United Nations Environment Programme
برنامج الأمم المتحدة للبيئة • 联合国环境规划署
PROGRAMME DES NATIONS UNIES POUR L'ENVIRONNEMENT • PROGRAMA DE LAS NACIONES UNIDAS PARA EL MEDIO AMBIENTE
ПРОГРАММА ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ ПО ОКРУЖАЮЩЕЙ СРЕДЕ
UNEP

# MEMORANDUM

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| To : | Kenneth King<br>Assistant CEO<br>Attn: Programme Coordination<br>GEF Secretariat<br>Washington D.C., USA<br>Fax: (1 202) 522 3240<br><br>Lars Vidaeus, WB/GEF<br>Washington DC, USA<br>Fax: (1 522) 3456<br><br>Rafael Asenjo, UNDP/GEF<br>New York, USA<br>Fax: (1 212) 906 6998<br><br>Calestous Juma, SCBD<br>Montreal, Canada<br>Fax: (1 514) 288 6588<br><br>Madhav Gadgil, STAP<br>Bangalore, India<br>Fax: 91 80 334 1683 | Date:<br><br>Drafter | 25Nov, 98<br><br>SAK |
| Through: | | Room:<br>Extension: | Q235<br>3265 |
| From: | Ahmed Djoghlaf<br>Executive Co-ordinator<br>UNEP GEF Co-ordination Office | Reference: | PDF A - MSP/BD |

Subject: PDF A proposal submission

Please find attached the PDF A proposal "An Indicator Model for Dryland Ecosystems in Latin America" submitted for consideration of GEF financing.

We look forward to receiving any comments by 4 November 1998. Thank you.

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# GLOBAL ENVIRONMENT FACILITY

**Block A PDF**

**PART I – ELIGIBILITY**

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| **1. Project Name:**<br>An ***Indicator Model for Dryland Ecosystems*** in Latin America | **2. GEF Implementing Agency:**<br>UNEP |
| **3. Countries in which the project is being implemented:**<br>Mexico, Chile and Brazil | **4. Country Eligibility:**<br>**5.** Chile, Mexico and Brazil are all eligible. Mexico ratified CBD, 3/11/93; Chile ratified the CBD 9/9/94; and Brazil ratified the CBD 2/28/94. |
| **5. GEF Focal Area:**<br>Biodiversity | **6. Operational program/Short-term measures:**<br>Arid and semi arid ecosystems: Op Program No.1 |

**7. Project Linkage to national priorities, action plans and programs:**

This project will provide a critical tool for decision makers, nongovernmental groups and other organizations in Mexico, Chile and Brazil in meeting national goals and objectives in biodiversity and desertification in dryland areas. The preservation of biological diversity in arid and semi-arid regions is a priority for all three countries, but there are barriers to developing effective environmental, social and economic responses. Authorities, nongovernmental groups, and affected communities currently lack the tools for integrating physical environmental and socio-economic data in both sectors of biological diversity and desertification, information which is crucial for designing long-term policies and programs. The project will address this by providing an operational model to do so.

In Mexico, the national Senate ratified the Convention to Combat Desertification in February of 1995 and the Convention on Biological Diversity in March of 1993, making their provisions a priority for implementation by the government. The National Development Plan, through the Forest and Soil Program 1995-2000, establishes monitoring of land conditions as a priority, especially in drylands. In particular, the conservation and protection of biological diversity and related environmental services are priorities in Mexican environmental policy. In accordance with the Biodiversity Convention, a key strategy of the government is on-site conservation through the creation of natural protected areas on government lands representative of different ecosystems and their biological diversity. Areas containing an original environment that has not been greatly altered are subject to special protection, conservation, and restoration policies.

Specifically, the conservation of biological diversity in the drylands is a priority in Mexico. These dryland areas contain 29 of the 99 protected areas of interest to the federal government, which together comprise 57% of the protected surface in the country. Of the official 25 *priority* protected areas, 9 are located in the drylands.

In 1992, the national commission on biological diversity, "CONABIO" was created to promote and coordinate actions and studies related to knowledge, preservation, and sustainable use of Mexico's biological resources. Among its main functions, it is to compile, maintain, and update species inventories, create corresponding databases, provide public service information and promote sustainable use programs for biological resources.

To meet increasing information needs, greater coordination between environmental information generators and users is being carried out, along with a strengthening of Mexico's institutional capacity to produce new environmental information and indicators. The generation of information and indicators related to the state of the drylands, especially land degradation, is a government priority. SEMARNAP

has begun development of a monitoring system to identify the magnitude, causes, and tendencies of land deterioration to determine how producers, the local population, and authorities may better direct programs to control degradation of biological diversity in drylands and subhumid areas. The generation of environmental information and indicators is to be accomplished through analysis of physio-biological, natural resource, demographic, economic, and social data, in compliance with international standards and in a manner that can be accepted and adapted by the agencies developing environmental information.

In Mexico, natural protected areas are strategic mechanisms for assuring biodiversity protection and the maintenance of vital environmental functions. The project will contribute to the monitoring of physical and social conditions in protected areas located in the drylands, and will allow officials and nongovernmental groups to identify the elements which threaten the integrity of the environmental resources in those areas. In this manner too, SEMARNAP, through the Natural Protected Area Coordination Unit (UCANP) and other agencies, will orchestrate corresponding corrective measures. As such, the project will promote institutional strengthening in support of on-site biodiversity conservation carried out through the Natural Protected Areas System. Additionally, indicators and information produced by the project will allow CONABIO to expand its databases on species habitat conditions in the drylands. Indicators can be integrated into CONABIO's National Biodiversity Information System, and would aid in the updating of the National Environmental Accounting System, developed by SEMARNAP and the National Statistic, Geographic, and Information Institute (INEGI), which would facilitate public information use. Absent the development of tools as proposed by this project, agencies and groups would not have the capability to undertake such data development and integration. During planning of the project, the participation of CONABIO, UCANP and other nongovernmental groups will be specified.

Similarly, this tool will provide substantial capability to affected groups, decision makers and nongovernmental organizations in Chile and Brazil in their evaluation and monitoring of, and in their development of appropriate policy-responses to, loss of biological diversity in the drylands. As in Mexico, Chile regards biodiversity protection as a national environmental priority. Approximately 18% of Chile's territory is under the protection of the National System ("SNASPE") protecting biological habitat, managed by the National Forest Corporation (CONAF). Much of these areas are located in humid regions. There is a dramatic lack of biological protection in arid and semi-arid regions of the country, particularly for plant communities with a high degree of endemism. The project will not only provide a critical tool for official agencies, such as CONAF, but for nongovernmental institutions in their evaluation, monitoring and management of dryland species. It will provide strategic information, particularly on the biological and economic values of the resources found in drylands, that will be necessary for CONAF and other institutions in Chile to consider incorporating these into its protected area programs. This will be assured through participation CONAF and other nongovernmental groups in the project, in collaboration with the University of Chile. Agrimed works in close collaboration with National Commission on the Environment (CONAMA) which is charged developing a diagnostic survey of the state of biodiversity in Chile. AGRIMED also receives support from the Ministry of Agriculture, of which the National Forestry Corporation (CONAF) is a branch. This is an important linkage as CONAF is responsible for both the national system of protected areas and the development of national action plans to combat desertification.

In Brazil, the project may be even more critical as it will provide the information, data and tools necessary to ensure that national biodiversity programs consider important dryland biological resources in their implementation. Such an integrated framework, involving biological diversity and desertification elements, has not been developed at a national level in Brazil. Analyses and evaluations have identified serious gaps in data, in the inequality of conservation efforts, and in the public and private partnerships towards conservation. Prior to defining a National Policy and Strategy, the design of which is expected by mid 1999, the Government adopted a tactical preliminary, wide ranging program to address conditions and problems of the various existing biomes, including the Caatinga, the typical biome of the semi-arid

region.

In the case of the Caatinga, this policy will include the National Desertification Action Program, a result of the U.N. Convention to Combat Desertification. This project will provide important contributions towards the implementation of the two Conventions, particularly through the development of an operational model for evaluating and monitoring biodiversity in the drylands, and in the case of the Caatinga will subsidize the conservation strategies and policies of biodiversity. The integration of the project will be assured by the participation of Brazil's Ministry of Environment with the nongovernmental entity, Esquel Brazil.

**8. GEF National Operational Focal Point and date of Country Endorsement:**
Mexico: October 14, 1998
Chile: October 14, 1998

**9. Project Rationale and Objectives:**

General Statement:

As described below, this project will provide the GEF and its partners, policymakers and nongovernmental organizations, and affected communities with a unique tool to identify vulnerable dryland ecosystems, develop appropriate management plans, and monitor the direction of change following the implementation of these plans. In the face of accelerated land degradation in the drylands, the unique bio-diversity of this biome and the livelihood of dryland residents are increasingly threatened. A baseline application of the *Indicator Model for Dryland Ecosystems*, which considers the spatial dimension of socio-economic indicators in concert with environmental factors, will allow policy makers to define site-specific national actions plans targeted at the stabilization of critical dryland ecosystems. Periodic updates of key land degradation indicators will allow for the measurement of progress towards stability and restoration. Currently, policy makers and nongovernmental groups alike in Latin America are without such a unifying framework for targeting and evaluating their actions in the face of arid land degradation. As the proposed model has, to date, been applied solely in a research setting, this project will focus on technology transfer to resource planners and managers. Absent GEF funding, the model is unlikely to infuse the policy dialogue in a manner which assists in stemming land degradation in Latin America's arid zones in ways which are sensitive to the economic and cultural needs of the affected communities.

The refinement and planning level application of the *Indicator Model for Dryland Ecosystems* may also help the GEF to measure program level progress towards it organizational objectives. Under Operational Program Number 1, the GEF articulated a vision for the conservation and sustainable use of biological diversity in arid and semi-arid zones. In order to add up performance measures from individual projects, a common set of indices measured against uniform scales must be available to the GEF. This is exactly what the model seeks to do. The education and training component of the project (to develop and apply the information systems technologies to monitor degrading environments) will build capacity among policymakers, nongovernmental groups and other affected communities. In fact, by virtue of the graphically rich map presentation of these indices, the model and the accompanying training can help raise awareness through communications and outreach programs to affected communities.

Project Rationale:

The 290,235 $km^2$ South American Pacific desert biogeographical province lies in the rain shadow of the high Andes. Storms carried by the trade winds across the Amazon Basin are routinely wrung out as they pass over these mountains, leaving little moisture to fall on the narrow band of Pacific Coast on their

leeward side. This province, 41% of which lies in Chile with the rest located in Peru, contains what is generally considered the driest desert on Earth, the Atacama. Although the stark Atacama does not generally conjure up image of rich biodiversity, on its margins lies a semi-arid landscape which continues to reveal its unique species composition. For example, within the last year a bromeliad, *Tillandsia tragophoba*, with a unique water capturing structure, was identified near Papose, Chile in the semi-arid region of the province. This plant is striking example of an arid land species, which commonly have "a restrictive geographical distribution and a wide range of morphologicl, physical, and chemical adaptation to their harsh environment" (GEF Operational Program Number 1). These are traits which make them a rich resource for plant breeding. Recent bio-prospecting in the region also suggests that Chilean flora could be an important source of medicinal compounds. Despite the importance of the resource, 57 shrubs and 13 trees in the semi-arid zone are considered endangered.

Like Chile, Mexico's drylands contain a wide array of plant species. Shrubs and grasslands dominate this biome, which covers almost half Mexico's territory. These provinces contain 82% of the world's agave species and the wide variety of sage species which are endemic to Mexico represent 88% of the world's total. Together with United States, Mexico is also home to 90% of the Earth's species of cactus. In terms of animals, Mexico ranks 1$^{st}$ globally in reptile diversity, 2$^{nd}$ for mammals, and 4$^{th}$ for amphibians. The fauna of Mexico's drylands include 250 species of vertebrates, 20 of which are considered endangered.

The Brazilian Caatinga, the principle dryland ecosystem, covers 900,000 km$^2$. This biome has many species of great ecological and economic value. Approximately 452 tree, bush and shrubbery species have been identified, many of which contribute to the economic production strategy of the inhabitants of the semi-arid zone. Among the wide variety of animals in the Caatinga, two species of birds, one primate and one of ground vertebrate are endemic and endangered.

Unfortunately, many arid land species share another trait, the threat posed to them by land degradation. Most semi-arid regions of the world are inhabited by agro-pastoral communities which rely upon local land and water resources for survival. Although the exact causes are unresolved, globally, land and water degradation has become an acute environmental, economic and social problem. Each year, the world loses 24 billion tons of topsoil through soil erosion. In the drylands that cover about 40% of the earth's surface, soil erosion is a critical component of desertification. Erosion, when coupled with a breakdown in soil structure, a loss of both plant cover and species diversity, and a reduction in plant productivity places both the agro-pastoral communities and the unique native species in peril. And yet, while much international attention has been focused on loss of biodiversity in humid subtropical areas, arid and semi-arid lands remain largely unprotected. The situation in Chile is a striking example of the imbalance. While greater than 25% of Chile's southern forest have been afforded some form of legal protection, less that 5% of the Pacific desert biogeographical province benefits from similar assurances, well below the accepted 10% target. In Mexico, although the dryland biome cover half of the national territory, only 9 of 25 priority protected areas are in semi-arid zones, while 80% of all Mexico's land is subject to erosion. Only a tiny part, around 3%, of the Brazilian Caatinga is currently under a conservation regime.

Although the lack of striking, between-species variation contributes to the relative lack of attention paid to the drylands, the presence and plight of indigenous communities in these semi-arid zones is the major factor in retarding the development of conservation plans. Although both are promoted by the CBD and included in the GEF Biodiversity Operational Strategy, in this context, the objective of promoting sustainable use becomes increasingly viable relative to the creation of protected conservation areas. Specifically, "sustainable use management will be sought by combining production, socio-economic and biodiversity goals" across "ranges of uses from strict protection in reserves through various forms of multiple use with conservation easements to full scale use". Developing a plan for sustainable use management calls for spatial analysis of semi-arid landscapes. Unfortunately, the development of these plans faces significant obstacles due to the lack of a suitable analytical tool by which desertification, land

and water management and biodiversity data can be gathered, integrated, and analyzed in concert. The model of dryland indicators proposed for this project seeks to redress this shortfall.

The development of a planning model that can integrate data sets and geostatistical maps (developed through data analysis as described below) would allow analysts and policy makers to more efficiently and effectively parse the landscape into regions in need of critical protection, those which merit management refinement, and those which appear to be functioning well under current management patterns. To date, the lack of a tool which facilitates landscape scale planning has produced a dearth of activity on biodiversity in arid lands. The *Indicator Model for Dryland Ecosystems* provides a tool by which land use planners can coordinate their action with counterparts working in agencies charged with species protection, agricultural development and forestry. This coordination will certainly help leverage increased financial support for programs which ensure biological protection and community development in the drylands. The organizations working on this project, both governmental and in the NGO community, are committed to developing this tool, not as a *research* exercise so much as for promoting improved environmental management in the oft overlooked semi-arid biome.

Objectives of the Project:

During a pilot application of the *Indicator Model for Dryland Ecosystems* in the Rio Limari region of Chile, located on the southern margin to Pacific desert biogeographic province, spatial data on soil erosion, water holding capacity, and changes in precipitation were transformed into standard indices ranging from 1 to 7 which describe conditions ranging from very bad to very good. For example, a water holding capacity of less than 25mm/m, corresponding to an index of one, was considered very bad, while and index of 7 was assigned when a very good water holding capacity exceeded 300mm/m. Based on maps of these indices, approximately 30% of the pilot region was found to be in average or below average condition. The spatial distribution of biological indicators such as vegetative cover, phytovolume of woody plants and precipitation use efficiency, evaluated on the same 1-7 scale was also mapped. A comparison of these maps revealed that the biological condition of the 30% of the landscape which was in average or below average physical condition was primarily in moderately bad or bad condition. Similar mapping of socio-economic indicators added additional insight on the human dimension.

Although biological indicators such as vegetation cover, phytovolume, and precipitation use efficiency can be considered part of a suite of biodiversity indicators, others are needed to fully elaborate the wild plant and animal dimension of arid land management. Many of these are discussed in the proposed methodology, including dominant species analysis, vertical plant stratification analysis, biological association analysis, and species abundance analysis. The challenge is:

- to identify which key indicators are needed to assess links between land degradation in arid and semi-arid regions and the viability of this biome's unique biodiversity;
- to select standard methodologies for quantifying these indicators;
- to perfect a methodology for transforming each indicator into the standard set of 1-7 indices which are needed to compare indicators measured on different absolute scales;
- to integrate these indices into the proposed spatial analysis framework;
- to demonstrate to decision makers and other private and public groups, on a pilot scale and through hands-on training and capacity building, how this framework can help to logically balance the potentially conflicting demands of economic activity and species preservation in the drylands.

Meeting these challenges will be the objective of a medium-sized project which will be submitted to the GEF. Ultimately the model, which is a clear example of a tool for rapid biological/ecological/social assessment, must be put through a series of trials in various geographic settings to ensure its practical use by desertification/biodiversity policymakers. After subjecting the system to testing in this manner, its

strengths and shortcomings should become evident. The model would then be updated and improved to remedy its shortfalls and tailor its application to the particularities of drylands in the countries participating, but which could serve as a model for drylands across the globe. By facilitating two important project outputs, sectoral integration and sustainable use, the development of this tool is wholly in keeping with the intent of Operational Program Number 1.

**10. Expected Outcomes:**

The tangible outcome of the medium-sized project for which the partners will ultimately seek funding will be a functioning *Indicator Model for Dryland Ecosystems* in a pilot region of each of the three participating countries. The standard of *functionality* will include a working software package, informed with the best available databases, operated by trained individuals. A formal training program will build the capacity of official and nongovernmental users, while also assuring that the final element is not overlooked and can be utilized by policy-makers in each of the country partners, as well as by policymakers facing similar dryland management problems.

Equipped with a functioning *Indicator Model for Dryland Ecosystems*, policy makers and nongovernmental groups in the target regions of each participating country will be able to:

1. Survey important indicators of plant and animal biodiversity and include them in a spatially distributed database of other physical, biological, and socio-economic data related to the degradation of land in arid regions.
2. Integrate biodiversity conservation and sustainable use objectives in land use and natural resource use management plans.
3. Identify processes and categories of activities which have or are likely to have significant adverse impacts on the sustainable use of biodiversity.
4. Develop the basic protocol for a long-term monitoring program using periodic data updates of key indicators.
   Develop plans for replicating the application of the *Indicator Model for Dryland Ecosystems* in other arid and semi-arid regions of the country.

The project has several expected outcomes on a global scale as well. This expectation stems from the general utility which the spatial *Indicator Model for Dryland Ecosystems* can offer officials and affected groups concerned with biodiversity and sustainable development in arid lands. These include:

1. Providing a monitoring and evaluation framework for the GEF to offer to other officials, intergovernmental agencies and nongovernmental groups seeking support for biodiversity activities in arid and semi-arid regions.
2. Complimenting IUCN's efforts to develop appropriate biodiversity indicators for forests, agroecosystems, freshwater, marine/coastal/SIDS.
3. Complimenting the UNEP ROLAC's efforts in developing a Latin-America/Caribbean wide program to develop indicators for desertification and sustainable development.
4. Developing a software training program which can be replicated to strengthen the institutional capacity of government agencies and non-governmental organization to integrate biodiversity and economic development objectives in land use plans.

**11. Planned activities to achieve outcomes:**

The program would consist of a series of pilot studies that implement the model's methodology in selected high priority areas of Brazil, Mexico and Chile (and other participating countries as determined during the planning phase of the program) where there are critical problems of land degradation, biodiversity loss and migration. Pilot zones will be selected according to: the current condition of local biodiversity; the initial availability of data; and the level of interest among local communities as well as resource planners and managers. The necessary software and the computer components to support the

model will be distributed to participants in each of these countries. Thereafter, technical training in systems application and cartographic representation techniques will be provided to participants by the model's developers. The parties will of course need to identify in advance the appropriate study plans and agree on the datasets that will be used and the time period for monitoring and evaluation. Preliminary organizational meetings as well as periodic review meetings among the parties will accordingly be convened. There will be regular meetings to integrate findings and monitor implementation of the program. Senior policy makers will be informed by the project through a series of computer based presentations during which GIS layers of various indices will be merged into a mosaic of conservation and sustainable use opportunities. We will also try to integrate our findings with teams in Africa and other regions working on similar efforts.

**12. Stakeholders involved in project:**

The partners will convene the Workshop to include participation from the relevant stakeholders. To ensure that the Workshop is effective in producing expected outcome products, particularly a workplan for Chile, Mexico and Brazil, we will seek to target participation from 15-20 stakeholder groups. We will invite representatives from intergovernmental organizations, including the CCD and CBD Secretariats, the UNEP Regional Office for Latin America, the Food and Agriculture Organization, the International Fund for Agricultural Development, the World Bank, the GEF, the OAS; and from private and nongovernmental stakeholders from all three countries, including Esquel Group Foundations in Brazil and Chile, CODEFF and EarthAction in Chile, RIOD Mexico (a consortium of nongovernmental, campesino and indigenous groups working to address desertification in Mexico), Conabio (Commission for biodiversity monitoring/inventory in Mexico), and interested potential African partners, including ENDA T.M. from Dakar, Senegal, and IUCN.

It should be noted that the Natural Heritage Institute, the Esquel Group Foundation, the National University of Chile, and the Mexican Soil Conservation and Restoration Department of Semarnap are collaborating with other country officials, NGOs and academics to undertake pilot projects in various regions to test the value of the model/methodology and to document its strengths and weaknesses. The National University of Chile's Agrimed, the model's primary designer will collaborate with the other partners as well as the Department of Sustainable Development in the Chilean Ministry of Agriculture. Participating from Brazil will be the Esquel Brazil Foundation, an NGO working with the government on desertification and civil society issues, and the Ministry of Environmental Affairs which collaborated on the model's design. In Mexico, the Mexican Soils Conservation and Restoration Department of SEMARNAP, will participate, as they have collaborated with NHI and the other partners in documenting desertification, biological diversity loss, and socio-economic relationships in Mexico. NHI has extensive experience documenting the socio-economic causes and consequences of desertification in the U.S./Mexico context, recently preparing a U.S. Congressional Report on these issues. This effort has the potential to be extended to interested partners in Latin America and the Caribbean region and in Africa, and we will seek collaboration where appropriate.

## PART II – INFORMATION ON BLOCK A PDF ACTIVITIES

**13. Activities to be financed by the PDF:**

The current proposal is for support of a planning exercise which will allow the participants to develop a detailed workplan with a high likelihood of fulfilling the ultimate objective. The planning grant represents a first step towards the achievement of two important project outputs, sectoral integration and sustainable use. It is wholly in keeping with the intent of Operational Program Number 1. Activities will include the organization and convening a workshop which brings together the team members, NGOs, officials and intergovernmental agencies involved on the project. The team will coordinate closely with UNEP's Regional Office for Latin America and the Caribbean in ensuring that its activities compliment those of the UNEP ROLAC. The workshop will be held at a site determined by the partners as conducive to wide participation by affected groups. If feasible, the partners will seek to organize in a workshop in conjunction with the Second Conference of the Parties of the Convention to Combat Desertification in

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Dakar, Senegal in early December, 1998. The workshop will accomplish tasks 1-4 in Section 14. Follow up work days in the participating countries will be organized by the Natural Heritage Institute and will lead to the completion of tasks 5 and 6 by the end of 1998. Task 7 will be competed by the end of January 1999.

**14. Expected Outputs and Completion Dates:**

The expected outcomes of the planning phase of the project will include the following:

1. The establishment of a suite of appropriate indicators for assessing biodiversity in arid and semi-arid regions.
2. The development of suitable standard index scales which transform indicator specific data into the into the very bad to very good scale (1through 7) needed for integration into the Model of Indicators.
3. A workplan for software enhancement which will guide the model developers' efforts to include the selected suite of biodiversity indicators.
4. An exploration of the possibility of adding country cases from Latin America and the Caribbean region, and the African Continent, in order to achieve a wider regional representation.
5. The selection of a pilot location for the application of the Model of Indicators in each of the three participating countries.
6. Workplans for data collection, compilation and analysis in the pilot zone of each participating country.
7. A GEF targeted proposal on the Model of Indicators which includes a program of work containing, *inter alia*, sequences of activities, assignments, timelines, coordination mechanisms and co-financing arrangements.

**15. Other Possible Contributors/Donors and Amounts:**

Other contributions to this project will be sought from relevant intergovernmental organizations and private foundations.

**16. Total budget and information on how costs will be met:**

$25,000 Block A PDF Grant (including the Block A grant):

*Expected Total cost of medium-sized project (GEF Contribution): US $750,000*

**PDF A**

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| Logistics (meeting room, etc.) | $ 1,850 |
| Travel Costs | $12,600 |
| Daily Subsistence Allowance (10 people x 3 days x $150) | $ 4,500 |
| Preparation of documents and briefing materials | $ 3,800 |
| Organization of workshop, communications, miscellaneous | $ 3,100 |
| Preparation of 3 Country Workplans and Project Proposal | $ 7,800 |
| *TOTAL :* | *$33,650* |
| Co-financing | $ 8,650 |
| **TOTAL:** | **$33,650** |

**PART III – INFORMATION ON THE APPLICANT INSTITUTION**

**17. Name:** University of Chile, Esquel Group Foundation Brazil, and Mexican Soils Conservation and Restoration Department (SEMARNAP), in collaboration with the Natural Heritage Institute.

See Annex 1.

**18. Date of Establishment, membership and leadership:**

See Annex 1.

| 19. Mandate/terms of reference: | 20. Sources of Revenue: |
|---|---|
| See Annex 1. | See Annex 1. |

**21. Recent activities, in particular those relevant to the GEF:** The Esquel Group Foundation and team in Brazil have designed activities to combat desertification in Northeast Brazil over many years. The University of Chile team has developed, with its partners in five countries in South America, the original model on desertification indicators to be implemented in this project. The Department of Conservation and Restoration of Soils , Semarnap, is Mexico's primary agency for establishing national programs to recover soils in arid and subhumid lands in Mexico. The Natural Heritage Institute has documented and published reports on desertification and its socio-economic causes and consequences for official agencies, intergovernmental groups and nongovernmental organizations, including the CCD Secretariat, UNEP, and International Organization for Migration. It has developed programs on biological diversity, particularly focusing on institutional and policy reform to promote the protection of endangered species.

**PART IV – INFORMATION TO BE COMPLETED BY THE IMPLEMENTING AGENCY**

**22. Project Identification Number: tbd**

**23. Implementing Agency contact person: Ahmed Djoghlaf**

**23. Project linkage to Implementing Agency program(s):**

UNEP has a primary role in the GEF in catalysing the development of scientific and technical analysis and in advancing environmental management in GEF-financed activities. UNEP also provides guidance on relating the GEF-financed activities to global, regional and national environmental assessments, policy frameworks and plans and to international environmental agreements. This project will therefore be linked to UNEP's activities including its existing work on monitoring the state of the environment and analysing global environmental trends through its Global Environmental Outlook. In particular, the project will build on the UNEP's ENRIN and CCAD strategy for environmental information management, which includes the development of indicators to assess the state of the environment in various regions. The project will also build on the "UNEP-CIAT Project for Environmental and Sustainability Indicators for Latin America and the Caribbean". This project has advanced the use of the indicator framework (and has been accepted), and developed indicators that are being used at the regional and national level. UNEP is also working on a new potential project in Mesoamerica, to assess the state of the environment from an ecosystem point of view, and to develop indicators for those ecosystems. In the second phase of this project, UNEP will be focusing more on national/regional level indicators for Central America for sustainable rural development in association with the World Bank. In addition, with GEF funding, UNEP has facilitated the development of a PDF A proposal on Biodiversity Indicators. This project will compliment these initiatives by adding to this framework of activities, the development and testing of indicators relating to land degradation in the context of its impact on biodiversity in arid and semi-arid ecosystems.

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## ANNEX 1

**17. Name**

University of Chile – Center for Agriculture and Environment:

Natural Heritage Institute

Secretaria de Medio Ambiente, Recursos Naturales, y Pesca (SEMARNAP)

Esquel Group Foundation – Brazil

**18. Date of Establishment, membership and leadership:**

*University of Chile – Center for Agriculture and Environment:* 1995; no membership; Dr. Fernando Santibanez

*Natural Heritage Institute*: 1989; no membership; Greg Thomas, President.

*SEMARNAP*: 1994; no membership; Julia Carabias, Environment Minister.

*Esquel Group Foundation – Brazil*: 1984; no membership; Dr. Sílvio Sant'Ana, Executive Secretary

**19. Mandate/terms of reference:**

*University of Chile – Center for Agriculture and Environment*: AGRIMED is a research structure of the Faculty of Agrarian and Forest Sciences. It's mandate is to support and encourage an academic team with the ability to initiate and carry out innovative programs directed at the environmental implications of agriculture at different levels of perception; to develop and promote the use of advanced technologies toward continued study of the environment and evaluation of the impact of agricultural developments on the natural resources.

*Natural Heritage Institute*: To foster conservation and sustainable use of the world's limited stock of natural resources by improving the environmental institutions, policies and tools available to decision makers and private actors.

*SEMARNAP*: To attend to, coordinate, and develop national policies, projects and programs in forests, soil conservation and restoration, wildlife, natural protected areas, regional sustainable development, environmental standards, air, water, and soil contamination control, water administration, operation of the natural meteorological network, and fisheries administration. The Soil Conservation and Restoration Department promotes actions dedicated to the fight against desertification and promotes soil and river basin restoration and conservation.

*Esquel Group Foundation – Brazil*: To organize activities which aim to promote sustainable development in the economic, social, environmental, political and cultural spheres. Its ultimate objective is to promote actions that reduce social disparity and increase the possibility of extending the benefits of development to the disenfranchised urban and rural masses and promoting their integration into the national economy. The focus of the work is in development issues, especially in drylands areas, biodiversity and natural resources.

**20. Sources of Revenue:**

*University of Chile – Center for Agriculture and Environment*: The IBM International Foundation provides ongoing support and modern hardware and software facilities for high technology information management for this department. Additional financial support comes from the University (a public university), and from national agencies such as the National Commission on the Environment (CONAMA) and the Ministry of Agriculture.

*Natural Heritage Institute*: Funding for general support and project activities is obtained through international organizations, intergovernmental and governmental agencies, and various private foundations. Funding for NHI projects has come from such diverse sources as the UN Environment Programme, the UN Development Programme, the International Fund for Agricultural Development, the CCD Secretariat, the US Environmental Protection Agency, the US Department of the Interior, the Ford Foundation, the Packard Foundation and the Hewlett Foundation.

*SEMARNAP*: Funding is provided by the Mexican government.

*Esquel Group Foundation – Brazil*: Revenue is obtained through individual contributions; service contracts with international organizations such as the Inter-American Development Bank and agencies of the United Nations, the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC) of Canada, and the World Bank; and financing from foundations such as C.S. Mott, CODESPA, MacArthur, Ford, Botwinick-Wolfensohn, Banyan Tree, Rockefeller, and Rockefeller Brothers Fund, among others.

12/19

COMISION NACIONAL DEL MEDIO AMBIENTE

Santiago, 14 OCT 1998

D.E.N° 4851/00

Señor
Carlos del Castillo
Representante Residente.
Programa de Naciones Unidas para el desarrollo
Av. Dag Hammarskjöld 3241
Vitacura
Santiago

Ref.: Proyecto " Operationalizing A Model Of Indicators To Evaluate The Physical And Socio-Economic Dimensions Of Desertification"

Estimado señor del Castillo:

Por la presente me refiero a la solicitud del señor Fernando Santibáñez, Director de la Facultad de Ciencias Agrarias y Forestales de la Universidad de Chile, para el financiamiento del proyecto arriba mencionado. Como punto focal del Fondo para el Medio Ambiente Mundial aprueba su solicitud. Este proyecto ha sido discutido y aprobado en Comité Técnico de CONAMA.

Sin otro particular, lo saluda atentamente,

ALFREDO ECHAÑA BARAONA
Director Ejecutivo
COMISION NACIONAL DEL MEDIO AMBIENTE

REB/AC/CK/TS

OBISPO DONOSO 6 - PROVIDENCIA - CASILLA DE CORREO [illegible]

13/19

DIRECCION GENERAL DE CREDITO PUBLICO
DIRECCION DE ORGANISMOS FINANCIEROS INTERNACIONALES
Subdirección de Proyectos Ambientales y de Desarrollo Urbano

MTF

6882

Oficio No. 363. III, 4.- 359

México, D.F., a 14 de octubre de 1998.

LIC. JOSE LUIS SAMANIEGO LEYVA
Coordinador de la Unidad de Asuntos Internacionales
Secretaría de Medio Ambiente, Recursos Naturales y Pesca
Lateral del Periférico Sur 4209, piso 6,
Colonia Jardines en la Montaña
C i u d a d

Hago referencia a su comunicación No. UCAI/4915/98, del 24 de septiembre de 1998, relativo a la propuesta para el proyecto regional "Evaluación de la metodología para determinar indicadores físicos y socioeconómicos de la degradación de la tierra", que sería apoyado con recursos del Fondo Mundial para el Medio Ambiente ( GEF ), a través del PNUMA como Agencia Instrumentadora del GEF en México.

Sobre el particular, a través del presente me permito comunicar a Usted que esta Secretaría de Hacienda y Crédito Público, en su carácter de Punto Focal del GEF en México, está de acuerdo en que nuestro país participe en dicho proyecto; lo anterior, en virtud de que esta iniciativa contribuirá al cumplimiento de metas sectoriales de desarrollo.

Mucho le agradeceré nos mantenga informados del trámite que guarden estas gestiones, y sin otro particular por el momento, aprovecho la ocasión para reiterar a Usted las seguridades de mi más atenta y distinguida consideración.

A t e n t a m e n t e,
SUFRAGIO EFECTIVO. NO REELECCION.
El Director de Organismos Financieros Internacionales

P.A. Claudia Ruiz Esparza Burgos

Ricardo Ochoa

RECIBIDO
OCT 14 PM 5:30
RECURSOS NATURALES

14/19

SEMARNAP

**Unidad Coordinadora de Asuntos Internacionales**

UCAI/5231/98

México D.F., 14 de octubre de 1998

**Ing. Rafael Obregón V.**
*Director General de Restauración y Conservación de Suelos*
Subsecretaría de Recursos Naturales
Presente

Me permito hacer referencia a su comunicado de fecha 21 de septiembre relativo al proyecto regional "*Evaluación de la Metodología para determinar indicadores físicos y socio económicos de la degradación de la tierra*", que será presentado por el Instituto del Patrimonio Natural (NHI) al Fondo Mundial para el Medio Ambiente (GEF), para su financiamiento.

Al respecto, informo a usted que, a través del oficio 393.111.4-359 (se anexa copia de referencia) de la Dirección de Organismos Financieros Internacionales de la Secretaría de Hacienda y Crédito Público, en su carácter de Punto Focal del GEF en México, se avala dicha iniciativa en el entendido de que contribuirá con las actividades que en la materia se están llevando a cabo en el sector.

Sin otro particular, aprovecho la ocasión para enviarle un cordial saludo.

Atentamente

José Luis Samaniego Leyva
*Titular de la Unidad*

c.c.p. M.en C. Julia Carabias Lillo.- Secretaría de Medio Ambiente, Recursos Naturales y Pesca.- Presente.
Dr. Víctor M. Villalobos Arámbula, Subsecretario de Recursos Naturales/SEMARNAP.- Presente
Sr. Rafael Rodríguez, Oficial de Programa, Programa de Naciones Unidas para el Medio Ambiente.- Presente

MJJ

15/19

Ing. Rafael Obregón V.
Director, Soil Restoration and Conservation
Natural Resources Subsecretariat

In reference to your communication of September 21 regarding the regional project "Evaluation of the Methodology to Determine Physical and Socioeconomic Indicators of Land Degradation", to be presented by the Natural Heritage Institute to the Global Environment Fund (GEF) for financing;

In this regard, through official notice 393.111.4-359 (reference copy is attached) of the International Financing Organizations Office of the Secretariat of Housing and Public Credit, in its role as the Focal Point for GEF in Mexico, this initiative is endorsed because we believe that it will contribute to activities in this matter which are being carried out in the sector.

Sincerely,
Jose Luis Samaniego Leyva

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Lic. Jose Luis Samaniego Leyva
Coordinator, International Business Unit
SEMARNAP

In reference to your Communication of September 24, reference number UCAI / 4915 / 98, regarding the proposal for regional project "Evaluation of the Methodology to Determine Physical and Socioeconomic Indicators of Land Degradation", which would be supported by GEF resources through UNEP as the GEF instrumental agency in Mexico;

In this matter, the purpose of this letter is to inform you that this Secretariat of Housing and Public Credit, in its character as the GEF Focal Point in Mexico, is in agreement that our country participate in the aforementioned project, in light of the fact that this initiative will contribute to the achievement of development sector goals.

I would very much appreciate being kept informed of procedures as we move forward, and assure you of my highest and most distinguished consideration.

Sincerely,
Director, International Financing Institutions
Ricardo Ochoa

16/19

MINISTÉRIO DO MEIO AMBIENTE,
DOS RECURSOS HÍDRICOS E DA AMAZÔNIA LEGAL
- GABINETE DO MINISTRO -

Brasília, september 21st 1998.

To
**Michelle Leighton**
Natural Heritage Institute
114 Sansome St., Ste 1200
San Francisco, CA 94104
USA

Dear Mrs. Leighton,

On behalf of the Minister of Environment, Water Resources and Legal Amazon, I would like to convey the support of this Ministry to the accomplishment of the Project on Indicators to be carreid out by competent institutions as the Grupo Esquel Foundation Brasil, the University of Chile and the Natural Heritage Institute.

The Ministry of Environment, Water Resources and Legal Amazon is carrying out an outstanding work to combat desertification and drought in Brazil, in co-operation with Grupo Esquel Foundation Brasil, being the object indicators very relevant in this respect.

Therefore, I wish to reiterate our support to this initiative and we are looking forward to benefitting from its results as soon as possible.

Yours sincerely,

Heitor Matallo
Coordinator National Action Program

17/19

**MINISTERIO DE AGRICULTURA**
CORPORACION NACIONAL FORESTAL
COORDINACION DEL PROGRAMA DE ACCION NACIONAL
CONTRA LA DESERTIFICACION

La Serena, Agosto 12 de 1998.

**A QUIEN CONCIERNA**

La Coordinación del Programa de Acción Nacional Contra la Desertificación califica al proyecto *"Operationalizing a Model of Indicators to Evaluate the Physical and Socioeconomic Dimensions of Desertification"*, como de alta prioridad para los planes que el país esta implementando a través de esta Secretaría. La Universidad de Chile es un activo colaborador de la Secretaría Nacional en las materias concernientes con la generación de información y de estrategias de control de la desertificación y de recuperación de tierras degradadas.

En el caso de ejecutarse el proyecto, la Coordinación Nacional procurará interactuar con el equipo ejecutor de modo de contribuir a la obtención de resultados aplicables para mejorar las acciones nacionales contra la desertificación.

**GUIDO SOTO**
**Coordinador Nacional**
**Programa Nacional Contra la Desertificación**

18/19

Unofficial Translation
Elinor Leary

**Letter of Support from Chile's Ministry of Agriculture**

La Serena, August 12, 1998

To whom it may concern:

*La Coordinación del Programma de Acción Nacional Contra la Desertificación* classifies "Operationalizing a Model of Indicators to Evaluate the Physical and Socioeconomic Dimensions of Desertification" as a high priority among the country's programs implemented through this Ministry. The University of Chile is an active collaborator with this Ministry in matters concerning information generation and strategy for desertification control, and for the recuperation of degraded lands.

To carry out the project, *La Coordinación Nacional* will endeavor to interact with the executive team to contribute to the attainment of applicable results in order to improve national actions against desertification.

GUIDO SOTO
National Coordinator
National Desertification Program