populations (e.g. using WOCAT- the World Overview of Conservation Approaches and Technologies) and alternative response options (those for local communities and those that require support – policy, technology, infrastructure, etc).
- Economic indicators related to land degradation, such as water quality and costs of treatment, soil productivity and costs of fertilisers and other inputs.

It was suggested that, where possible, selected indicators should be of interest for local communities as well as globally: a good example is soil carbon, in view of its relationship to soil quality (moisture and nutrient retention, reduced erodibility) as well as water quality. It is also necessary to understand how local land use and land management practices affect factors such as water quality and availability, soil productivity, ecosystem resilience and how they affect global carbon stocks, GHG emissions, etc. In addition, there is a need to link, for example, impacts on the hydrological cycle from soil water to the groundwater table, to streamflow, to water quality. Observations and interpretation of remote sensing data can be backed up by site-specific data, for example from runoff plots and erosion monitoring. Seasonality is also recognised as an important factor in regard to land use and management practices that will require several measurements per year.

It was noted that maps and analyses of certain variables can be used to facilitate discussions and a two-way exchange of information both to build trust and empower local communities and to compile more qualitative and historic information on trends, impacts, responses and options. Emphasis was placed on effective participatory processes, in collaboration with experienced actors on the ground, including NGOs. In this regard the work of SANREM CRSP (University of Georgia) on landscape-lifescape analysis was noted as well as the work in Mexico on sustainability by Martha Astier *et al.*



## Processes and procedures

The meeting discussed the issue of a sound **selection strategy of pilot sites and communities**, the local information from which should be representative for significant areas and avoid bias. *Stratification criteria* identified include the agro-ecology; the land-use system; the kind and rate of current degradation (or improvement); the degree of human influence on degradation; the degree of rehabilitation potential (taking into account social capital); and the social and economic change dynamics, e.g. in population, land use, and livelihoods. Some pilot sites should be located where rehabilitation or improvement is ongoing or has been successful.

*Desirable features* of a pilot site (but which might in certain cases make it less representative) would be the availability of historic information; the presence of a functioning advisory or extension service, active NGOs or other potential partners; and no evidence of earlier, extractive surveys. Recognising that certain pilot countries had already been identified based on country interest and ongoing programmes (China, Senegal, Argentina, Tunisia), it was agreed that the number of pilot sites should not be limited but that there should be core pilots and others that would feed additional information into the process. South Africa was suggested as a possible pilot country. Linkage with the MA, Millennium Assessment of Ecosystems (goods and services and trends) was noted and the aim for LADA to feed into the MA (which has a 4-year time span).

LADA should explore which options for prevention, rehabilitation or stabilisation of land degradation fit within a sound, common **philosophy of land improvement and management**, yet to be clearly defined and agreed. The principles of conservation agriculture may be a good basis, even though its implementation requires adaptation to different climates, ecosystems and land uses. Preconceived assumptions that all degraded land should be rehabilitated would be counter-productive: the feasibility of rehabilitation should be determined by realistic cost/benefit analysis combined with consideration of cultural, heritage and other local values and know-how regarding land resources. The perspective in which LADA should be grounded is sustainable improvement of human livelihoods through stabilising, improving or rehabilitating land resources. The dual landscape-lifescape perspective developed by SANREM-CRSP (University of Georgia) was cited as a valuable approach.

As an example of the dynamics and interrelationships, three interconnected processes would need to be considered for pastoralism in drylands to reach sustainability: out-migration, which is generally ongoing; improvement of local livelihoods outside pastoralism; and improvement of the land and the livestock system. Since populations in many dryland areas face extreme poverty, the lack of risk-taking capacity and the dearth of obvious options for development need to be recognised. The joint FAO and World Bank global study “Farming Systems and Poverty: improving farmers’ livelihoods in a changing world”, was cited as a useful reference, which could be further refined at national level.

## Strengthening capacities

LADA should identify those aspects of **capacity building** that will most effectively and rapidly contribute to the assessment process, including the methodological development, and the LADA goals – in particular, the underlying goal to increase the effectiveness of the several global instruments, such as the CCD, at local and national level. The ongoing decentralisation process in many countries emphasises responsibilities at local levels, hence local capacity building is a priority which should include *inter alia*: goal setting, ecosystems analysis, developing options

for intensification and better land management, and conflict resolution and negotiating use of land by multiple users. Local authorities and communities should be empowered to address short-term and long-term issues, to develop local action plans and to plan and allocate funds with a long-term perspective. This will require the development and implementation of enabling policies and support mechanisms (financial, technical, information). Strong capacities at local levels will provide sound support for the implementation of national action plans and help mobilise resources to be applied both nationally and locally.

Capacity building thus should also address the reciprocal linkages between local communities and Government. The GEF-UNU project on People, Land management and Environmental Change (PLEC) was cited as an example that has brought farmers' insights into politicians' and decision-makers' perceptions; the SARCCUS model was also effective in this regard. A further example is the Integrated Pest Management (IPM) process, whereby farmers' conviction and lobbying have brought about major policy shifts in some countries. It was noted that the extremely limited resources of many government institutions are an important inhibiting factor in the implementation of strategies, programmes and national action plans. Capacity building therefore should not be limited to training but should also include measures to alleviate this constraint.

Both nationally and internationally, a multidisciplinary group of experts should be identified to guide the capacity-building process, for example through study tours, an induction training programme, and at local level through farmers' field schools and other participatory approaches.

LADA should devote significant efforts to the **dissemination of knowledge and insights** on land degradation and rehabilitation. On the basis of the identification of successes and failures at different scales and the analysis of the processes and formulation of lessons learnt, this would lead to *policy advice* and promote increased coherence among the diverse policies pursued by Government ministries and departments. The past structure of SARCCUS suggests a way in which inter-country collaboration and information sharing might be facilitated, and regional recommendations, based on technical information, might be provided in support of Governments' decision-making processes.

LADA should facilitate a *cultural learning process* on land husbandry and its improvement, since the links between the increasingly urban populations and the land have been weakening in many countries. The broad-based Australian Landcare movement and its associated public relations institution have proved successful and may be a useful model for adaptation in other countries. LADA should build up a knowledge base to support the emerging willingness of nations and the international community to pay for countering land and water degradation – a willingness that has grown out of the increased understanding and awareness of the wider environmental and social as well as economic benefits. The costs involved in improving the situation are likely to be significantly lower than in the past, when engineering solutions to land degradation were still dominant. The main costs would be in assisting people to adopt an agronomy-based, ecologically sound approach to better land husbandry and to adapt it to their needs and conditions.

## **Linkages**

**Linkages and working relationships** should be promoted through discussion with partners, both direct and through electronic consultation on different aspects and through further expansion of the LADA Web site. LADA should build up an *ecology of disciplines*: starting with common goals, build ongoing working relationships among individual natural and social scientists and

among different institutions. The role of natural resource economists is considered crucial in the LADA process and in the interdisciplinary cooperation. Working relationships should include existing movements, programmes and networks on different aspects of land and water management; and national and (sub)regional institutions, such as appropriate SADC or CILSS institutions. International partners should include CGIAR centres such as ICRISAT, ICARDA and ILRI.

While two Ministries, Agriculture and Environment, would have a major role, the **scope of a national LADA** is wider than research and technical ministries, and should also involve Finance and Planning Ministries, as well as the Prime Minister's office.

**Near-term activities** necessary to bring the LADA process forward include: the preparation of an issues paper to stimulate discussion and commitment by different partners, including Governments, networks, NGOs; the expansion of the LADA Web site with all information, reports and links becoming available; building thematic working groups on different aspects including methods, data acquisition, institutional relations and partnerships. In addition the Technical Working Group recommended the preparation of a LADA presentation for relevant meetings and conferences – in particular, as a side event at the Earth Summit + 10 in Johannesburg, September 2002, well coordinated with the several Convention secretariats that will have a presence there.

#### ISSUES AND RECOMMENDATIONS BY THE TECHNICAL ADVISORY GROUP

1. The pressure-state-response model will be valuable; however, it should be complemented by less mechanical approaches that address, for example, social dynamics and policy, institutional and cultural dimensions as well as ecological and economic parameters, in order to provide a balanced analysis that does justice to the complex contextual situation on the ground.
2. The land degradation assessment should cover two kinds of information:
  - Stratified geo-referenced quantitative data such as degree, type, severity and current rate of land degradation, land cover, land use and agro-ecological setting, as well as water and biological parameters; and,
  - Qualitative, multi-faceted information acquired through participatory dialogue by the national LADA team and the local communities.

The sustainable livelihoods concept, based on five groups of assets or capital (natural, physical, human, social and economic) may prove a useful basis for structuring and analysing the information.

3. During the pilot study, methods will be tested to link information needs and priorities of different stakeholders (local to global levels), for example, linking local decision-makers with national decision-makers to enhance consideration of local insights and perspectives in policy development and planning. The resulting information and analytical tools should enable better policies to be defined to reverse negative. The work should, to the extent possible, be rooted in assessing the impacts of actual land use, technologies and practices and on validating existing assessment and development approaches.
4. The selection strategy of pilot sites should be representative for significant land degradation situations, taking into account biophysical and socio-economic parameters. Stratification

criteria could be *inter alia*: agro-ecology, land use systems, kind and rate of current degradation (or restoration), degree of human and/or livestock pressure, degree of rehabilitation potential, social and economic change dynamics of the area, and where possible, presence/capacity of extension system, NGOs and potential partners in the area and the historic information base.

5. The LADA project would concentrate on capacity building and conflict resolution mechanisms which will empower local stakeholders (communities and local authorities) to look at and analyse their resource management strategies and development plans in relation to wider environmental concerns and long-term interests. Such interests include protection/rehabilitation of water resources, carbon sequestration and biodiversity conservation and sustainable use, including soil biodiversity.
6. Participatory rural appraisal processes and multidisciplinary diagnostic methods would be essential for stakeholder analysis of constraints and opportunities and identification of ways and means, through improved resource management strategies and actions and support mechanisms (technical, information, financial, policy), to match local, national and global goals. A dual landscape-lifescape analytical approach was considered useful.
7. Multidisciplinary processes and partnerships are essential to build up an ecology of disciplines and strengthened collaboration at all levels (i.e. among natural and social scientists, resource economists, and various institutions and networks). The project in its methodological development would work on standardising key indicators (qualitative and quantitative) of land degradation and sustainability, using simple indicative biophysical and socio-economic parameters that are widely applicable. In selecting indicators, emphasis should be placed on the need to link land use/management practice with land resource status and trends and to link different scales/levels, i.e. use of remote sensing and local measurement. The temporal dimension is also important in determining frequency of measurements (e.g. seasonality).
8. LADA would devote significant efforts in the dissemination of knowledge and insights on land degradation and rehabilitation. This could be initiated through, *inter alia*: the preparation of a LADA issues paper to facilitate wide consultation and partnership development at various levels (local, country level, regional networks, research and development partners); thematic reviews; the identification of successes and failures and analysis of lessons learnt; expansion of the LADA Web site and electronic consultations; and presentation of LADA as a side event at the EARTH Summit+10 conference. This should contribute to raised awareness of the multiple benefits and increased commitment of governments (agriculture, environment, finance, planning etc.) rural and urban populations, and the international community to invest efforts and resources in countering land and water degradation.
9. LADA will ensure liaison with existing technical advisory bodies such as STAP and technical groups under CCD, NAPs, the CBD liaison group on biodiversity in drylands (currently being established), CG centres and regional partners and so forth.
10. LADA outcomes, while focusing on assessment, should strengthen capacities at all levels to implement strategies and actions to counter land degradation and in this regard it should establish links with programmes and projects that can help meet expectations of stakeholders through implementing remedial actions. DFID expressed its interest in providing support in enhancing the application of the sustainable livelihoods approach through linkages with the ongoing DFID-funded sustainable livelihood programme in FAO.

## STEERING COMMITTEE MINUTES

1. Ms. Tengberg opened the first session of the Steering Committee Meeting by welcoming all participants and proceeded to receive suggestions for the establishment of the Committee according to the provisions in the Project Document.
2. A provisional Steering Committee was established with as confirmed members GEF/ UNEP, Mr Koohafkan (FAO), Mr Cissoko (UNCCD), the Global Mechanism of the UNCCD and UNDP. Provisional members included the donor community (two members to be identified), national representatives (China, Argentina and Senegal), technical experts (Messrs Stocking and Pretty) and institutes and organisations (ISRIC, the Millennium Assessment), the NGO community (Landcare Australia with other NGOs to be explored), and Regional CCD-linked organisations (CILLS and SADDC).
3. The IFDC and the European Commission were welcomed as observers in the Steering Committee.
4. Terms of Reference for this Steering Committee were agreed upon.
  - The Steering Committee will meet at least once a year. Its role will be to:
  - Ensure that the needs of the CCD are met.
  - Constitute working groups that reports to the steering committee.
  - Review and approve the final technical reports from the different components of the PDF B, i.e. reviews and synthesis; thematic studies; development, testing and revision of integrated assessment approaches and methods; and pilot studies and implementation related strategies.
  - Establish communication pathways for its members.
  - Ensure partnerships with all stakeholders, e.g. technical agencies, donors and end users.
  - Promote effective linkages between country, CCD thematic networks, other subregional and regional stakeholders of LADA.
  - Establish the International Steering Committee of the full project.
  - Review and approve final LADA project document and GEF project brief.
5. The Committee would meet at least once a year and keep contact via e-mail for internal communications and via a LADA Web site for more public exchanges.
6. It was noted that the harmonisation process between the various global assessments (GIWA, Millennium Assessment, GEO, IPCC, WOCAT) and LADA will be continuously kept in view.
7. A flowchart was produced illustrating the major steps of the PDF-B process (Figure 1).
8. Terms of Reference for each activity are to be prepared and the Steering Committee should be invited to review these, including the institutes and experts to be involved in the execution of these reviews and studies.
9. A gap analysis would be included in the various data and methodology reviews and criteria would be provided that would permit to arrive at a priority setting for indicators and approaches to be followed.

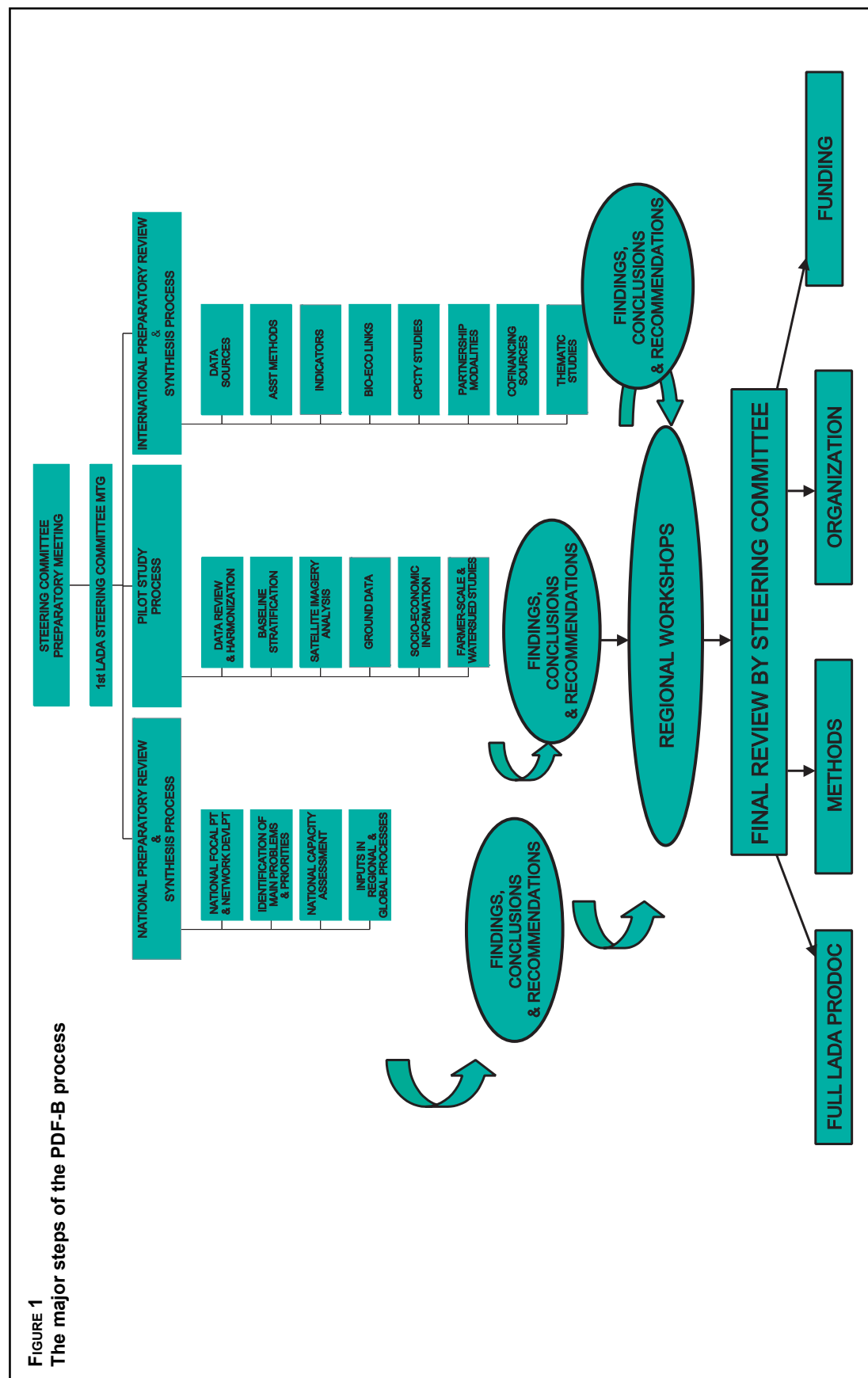
10. After a brief discussion it was agreed that the acronym LADA would be maintained, it being understood that the project would also include the assessment of rehabilitation. FAO clearly indicated that additional support and funds would be sought to strengthen national capacities and in particular to promote rehabilitation of degraded areas.
11. Mr Per Ryden's suggestion that a brochure or a flyer be prepared to inform the CCD community and the target groups of LADA (farmers, policy makers, donors, the private sector and GEF) of the objectives, timeframe and sustainability of the LADA project was very much supported.
12. The UNCCD Convention defines the geographical boundaries of the drylands and that LADA is specifically and by priority is aimed at these dryland regions. However, it was recognised that large watersheds could go beyond that and that in the final analysis the results of LADA should also be applicable globally.
13. Pilot studies at the country level (Senegal, China and Argentina) will have the specific objective to test methodologies for land degradation assessment, building on their own national experiences and adapted to the national context. This should lead to more innovative methodologies of which the cost-effectiveness and replicability should be of consideration. This should contribute to the development of a full LADA project strategy. Tunisia will also be considered as a pilot country for PDF-B, but with resources from FAO and Tunisia, outside the PDF-B budget.
14. Mr Cissoko chaired the last session focusing on the role of CCD's related regional networks and NAP national focal points. Mr Cissoko explained that national focal points act as a gateway between the CCD and the governments. Regional CCD Workshops have been held or are planned for each region into which the LADA project progress could be dovetailed.
15. The European Commission stressed the importance of closer links between the LADA project and the CCD through the national focal points and UNDP suggested that the latter could also form the link with the farmer communities for the project. It was stressed that the principle of subsidiarity will be respected in all LADA activities and particularly in the area of national capacity building.
16. Mr Lantieri, after noting the importance of the private sector as a partner, requested that the national information systems on land degradation of the UNCCD National Action Programmes (NAPs) should not be duplicated. He also suggested involving NAPs and regional organisations.
17. Mr Perez-Trejo, Manager of WAICENT, gave a demonstration of how web-based platforms could be created that would permit to make a link between the local knowledge of farmers and research results.
18. It was noted that, in an ideal case, countries listed in all five CCD-Annexes would be covered by regional workshops, but given budgetary constraints and under the provisions of the project document, three regional workshops will be held with priority given to the African region. In principle the regional workshops should be held near the end of the PDF-B, but earlier occasions for dovetailing other workshops would certainly be used.
19. The European Commission made a particular call for inclusion of Annex 4 and 5 countries. USAID offered to organise a regional workshop covering North America and the Caribbean in a workshop planned in Mexico.

20. The Swedish observer noted the need for a closer link with IPCC in view of the relationship between land degradation and greenhouse gas emission.
21. The Committee noted that the financial engagements of all parties as reflected in the document were taken as approved. The European Commission did not exclude the possibility of contributing in the future, particularly towards a LADA workshop aimed at Annex 5 countries.

### **CLOSING SESSION**

The findings of the Technical Advisory Group were discussed in the final plenary session. Important issues discussed were the need for LADA to focus on degradation assessment, including the identification of ways and means to address and improve the situation; and in order to meet raised expectations of local communities and stakeholders, the need to establish strong links with non-LADA activities that would support the implementation of remedial actions – for example, FAO TCP projects for capacity building (policy and legal, institutional and technological interventions) and other Donor programmes.

The Minutes of the Steering Committee were adopted. DFID expressed its interest in providing support in enhancing the sustainable livelihoods approach. The meeting was closed by Mr K. Yoshinaga.







## **Annexes**



## Annex 1

# Welcome address

Ladies and Gentlemen,

I am delighted to welcome all of you, officially on behalf of FAO and especially on behalf of the Agriculture Department. I am particularly delighted, not only because I see many familiar faces and many old friends from when I was closer to soil science than I am now, but also because our partnership is essential for the important LADA endeavour. The reason for the present meeting is that we have received approval from GEF for the second phase of LADA project preparation

The LADA process started with a request from the UNCCD to look in more detail at land degradation issues and desertification and to build a scientific basis for land degradation estimates and assessments. It is clear that FAO cannot do this by itself, since many people have information that is very important. Above all, this joint effort aims not just at the perfection of the assessment, but very much also at the implementation. You may wish to keep as a running thread in your discussions the issue of “What do we actually do with this?” Studies must have a very concrete outcome. To paraphrase one of our Director-General’s favourite expressions, “people do not eat paper”. For us, this clearly refers to the commitments that member countries have made at the World Food Summit, to halve the number of the world’s hungry. That is what should be in the back of our minds – how can this kind of monitoring and assessment actually lead to concrete action and to more sustainable agriculture?

Land degradation has been with us possibly as long as agriculture itself. And the geologically inclined among us know that land degradation is a normal, natural process and an essential part of landscape renewal. What we are looking at today is the intensification of land degradation as a result of human intervention. You know much better than I what this means in practice, but one of the most telling statistics that comes to mind is the following. There are about 1 billion people in this world who are the absolute poor, surviving on less than a dollar a day – probably there are even more. There are about 800 million people who are food-insufficient. But about 2 billion people in this world are affected by land degradation: land degradation affects many more people than just the absolute poor. It is a complex set of problems across all latitudes and all ecological zones of the world. It is not just a problem of developing countries, or of the tropics. We must come to terms with the commonalities and the specific differences across ecologies and socio-economic environments.

You are to embark on yet another assessment, and I say “yet another” because the world already has several assessments of land degradation. But there is something new today in the

*Louise O. Fresco,  
Assistant Director-General, Agriculture Department,  
FAO, Rome, Italy*

international arena in which the discussions on land degradation take place – or rather, several new things: better geo-information tools; and the recognition that land degradation is a biophysical, economic, social and environmental issue.

We have a much better computer base than we ever had before, so we are better able to start linking national assessments, international efforts, satellite-based information with soil surveys and other existing information. We have much better facilities and systems for spatial analysis than before. Still, we cannot yet link production data to degradation data on a spatial basis. Geo-referencing our basic statistical data, including on land use and production, is one of FAO's challenges. However, there is also a risk in this – it is very tempting to sit behind a computer and do wonderful analyses of overlays, but land degradation is a reality in the field for people and their communities.

We have recognised that we must find ways to integrate the qualitative knowledge of how people work in degraded situations or how they improve land, and some of the social and anthropological data, with the quantitative assessments of land degradation, use and productivity. We now have a better understanding of the facts of land degradation than before, of its costs in terms of loss of biodiversity and in terms of declining or stagnating production. We also understand its effects on water resources, etcetera, but this knowledge is still very patchy. But we do not yet have a quantitative insight into the economics of land degradation. Even though many people have been working on this, in today's globalised, market-driven world we cannot calculate the value of arable land – there is no consistent market for good land, for topsoil, for soil organic matter or carbon sequestered. The LADA process that this meeting will be building will need to create a better understanding of the economics so that not only farmers and not only Ministries of Agriculture, but also Ministries of Finance will be convinced that it is worthwhile investing in the mitigation of land degradation or in land improvement. This is an area, like the value of biodiversity, where work is needed to estimate, assess and determine the long-term costs of not investing in countering land degradation.

Extensive monitoring has been done in the past and it remains very tempting to continue do this in a merely descriptive manner – the easy way. It is much more difficult, and much more challenging, to formulate testable hypotheses. Where is the most severe land degradation in specific areas, and *why*? One very rough hypothesis is that there is a complicated, non-linear relationship between agricultural intensification and land degradation that may look like a parabolic curve. At very low levels of intensity there is probably very little land degradation – what springs to mind is traditional shifting cultivation in areas with very low population pressure. If the system is managed very carefully, very intensive annual crop production, as in the Dutch polders and elsewhere, also may result in little or no land degradation, or even land improvement. But there is a whole series of systems at intermediate intensity, where land degradation takes on different forms and is linked in some ways to intensification.

We should gain a better understanding of the relationships between land degradation and intensification, not just because agriculture is often blamed for land degradation but also because in many areas, agriculture is the only suitable manager that can protect the land against degradation. It is the people living on the land, the farmers, the people making forestry their livelihood, that have to invest in the land. So the very best way, except in the case of pure nature conservation, will be to invest through agriculture and forestry and with the participation and initiative of the people living on the land. That is why the complex relationship of land degradation and improvement with intensification of agriculture and generating income is a very important one. These issues present an important set of challenges, particularly against the backdrop of this year.

In June this year the World Food Summit – five years later will be convened in Rome, where the commitment of governments towards halving the world's hungry will be reviewed. As you know, in the Rome declaration of the World Food Summit, November 1996, there are several statements on sustainable intensification and sustainable production – and this year's World Food Summit will evaluate where we are and where to go from here. This year is also the year of the Johannesburg summit – ten years after the commitments made by Governments at Rio. So this year, both the environmental community and the agricultural community of the world will be meeting. Land degradation and agriculture are core issues for both, so it is important and timely that we are holding this meeting and that the LADA project is starting now. I hope that some of your insights and ideas can already be fed into the preparatory process for the Summit on Sustainable Development in Johannesburg and for the World Food Summit.

I am looking forward to the outcome of your discussions. This is an important subject. I believe we have a role as a global LADA partnership. So I wish you success and thank you.



## Annex 2

# Statement by a representative of UNEP/GEF

On behalf of UNEP and the GEF, I am very pleased to welcome you all to this first meeting in the PDF B phase of the project on developing a Land Degradation Assessment for Drylands.

As you are aware, the development of a global land degradation assessment is a very timely endeavor, as land degradation is expected to get full status as a GEF focal area after the meeting of the GEF Assembly in Beijing in October this year. This welcome development is also expected to lead to the allocation of additional GEF resources to land degradation in the order of US\$250 million.

A Note on the Designation of land degradation as a GEF focal area was adopted at the GEF Council meeting in December 2001, and this Note identifies two priorities for land degradation in the GEF:

- The first is capacity building for sustainable land management that would focus on integrating the different planning frameworks under the different conventions, which include the National Action Programmes of the CCD, National Biodiversity Strategies and Action Plans of the CBD and National Communications to the FCCC.
- The second priority area would be to support on-the-ground investments in sustainable land management.

There is therefore a need to assess the global environmental dimensions of land degradation and desertification, such as impacts on terrestrial and aquatic ecosystems as well as the atmosphere and to operationalise the linkages between land degradation, biodiversity loss, climate change and livelihoods in drylands, and we expect the LADA project to assist the GEF in doing this.

Other needs and challenges that we are facing in developing LADA include:

1. Need for baseline data and valid indicators of land degradation in drylands that could be used in monitoring and evaluation of impacts of field projects;
2. Linking of field-level indicators of land degradation in drylands to remote sensing and global assessments of land cover;
3. Capacity building in land degradation monitoring and assessment at national level;

*A. Tengberg,  
Land Degradation Expert,  
United Nations Environment Programme/Global Environment Facility,  
Nairobi, Kenya*



4. The need to create a monitoring system that will continue to function beyond the completion of the GEF funding to LADA; and
5. Partnership building and resource mobilisation for non-GEF eligible components of LADA.

UNEP will ensure that LADA will complement and work in synergy with the other global environmental assessments that we are implementing, which include:

- The Millennium Ecosystem Assessment - MEA
- The Global International Waters Assessment - GIWA
- The Solar and wind energy resource assessment, and
- The Regionally based assessment of POPs.

Moreover, UNEP's GEF portfolio of land degradation projects will, in addition, offer experiences on designing land degradation indicators and on the interlinkages between land degradation and biodiversity loss in drylands. UNEP is also committed to capacity building at national level in management of environmental information and we have recently embarked up on a special capacity-building initiative for Africa in this regard.

It is my hope that this first meeting of the LADA Steering Committee will be able to address the needs and challenges I have highlighted and that we can devise strategies so as these challenges are reflected in the design of the full LADA project. I also hope that the development of the LADA project will be finalised within the anticipated time frame of two years, as there is an urgent need for accurate information of the extent and impacts of land degradation in drylands in order to assist the affected populations in designing appropriate interventions that will ensure the sustainability of livelihoods in these environments.

Thank you for your attention.

## Annex 3

# Statement by a representative of UNCCD

### THE NEED TO STRENGTHEN SUPPORT TO AN INTEGRATED LAND DEGRADATION ASSESSMENT

The central focus of the United Nations Convention to Combat Desertification (UNCCD) is to address the underlying causes of desertification and drought and to prevent and reverse the problems of land degradation in arid, semi-arid and dry sub-humid regions through the instruments of National, Sub-regional and Regional Action Programmes (NAPs, SRAPs and RAPs).

To contribute to this effort, article 21 of the Convention established the Global Mechanism (GM), whose main mandate is “...to increase the effectiveness and efficiency of existing financial mechanisms ...and to promote actions leading to the mobilisation and channelling of substantial financial resources, including for the transfer of technology,... to affected developing country Parties”.

Our experience shows that is not enough to develop and implement technical solutions to the dryland management problems but it is equally important to address the root causes of land degradation in order to secure good results of investments in projects and programmes. It is important to emphasise the relevance of an enabling environment, in terms of policy issues, institutional and legal frameworks, to sustain credibility for investing in land degradation.

Although desertification has been a cover-page issue, there is still the need to harmonise methodologies for measuring and assessing desertification and land-degradation processes and to apply this knowledge to a concrete action that contributes to implementation mechanisms at the national and subregional levels.

In the past three years, several affected countries, sub-regions and regions have approached the GM to establish a partnership in the development of desertification-monitoring systems. In this context, the GM has collaborated with UNEP/GEF, FAO and the UNCCD Secretariat in the development of the Land Degradation Assessment for Drylands (LADA) project. In particular, the GM has provided catalytic funding to facilitate the linkage between regional networks on desertification monitoring and LADA, and to support the consultative process that took place in December 2000.

An important distinctive feature of the LADA project is its global nature, the implications of which bears great relevance to major events that will pave the way for a world-wide assessment

*A. T. Saez on behalf of P. Rydén,  
Managing Director,  
Global Mechanism of the United Nations Convention to Combat Desertification,  
Nairobi, Kenya*

of the progress made to fulfil UNCCD principles and their linkages to developmental issues addressed by other conventions.

We look forward to forging strategic alliances with other Institutions promoting initiatives complementary to the LADA project. In the framework of the GM support to country parties and the civil society, I would like to mention here few examples of our substantial contributions. One of these examples is the Asia Regional Thematic Programme Network on Desertification Monitoring and Assessment (TPN1) hosted by China; another example is our work in Fouta Djallon as well as the subregional programme of El Gran Chaco, in which Argentina plays a distinctive role. All the aforementioned initiatives will be subject to a presentation during the LADA workshop and we are pleased to anticipate the evolution of a strong collaboration with the involved Institutions so as to increase efficiency and efficacy of our partnerships.

We stand at a pivotal moment for UNCCD implementation. We must continue to foster joint efforts in order to strengthen the acquisition of knowledge bearing in mind its applicability at the local level under the UNCCD's principles.

## Annex 4

# Meeting agenda and timetable

<b>23 January 2002 (Morning)</b>	<b>German Room – C269</b>
<b>9:00 – 09:30 hrs</b>	<b>Registration of the participants</b>
<b>9:30 – 10:30</b>	<p><b>Chair: K.Yoshinaga Session 1: Introduction</b></p> <ul style="list-style-type: none"> <li>• Welcoming address from FAO – Louise O. Fresco, Assistant Director-General, Agriculture Department</li> <li>• Introductory statements by sponsoring agencies, <i>i.e.</i> UNEP/GEF (A. Tengberg), UNCCD Secretariat (A. Cissoko), Global Mechanism of the UNCCD (P. Ryden),</li> <li>• Objectives and organisation of the workshop (P. Koohafkan) Adoption of the Agenda.</li> </ul>
<b>10:30 – 11:00</b>	Coffee Break
<b>11:00 – 13:00</b>	<p><b>Chair: P. Koohafkan Session 2: Key Notes</b></p> <ul style="list-style-type: none"> <li>• Land degradation and rehabilitation: philosophy and history (M. Stocking).</li> <li>• The components of land and the LADA project (P. Koohafkan)</li> <li>• Socio-economic causes of land degradation (C. Lilin)</li> <li>• Terrestrial Ecosystems Monitoring System (G. Servin)</li> <li>• Data sources and land degradation assessment methodology (R. Oldeman)</li> <li>• The role of remote sensing in LADA (D. Lantieri)</li> </ul>
<b>13:00–14.30</b>	Lunch Break
<b>23 January 2002 (Afternoon)</b>	<b>German Room – C269</b>
<b>14:30–15.30</b>	<p><b>Chair: P. Mahler Session 3: Debate on Key Notes and Country Papers</b></p> <ul style="list-style-type: none"> <li>• Questions and debate on Key Notes</li> </ul>
<b>15:30 – 15:45</b>	Coffee Break
<b>1545 – 17:00</b>	Country experiences in land degradation assessments and rehabilitation (Part I) China, Senegal and Tunisia Questions and debate.
<b>18:00 – 19:30</b>	Cocktail Party – Polish Room (Ground Floor Building A)
<b>24 January 2002 (Morning)</b>	<b>German Room – C269</b>
<b>09:00 – 10:30hrs</b>	<p><b>Chair: F. Nachtergaele Session 4a : Country experiences</b></p> <p>Country experiences in land degradation assessments and rehabilitation (Part II) India and Brazil Questions and Debate</p>
<b>10:30 – 10:45</b>	Coffee break
<b>10:45 – 11:45</b>	<p><b>Chair: El Hadj Sene, Session 4b: Country experiences (continued)</b></p> <p>Country experiences in land degradation assessments and rehabilitation (Part III) Soil erosion mapping in the Mediterranean region (PAP/RAC); The Landcare experience (LANDCARE, Australia) The European land degradation monitoring system (ESB) Questions and Debate.</p>
<b>11:45 – 12:45</b>	Organisation of the two parallel Working Sessions
<b>12:45 – 14:00</b>	Lunch

24 January 2002 (Afternoon)	German Room – C269 Working Session 1: The LADA Steering Committee	Philippine Room C277/281 Working Session 2: The Technical Advisory Group on Early Warning, Monitoring and Rehabilitation of Degraded Land
14:00-15:30 hrs	<p><b>Session A1: Chair: A. Tengberg Session 5a: Introduction and Business meeting (part I)</b></p> <ul style="list-style-type: none"> <li>• Welcome to the LADA Steering Committee</li> <li>• Discussion and Adoption of the Terms of Reference of the Steering Committee</li> <li>• Working procedures of the Steering Committee</li> <li>• Harmonisation with other global environmental assessments</li> </ul>	<p><b>Session B1 (part I) Chair: Ms L. Lipper</b></p> <ul style="list-style-type: none"> <li>• Welcome to the Working Group</li> <li>• Objectives and expected outputs of the Working Group</li> <li>• Monitoring, early warning and rehabilitation of degraded lands: scope and policy framework.</li> </ul>
15:30 – 15:45	Coffee Break	
15:45 – 17:30	<p><b>Session A2: Chair: P. Koochafkan, Session 6a: LADA road map and technical, financial and institutional issues (part II)</b></p> <ul style="list-style-type: none"> <li>• The LADA implementation strategy and work plan</li> <li>• Establishing the LADA network on indicators.</li> <li>• Country case studies and national implementation modalities</li> </ul>	<ul style="list-style-type: none"> <li>• Land resources monitoring and early warning systems: <ul style="list-style-type: none"> <li>- Selection of sites and indicators</li> <li>- "Hot spots" and "Bright spots"</li> <li>- Land degradation monitoring and disaster prevention</li> </ul> </li> <li>• Linking land resources monitoring and early warning systems with other monitoring and early warning systems; <ul style="list-style-type: none"> <li>- Other natural resources and environment monitoring systems.</li> <li>- Socio-economic monitoring systems.</li> <li>- Participatory and multi-stakeholder processes in land degradation monitoring and early warning</li> </ul> </li> </ul>
25 January 2002 (Morning)	German Room – C269 Working Session 1: The LADA Steering Committee	Philippine Room C277/281 Working Session 2: The Technical Advisory Group on Early Warning, Monitoring and Rehabilitation of Degraded Land
9:00 — 10:30	<p><b>Session A3: Chair: P. Ryden. Business Meeting (Part II)</b></p> <ul style="list-style-type: none"> <li>• Institutional aspects and network arrangements</li> <li>• Resources mobilisation and funding issues</li> <li>• LADA communication strategies</li> </ul>	<p><b>Session B2:</b></p> <p><b>Chairs: F. Shaxson and F. Perez-Trejo Business Meeting (Part II)</b></p> <ul style="list-style-type: none"> <li>• Land resources rehabilitation strategies; <ul style="list-style-type: none"> <li>- From Soil Conservation to Conservation Agriculture (CA)</li> <li>- Land and water management and CA in rainfed drylands</li> <li>- Soil biological management.</li> <li>- Land reclamation.</li> <li>- Integrated watershed management and participatory approaches.</li> </ul> </li> <li>• Institutional aspects of land rehabilitation; <ul style="list-style-type: none"> <li>- Land tenure, land consolidation and land reform.</li> <li>- Land markets, taxes and credit.</li> <li>- Land registration and administration</li> </ul> </li> </ul>

<b>10:30 — 10:45</b>	Coffee break	
<b>10:45 — 12:30</b>	<p><b>Session A4:</b> <b>Chair: A. Cissoko Business meeting (Part II)</b></p> <ul style="list-style-type: none"> <li>• Role of existing CCD related regional networks and CCD focal points</li> <li>• Role of Regional bodies and Regional workshops</li> <li>• Responsibilities of each partner</li> <li>• Any other business</li> </ul>	<ul style="list-style-type: none"> <li>• The place of monitoring, early warning and rehabilitation activities in the LADA project and its follow-up: timing and priority setting.</li> <li>• Conclusions and recommendations</li> <li>• Any other business</li> </ul>
<b>12:30 — 14:30</b>	Lunch	
<b>25 January 2002 (Afternoon)</b>	<b>German Room C269</b>	
<b>14:30 — 16:00</b>	<p><b>Chair: M. Stocking - Joint session of the LADA Steering Committee and the Technical Advisory Group.</b></p> <ul style="list-style-type: none"> <li>• Conclusions and road map of the LADA Steering Committee</li> <li>• Conclusions and recommendations of the Technical Advisory Group</li> <li>• Open discussion</li> <li>• Practical arrangements: next meeting.</li> <li>• Other Business</li> </ul>	
<b>16:00 — 16:15</b>	Coffee break	
<b>16:15 — 16:30</b>	<b>Closing session of the meeting:</b> Kenji Yoshinaga, Director Land and Water Development Division.	



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## WORLD SOIL RESOURCES REPORTS

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5. Report of the Fourth Session of the Working Party on Soil Classification and Survey (Subcommission on Land and Water Use of the European Commission on Agriculture), Lisbon, Portugal, 6-10 March 1963 (E)\*\*
6. Report of the Second Meeting of the Advisory Panel on the Soil Map of the World, Rome, 9-11 July 1963 (E)\*\*
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10. Report on the Soils of Bolivia, January 1964 (E)\*\*
11. Report on the Soils of Paraguay, January 1964 (E)\*\*
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18. The Soil Resources of Latin America, October 1965 (E)\*\*
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23. Bibliography on Soils and Related Sciences for Latin America (1st edition), December 1965 (E)\*\*
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28. Report of the Second Meeting on Soil Correlation for North America, Winnipeg-Vancouver, Canada, 25 July-5 August 1966 (E)\*\*
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40. Report of the Regional Seminar of the Evaluation of Soil Resources in West Africa, Kumasi, Ghana, 14-19 December 1970 (E)\*\*
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42. Report of the Eighth Session of the Working Party on Soil Classification and Survey of the European Commission on Agriculture, Helsinki, Finland, 5-7 July 1971 (E)\*\*
43. Report of the Ninth Session of the Working Party on Soil Classification and Survey of the European Commission on Agriculture, Ghent, Belgium 28-31 August 1973 (E)\*\*
44. First Meeting of the West African Sub-Committee on Soil Correlation for Soil Evaluation and Management, Accra, Ghana, 12-19 June 1972 (E)\*\*
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55. Cinquième réunion du Sous-Comité Ouest et Centre africain de corrélation des sols pour la mise en valeur des terres, Lomé, Togo, 7-12 décembre 1981 (F)
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58. Sixth Meeting of the Eastern African Sub-Committee for Soil Correlation and Land Evaluation, Maseru, Lesotho, 9-18 October 1985 (E)
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