

***UNITED NATIONS ENVIRONMENT PROGRAMME  
(UNEP)***

**GF/1040-00-10**

**An indicator model for the dryland ecosystems in Latin  
America**

**Project desk evaluation**

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Evaluation and Oversight Unit

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## Executive summary

1. The project aimed to provide the Global Environment Facility (GEF) and associates, policy makers, governmental and non-governmental institutions, affected communities and other stakeholders with an indicator model for dryland ecosystems. This model, translated into proprietary software known as MONITOR, should identify vulnerable areas and communities in the dryland ecosystems of Brazil, Chile and Mexico and offer a decision tool for developing management plans and monitoring the direction of changes after such plans are implemented.
2. The project was planned for an initial duration of 24 months, from April 2000 to March 2002, but was granted an additional 10 months extension for completion in January 2003.
3. This evaluation found that the project was relevant to the challenges faced by biodiversity in arid lands and their consequences for human welfare. This evaluation also considers that the project fulfilled its first objective of developing a decision support tool. Its development, however, involved more time than scheduled, which prevented full field-testing by local communities and adoption by policy makers. Available evidence suggests that activities are well underway in order to satisfy these objectives.
4. Relevance is evident when measured against the need for integrated analysis of the reciprocal biophysical and social causes and consequences of land use practices in drylands. Impact can be far reaching if the model is further refined in its predictive capacity under varying scenarios outside the drylands.

## Introduction

5. The purpose of this report is to establish the extent to which the project's objectives were met and planned results obtained, taking into account the indicators listed in the project logical framework. This report briefly analyzes the project's relevance, achievements, implementation, problems and sustainability. Recommendations are also offered in order to assist UNEP to strengthen and improve future related activities
6. The evaluation is based on desk review of the project documents, outputs, monitoring reports and products such as the MONITOR software system, its associated manuals and databases and reports of workshops carried out. The report is also based on interviews with National Heritage Institute (NHI) personnel and Chilean project staff and stakeholders, as well as electronic interviews with project personal in the three countries involved.

## I. Background

### A. Project relevance

7. Latin-American drylands face accelerated biophysical and social degradation. The demise of their biological resources and the resulting impact on human welfare are phenomena in urgent need of attention. The project "An Indicator Model for Dryland Ecosystems in Latin America" is a solid attempt to disentangle the interactions between the biophysical and socio-cultural roots of the environmental degradation of the drylands of Latin America, not only allowing the elaboration of better land-use practices, but also potentially fostering the development of technically and socially sound public policy.
8. In early 1999, potential project partners convened a workshop, gathering stakeholders from Brazil, Chile, Mexico and the United States of America, including leading policy and environmental experts, non-governmental representatives and community groups. At this workshop, an action plan to develop an indicator model for dryland ecosystems was adopted. Concomitantly, the scope and criteria for pilot studies were identified and the framework for public participation was planned.

9. Partners and collaborators were identified at this workshop. The project's original proponents were entities from four countries: the Center for Agriculture and Environment (Centro de Agricultura y Medio Ambiente -- AGRIMED) of the University of Chile and the National Committee for the Defense of Fauna and Flora (Comité Nacional pro-Defensa de la Flora y la Fauna -- CODEFF), both of Chile; the Esquel Group Foundation of Brazil; the Soils, Conservation and Restoration Department from the Environment, Natural Resources and Fisheries Secretariat (SEMARNAP) and RIOD-México from México; and NHI from the United States of America.

10. In accordance with GEF Operational Program Number 1, Arid and Semi-Arid Zone Ecosystems, the project should provide a decision support tool capable of identifying vulnerable dryland ecosystems and communities, providing advice regarding better land use practices and adaptively monitoring changes brought about by the implementation of management plans.

## **B. Project objectives and approach**

11. The goal of the project was to promote the maintenance and sustainable use of biological diversity in dryland regions of Latin America. In order to achieve this goal, the project aimed to provide policy makers, non-governmental organizations and local stakeholders with an analytical tool to identify the causes of land degradation and associated loss of biological diversity. Consequently, the project aimed at influencing national public policy. The tool provided was an "indicator model", for assessing desertification through the integration of physical environmental, biological and socio-economic variables in Brazil, Chile and Mexico. Given that such an analytical tool should be able to determine the consequences for biodiversity under different scenarios, it ought to influence decision-making processes.

12. The project involved an ample variety of approaches, embracing the development and later refinement of the MONITOR proprietary software to model the interaction of biophysical and socioeconomic factors; national consultations with interested parties; training of personnel; public involvement through consultation; and pilot study implementation. Based on the views of academic and non-governmental organization participants, the project, perhaps naively, aimed both to develop novel software and to influence public policy within a 24 month period. Successfully achieving the first objective, the project advanced but did not fully achieve the aim of impact on public policy formulation. However, there are several promising signals that governmental organizations are seriously considering adopting or have already adopted MONITOR in Brazil, Chile and México. Further, promising evidence reveals that this software will be used in pilot sites in other Latin American countries, including Argentina, Bolivia, Ecuador and Peru.

## **C. Project implementation**

13. The project was initially established for 24 months, commencing in April 2000 and ending in March 2002. An additional 10 month period was granted for completion in January 2003 and UNEP officially closed the project in March 2003. Changes in mid- and high-level officers in Brazil and Mexico and the withdrawal of CODEFF from the project delayed its implementation. Youth for Development and Production (Juventudes para el Desarrollo y la Producción -- JUNDEP) later joined the project as a Chilean non-governmental organization, together with AGRIMED.

14. An initial coordination meeting was convened in September 2000 in La Serena, Chile. A follow-up meeting in June 2001 took place in Brasilia, Brazil. At these meetings, methodologies were discussed, consensus was sought for the environmental and socio-economic variables required to feed the model and partners were familiarized with the software. By December 2001, AGRIMED delivered a manual containing a list of indicator variables and the procedures to assess them in order to evaluate the degree of desertification of a given site. Several workshops were organized to inform and enhance local participation. Similarly, several workshops were organized in Brazil, Chile and Mexico to familiarize and train both project associates and Government officials in the application of the MONITOR software. This capacity building activity attempted to expose stakeholders to a rationale as well as new approaches to address land degradation, its impact on biodiversity and its consequences.

15. Pilot studies were implemented and data was collected for biophysical variables. During the last partner's meeting, in December 2002 in Brazil, though no unified definition of what constitutes a "hot spot" for land degradation was adopted, each country team was able to define areas critical for biological diversity loss if current resource use practices continue unchanged.

#### **D. Role of the National Heritage Institute**

16. NHI coordinated project activities and administered the project budget, while the overall scientific and technical leadership was carried out by AGRIMED. A central administration by NHI was pivotal to foster the overall performance of the project, given the number of countries and entities involved. NHI periodically organized telephone conferences in order to promote exchange of opinions and experiences and to promote consensus regarding a variety of issues ranging from data gathering to editing of reports. Such activities, coupled with budget control, resulted in the smooth development of the project. However, NHI should have organized more meetings in order to allow partners to become familiar with the use of the MONITOR software in a faster and more expedient way, as problems emerged with the use and implementation of the new software. Otherwise, NHI's role seems to have been crucial in securing and administering funds while keeping the pace of the project on time.

## **II. Project achievements**

17. The need for decision support tools for improved management of dryland ecosystems in Latin America targeted to a wide array of users is overwhelming. From policy makers to consultants and farmers, people clearly need tools to improve land use practices, including profitability and environmental sustainability. The two goals of the project to develop an analytical tool and to influence national policy were accomplished to different degrees. In terms of planned outputs, the project was successful in elaborating proprietary software. Despite significant delays in completing such software, there is evidence that MONITOR is being and will be adopted by relevant governmental and non-governmental organizations, with a potential for adoption as a decision support tool for policy makers.

#### **A. Effectiveness**

18. AGRIMED developed the MONITOR software, a versatile decision support tool that effectively integrates complex interactions into an analytical tool, to improve the profitability and environmental sustainability of arid lands. The software can accommodate a wide-ranging set of biophysical and socioeconomic data. This model is general enough to be regarded as widely applicable to dryland settings elsewhere in Latin America. Variables included range from plant biomass to erosion, precipitation to salinization, labor activity rates to literacy rate and farm income, all variables potentially impinging upon land degradation and desertification even beyond arid lands.

19. Testing, validation and usefulness of the analytical tool at pilot locations ought to be carefully monitored. Due to time limitations, the actual effectiveness and impact of MONITOR at the end-user level should be further monitored and assessed beyond the completion of the UNEP/GEF project. Data collection at pilot sites is still underway and validation of the quality of the data gathered is pending.

#### **B. Impact**

20. In spite of the fact that the project was developed mostly by academic institutions and non-governmental organizations, there is evidence that policy and decision-makers are adopting MONITOR. Besides organizations in Brazil, Chile and Mexico, staff of a project carried out in Argentina, Bolivia, Brazil, Chile, Ecuador and Peru by the Instituto Interamericano de Cooperación para la Agricultura and the Banco Interamericano del Desarrollo will use the software. Such an adoption would make this project sustainable. Further, AGRIMED has secured additional funds in order to refine the software and increase ease of use by end-users. Such refinements would ensure software adoption. Recently, AGRIMED has started to adapt MONITOR to be used as a tool for teaching environmental education to young children at rural schools. Therefore, there is strong evidence suggesting that MONITOR can be sustainable and have far-reaching

impact. However, the formal role of MONITOR in shaping public policy through its adoption is yet to be assessed.

### **C. Rating of the project's performance**

21. According to currently available information, several aspects of the project's performance can be rated according to the following rating system: 1=Excellent (90%-100% achievement); 2=Very Good (70%-89%); 3=Good (60%-69%); 4= Satisfactory (50%-59%) and, 5=Unsatisfactory (49%and below).

22. Attainment of objectives and planned results: despite the overambitious goals pursued and the short time elapsed, results can be rated as 2 (very good).

23. Attainment of outputs and activities: similarly, the significant amounts of activities developed can be rated as 2 (very good).

24. Cost-effectiveness: a proprietary software with far-reaching implications has been obtained in a short time under a reasonable budget. This merits a rating of 2 (very good)

25. Impact: given its current and potential impact, this can only be rated as 2 (very good).

26. Sustainability: while to be achieved, signals are promising, meriting a rating of 3 (good).

27. Stakeholders participation: efforts deployed to involve stakeholders are significant, with varied results yet to be fully achieved, meriting a rating of 3 (good).

28. Country ownership: Although the adoption of MONITOR by end-users at the local and governmental levels is yet to be fully achieved, the project is to be rated as 3 (good) based on the promising signals that can be observed.

29. Implementation approach: overcoming several problems that could have delayed the operation and coordination of the project, its performance is 3 (good).

30. Financial planning: no evidence of financial restriction of any activity was detected, allowing for a smooth performance of the project which can be rated as 2 (very good).

31. Replicability: the approach and the model itself can be adopted and replicated in different countries or regions without significant problems. Therefore, the project can be rated as 1 (excellent).

32. Monitoring and evaluation: yet to be performed, monitoring is mandatory in order to evaluate the long-lasting effectiveness of the project.

33. In summary, the project was carried out in a cost-effective way, and had a high actual and potential impact, given that stakeholders explicitly adopted MONITOR and that it could be implemented in any country with desertification problems. Accordingly, the project ought to be rated overall as very good. Regarding the development of a new decision support tool integrating socio-economic and bio-physical factors triggering desertification, the project is to be rated as excellent.

### III. Problems and constraints

34. The overall goal of changing national policy appears ambitious. The 24 month period planned for developing the software, field testing the model, refining it, creating awareness of it, achieving its adoption by policy makers and influencing policy, seems too short a period. The following problems were identified during project implementation:

(a) Time constraint: the development of the model absorbed significantly more time than originally planned, seriously reducing the options for achieving objectives related to its testing and adoption;

(b) Administrative changes: Government collaborators changed over the duration of the project. Extra time was required to get those new personnel acquainted with the project philosophy and approaches;

(c) Input data required to operate the model was not available at all pilot sites, preventing the application of a similar algorithm at all sites. This hampered the ability to obtain useful generalizations, which is possible only when comparisons are carried out across sites, based on similar types of data;

(d) Published products: besides the MONITOR manual and a variety of interim reports, time precluded the preparation of technical and scientific reports for dissemination, hence validation of the project suffered.

### IV. Lessons learned

35. Complexities of the desertification process can be disentangled in an analytical tool. Therefore, pressures upon the biophysical variables can be managed and it is feasible to plan for sustainable development of drylands.

36. The "pressure-state-effect-impact" approach proved a useful framework to hierarchically organize variables into a conceptual model that could be translated into software.

37. Language differences matter. Three languages (Spanish, Portuguese and English) were used among project participants, but English was mandatory for reporting to UNEP. Unfortunately, English is not the first language of the countries where the project itself was developed, leading to a significant effort to translate (into and from English) several reports and documents, particularly at the non-governmental organization and local stakeholder level. It would be desirable for UNEP to accept most mid-term and other low ranking reports in the official languages of the countries involved. Such an option would not only honour cultural diversity, but save valuable time for project staff.

38. Government personnel changes matter. A project assumption was that Government partners and collaborators would remain constant in order to offer adequate continuity to the implementation of the project. The assumption proved false for mid- and higher-level officials in Brazil and Mexico, posing unexpected challenges and requiring extra time to inform and teach about the project philosophy and operation and delaying data gathering.

39. Institution type matters. While changes in governmental personnel triggered delays, it also reinforced another project assumption that universities and non-governmental organizations are more suited to develop innovative approaches, as they are more flexible and possess a wider base of intellectual resources than Government institutions. Conversely, while university -based projects may be more stable, they also imply a lower capacity to influence national policy, as this is set forth and financed largely by Government officials and entities.

## V. Recommendations

40. Sensitivity analysis. The MONITOR model is flexible, in order to suit all possible combinations of variables in several potential combinations. The different combinations and valuation of these variables might generate different "hot-spots" of biodiversity loss and degradation. Several factors impinge upon the dynamics and intensity of desertification; for that reason a sensitivity analysis seems desirable in order to determine the suite of factors that contribute to a higher degree to the desertification processes and that could be regarded as "drivers". To elucidate such characteristics or combinations of them will enhance the model in two respects. First, it will further promote a clarification and unification of criteria in order to decide which, if any, constitute a "hot spot". Second, it will allow development of a model that is more friendly to end-users who might not have the technical expertise themselves to operate the current model.

41. In the same vein, variables added to MONITOR should be statistically independent. Therefore, an analysis should also be carried out to determine which variables, if any, are either redundant or dependent, and whether they should be eliminated from the model or whether additional models should be created.

42. Fixed rules for end users: the adoption of the model at the end-user level might be hampered by the technical expertise required to operate the MONITOR model. It would be desirable to offer a more fixed model with a reduced number of significant "driver" variables to which users might enter data gathered by themselves. In fact, end-users should be trained to rigorously collect field information acting as "field expert evaluators", allowing for a more cogent integration into the process of generating and monitoring better land use practices but also reducing the dependency on academic centers and non-governmental organizations and thereby increasing the long-term sustainability of the project.

43. Distinguishing biodiversity types: the model refers collectively to biodiversity through an aggregated variable such as vegetation biomass. It would be desirable to distinguish among biodiversity that is regarded as a resource or otherwise valuable for human populations (food, wood) and their livestock (fodder) from that which is not used or is regarded as a nuisance. Such an approach could help to disentangle indirect and cascading effects of land use practices upon biodiversity. Similarly, the model ought to differentiate plant biomass accounted for by cultivars from wild species.

44. Addressing uncertainty: lack of data and complex interactions among environmental and social variables generates uncertainty. In fact, several biodiversity related indicators were dropped from the model due to a lack of information. Such uncertainty should be addressed by the MONITOR model. The adoption of Bayesian approaches or the inclusion of fuzzy logic might be required. It is unfortunate that no report detailed the set of indicator variables that were deleted from the analysis due to the scarcity of data.

45. Development of future scenarios: MONITOR would significantly improve its value as a decision-support tool if its predictive capacity were strengthened. The inclusion of options regarding higher order pressures (such as changes in stock market values for dryland derived products, real estate speculation, short- and medium-term climate oscillation and changes even outside drylands) would improve its capacity to develop different scenarios in which the pressure-state-effect chain could be addressed by stakeholders.

46. Validation through technical and scientific publication: MONITOR will be socially validated if success in implementation of recommendations does indeed promote better practices that reduce land degradation and biodiversity loss in variables which stakeholders perceive and value. While such testing is underway, it is highly desirable that technical and scientific papers describing the rationale and model structure be published in high quality journals in order to obtain quality control from reviewers as well as to promote the dissemination of MONITOR among the technical and scientific community.

47. With the exception of the immediately preceding recommendation, all other recommendations might require a time framework and funding equivalent of a new research project and grant.

## Annex I

### TERMS OF REFERENCE FOR THE EVALUATION OF THE PROJECT AN INDICATOR MODEL FOR DRYLAND ECOSYSTEMS IN LATIN AMERICA GF/1040-00-10.

Under the guidance of the Chief of Evaluation and Oversight Unit (EOU) and in close co-operation With the Programme Officer, Land Degradation in the Division GEF Coordination (DGEF) and Collaboration with the Programme Officer for Medium Sized Projects (MSP) in (DGEF), the Evaluator shall undertake a detailed review and evaluation of the project "An Indicator Model for Dryland Ecosystems in Latin America", GF/1040-00-10. The evaluation shall be conducted by a consultant and EOU during the period between 26 May and 6 July 2003 (19 days spread over 6 weeks).

#### 1. BACKGROUND

The project aimed at providing the GEF and its partners, IGOs, policymakers, non-governmental Organizations, and affected communities with the *Indicator Model for Dryland Ecosystems* (renamed MONITOR), a tool to identify vulnerable dryland ecosystems, and vulnerable communities, develop appropriate management plans, and monitor the direction of change following the implementation of these plans in Latin America.

The project activities were focused in the following areas of:

1. National Consultations to determine the suite of potential physical, biological, demographic, and socio-economic indicators suite to the conditions in each participating country and to select a pilot region for model testing.
2. An international coordination meeting of the implementing partners to achieve comity among the indicators proposed for each country, assures coordination between the pilot sites, and finalizes a uniform implementation strategy.
3. Training of responsible staff among the partner organizations in the use and Implementation of the Indicator Model in order to effectively transfer institutional capacity to official recourse managers and community groups the identified pilot regions.
4. Implementation of a public involvement plan in each of the pilot zones, including training in the use of model, and capacity building for rapid assessment, data collection and database development
5. Work with official resource managers, in collaboration with community organizations, to develop an Indicator Model in the pilot region of each the participating countries. The developed model was then be used to generate data products describing the link between demographic socio-economic conditions, arid land management and biodiversity protection.

6. Model refinement during an international coordination meeting to assess result of Implementation to date, and to identify any needed model refinements or mid-course changes to the project which may have become evident the database development and spatial analysis processes.
7. Evaluation and monitoring of the potential for developed through application of the model to shape policy recommendations for arresting land degradation.

Project duration was initially 24 months (April 2000 to Mach 2002), which was extended for another 10 months for completion in January 2003. The budget was US \$1,048,800 funded by the GEF Trust Fund (US \$725,000) and cofinancing from Esquel Group Foundation, Brazil (US \$91,000), University of Chile (US \$145,000), Secretaria de Medio Ambiente, Recursos Naturales, y Pesca (SEMARNAP), México (US \$60,000) and National Heritage Institute, (NHI) (US \$27,800).

### 1.1 LEGISLATIVE MANDATE

The project refers to UNEP's programme of work 2000-2001, and its sub-programme (GF/1040-00-10 , Environmental Assessment and Early Warning) and sub-programme element (Access to Environmental Information and Public Participation ) on Sustainable Management and Use of Natural Resources. The project also support the GEF Operational Strategy in which "GEF activities will be designed to support capacity building, human resource development and skills that are necessary to achieve global environmental objectives" and the GEF Operational Program Number 1 o Arid and Semi –Arid Zone Ecosystems and its emphasis on conservation and sustainable use of biodiversity.

### 1.2 SCOPE OF THE EVALUATION

In accordance with UNEP/GEF policy, the evaluation shall be conducted as an in-depth evaluation. The objective of the evaluation is to establish project impact, and review and evaluate the implementation of planned project activities, outputs and outcomes against actual results. The performance indicators provided in the Log Frame/project matrix should be used together with the evaluation parameters of appropriateness, effectiveness and efficiency, impact and sustainability. Guidelines on performance indicators are provided in the UNEP project manual pp. 13/89-13/99 and also available on [http://www.unep.org/Project\\_Manual/](http://www.unep.org/Project_Manual/).

The findings of the evaluation will be based on:

- (a) Desk review of the project documents, outputs, monitoring reports (such as the quarterly reports to UNEP and the GEF annual Project Implementation Review reports), and relevant correspondence;

- (b) Specific products including the MONITOR Software System, databases for the three pilot sites , surveys and materials, reports of training courses and workshops highlighting presentations, case studies, technical information, strategies and recommendations related to wider adoption of MONITOR;
- (c) Interviews with project management at NHI, California,USA;
- (d) Interviews with stakeholders from all participating project countries at governmental and non-governmental levels, which were involved with this project. This will also entail visits to the project site in Chile.

The evaluator should develop a participatory evaluation methodology to carry out this exercise.

## 2. TERMS OF REFERENCE

The evaluator shall:

- a) Establish to what extent the project's objectives were met and planned result obtained, taking into account the indicators listed in the project logical framework, and the extent to which project activities are completed and outputs were attained, particularly focusing on:

At objective level:

- Integration of complex interactions between indicators into an analytical tool;
- Testing , validation and usefulness of the analytical tool at pilot locations.

At outcome (results in UNEP terminology) level :

- Applicability of MONITOR at the pilot sites
- Uptake of MONITOR by policy- and decision-makers
- Wider applicability of MONITOR dryland settings in Latin America
- Quality and usefulness of other outputs, such as training courses and material and publications translated and distributed.

At activity level, in particular with regards to NHI's role:

- Development of the MONITOR software
- Identification of relevant indicators and data sets to feed into MONITOR
- Training and awareness creation.

- b) Examine the impact of the project in terms of assistance to the participating countries in conserving biodiversity in drylands and building capacity; establishing policies; and raising awareness at local and national levels.

- c) Assess the cost-effectiveness of the project taking into account the achievement of the project objectives detailed above.

- d) Determine the various aspects of project as follows:

- sustainability and sustenance of capacity built in participating countries;
- level of stakeholders participation. Particular attention should be paid the level of participation of target groups and participation by countries, the private sector and civil society NGOs;
- country ownership of the project during design and implementation. Attention should be paid to the relevance of project for national development and environmental agendas, regional and international agreements, and recipient country commitment;

- effectiveness of the institutional structure, financial planning including the level of co-financing both cash and in-kind, the staffing, administrative arrangements and operational mechanisms at the project level from the point of the flexible implementation approach;
  - replicability of the project, taking into account arrangements and steps taken in this respect;
  - Effectiveness of the monitoring and evaluation system as an effective management tool of the project. Attention should be paid to the identification of baselines and indicators, quality of backstopping, quality assurance, and control of deliverables;
- e) Identify problems encountered and lessons learned during project implementation.
  - f) Provide recommendations to UNEP and its executing partners regarding future actions to follow up this project.

### 3. EVALUATION REPORT FORMAT AND PROCEDURES

The evaluation report shall be a detailed report, written in English, of no more than 20 pages exclusive of the executive summary, the learned, and findings and recommendations and include:

- i) Executive summary ( no more than 3 pages)
- ii) Separate section on lessons learned
- iii) Separate section on findings and recommendations
- iv) All annexes should be typed.

The success of project implementation will be rated on a scale of 1 to with 1 being the highest rating and 5 being the lowest. The following items should be considered for rating purposes:

- Attainment of objectives and planned results
- Attainment of outputs and activities
- Cost-effectiveness
- Impact
- Sustainability
- Stakeholders participation
- Country ownership
- Implementation approach
- Financial planning
- Replicability
- Monitoring and evaluation

Each of the items should be rated separately and then an overall rating given. The following rating System is to be applied:

1=Excellent	(90%-100% achievement)
2=Very Good	(75%-89%)
3=Good	(60%-59%)
4=Satisfactory	(50%-59%)
5=Unsatisfactory	(49%and below)

In accordance with UNEP/GEF policy, all GEF project are evaluated by an independent evaluator contracted by the EOU, and not associated with the implementation of the project. The evaluator should have the following qualifications (i)Basic expertise on the subject matter,(ii)Experience with project in developing countries, and (iii) project evaluation.

## I. OUTPUTS OF EVALUATION

The final report shall be written in English and submitted in electronic form in MS World Format by 6 July 2003,and should be addressed as follows:

Mr. Segbedzi Norgbey, Chief, Evaluation and Oversight Unit  
 UNEP, P.O Box 30552  
 Nairobi , Kenya  
 Tel: (254-2623387  
 Fax:(254-2)623158  
 Email : segbedzi.norgbey@unep.org

With a copy to

R. Ahmed Djoghlaif, Director  
 UNEP/Division of GEF Coordination  
 P.O. Box 30552  
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Ms Anna Tengberg  
 Programme Officer Land Degradation  
 UNEP  
 The Division OF GEF  
 Co-ordination  
 Tel:(254-2)62-41-47  
 Fax:( 254-2)621041  
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The evaluation report will be printed in hardcopy and published on the Evaluation and Oversight Unit's web-site [www.unep.org/eou](http://www.unep.org/eou). Subsequently the report will be sent to the GEF Secretariat for their review and inclusion in the web-site.

#### 5. SCHEDULE OF EVALUATION

The contract will begin on 26 May and end 6 July 2003 (19 days spread over 6 weeks). The Consultant will travel to NHI, the executing Agency, California, USA, to interview relevant staff, and make a field visit to the pilot site in Chile. The consultant will submit a draft to EOU on 23 June 2003. Comments on the final draft report will be sent to the consultant after a maximum of 2 weeks. After incorporating the comments, the consultant submits the final report by 6 July 2003.

#### 6. SCHEDULE OF PAYMENT

The evaluator will receive an initial payment of 30% the total amount due upon signature of the Contract. An intermediate payment of 30% of the total amount will be made upon assessment of satisfactory progress. Final payment of 40% will be made upon satisfactory completion of work. The fee is payable under the individual SSAs of the evaluator and is inclusive of all expenses such as travel, accommodation and incidental expenses.

In case, the evaluator cannot provide the products in accordance with the TORs, the timeframe agreed, or his products are substandard, the payment to the evaluator could be withheld, until such a time the product are modified to meet UNEP's standard. In case the evaluator fails to submit a satisfactory final product to UNEP, the product prepared by the evaluator may not constitute the evaluation report.

## **Annex II**

### **SCHEDULE OF MEETINGS AND VISITS:**

Meetings with: Fernando Santibáñez: several times in July, August and October at Santiago, La Serena and Ovalle.

Meeting with M. Leighton, F. Santibañez, H. Montoya and R. Aguilera: July at Santiago.

Meeting with F. Santibañez and H. Montoya: October at La Serena.

Meeting with Asociación Gremial de Comunidades Campesinas de la Provincia del Limarí, Ovalle: October.

Meeting with Asociación de Municipios Rurales, La Serena: October

Visits to Agrimed: several times August.

Visit to Jundep, La Serena: October

Visit to Recoleta, Ovalle: October

## Annex III

### LIST OF INSTITUTIONS AND SITES VISITED AND PERSONS INTERVIEWED:

III a. The following persons were interviewed either personally, by email, fax or phone:

- Aguilera, Raúl (Universidad de Chile, Chile).
- Alfaro, Vladimir (Corporación Nacional Forestal, Chile).
- Alvarez, Andrés (Asociación de Municipios Rurales, La Serena, Chile).
- Alvarez, Wilfredo (Asociación Gremial de Comunidades Agrícolas de la Provincia del Limarí, Ovalle, Chile).
- Cepeda, Wilfredo (Asociación Gremial de Comunidades Agrícolas de la Provincia del Limarí, Ovalle, Chile).
- Contreras, Eduardo (Asociación Gremial de Comunidades Agrícolas de la Provincia del Limarí, Ovalle, Chile).
- Gallardo, Luis (Asociación Gremial de Comunidades Agrícolas de la Provincia del Limarí, Ovalle, Chile).
- Gallardo, Mirtha (Asociación Gremial de Comunidades Agrícolas de la Provincia del Limarí, Ovalle, Chile).
- González, Alfonso, (GEA AC, México).
- Ibarra, Osiris (Semarnat, México).
- Leighton, Michelle (National Heritage Institute, USA).
- Lucia, Maria (Brazil).
- Montoya, Helvia (Corporación de Desarrollo Social JUNDEP, Chile).
- Morales, César (Comisión Económica para América Latina, Chile).
- Muñoz, Sergio (Asociación de Municipios Rurales, La Serena, Chile).
- Núñez, Jorge Ibarra, Osiris (Semarnat, México).
- Santibañez, Fernando (AGRIMED, Universidad de Chile, Chile).

IIIb. The following institutions and sites were visited:

- Agrimed, Universidad de Chile, Santiago, Chile.
- Asociación de Municipios Rurales, La Serena, Chile.
- Jundep, La Serena, Chile.
- Recoleta, Chile.
- Asociación Gremial de Comunidades Agrícolas de la Provincia del Limarí, Ovalle, Chile.

## Annex IV

### LIST OF REPORTS AND PUBLICATIONS REVIEWED

#### IV a. Project-generated reports

- AGRIMED (no date) Manual for field evaluation of indicators on desertification: Indicators of Pressure. 21 pages.
- AGRIMED (no date) Manual for field evaluation of indicators on desertification: Indicators of State. 16 pages.
- Comisión de las Partes Mexicanas (2001) Avances del Proyecto Modelo de Indicadores para Ecosistemas de Tierras Secas en América Latina. SEMARNAT-GEA AC-NHI, México. 48 pages.
- González, A. (2000) Public participation plan for the Project for Outlining and Pilot Implementation of a Model of Indicators (of sustainable management) for Dryland Ecosystems. GEA AC, México. 11 pages.
- GEA AC (2002) Proyecto Modelo de indicadores para ecosistemas de tierras secas en América Latina. Reporte Terminal: Indicadores Socioeconómicos del área piloto de México Cuatro Ciénagas, Coahuila.
- GEA AC (2002) Reporte del Sondeo Participativo del Ejido El Oso en el Municipio Cuatro Ciénagas, Coahuila de Zaragoza. 17 pages.
- GEA AC (2002) Reporte del Sondeo Participativo del Ejido Cerros Prietos en el Municipio Cuatro Ciénagas, Coahuila de Zaragoza. 13 pages.
- GEA AC (2002) Reporte del Sondeo Participativo del Ejido El Venado en el Municipio Cuatro Ciénagas, Coahuila. 18 pages.
- GEA AC (2002) Reporte del Sondeo Participativo del Ejido El Rayo en el Municipio de San Pedro, Coahuila. 15 pages.
- GEA AC (2002) Reporte del Sondeo Participativo del Ejido San Vicente del Municipio Cuatro Ciénagas, Coahuila de Zaragoza. 17 pages.
- GEA AC (2002) Reporte del Sondeo Participativo del Ejido Santa Teresa de Sofía en el Municipio Cuatro Ciénagas, Coahuila. 18 pages.
- JUNDEP (2001) Avances Noviembre,, La Serena. 5 pages.
- JUNDEP (2001) Informe Taller "Percepción problemas ambientales", Ovalle. 22 pages.
- Paz, F. & L.A. Palacios (2002) Indicadores de desertificación. Manual de Campo (v1.0). Semarnat, Montecillo. 43 pages.
- Purkey DR (2001) A report of a mission to Chile carried on in support of the Indicator Model for Dryland Ecosystems in Latin America project. 15 pages.
- Santibañez F (2001) Definición de los componentes e indicadores de la desertificación dentro de un esquema de presión-estado-respuesta-acción. Agrimed, 7 pages.
- Santibañez F (2002) MONITOR: A computer tool to monitor land degradation, biodiversity and human activities affecting natural resources. Paper delivered at TWNSO-Promoting best practices for conservation and sustainable use of biodiversity in arid and semiarid zones. Cairo, Egypt.
- Santibañez F (2003) Manual para la evaluación de indicadores de la desertificación: indicadores de presión y estado. Santiago, 38 pages.

- Santibañez F (no date) Using computer techniques to monitor land degradation, biodiversity and human activities affecting natural resources. 8 pages.
- Santibañez F & G Thomas (2002) Developing an Indicator Model and Monitoring Tools for Assessing Desertification and Biodiversity Protection in Latin America, 13 pages.
- SEMARNAP (2000) Modelo de Indicadores para Ecosistemas de Tierras Secas. Proyecto GEF/1040-00-10. Primer informe trimestral de México, SEMARNAP, México. 15 pages.
- UNEP / GEF Sub-project document: An Indicator Model for Dryland Ecosystems in Latin America. Project number GEF 1200-00- (no date, unsigned document). 45 pages.
- UNEP / GEF Project Implementation Review format (FY 2001): Indicator Model for Dryland Ecosystems in Latin America. 12 pages.
- UNEP / GEF Project Implementation Review format (FY 2002): Indicator Model for Dryland Ecosystems in Latin America. 28 pages.
- UNEP / GEF Project Terminal Report: An Indicator Model for Dryland Ecosystems in Latin America. 44 pages.
- UNIVERSIDAD DE CHILE (2002) Report on La Serena Meeting: Workshop "Desertification indicators and information systems to monitor desertification proceses", Santiago. 7 pages.

IV b. Other reports and publications related to desertification and decision-making tools:

- Bassett C & J Talafré (2002) Implementing the UNCCD: towards a recipe for success. Review of European Community & International Environmental Law 12: 133-139.
- Bathurst JC, J Sheffield, X Leng & G Quaranta (2003) Decision support system for desertification mitigation in the Agri basin, southern Italy. Physics & Chemistry of the Earth - Parts A/B/C, 28: 579-587.
- Kjellén B (2003) The saga of the Convention to combat desertification: the Rio/Johannesburg process and the global responsibility for the drylands. Review of European Community & International Environmental Law 12: 127-133.
- Oxley T & M Lemmon (2003) From social-enquiry to decision support tools: towards an integrative method in the mediterranean rural environment. Journal of Arid Environments 54: 595-617.
- Santibañez F & V Marín, eds (1998) An environmental information and modelling system for sustainable development: computer tools for sustainable management of arid and Antarctic ecosystems. Universidad de Chile/IBM International Foundation, Santiago. 112 pages.
- Secretaría de la Convención de Lucha contra la Desertificación (2002) A proposal for the regional thematic network in Latin America and the Caribbean (LAC) on benchmarks and indicators (B&I). 30 pages.

- Simonetti JA, ed (1996) Conservación y uso sostenible de la biodiversidad en zonas áridas y semiáridas de América Latina y el Caribe. FAO (Santiago), Serie Zonas Aridas y Semiáridas 8, 177 pages.
- Solh M, A Amri, T Ngaido & J Valkoun (2003) Policy and education reform needs for conservation of dryland biodiversity. *Journal of Arid Environments* 54: 5-13.
- Zeidler & KJ Mulongoy (2003) The Dry and Sub-Humid Lands Programme of work of the Convention on Biological Diversity: connecting the CBD and the UN Convention to combat desertification. *Review of European Community & International Environmental Law* 12: 164-175.
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