

**GLOBAL
ENVIRONMENT
FACILITY**

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AND CHAIRMAN

November 21, 1997

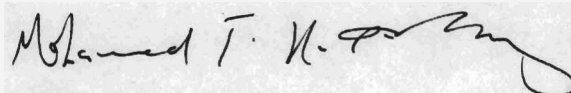
Dear Council Member:

UNDP, as the Implementing Agency for the project entitled, *Mongolia: Biodiversity Conservation and Sustainable Livelihood Options in the Grasslands of Eastern Mongolia*, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP procedures.

Over the next four weeks, the Secretariat will be reviewing the project document to ascertain that it is consistent with the proposal included in the intersessional work program approved by the Council in July 1997, and with GEF policies and procedures. The Secretariat will also ascertain whether the proposed level of GEF financing is appropriate in light of the project's objectives.

If by December 19, 1997, I have not received requests from at least four Council Members to have the proposed project reviewed at a Council meeting because in the Member's view the project is not consistent with the Instrument or GEF policies and procedures, I will complete the Secretariat's assessment with a view to endorsing the proposed project document.

Sincerely,



Attachment:

Mongolia: Biodiversity Conservation and Sustainable Livelihood Options in the Grasslands of Eastern Mongolia

cc: Alternates, Implementing Agencies, STAP

FACSIMILE TRANSMISSION

**United Nations Development Programme**
GLOBAL ENVIRONMENT FACILITY

To: Alfred M. Duda
Team Leader, Operations
GEF Secretariat

Date: 12 November 1997

cc: Kevin Hill
Biodiversity/International Waters
RBAP/GEF

Fax: (202) 522-3240

Pages:

From: Rafael Asenjo
Executive Coordinator, UNDP/GEF

Subject: MON/97/G32 – Biodiversity conservation and sustainable livelihood options in the grasslands of Eastern Mongolia.

I am pleased to attach the final project document for the above-named project for your final review and onward transmission to the GEF Council. The project is due to start in January 1998 and I would very much appreciate you ensuring that this is circulated to the Council as soon as possible.

Please find below an outline of how the project document was revised to take into account the comments made by the Bilateral Consultations and the GEF Council during its inter-sessional work programme in July.

Mongolia Environmental Trust Fund

There is a section devoted to the Trust Fund. This section, which is supported by Table 10, outlines clearly the Trust Fund's implementation arrangement, its sources and levels of co-financing, management, uses, beneficiaries and recurrent costs (page 15).

Guidance from the CBD at COP-3

The document is consistent with the CBD objectives of conservation, sustainable use, fair and equitable sharing of biodiversity resources and benefits, and the ecosystem management approach. It is also consistent with COP-3 guidance on sustainable use of agricultural biodiversity, in the broad sense.

Mid-term evaluation

The project provides for two evaluations. This is due to the seven-year length of the project, given this period being necessary to carry out biodiversity conservation activities, achieve demonstrable outputs and to ensure the expected sustainability outcomes.

Training

The fellowships that were mentioned in project brief at the time of the Bilateral Consultations have been revised as training programmes. These changes are also reflected in the incremental cost matrix and the project budget.

Property rights and land tenure

Property rights and land tenure issues have been developed in the project document on pages 6, 25, 35 and 38. In particular, it should be noted that a new buffer zone law was submitted to Parliament in this past fall to take into consideration and ensure the recognition of communal property rights.

Buffer zone boundaries

The buffer zones, which have been demarcated, have been defined as 20 km bands around the protected areas. There are approximately 1,000 households that migrate between the winter and summer pastures found within the buffer zones. The draft law on buffer zones provides for the development of guidelines for the Buffer Zone Management Committees so as to ensure the recognition of and agreement on sustainable development activities within the buffer zones.

Consultation with critical stakeholders

The project document states on pages 24 and 27 that the key stakeholders were involved in the formulation of the present project. The project proposal "benefited substantially from a participatory consultative process with local communities in the Eastern Steppe, with local private businessmen and local government officials, with national NGOs, with national government officials and with representatives of the donor community in Mongolia." This consultative process is expected to continue and improve during the entire project cycle.

Risk assessment

The risks to the project have been elaborated further in section F of the project document. The socio-economic and threats to biodiversity are planned for within the scope of the present project as they impact directly on the protected areas (objective 1), their buffer zones (objective 2), and in the wider landscape of the Eastern Steppe (objective 3).

As regards the latter, objective 3 is to incorporate biodiversity conservation components into provincial and local development plans. Outputs include: provincial and local level government administration trained to incorporate biodiversity considerations into development plans, including their strengthening for the future reduction and removal of threats to biodiversity; and biodiversity components incorporated into land-use and zoning plans.

**UNITED NATIONS DEVELOPMENT PROGRAMME
GLOBAL ENVIRONMENT FACILITY
Government of Mongolia**

Project Number: MON/97/G32
Project Title: Biodiversity conservation and sustainable livelihood options in the grasslands of Eastern Mongolia
Project Site: Eastern Mongolia
ACC/UNDP Sector: 0400 – Natural Resources
ACC/UNDP Sub-sector: 0430 – Biological Resources
Government Sector: Environment
Government Sub-sector: Biological Resources
Executing Agency: Ministry of Nature and Environment (MNE)
Project Start Date: January 1997
Project Duration: 7 Years

Project Financing

UNDP	
GEF	US\$ 5,164,000
TRAC	US\$ 1,039,000
Government	
In-kind, local currency	US\$ 1,355,000
Cash, local currency	US\$ 700,000
Other	US\$ 3,767,000
Finland	US\$ 60,000
Netherlands	US\$ 84,000
US Peace Corps	US\$ 378,000
MAP-21	US\$ 15,000
NPAP	US\$ 1,130,000
MDP	US\$ 50,000
GTZ	US\$ 250,000
Dutch/UNDP	US\$ 300,000
Other donors	US\$ 1,500,000

Total: US\$ 12,025,000

Brief description: This project aims to promote and ensure the long-term conservation and sustainable use of the unique biodiversity in the protected areas and buffer zones of the Eastern Steppe grasslands of Mongolia. A model for biodiversity conservation and sustainable development that addresses the priority threats to biodiversity will be applied through a well-defined, targetable area that can later be replicated throughout the Steppe region and other ecological regions of the country and the world.

On behalf of:	Signature	Date	Name/Title
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The Government of
Mongolia

UNDP

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ACRONYMS

ADB	Asian Development Bank
BAP	Biodiversity Action Plan
CTA	Chief Technical Advisor
DANIDA	Danish International Development Agency
EPA	Environment Protection Agency of the MNE
GEF	Global Environment Facility
GIS	Geographical Information Systems
GOM	Government of Mongolia
GTZ	German Technical Assistance Agency
HEM	Hydrometeorology and Environmental Monitoring
HMA	Hydrometeorology and Monitoring Agency of the MNE
IFAD	International Fund for Agricultural Development
IUCN	International Union for the Conservation of Nature
MACNE	Mongolian Association for the Conservation of Nature and the Environment
MAS	Mongolian Academy of Sciences
MAP 21	Mongolian Action Plan for the 21st Century
MDP	Governance and Management Development Programme
MNE	Ministry for Nature and the Environment
NEAP	National Environmental Action Plan
NGO	Non-governmental organisation
NPACD	National Plan of Action to Combat Desertification
NPAP	National Poverty Alleviation Programme
NP	National Park
NR	Nature Reserve
NREL	Natural Resource Ecology Laboratory, Colorado State University
NSF	National Science Foundation (USA)
NUNV	National United Nations Volunteers
PAA	Protected Areas Administration
PALD	Policy Alternatives for Livestock Development in Mongolia
PRA	Participatory Rural Appraisal
RAS	Russian Academy of Sciences
RRA	Rapid Rural Appraisal
SIDA	Swedish International Development Agency
SPA	Strictly Protected Area
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNOPS	United Nations Office for Project Services
UNV	United Nations Volunteers
WWF	World Wide Fund for Nature

Local Terminology:

<i>aimag</i>	province
<i>sum</i>	district
<i>bag</i>	ward
<i>khural</i>	people's assembly or parliament

A. CONTEXT

I. Description of sub-sector

a. Country context

Mongolia occupies an ecological transition zone in Central Asia between the Siberian taiga, the Central Asian steppe, the Altai Mountains and the Gobi desert (Map 1). These different ecosystems and their transitional zones provide a diverse habitat for a variety of plants and animal species adapted to the harsh climate of this region and are considered to be of utmost importance as a genetic resource of global significance.

Although Mongolia has a diversity of ecosystems including alpine, high mountain, taiga forest, mountain forest steppe, salt and freshwater lakes and riparian areas, it is most famous for its huge expanse of temperate steppe and for its great desert, the Gobi. These semi-arid and arid areas comprise 60% of the country and are inhabited by about 25% of the country's population, the majority of them being transhumant.

More than 3,000 species of vascular plants, 927 lichens, 437 mosses, 875 fungi and numerous algae have been recorded in Mongolia, but many other species remain to be identified. Mongolia's flora includes almost 150 endemic species and nearly 100 relict species. Over 100 plant species are listed in the Mongolian Red Book as rare or endangered. Mongolia's fauna is diverse. It includes 136 species of mammals, 436 of birds, 8 of amphibians, 22 of reptiles, 75 of fish and numerous invertebrate species. Wildlife species that have largely disappeared from the rest of the continent still exist here, sometimes even in relative abundance. These include 28 endangered mammal, 60 bird, 4 reptile, 2 amphibian and 2 fish species and subspecies. Among the best known are the snow leopard (*Uncia uncia*), the Mongolian subspecies of saiga (*Saiga tatarica mongolica*), argali or wild mountain sheep (*Ovis ammon*), wild camel (*Camelus bactrianus ferus*), Gobi bear (*Ursus arctos gobiensis*), the wild ass (*Equus hemionus*) and the white-naped crane (*Grus vipio*).

With only 2.3 million people and an area three times the size of France, Mongolia is one of the most sparsely populated nations on earth. Nearly half of the population lives in rural areas. Covering 1.564 million square kilometers, Mongolia is the seventh largest country in Asia. It supports about 29 million livestock. About 34% of the people are directly dependent on extensive livestock production with another 26% indirectly. Mongolia has not yet experienced the high level of industrialization that has occurred in other areas of Asia and therefore, it harbors some of the world's least spoiled temperate ecosystems.

The ecosystems of Mongolia are vulnerable to the negative impacts of many forms of economic exploitation. At the present time, however, most of the country is relatively intact - due primarily to the mobile, extensive, traditional livestock production system.

Since 1990 Mongolia has experienced major economic changes and difficulties as a result of the transition to a market economy. In 1996, nearly 30% of the population were classified as poor. The causes of poverty due to this transition can be attributed to a number of factors. (1) The severe fiscal contraction that has reduced the ability of the State to finance and sustain social and economic

subsidy programmes; (2) the sizable lay-offs in the public sector; and (3) a very rapid pace of privatization of collectives, which has resulted in the highly unequal ownership of assets.

Economic growth is a real imperative for Mongolia, to meet the basic needs of its people, to reverse the decreasing trend in standards of living following liberalization and to strengthen Mongolia's position in international markets. However, current reforms risk aggravating social and environmental problems. Natural resource issues, such as the protection and management of land resources and biodiversity, the supply and quality of water and control of soil erosion and desertification, all need to be linked to economic growth if Mongolia is to develop sustainably into the next century.

b. Biodiversity and global significance of the Eastern Steppe

Mongolia's temperate steppe covers almost all of the eastern part of the country, extending west to the depression of the Great Lakes. This 'sea of grass' is linked ecologically to the vast plain that begins in Eastern Europe and reaches to the steppes of Manchuria. The Eastern Steppe covers the two provinces (*aimag*) of Dornod and Sukhbaatar and parts of Khentii province. It has a total area of approximately 247,260 km² (Map 2).

With an annual precipitation of about 250 mm and very high inter-annual variability, the Eastern Steppe is dominated by grasses characteristic of the Dagurian and Eastern Mongolian Steppe. Lack of freshwater is a strong constraint to permanent habitation in many parts of the steppe. Just across the border in China and Russia, the vast majority of the steppe has been plowed under.

The vegetation and soil structure of the Eastern Steppe is varied: depressions and wetlands in the north gradually change into rolling hills until reaching the vast flatlands of the plains in the south. The very eastern tip of the area, on the shores of Numrug River and adjacent to the Numrug Strictly Protected Area, is the second warmest location of Mongolia. This and the availability of freshwater in the river and in Lake Buir has in the past attracted horticultural and cereal state farms and is currently being considered for large scale agribusiness.

Home to 25 species of mammals, the Eastern Steppe is one of the world's last temperate grasslands with an abundance of rare and threatened species, including many endangered mammals and birds. A number of important wildlife of the Eastern Steppe are listed as rare, very rare or endangered in International and National Red Data Books. These include great bustard (*Otis tarda*), several species of crane, mandarin duck (*Aix galericulata*), relict gull (*Larus relictus*), swan goose (*Cygnopsis cygnoides*), white-tailed sea-eagle (*Haliaeetus albicilla*) and the Eurasian otter (*Lutra lutra*). A number of endemic species and subspecies are approaching extinction and can be found only in the Eastern Steppe. These include the *alashanbeg* elk (*Cervus elaphus alashanicus*), the rare Daurian hedgehog (*Erinaceus dauricus*), the Mongolian moose (*Alces alces cameloides*), the Asiatic grass frog (*Rana chensinensis*) and five species of reptiles.

The Eastern Steppe is dominated by about 300,000 to 500,000 Mongolian gazelles (*Procapra gutturosa*) which undertake large-scale annual migrations across the steppe. This phenomenon is matched only by two other ungulate migrations in the world: the wildebeest and associates in East Africa and the caribou in North America. Today, the gazelles remain only in about 38% of their

original habitat, mostly in the southern districts (*sums*) of the Eastern Steppe (Map 3), the majority are well outside existing protected areas. Their annual east-west migrations have been cut off by the Ulaanbaatar-Beijing railroad that has an impenetrable fence along side it. The government is considering creating underground passages beneath the railroad for the gazelle population.

Little is known about the dynamics of gazelle populations and of sustainable limits of annual off-take of gazelle. Since the 1970s the government has issued between 10,000 and 60,000 permits annually for hunting gazelles. In 1995 the government allowed permits for the culling of 10,000 gazelle (estimated at 1-3% of the population), but in 1996 no hunting was allowed. So far it has not allowed any for 1997 either. These figures do not show the amount of illegal hunting that is known to exist. Many of these illegally hunted gazelle end up in two Chinese processing factories just across the border. The price of gazelle meat and their by-products on the Chinese market is very high at the moment (US\$ 1/kg of meat). Much higher than sheep for example, thereby providing an incentive to hunters. Annual fires in the steppe force the gazelles to move into China, where they become easy prey. The Mongolian government hopes that by joining the Convention on Migratory Species it will be able to gain a leverage to adequately regulate cross-border gazelle hunting.

Of the 150 endemic flora in Mongolia, about 15% occur in the Eastern Steppe. Because of its position as a transition zone, one finds steppe plants from Kazakhstan growing beside Manchurian steppe flowers. Over 100 plant species are used for medicinal purposes (e.g., *Caragana spinosa*, *Glycyrrhiza uzalensis*, *Sophora* spp., *Paeonia* spp). There are various important vegetation associations and one in particular, the *Stipa + Filifolium + Caragana microphylla* association, occurs in no other temperate grassland. In addition, the below-ground biodiversity is considered to be greater than the above-ground biodiversity. Hence, the conservation of soil biodiversity is an added global concern, particularly due to species-community-ecosystem interactions and below and above ground soil organism and plant interactions.

Three distinct vegetation zones have been classified for the Eastern Steppe:

- The Numrug system: a forest-steppe transition zone occurring in the eastern tip of the zone, this system extends into China;
- The Daguur Mongol system: a complex of forest-steppe transitional vegetation and *Stipa+Filifolium+Caragana* grass/shrub association, this system occurs north of Choibalsan and extends into Russia; and
- The Dornod Mongol system: a relatively homogenous system comprising bunchgrasses and rhizomatous grasses in vast open grasslands with hardly any woody vegetation. This system occupies the remaining 50-60% of the Eastern Steppe.

Domestic livestock too are diverse in the Eastern Steppe. The five species raised by herders (sheep, cattle, goats, horses and camels) are varieties adapted to the harsh climate of Mongolia and do not occur elsewhere. Inter-varietal diversity is also high.

The global significance of biodiversity in the Eastern Steppe is due to the abundance of important, rare and threatened species, as well as its species-community-ecosystem interactions. While it does

not have a large number of species, the Eastern Steppe of Mongolia harbors many endangered mammals and birds. The Eastern Steppe is also one of the world's last temperate grasslands of importance to the world conservation movement and with a sufficient contiguous area for conservation on a globally significant scale.

c. Socio-economic context

The more arid and remote Eastern Steppe is far less inhabited than the Central and Western Steppes of Mongolia. The Eastern Steppe retains much of its pristine character primarily because of the mobile and dispersed traditional livestock production system that is in use.

In 1992, the Eastern Steppe was inhabited by 218,900 people, or 9.4% of the country's population (see Table 1). Between 1960 and 1990, the population of the Eastern Steppe almost doubled, but since 1990 the population growth rate has decreased considerably (Table 2), as many people have left collectives and state farms for the three major urban centers in central Mongolia. The population density decreased from west to east in the Eastern Steppe, Dornod Province has one of the lowest population densities in the country: 0.42 people/km², compared to the highest of 2.5/km². More than half of the people living in the Eastern Steppe are nomadic pastoralists. The percentage of people living in urban areas is far lower than the national average (Table 3).

Transhumant herding communities are generally organized around the management of large territories. Transhumance takes place between spring, summer, autumn and winter pastures. Salt licks and water points are key sites that determine the distribution and mobility of animals. Productivity and range carrying capacity of the pastures varies tremendously from year to year, thus requiring that a household maintain its mobility and have access to a large land area. Households in the Eastern Steppe function fairly independently and are very much dispersed from one another. Hay harvesting (mostly by hand) is an important traditional activity.

During the Collective Era, households and livestock were distributed among collectives and state farms. Families became specialized production units, concentrating for example only on milk, or meat, or wool. Livestock herding was still carried out on an extensive, transhumant basis, however mechanized hay and pasture production, including silage were introduced to reduce the feed shortages in winter and spring. All other inputs (medicines, minerals, etc.) were provided at subsidized prices. Families could own a few private animals, but the collectives owned the majority. State farms were created as dairy and cereal farms.

After liberalization, risks of production increased because subsidies were eliminated. Assets of the collectives and farms were privatized. In the Eastern Steppe, unlike elsewhere in the country, very few associations or cooperatives have taken over the former collectives. Most of the assets were simply divided among former employees, resulting in a breakdown of the collectives with a marked decrease in production of hay and crops. Households became more diversified, but production decreased.

Livestock population

During the collective era the livestock production in the country was kept at a stable level resulting in national populations between 24 and 25 million head, this was done by manipulating domestic consumption and export levels. The official export of live animals to Russia and China stopped after 1990 because of the breakdown of inter-governmental agreements. The total livestock population would have increased uncontrollably if it had not been for the fact that price subsidies were lifted and lower prices for camels resulted in very high domestic urban demand. Camel populations fell by one third between 1989 and 1995. In 1993, the government established a partial ban on the slaughter of camels in order to save the country's herds. In addition, domestic consumption of meat has increased since 1990 as production of other food items (vegetables and grains) has decreased.

As a result of these trends, the country's livestock population growth rate fell in 1991-1993 (to a low of 0.98 head/year), but by 1994 it reached 1.05 head/year. The major contributor to this growth was a 72% increase in the goat population, as the price of cashmere wool nearly doubled (Table 4).

In 1995, the total livestock population was estimated as 28.57 million head for the whole country. The carrying capacity of the land (for planning purposes) has been estimated as 40 million head per year, therefore the government assumes that there is ample room for expansion of livestock. However, its current policy is to increase and maintain livestock numbers at a conservative maximum of 32 million head by the year 2005.

Livestock populations in the Eastern Steppe did not follow the national increasing trend. In fact, livestock populations in the three *aimags* have decreased by 18% since 1991, most of it in Dornod *aimag* (Table 5). The share of total national livestock population in the Eastern Steppe fell from 12% in 1991 to only 9% in 1995. In Dornod, sheep populations almost halved between 1991 and 1995 and populations of all other domestic animals fell sharply, except for goats which registered a slight increase. One explanation is that the Eastern Steppe has increasingly become the region providing livestock for domestic consumption for the rest of the country. Another possibility is that cross-border unofficial export especially into Russia has increased.

These trends indicate that total livestock populations in the Eastern Steppe are not currently a threat to biodiversity loss, thus allowing the project significant leeway to implement its conservation efforts. However, they also indicate that there will be considerable political pressure at the *aimag* level to develop the livestock industry of the Eastern Steppe. Therefore, the work of the project in incorporating biodiversity conservation into local level development planning will be extremely important in helping to mitigate diverse long-term effects.

Land tenure, grazing management and mobility

Mongolian herding communities are generally organized around the management of large grazing territories, the size depending on ecological conditions. They may be small groups using the same well and its adjacent pastures, such as in Dornogobi and the Eastern Steppe, or large groups using a single mountain or river valley, such as in Arkhangai. Customary grazing rights evolved as a set of social customs regulating behaviour within and between such groups (mechanisms to allocate pastures, to monitor and enforce compliance and to resolve conflicts). Such customary informal regulations have persisted during the Collective Era to the present day.

Land was nationalized during the Collective Era. The State owned the land and allocated user rights to collectives, state farms, cities and other administrative entities. Private ownership of land was restricted to small plots for residential purposes, although backyard farming was not discouraged.

Collectives were run very much according to traditional communal property regimes. Members of the collective had equal rights to all natural resources within the collective's land. The collective made all decisions concerning land use planning and zoning within its jurisdiction.

After de-collectivization and the break-up of the collectives, not only have production systems in the country become once more diversified (meat, milk, wool, all animals), but in addition, there has been a return to the traditional *khot ail* and *saakhalt*, or neighborhood groups. These communal institutions function as *ad hoc* groups to satisfy labour shortages, to increase the social and economic security of individual households and to provide land tenure security.

Traditionally and during the collective era, grazing patterns were kept flexible and mobility was not discouraged. This was a clear recognition of the ecological and economic necessity of mobility of livestock in arid lands. Although officially herders of collectives were not allowed to cross-district borders, they nevertheless did so, especially during the *otor* or long distance movements. Such movements were negotiated between neighbouring *sums* or *aimags*.

The territory of some sums of the three Eastern Aimags is very large, which is why herdsman are not always able to reach some remote pastures within their sum from their settlement. Therefore, sometimes herdsman prefer to use a pasture in a neighbour sum, because it is much closer than their sum's pastures. This does not cause serious conflicts, and herdsman from both sums traditionally regulate it. This kind of pasture land use is still very common in other parts of Mongolia as well. Pasture land use is governed by the general schedule for winter, spring, autumn and summer settlement pursuant to the traditional system of transhumance.

The main reason of that is a peculiarity of Mongolian transhumance where livestock is on the pasture during four seasons of the year. In order to ration use of pastures and protect winter and spring grasses, the use of four season's pastures should be controlled by orders. The Local Governor is responsible for allocation of season pastures.

At present, these traditional rules for access and negotiation persist precisely because they were not destroyed during the collective era. But at the same time, *sum* and *aimag* government officials continue to play an important role in controlling access to property rights. For example, as a result of both forest/steppe fires and the Brandt's vole (*Lasiopodomys brandti*) infestation in 1995, officials in Dornod and Sukhbaatar negotiated and assisted households in affecting temporary moves outside their normal migration routes. Population density in the Eastern Steppe is still very low and there are still many empty niches which households can occupy for livestock production outside of the protected area system.

However, these traditional regulations and post-collective adaptations for land tenure security and allocation may not be able to cope now with the pressures of privatization and urban-rural migration, unless new laws are formally adopted to support and extend them. The Parliament has

recently passed a bill that would allow local communities (presumably the *khot ails* or equivalent) to communally lease their lands and natural resources. Lessons can be learnt from other countries that have passed laws supporting and extending the communal ownership of land (notably in Africa and Middle East). However, according to the New Constitution of Mongolia adopted in 1992, pasture land should not be privatized (Article 6, Paragraph 3). Therefore, the Government of Mongolia will not discuss pasture land privatization.

Income distribution

There has been a growing inequality in livestock ownership in Mongolia. In 1991 a rich household would have 90-100 animals, a middle household 50-60 and a poor household less than 30 animals. Now, in 1996, a household is considered middle class if it has 250 to 300 animals and private herds of up to 2000 sheep have been recorded. The minimum herd required for survival now is higher than before: at least 100 head per household. This is because households rely less on other sources of income (e.g., pensions, subsidies and crop cultivation). Poor households have higher ratios of dependent people to workers: 0.5 dependent/worker as opposed to 0.33 dependent/worker in rich households. In a quick survey of Dornod, only 20% of the households have members who are all employed. Official statistics show very high unemployment rates. Officially 59.6% of Sukhbaatar is unemployed, 30.1% of Khentii and 7.1% of Dornod.

It is not known how many herding households live below the poverty line. The Government estimates the poverty level at 20% of the country's population, while a recent controversial World Bank Study reported 30%. A small sample study by the project formulation mission shows that local perceptions are that poverty is about 30% for each community or neighborhood. Questionnaires administered in the Eastern Steppe to a small sample of households in Dornod and interviews with *Sum* governors, show that on average 20% of households are below the poverty line. One *Sum* in Khentii province reported poverty figures of 50-60%. Most of the poverty is attributed to the failure of former state employees to adjust either to a capitalist system or to traditional livestock production methods. More studies are needed on the household distribution of livestock and whether there are any emerging regional inequalities. The phenomenon of absentee livestock ownership (i.e., people owning livestock that they confide to hired herders) is a growing one.

In the past few years, the social and economic support structures of rural areas have gradually become obsolete. This, as local governments have lacked the financial capacity to maintain them. This has led many transhumant herders, along with their livestock, to settle around functional service centers, leading to over-concentration and consequently over-grazing and excessive felling of tree plantations for fuel. At the same time, the local government has little capacity in land-use planning and enforcement of regulation to combat land degradation.

Other programmes run by the government, such as fire prevention and control, livestock breeding schemes, afforestation and soil conservation, have largely disappeared due to financial difficulties. Local communities have the managerial capacity to pick up these programmes at the local level, but not the financial capacity.

In conclusion, poverty has been increasing in the Eastern Steppe. Livestock populations in the three *aimags* of the Eastern Steppe and land area under cultivation have decreased. At the same time,

socio-economic safety-nets provided by the previous system no longer exist. Households have been forced almost overnight to become self-reliant, but are far from being self-sufficient. The majority of respondents in a quick survey by the project formulation mission see alternative income generation as a solution to poverty and unemployment. The kinds of activities mostly considered are transformation of agricultural/livestock products and services. Illegal hunting and medicinal plant gathering is not openly mentioned, but has clearly become an increasingly lucrative form of alternative income generation.

d. Status of biodiversity and natural resources in the Eastern Steppe

The natural resources of the Eastern Steppe in general have not been completely studied. Information on the flora and fauna of the Protected Areas is available, although periodic financial constraints have resulted in incomplete sets of data.

The project will directly work with three strictly protected areas (SPAs), three nature reserves (NRs), and one natural and historical monument (NHM) in the Eastern Steppe. Table 6 provides the complete list, year of establishment and size of each of these protected areas. Map 4 shows all the protected areas of Mongolia and Map 2 the protected areas of the Eastern Steppe.

The status of biodiversity in the Eastern Steppe is considered to be adequate, although already the effects of liberalization can be felt. Medicinal plants, fuelwood, palatable grasses, birds and large mammals are all in some form of danger. Of interest is the observation that ever since the breakdown of the farming collectives and reduction in areas of wheat cultivation, the population of birds in the Dagurian SPA has increased. It is assumed that wheat production helped to provide extra feed to the birds in the summer time. It may be potentially useful to encourage some buffer zone families to cultivate wheat, in dispersed patches, in order to attract more birds.

Grazing resources and overgrazing

Mongolian pastures contain more than 2,500 species of plants, hundreds of which are useful as fodder. About 76% of the land area of the country is classified as agricultural land, of which only 0.8% is used for crop cultivation. The remainder is used for hay making and pasture land. Of the estimated 120 million hectares of pasture in Mongolia, only about 75% is actually used due to lack of water in the remainder of the areas. The natural fodder is complemented by hay and cultivated pastures.

In 1991 the Eastern Steppe still had 15,000 hectares under fodder crops, but by 1995 there were none. However, hay harvesting continues to be an important activity in the Eastern Steppe. In 1995, 115,800 tonnes of hay were harvested. Normally plots of land are set aside for hay harvesting and domestic grazing is prohibited from May to September.

At the moment the quantity of feed for all livestock is not considered to be a constraint, rather its distribution both in time and space has been. Since 1990 there has been an urban to rural migration trend as people have once again taken up extensive livestock production as a means of survival. However, since 1994 or so, there has been a reverse trend of rural to urban migration, since support facilities, especially water points, markets, schools and clinics, have broken down. The people

returning to the *sum* and *aimag* centers do so with all their livestock, in order to take advantage of proximity to services. This is causing severe overgrazing around the centers. Potential heavy grazing may also be occurring around permanent rivers.

One issue of major importance is the dynamics of natural range production in the Eastern Steppe. Some long-term data exist on biomass production, but the data are inadequate for calculating one-time carrying capacities and less so for long-term fluctuations in the carrying capacity of rangelands. In addition, the data are not collected on a wide enough spatial scale to take into account micro-niches and spatial variability.

Natural resource degradation

Not much is known about the condition of natural resources in the Eastern Steppe. Statistics for the entire country are also uncertain. Land degradation estimates range widely and are unreliable. The NPACD gives an estimate of 7% of degraded land in the country, while the NEAP estimates that 24% of the rangelands or 19% of the country is subject to moderate to severe desertification. Another study estimates that only 4.5% of pastureland, or 3.6% of the country is actually degraded. Causes of natural resource degradation in the Eastern Steppe are thought to be:

- over-grazing and deforestation around key points such as water and permanent settlements;
- forest and steppe fires;
- cultivation in marginal areas;
- rodents, particularly the Brandt's Vole; and
- damage by off-road vehicle driving.

Choibalsan, the center of Dornod *aimag*, is overgrazed within an estimated radius of 20 km around it. Smaller *sum* centers can be overgrazed by up to two kilometres around them. A quick survey of land degradation in the three provinces (February 1997) shows that people's perceptions are that between 10-30% of the land is degraded, almost all occurring around *sum* and *aimag* centers. However, not all *sum* centers have attracted people and livestock and many are still ecologically healthy. A rough estimate is that only one third of all *sum* centers are ecologically threatened.

Another problem is that whatever trees had been planted in the past in the *sum* centers are now being used for fuelwood. There are no studies monitoring the rate of forest destruction (e.g., from northern Khentii and Dornod *aimags*) for fuelwood in urban centers.

According to Mongolian scientists, there is growing evidence of a fundamental change in the Eastern Steppe ecosystem, some Mongolian scientists even go so far as to call it an ecological imbalance. There has been clear evidence of growing aridity in the Eastern Steppe during the last 70 years. The decreasing rainfall pattern and increasing dominance of Manchurian-type flora show this, and in particular of *Stipa* spp. which are taking over the more palatable and nutritious short grasses. In addition, there have been periodic (every decade or so) population booms of Brandt's vole. The population explosions are so severe that they force herders and gazelles out of the region in search of fodder.

In 1958, the government started a campaign of aerial chemical pesticide application to reduce the population of this rodent. The voles compete not only with wild but also with domestic livestock for forage. However, the ecological and reproductive dynamics of the vole have not been studied adequately and no environmental and biological impact assessments of aerial pesticide application have been carried out, although it is widely known to kill off all insects and birds in the treated area. In the 1970s the collectives were able to organize ground campaigns where the pesticides were selectively applied to the vole burrows, but such campaigns have now broken down.

Every year wildfires, caused by human activity, devastate major parts of the Eastern Steppe, often forcing the area to be declared a natural disaster area. In 1993, there was no protected area untouched by fire. In 1996 all of Numrug SPA and Ugtam NR, 70-80% of Dagurian SPA and 40% of Dornod SPA were burned.

Hunting

Mongolian pastoral peoples rely primarily on their livestock for food, complementing this diet when possible with wild meat and edible plants. The most commonly hunted wildlife for domestic use are marmot (*Marmota sibirica*), Siberian roe deer (*Capreolus pygargus*), wild boar (*Sus scrofa*), brown squirrel (*Sciurus vulgaris*), hare (*Lepus* spp.), Mongolian gazelle (*Procapra gutturosa*), argali (*Ovis ammon*), ibex (*Capra sibirica*) and in some areas the wild ass (*Equus hemionus*). Wolf (*Canis lupus*) and snow leopard (*Uncia uncia*) are also hunted for their skins and argali and ibex for trophies.

The new Law on Hunting went into effect in June 1995, making the hunting of argali, ibex, snow leopard and wild ass illegal. Hunting of wolves and foxes (*Vulpes* spp.) remains legal year round, but for other species there are specific hunting seasons. As there are few rangers and environment inspectors and as these usually have inadequate means of patrolling their areas, there is no way of knowing for certain how much hunting is actually going on without permits and thus little scientific basis exists for determining whether harvest levels are sustainable.

In the Eastern Steppe there appears to be considerable poaching by the Chinese and Russians. Border guards assist in the patrolling of the strictly protected areas, but do not have any wildlife or ecology training. Illegal hunting is greatest along the country's border (where most of the protected areas are) but it is also a general threat because it follows the migration patterns of mammals throughout the Eastern Steppe.

2. Host country strategy

The tradition of environmental protection has a long history in Mongolia. Marco Polo wrote about closed seasons for hunting, and in 1709 Khakh Joram set aside 16 mountains that were to be protected from hunting, cultivation and timber felling. Another ten areas were protected by 1975, for a cumulative area of 5.5 million hectares (3.5% of the country). Today the total is 17.4 million ha (11.1 % of the country). At the Earth Summit (UNCED) in Rio de Janeiro in 1992, the Government of Mongolia suggested that the entire country be considered as a Biosphere Reserve, demonstrating its commitment to biodiversity conservation.

Government policy is to increase the area of protection to 30% of the country in the long run, in order to preserve the ecological balance of the country. The present government has recently passed a resolution affirming that by the year 2000, 15% of the country would be included in the special protected area system.

Part of this expansion is planned to take place in the Eastern Steppe. About half of the expansion will consist of Strictly Protected Areas and the rest by Nature Reserves. The expansions are planned for areas that have very little human habitation at the moment, in order to reduce the social and economic costs.

Over the past two years, Mongolia's parliament has passed 17 environmental laws (partly with assistance from the Pilot Phase GEF Project). These include: Environment Protection (1995), Land (1995), Special Protected Areas (1994), Hunting (1995), Natural Plants (1995), Water (1995) and Forests (1995). Annex 1 provides a complete list of all Environmental Laws.

The GOM is signatory to several international conventions, including the Convention on Biological Diversity, Convention to Combat Desertification and Drought and the Convention on the International Trade of Endangered Species (CITES) and the Ramsar Convention on Wetlands of International Importance. The GOM is currently considering joining the Convention on Migratory Species.

Mongolia's Environmental Action Plan "Towards Mongolia's Environmentally Sound Sustainable Development", was approved by the Cabinet in February 1995 and upheld by the present government. Principle environmental issues outlined in the plan include land management, urban water and air pollution, solid wastes, desertification, land and environmental degradation from mining and petroleum extraction, conservation of biological diversity and institutional strengthening. To address these key issues, the plan proposes to build capacity, develop environmental monitoring and ecological information systems, enhance public awareness and participation in environmental protection and strengthen the role of NGOs and cooperation with international organizations and institutions.

The MNE has also prepared and ratified its Biodiversity Action Plan (BAP), assisted by the GEF Pilot Project. The overall objective of the BAP is to set in place measures to protect biodiversity, to restore damaged areas and to ensure that consciousness of biodiversity is integrated into economic and social development programmes. The BAP has 17 specific objectives and 75 activities, supported by 13 legal and institutional measures for their implementation. The present project would fully or partially implement 11 high priority activities identified in the BAP (Table 7).

Environmentally-related policies and laws of the GOM include the Concept for National Development, Rural Development and Agriculture policies, National Poverty Alleviation Programme, National Agenda 21 and the Master Plan for Protected Areas.

The current agriculture and livestock policy of the government is included in its "Basic Guidelines on Rural Policy", approved in May 1996. The main elements of the rural development policy focus on increasing the standard of living in the rural areas (infrastructure and services), support to agricultural and livestock intensification in and around settlement areas and support to and

improvement of traditional extensive mobile livestock systems. The Policy Guideline has at least 12 instances in which environmental concerns are mentioned in connection with rural population distribution, crop cultivation, extensive livestock and intensive livestock production. The policy encourages an increase in livestock production and productivity and measures to prevent the concentration of livestock and does so within the context of minimizing environmental impacts.

Currently there is a debate within the National Parliament on laws pertaining to pasture utilization, ownership and management, which will be crucial in guiding local level land use planning and sustainable development. The Law on Land Use Fees was adopted in April of 1997 by National Parliament. According to this law, the land fee directly depends on the number of livestock, and at the end of each year, after registration of all livestock, herdsman should pay an annual fee for pasture use.

The Eastern Steppe is seen by the GOM as the 'next frontier' for industrial and agricultural development because of its specific environmental potentials. The recent inter-governmental agreement for the development of the Tumen River Watershed covers part of the Eastern Steppe. It includes the establishment of a corporation that would oversee the industrial development of the area. Activities foreseen for the Eastern Steppe include: surface-stripped uranium mining, oil exploration and extraction, a transnational gas pipeline and iron ore mining. The development will be accompanied by infrastructure development (roads, communications and services) and support for thousands of employees. The government became a signatory to this project through a Memorandum of Understanding in December 1995 on Environmental Principles Governing the Tumen River Economic Development Area. It includes considerable focus on conducting environmental impact assessments by all countries (China, Republic of Korea, Democratic People's Republic of Korea, Mongolia and Russia).

The Mongolian Law on Environmental Protection lays out the obligation of the State Administrative Central Organization to establish an Environmental Protection Fund. It also provides for the receipt of appropriate revenues from fees and payments for environmental pollution and adverse environmental impacts, license fees for travel and tourism in Special Protected Areas, donations and assistance from citizens, economic entities and organizations and other income sources (Article 32, paragraph 2). The law requires that the fund shall be allocated for ecological education, environmental protection and natural resource restoration activities. The Government of Mongolia will use this fund when making their contribution to the Mongolia Environmental Trust Fund.

All of these GOM actions will contribute to the reduction of threats to biodiversity in the Eastern Steppe, but the GOM's capacity to implement its policies in the field and to sustain these actions is limited.

3. Prior and on-going assistance

Table 8 provides a Gap Analysis showing the intervention areas of each project or programme, whether associated or not. The proposed project is designed to fill in some of the gaps. Activities of the project will be coordinated with those of other projects, particularly the UN-assisted ones, so

that global environmental concerns are integrated into international assistance provided by the UN system to Mongolia.

The Pilot Phase GEF Project has advised and assisted the strengthened MNE with: the drafting of environmental legislation, protected area management plans, preparation of the National Biodiversity Conservation Action Plan (BAP), training in a wide range of fields, and publications on Mongolian biodiversity.

Lessons were learned from the Pilot Phase GEF Biodiversity Project. For example, highly enthusiastic government counterpart staff and close attention was paid by the MNE to the project and workshops are successful methods for reaching consensus on key issues (such as the BAP). Also, there is a critical shortage of well-qualified government staff and there is a low level of up-to-date knowledge in Mongolia on ecological and range management principles, as well as on sampling and biometry methods.

WWF and the Pilot Phase GEF Project have assisted the MNE in conducting field consultations and in designing the expansion plans for all of Mongolia's protected areas. Part of the expansion is to be in the Eastern Steppe. The preliminary proposal for the Eastern Steppe has already been discussed and approved by the provincial *khural*. The proposal is now under review and awaiting approval by parliament. Parliament has requested the MNE to conduct more field consultations before making a decision. WWF has set aside funds to continue the process of stakeholder discussions to finalize the proposal.

In 1995, the MNE conducted an aerial survey of gazelles with assistance from the Pilot Phase GEF Project and the WWF, in order to get data to prepare for the Migratory Species Convention and is currently inventorying biodiversity in wetlands, including the Dagurian SPA of the Eastern Steppe.

The Government of Mongolia participated actively in UNCED and endorsed its commitments to global efforts toward sustainable development, by approving the Mongolian Action Programme for the 21st Century (MAP-21). The MAP-21 approach is participatory and is seen as a product and a process by national and local governments to help define choices, goals, targets and standards of sustainable development. It provides a framework for concrete biodiversity conservation and sustainable development in the *aimags* covered by the proposed project. In addition to geographic concurrence, there will be thematic ties between the two projects as MAP-21 will provide a contextual policy framework in which to undertake concrete sustainable development actions to be initiated by the GEF project. Unfortunately it has limited funds for what it has set out to do, especially in inspiring and building capacity for participatory decision-making at the local level in the short, two year, time frame given to it.

MAP-21 is working closely with the Governance and Management Development Programme (GMDP), funded through UNDP (ADB, UNESCO and SIDA) which is supporting the Government policy on decentralization and restructuring of government. In November 1996, the new government formally endorsed the Decentralization and Local Government Reform Plan. The programme will begin with testing an approach in six *aimags*, one of which is Sukhbaatar. It includes training in management, human rights and local democracy, capacity building in terms of administration and procedures (taxation, land tenure, etc.) and public information systems

development for local assemblies, including participatory monitoring and evaluation. The proposed project will pay close attention to the success of the model in Sukhbaatar and adopt elements as appropriate.

The UNDP/Dutch Environmental Public Awareness Programme (US\$ 300,000) focuses on training environmental NGOs and awarding grants to NGO projects dealing with environmental education. Close coordination with this project will promote geographic overlap and focus on those communities chosen to participate in the Community Fund.

Russia, China and Mongolia signed the "Dornod International Protected Areas" agreement in June 1994 and subsequently held a regional conference in Choibalsan in October 1996 with GTZ funding. The meeting marks the beginning of fruitful collaboration on regional biodiversity and environmental issues.

The GTZ is also providing assistance to the Protected Area Administration of the Eastern Steppe (US\$ 250,000) in terms of equipment and training of Protected Areas Administration (PAA) professional staff for the development of management plans for the protected areas. The proposed project will fill the gap in equipment and training needs for the protected areas of the Eastern Steppe. The GTZ also has a project in northern Khentii province on strengthening the protected area and buffer zone management that can provide an important model for this project.

The US Peace Corps has two volunteers teaching English and computer skills. They and an additional volunteer will provide further assistance to the proposed project in these areas and other community development issues and protected area training.

The Policy Alternatives for Livestock Development (PALD) research project generated many lessons and recommendations on livestock management, local institution building and land tenure. These have all contributed to the formulation of the present project proposal. The PALD is continuing under ADB funding and the project is expected to remain in close contact with it.

The UN System and bilateral donor supported National Poverty Alleviation Programme (NPAP) is a comprehensive five year programme of US\$ 83 million. One of the underlying causes of biodiversity loss in Mongolia is poverty. The NPAP system funded initiative serves as a good example of a coordinated and synergistic approach. About US\$ 10 million from the World Bank have already been allocated to this programme. Most of this fund, according to the Evaluation study currently underway, will be allocated to the Local Development Funds. The fund is designed to provide small, soft loans to individual households at or below the poverty line (loans of a maximum US\$ 100 per household with a half to one year pay back period). The NPAP will not be funding community oriented activities, nor accepting large requests.

Self-funding research institutions such as the Smithsonian Institute and the Wildlife Conservation Society of New York have collaborated in the past with the Pilot Phase GEF Project and are expected to continue to do so with the new project. The Natural Resource Ecology Laboratory (NREL) of Colorado State University has a three-year US/NSF funding for research on rangeland carrying capacity in the Steppe Ecosystem and will also hold training seminars for researchers.

a. The Mongolia Environmental Trust Fund

1. Implementation arrangements

In July 1997, a national workshop on the METF was held at which the METF was legally established, an initial board was chosen and work plan for the first year agreed upon. By the middle of November, 1997, it is anticipated that:

- The legal establishment of the METF will be completed.
- Fund-raising activities will be in progress.
- Responsibility for the operation and administration of the METF will be handed over to the initial Management Board and the Fund Administration Office.

The activities of the METF for the next twelve months fall under five headings: administration, fund-raising activities, financial activities, legal work and project support. The first meeting of the Board of Directors of the METF will be held in Ulaanbaatar in mid-December 1997. The work schedule is given in Table 9.

The METF will have several windows so that funds allocated for biodiversity conservation will go only to that activity.

2. Sources and levels of co-financing

The goal is to raise the capital sum of US \$10 million for the METF. This will be supplemented by contributions from the Government of Mongolia. In Table 10 the potential sources of co-financing are given. Twenty major donors have been given a priority and are now being approached under Environment Development Group (EDG) contract. The fund-raising efforts will continue throughout the life of the METF. However, at this point it is difficult to say what the level of co-financing will be from different sources. The US\$ 1.5 million from GEF would be made available on a one-to-one basis as and when contributions from other sources are made available.

Further contributions to the Trust Fund will be done through fund-raising activities that will continue throughout the lifetime of the fund. The activities include: research on potential sources of income, discussions regarding debt re-negotiations, dissemination of information on the Trust Fund, approaching potential donors, liaisons with potential donors, negotiating with the Government of Mongolia and reviewing and revising fund-raising strategy. The Government of Mongolia will provide the equivalent of US\$ 700,000 in local currency for specific projects under the Trust Fund at yearly allocations of US\$ 100,000 local currency equivalent.

3. Management of the Trust Fund

A nine-member Board will manage the METF with representatives from government agencies, non-governmental organizations, local groups, academic community, private sector and international donor community. The Fund Administration Office will manage the day-to-day running of the METF, and act as a liaison between the Board and the supporting committees; scientific and technical advisory committee (STAC) and financial advisory committee (FAC). The METF's capital will be invested offshore, managed by the Asset Manager. The FAC will advise the Board on all matters relating to finance in Mongolia and abroad. The STAC will review all proposals for funding and advise the Board on proposed and existing projects funded by the METF. The operational structure of the METF is presented in Figure 1.

4. *Defining the uses of the METF*

The Articles of Association embody the overall objective of the METF in Article 2: "To fund projects which will contribute to the conservation and sustainable management of the land and its resources, including the diverse ecosystems, the wildlife and abundant biodiversity of Mongolia; and to the reduction of desertification in Mongolia; and in so doing will involve the broadest possible spectrum of Mongolian society in the activities on the foundation."

The Board will establish criteria for evaluating and prioritizing projects in accordance with the objectives of the foundation and will use these criteria to select projects. The STAC will advise the Board on funding priorities for the coming year and will review proposals.

5. *Beneficiaries of the METF*

The beneficiaries are government agencies, non-governmental organizations, local groups, academic community and private sector people that can submit environment-related projects for METF funding. METF will benefit the people through long-term financing of environmental projects and strengthening of international cooperation in this field.

6. *Extent to which revenues will meet recurrent costs*

The annual revenue of the METF is difficult to predict at this stage, but it is hoped that the revenues will exceed US \$500 000 per year once the goal of US \$10 million has been reached. The METF will certainly be able to fund the recurrent costs of a significant number of environmental activities in Mongolia as well as be able to meet the METF Administration costs once the fund has reached several million dollars in investment capital.

4. **Institutional framework for sub-sector**

a. Government administrative situation

The newly elected government has undertaken considerable restructuring and in general has gone toward downsizing and aggregation of divisions. The government has embarked upon a decentralization policy and the strengthening of local capacities for planning and administration. The GOM annually allocates parts of its national budget to the provinces for monitoring and environmental impact assessments, afforestation and soil conservation, and environmental inspection at the local level. However, most of the activities at the provincial level are financed out of provincial budgets. These are replenished primarily through fees and taxes from industries and manufacturing.

Mongolia is divided into 21 *aimags*, which in turn are subdivided into 350 *sums* (districts), each *aimag* containing up to 20 *sums*. All *sums* have at least one bank, a post office, schools and a hospital. *Sums* typically have between 2,000 and 5,000 people and cover 1,000 to 1,500 km². Each *sum* has between four to ten *bags* (wards).

The *bag* has re-emerged as the intervening local institution linking the *sum* with the *khot ail*. The *khot ail* is not an administrative unit, but a traditional institution, made up of one to four households. However, the exact functions and responsibilities of the *bag* have not yet been clearly

defined. It may be that they will continue the role of the previous brigades in ensuring fair access to grazing lands. There has also been an emergence of producer associations (*khoshoo*) and small cooperatives.

Following liberalization and decentralization, the resources available to local governments have substantially decreased. The 1997 budget planned by the three *aimags* are: US\$ 3.2 million for Dornod, US\$ 3.7 million for Khentii and US\$ 2.7 million for Sukhbaatar. These budgets are higher than the Mongolian average for provincial budgets, mainly because of their manufacturing industries (food, meat, carpets and coal).

The provinces plan to allocate 15-19% of their budget for environmental protection in 1997. Most of this budget is to pay the salaries of environment inspectors and to cover operational costs, but a part of the budget is available for afforestation and soil conservation. These funds, although welcome, are not adequate to ensure that the Eastern Steppe will be able to incorporate biodiversity conservation into its development plans. A quick survey of local people in Dornod shows that 40% do not know about the Environment inspectors and what their role is supposed to be.

Each province has its own "Governor's Guidelines for Development, 1997-2000" which is focused on economic and social development. However, they also incorporate environmental concerns, such as land use management and planning, enforcement of environmental laws, afforestation and soil conservation around *sum* centers. They also address participation in the National Plan on Sustainable Development for the 21st Century, surveys of medicinal plants, natural disaster response capabilities, eco-tourism, support to international protected areas to protect migratory species, creating wildfire databases and promoting environmental monitoring.

The new structure of the MNE is presented in Figure 2. The MNE has been instrumental in establishing laws and procedures for environmental protection, land use, natural resource rehabilitation and environmental protection.

The Environmental Protection Agency within the MNE has taken the responsibilities of enacting and enforcing laws and regulations, implementing national policies, controlling and monitoring application of CITES, and monitoring and implementing natural resource rehabilitation and protection. It also is responsible for protected area management, environmental impact assessments and issuing and monitoring hunting permits (in addition to those given by the *aimags*).

The Protected Area Administration (PAA) of the Eastern Steppe has direct responsibility over all protected areas in the Eastern Steppe and is under the direction of the national MNE structure, not the provincial government. It is located in the town of Choibalsan, Dornod *aimag* and covers all the protected areas of Dornod and Sukhbaatar *aimags*. It receives its budget annually from the national MNE coffers, which covers salaries and some operational expenses. In 1995/96 it was able to implement a fire emergency programme worth US\$ 5,700 from its own budget. It has already benefited from the support given by the Pilot Phase GEF Project (training, vehicle, small project funds, some equipment) and GTZ (vehicles, training). However, it still requires incremental support in order to bring it up to an acceptable standard for aggressive protection and management of the protected areas and for buffer zone development. Results of a quick survey in Dornod in February

1997 show that 30% of respondents are not aware of the presence of park rangers in the protected areas.

The annual budget of the PAA in the Eastern Steppe is insufficient to provide an adequate monitoring and inspection programme of all protected areas. In addition, giving the relatively recent creation of the PAA, professional staff and particularly the rangers have received little training and capacity building. Although the Master Plan for Protected Areas developed by the MNE requires the creation of management plans for all SPAs, such documents have not yet been finalized for the Eastern Steppe.

As the regular budget for the PAA and local government administration is insufficient, there is no development or implementation of buffer zone management plans, nor are there models for the sustainable use of grassland ecosystems. The present level of species protection is insufficient and further land degradation and loss of biodiversity is expected.

There are few rangers, border guards and environment inspectors to enforce the new Law on Hunting. They also lack the necessary training in ecosystem, wildlife and protected area management. Without the present project and in spite of the limited assistance of the GTZ, US Peace Corps, UNDP/Dutch environmental awareness programme and MAP-21, further deterioration of the protected areas and of much of the unique biodiversity grasslands of Eastern Mongolia is expected.

Another important agency in the MNE is that of Hydrometeorology and Environment Monitoring (HEM), which is responsible for all monitoring (climate, earth resources and biodiversity). It has an Environmental Monitoring Unit in each *aimag*, which has sufficient instruments and personnel to collect data on climate, but not on biodiversity. This Agency is also responsible for the BMIS (Bureau for Monitoring and Inspection Services), which includes a newly established Geographic Information System (GIS) capability. Demands on the BMIS are already very high from different projects and Ministries and it is not capable of servicing regional demands effectively. Data collected through both baseline and incremental activities will be too much for the BMIS in Ulaanbaatar to handle, therefore provincial level GIS capabilities are necessary.

In the last six years the Government of Mongolia has done much to assure the legal and policy framework necessary for environmental protection and biodiversity conservation. However, the extreme financial constraints facing the new country very severely limit the national and local government's possible actions and most particularly limit the possibilities for implementation of environmental laws, regulations and other measures. At the same time, many in government perceive environmental considerations as separate from the urgent requirements for development. The result is that the government has a good institutional and legislative start for biodiversity conservation, but as yet it is weak financially, politically and lacking in human resources. At the moment there is very little enforcement or implementation of relevant policies and legislation and the incentive structure for industries and people to internalize and act on biodiversity concerns remains to be put in place. There are clear incremental costs associated with its efforts in biodiversity conservation for global and domestic benefit.

b. NGOs, national scientific institutions and the private sector

Of the few NGOs operating in Mongolia, the MACNE is the most active and the oldest. It is currently implementing a project, funded by the Netherlands, to reintroduce the Przewalski's wild horse (*Equus przewalskii*) to Mongolia. MACNE has a membership of 1520 people in the Eastern Steppe and eight local affiliated NGOs, who work on a voluntary basis. It has had extensive experience in preparing and disseminating public awareness information on conservation issues.

The national scientific institutions (e.g., Mongolian Academy of Sciences, Mongolian State University, Darkhan University) are highly respected and have well trained staff. Their capacity in implementing programmes such as biodiversity conservation, sustainable development and environmental economics is however, limited.

Other institutions, such as the Animal Husbandry Institute, the Land Policy Institute, the Geo-Ecology Institute and the Center for Social Development are active parts of the baseline. The Center for Social Development has a training programme in Participatory Rural Appraisals and Rapid Rural Appraisals. These institutes are considered highly important for projects and development programmes.

Local businesses too are concerned with biodiversity conservation. For example, Mongol An Corporation, Nukht Ecotourism Co. and Juulchin Tours are all interested in promoting eco-tourism in Mongolia. Some businesses in the Eastern Steppe, such as small businessmen from *Sumber sum*, are willing to collaborate with local government in order to reduce the incidence of wildfires that threaten their enterprises as well.

B. PROJECT JUSTIFICATION

1. Threats to biodiversity in the Eastern Steppe

Temperate grasslands are generally disappearing in the world and have already been irretrievably altered in countries adjacent to Mongolia. Consultations with local communities and government officials in the Eastern Steppe and other parts of Mongolia have led to a comprehensive listing of potential proximate causes for biodiversity loss in the Eastern Steppe. Table 11 provides a matrix linking each proposed output and activity of the project with specific threats to biodiversity. The following are considered the priority threats:

- Land degradation, due to inappropriate and poor land-use practices, brought on by lower mobility and over-concentration of people and livestock around few service centers. The intermediate causes are breakdown of social and economic services (schools, clinics, markets) leading to lower mobility and over-concentration of people and livestock around large service centers. The root causes are the negative socio-political effects of change to a liberal system, as well as presumed increase in aridity of the general ecosystem leading to lower carrying capacity of rangelands.
- Potentially negative impact of proposed industrial development in the Eastern Steppe, including more roads and railroads that may disrupt gazelle migration patterns and more jobs and

increased human migration into the buffer zones of the protected areas, which would increase threats on biodiversity. The intermediate cause is the lack of appropriate consideration of these potential impacts within provincial development plans.

- Increased frequency of wildfires due to the breakdown of preventive and remedial measures, associated with the increasing government financial and managerial constraints.
- Illegal hunting of mammals (gazelle, elk and marmot), both within and outside protected areas, primarily for alternative income generation through sales to China and Russia, or by the neighbouring countries themselves. The root cause of this threat within Mongolia is increasing poverty.
- Over-exploitation of vegetation for medicinal purposes and fuelwood, both for alternative income generation and for a lack of other low cost sources of energy. The root causes of this threat are poverty and breakdown of industrial energy generation structures after liberalization.
- Indiscriminate use and aerial application of pesticide for the control of Brandt's vole populations within buffer zones and other areas outside protected areas, due to the lack of knowledge of alternative, more environmentally benign technologies. This causes a disruption of population dynamics of birds, rodents, insects and reproductive anomalies within mammals.

The likely geographic distribution of these threats to biodiversity conservation, based on information already available, is shown in Map 5. Activities will be implemented according to this indicative list of threats to biodiversity, but the list will be refined as more information is generated during the project.

The threats are distributed throughout the Eastern Steppe and not just in protected areas. Illegal hunting is greatest along the border (where most of the protected areas are) but it is also a general threat because it follows the migration patterns of gazelles and other mammals throughout the Eastern Steppe. Wildfires are also a general threat, but they mostly originate in the northern part of the Eastern Steppe and spread southward.

Over-exploitation of natural resources is a specific threat. Over-exploitation of fuelwood and medicinal plant species occurs mostly around population centers, but also in buffer zones of the protected areas. Land degradation is clearly associated with over-concentration of people and livestock around functional service centers, but not all *sum* centers are threatened. Industrial development is a specific threat associated with the existing railroad and a proposed extension. Areas earmarked for mining (oil, metals) occur either in the proposed expansion areas of the SPAs, or in their buffer zones.

There is a need for more intensive study of the ecology of the gazelles and other mammals in the Eastern Steppe. The purpose of the study is to answer such issues as what species or habitats need protection, how to protect the animals and habitats, and what could be considered to be sustainable off-take of the gazelles and other major mammals. Also, what are the migratory patterns of the

gazelles, including seasonal variations, where are their major birthing grounds, what are the major epidemic diseases and contagion possibilities between gazelles and domestic animals? In addition, there is a need for a national-level analytical review of the distribution of endangered and otherwise special mammals and recommendations for or against re-introduction.

The soils of the Eastern Steppe are extremely shallow and along with the low precipitation, are not suited to crop cultivation. However certain areas, particularly near the major rivers and lakes, can be cropped using irrigation. Currently, a Japanese funded agriculture project is introducing maize, sunflowers and horticulture into the Numrug area, but it is not clear whether it is to be inside the expansion area or not. Sustainable development of the Eastern Steppe must consider the inappropriateness of crop cultivation and the limits of its expansion into the Steppe. The appropriateness of pasture cultivation has also to be closely evaluated. A sustainable master plan for the Eastern Steppe would have to include guidelines for zoning the ecosystems according to their potentials and constraints.

2. Expected project outcome

The project will focus on the SPAs, NRs and National Monument in the three *aimags* of the Eastern Steppe (Map 2). At the end of the project, it is expected that management plans will have been finalized and implemented for all protected areas in the Eastern Steppe. At the same time, the capacity of the PAA staff will have been enhanced (training and equipment) for the effective implementation of these management plans. Long-term monitoring and inventory systems will have been established, including a GIS capability. Action-oriented medium-term research sub-contracts covering targeted research topics critically relevant to project implementation will have been commissioned to support the management of the protected areas.

~~Buffer zone management, focusing on participatory methods to manage biodiversity~~ in and out of the protected areas will be a second important outcome of the project. By the end of the project, ~~buffer zone management committees~~ will have been established for each of the protected areas and their capacity for planning and managing the buffer zones sustainably will have been strengthened through training, PRAs and participatory planning. In addition, the capacity of the buffer zone committees and PAA staff in targeted research and monitoring of resource use will have been enhanced.

~~Community buffer zone management plans will have been implemented as far as fire prevention and afforestation are concerned.~~ Coordination with other projects and on-going activities is expected to allow the full implementation of the community management plans by the local people. Recommendations from studies sponsored by the project on innovative means for fostering volunteerism, attracting government cost-sharing and on a socially acceptable system of fees and fines, will have assisted in the process. A major emphasis on public awareness campaigns will also have facilitated the design and enforcement of the buffer zone management plans.

A third major outcome of the project is expected to be the effective incorporation of biodiversity conservation into provincial and local development plans in the Eastern Steppe. At the end of the project, it is expected that provincial and local level government administration officials will have been trained. Biodiversity conservation will also have been incorporated into land use, zoning and

general development plans for both the *aimag* and *sum* levels through workshops and targeted surveys of biodiversity hotspots. Public awareness campaigns at these levels on biodiversity conservation will have assisted the process of planning.

At the end of the project, other activities will have been carried out designed to strengthen, sustain and replicate these efforts. These will include yearly coordination workshops with other projects and government agencies, amendment of existing environmental laws and development of new ones relevant to biodiversity conservation, incorporation of a system of incentives into laws and regulations and a study and regional encounter on illegal hunting of highly mobile mammal species. Four one-year training programmes and two overseas Masters training programmes will also have been administered early in the project cycle, to allow the trainees to return and assist the project.

GEF funds will have been added to other co-financing to capitalize the biodiversity account in the Mongolia Environmental Trust Fund, eventually allowing the replication and long-term support for the protection of biodiversity in the Eastern Steppe.

3. Target beneficiaries

The following national beneficiaries have been identified for the project. They are described according to their interest in the project, the nature of their involvement, and their expected benefits.

a. Transhumant livestock herders

There are about one thousand transhumant households associated with the buffer zones of the protected areas in the Eastern Steppe. The livestock herders do not consider their mobility as a hindrance to participation in the project cycle. They are represented by heads of the *khot ails* (groups of households moving together), *bag* governors and *sum khural* assemblies. They are particularly interested in the project because they believe that traditional and state controls that prevented the over-exploitation of natural resources are now breaking down and nothing else is replacing them.

Their involvement would be in the form of participatory and rapid rural assessments for the design and evaluation of the project, participation and representation by buffer zone management committees. They would also participate in workshops, be expected to volunteer for the implementation of activities (e.g., afforestation and fire prevention) and respect and enforcement of rules and regulations (hunting, land and natural resource user controls).

b. Settlers around *sum* centers

Settlers, many of them former transhumant herders, or workers in state farms/collectives, are represented by *sum* governments and *sum khurals*. They are interested in the project for the same reasons as the transhumant herders (increasing over-exploitation of resources) and also in finding sustainable alternative incomes to support their families, such as legal hunting and harvesting of medicinal plants. Those *sum* centers located within the buffer zones that are having serious land degradation problems will be the immediate beneficiaries of the project through its planning, afforestation and fire prevention measures. Their involvement would be in the form of participatory

and rapid rural assessments for the design and evaluation of the project, participating in workshops, volunteerism for the implementation of activities and respect and enforcement of rules and regulations.

c. Aimag and sum governors and staff

Their interest lies in representing the people and in following the platforms they were elected upon, which includes sustainable development. All local and provincial government staff will be beneficiaries of training in biodiversity conservation, land-use planning and participatory development. They will also have a consultative role in all planning and evaluation exercises. A representative of local government would be involved with all buffer zone management committees.

d. Other

Other beneficiaries will be Mongolian scientific institutions and NGOs, benefiting from research grants, some equipment and training and other sub-contracts.

4. **Project strategy and implementation arrangements**

a. Project strategy

The project places its highest emphasis on conservation and management of existing protected areas in the Eastern Steppe. Strategically incremental assistance to the PAA in the lifetime of the proposed project will be sufficient to raise it to an internationally accepted standard of management and biodiversity conservation. The Mongolian Law on Special Protected Areas became law in April 1995. The protected area designation is a melding of ideas from IUCN categories and Biosphere Reserve concepts that have been adapted to Mongolia's situation and rural conditions.

Participatory pre-project analysis of threats to biodiversity in the Eastern Steppe has shown clear links to poverty. Therefore, the project will also focus on linking biodiversity conservation and sustainable development in the buffer zones of the protected areas.

The project, the GEF alternative, includes the activities to ensure the protection of globally significant biological diversity in the protected areas and buffer zones, as well as to improve the means of livelihood of people living in the latter. People in the buffer zones will be provided alternative livelihoods that are compatible with biodiversity conservation. These will serve as models for replication elsewhere.

However, the project recognizes that a sole emphasis on protected areas and their buffer zones is not sufficient to ensure sustainability of the benefits and reduction of negative externalities. Therefore, the project will also contribute toward the building of capacity and relevant institutional frameworks at both local and provincial levels to replicate biodiversity conservation both in and out of the protected areas.

Mechanisms for the sustainability of biodiversity conservation, increased training, enforcement capacity and public awareness are activities included in the alternative to ensure that conservation of biodiversity is an important component in the development of Eastern Mongolia.

It is expected that work done by this and associated projects to enhance the capacity of local governments in the Eastern Steppe will ensure that biodiversity conservation and sustainable development will be on-going themes within provincial and local government plans and budgets. The project will provide domestic benefits in the form of replicable models of sustainable development with biodiversity conservation, which will be covered by non-GEF funds on an incremental cost basis.

Finally, in order to ensure the sustainability and replicability of the proposed actions beyond its lifetime, the project will implement activities at the national level specifically related to biodiversity conservation in the Steppe ecosystem.

Given the relative good health of the Eastern Steppe, the project's main activities are on preventing biodiversity loss, although some actions on rehabilitation of degraded lands have also been proposed. This is a positive operational point and is expected to contribute to the eventual success of the project.

The proposed project incorporates some innovative elements since it is one of the few GEF projects worldwide that attempts to link pastoral land-use systems with biodiversity conservation. It will provide models for replication, both in the Eastern Steppe and in other grassland and pastoral settings.

In addition to addressing global priorities, the project addresses national priorities, is country driven, will benefit from a substantial amount of co- and associated financing and can potentially leverage additional non-GEF resources. The process of project proposal identification and formulation has benefited from substantial input from a participatory consultative process with local communities in the Eastern Steppe, with local private businessmen and local government officials, with national NGOs, with national government officials and with representatives of the donor community in Mongolia. This consultative process is expected to continue and improve during the entire project cycle.

The project design is such that it will allow for an iterative approach to biodiversity conservation. Although the project will initially control the pace of most activities, it will gradually hand over much of it to relevant stakeholders. For example, the PAA will take complete responsibility for protected area and buffer zone management from the beginning. Fire prevention and control, afforestation and soil conservation, will be established and self-sustaining midway through the project. Buffer zone committees will function as equal partners with the project until such time as they can take over the responsibilities for planning, monitoring and executing the management plans. A total of seven years for the project is deemed sufficient time for this process.

Expected modifications in the buffer zone and land tenure laws of the country will have significant impact on the implementation of the buffer zone management activities and the provincial and local level land use planning process. The project will formally allocate the buffer lands adjacent to the

Protected Areas to the local resident community, represented by the Buffer Zone Management Committees.

A new law on buffer zones has been submitted to the Parliament for approval in the autumn 1997 session. The draft law states:

“Buffer zones shall mean specifically designated areas taking into consideration the requirements of minimizing, mitigating and preventing from potential negative impacts on Strictly Protected Areas and National Parks, to improve the participation of local people in conserving the area, ensure their socio-economic sustainable development, and support sustainable uses of natural resources.”

The buffer zones will be administered by Buffer Zone Management Committees *“in order to regulate buffer zone development, sustainable natural resource use, and increase participation of local people in conservation and restoration activities”*.

The Buffer Zone Management Committees shall be composed of representatives of the local Citizen Khurals, local people, the protected area administration and environmental non-governmental organizations. Based on this law, guidelines can be developed for Buffer Zone Management Committees to ensure recognition of and agreement on sustainable development activities in the buffer zones. In addition to the new law, local Agenda 21 policies are being developed in each aimag reflecting the Government's strong support for sustainable development activities.

This formal recognition of the communal property rights of specifically defined local communities will provide the necessary incentive to the local residents to enact and respect regulations on biodiversity conservation. In addition, the project will assist the MNE in its efforts to influence the process of enactment or modification of environmental and other relevant laws, including the Land Law and Grazing Fees Law. Clarification and legalization of the communal nature of pastureland and its specific allocation to local communities will also be crucial in assisting the process of land use planning and zoning at the provincial and local levels.

The Mongolia Environmental Trust Fund already exists, established under the Pilot Phase GEF Project. However, it is in need of seed funds to attract more donors and thus become fully functional to add sustainability measure to biodiversity conservation initiatives.¹

b. Implementation arrangements

The proposed project will work at several institutional levels. At the national level the executing agency will be the MNE. The implementing agency will be the Environmental Protection Agency and Hydrometeorology and Environment Monitoring Agency of the MNE. The operational focal point will be the Division of International Cooperation and Projects of the MNE. The cooperating agencies will be UNOPS and the UNDP Country Office and the local counterpart agency will be the Protected Area Administration of Dornod and all three *aimag* governments.

¹ Please see section 3a on the Mongolia Environmental Trust Fund.

The project will report to the National Committee for Biodiversity Action Plan Monitoring, which has biodiversity focal points in various ministries, scientific institutions and NGOs, in order to ensure cross-sectoral linkages. At the local level, the project will work directly with the Eastern Steppe Protected Area Administration, Environmental Monitoring Units of each province, *aimag* governments and *sum* and *bag* governors. It will also work with local cooperatives and associations.

The project is designed for seven years, starting January 1998.

5. Reasons for assistance from UNDP/GEF

The proposed project falls within the objectives as stated in the GEF Operational Strategy, as well as the Draft GEF Operational Programme for Arid and Semi-Arid Lands. It is consistent with the Convention on Biological Diversity and addresses 11 of the priority issues as stated in the Mongolia Biodiversity Action Plan (Table 7), developed at the request of the Government of Mongolia with full participation of all stakeholders.

The project is consistent with both environmentally related policies and laws of the GOM, as well as with its Concept for National Development, Rural Development and Agriculture policies, National Poverty Alleviation Programme, National Agenda 21 and Master Plan for Protected Areas. The project also addresses all three thematic areas of the UNDP Country Coordination Framework (1997-2001).

The project answers the Operational Strategy's call for a range of uses from strict protection on reserves, through various forms of multiple use with conservation easements, to full scale use. It also reflects the Operational Strategy's concerns for replication of successful outcomes by providing the 'upstream' linkages and financial resources through the Mongolia Environmental Trust Fund.

The section on "Short-term Response measures" of the Operational Strategy specifies that priority can be assigned to measures with focus on threatened or endangered species and that GEF interventions can be considered opportune in the face of a fortuitous combination of factors. In the case of Mongolia, this fortuitous combination of factors includes a national policy environment conducive to conservation after the recent transition and emergence of Mongolia as a free-market economy and the relative good health of the Eastern Steppe.

Mongolia ratified the Convention on Biological Diversity on 30 September 1993. The project is fully consistent with the CBD's objectives of conservation, sustainable use, and fair and equitable sharing of biodiversity resources and benefits, with the ecosystem approach as highlighted in Annex 1 of the convention. It is also consistent with the CBD decision III/11 at its COP-3 on sustainable use of agricultural biodiversity, in the broad sense. The date of notification of participation in the restructured GEF is 14 April 1994.

The rationale for GEF involvement in this intervention is that, on its own, the GOM is unlikely to achieve global environmental benefits. This is because the GOM after liberalization does not have the economic strength to concentrate on biodiversity and other environmental issues, as the political

forces for rapid economic development are stronger. The GOM also still lacks the necessary technical skills to undertake the work.

The present government has been elected on a platform of faster liberalization and economic development. Provincial governments of the Eastern Steppe are thus keen to focus on agricultural and industrial development and to help regain the region's former economic potential. This policy could potentially be at odds with biodiversity conservation. There is therefore a need for awareness raising, both at the level of local governments and the general public. Key areas are on biodiversity conservation and links to sustainable development, primarily in protected areas and their buffer zones, but also in the Eastern Steppe as a whole. These are also the reasons for the various components of the project.

GEF resources in the project will be used to meet the incremental costs of activities. The incremental costs have been calculated in agreement with the Government of Mongolia and are reported in Annex 2. The project provides an alternative that is cost-effective given that it will not attempt to replace local capabilities, institutions, nor production systems, but will place incremental resources in strategic 'pressure points'. Examples of such pressure points are park management plans, ranger capacities, local government capacities, biodiversity overlays and targeted research.

In addition to addressing global priorities, the project addresses national priorities and will benefit from a substantial amount of co- and associated financing. UNDP will co-finance US\$ 1 million to be invested in the sustainable development activities in the buffer zones and in helping capitalize the Trust Fund.

6. Special considerations

a. Consultative and participatory project formulation process

The current project proposal has benefited from extensive consultation with local communities, protected area staff, provincial and local administration officials, MNE, UNDP Country Office and UNDP/GEF, as well as private businesses, national NGOs and on-going projects and programmes. It has drawn upon several earlier documents, including proposals developed by the pilot phase GEF biodiversity project, the independent evaluation of the pilot phase, and an earlier GEF mission that conducted participatory field work.

The formulation mission conducted rapid rural appraisals with several herding households in the Eastern Steppe, as well as in-depth discussions with *sum* and *aimag* local administration officials, protected area directors and managers and environment inspectors. Priority threats to biodiversity, project target areas and proposed activities in the Eastern Steppe were established through a consultative process with all stakeholders.

The proposed project has and will place considerable emphasis on local level participation (by local government and by herders) in various aspects of the project (e.g., buffer zone management, community environment funds, afforestation and soil conservation). It ensures this process by allowing for appropriate personnel and financial resources for such work and by designing a flexible and participatory process.

All protected areas in Mongolia may be established only with the acquiescence of local community representatives and indeed were often created at the request of local communities. Protected areas in Mongolia do not necessarily exclude people. The Protected Area Law, recently enacted, was designed to include a variety of ways for designation. Several categories allow for the continuation of traditional herding practices, although these practices may be regulated by the Protected Area Administration to ensure that adverse harm to biologically sensitive areas does not occur.

The project also places great emphasis on workshops, public meetings, public awareness campaigns and innovative information dissemination activities (e.g., thematic traveling shows, fairs and festivals) at the provincial and local levels. By strengthening the lowest institutional level (*bag* levels) and creation of buffer zone management committees, the project ensures that communication is bottom-up as well top-down. The project design ensures that participatory monitoring and evaluation are built into the process from the start.

The Stakeholder Involvement Plan developed by the formulation mission follows the criteria established by the Draft GEF Operational Guidelines. Effective public involvement contributes to the social, environmental and financial sustainability of the project. Effective public involvement is also country-driven, adaptive to local conditions, flexible in all the phases of the project cycle, broad-based and representative of all stakeholder groups, especially at the community level and is transparent, with public involvement records made available for dissemination.

There are a few local NGOs working on conservation issues in the Eastern Steppe, such as MACNE. Their interest is in biodiversity conservation for future generations. Their involvement would be in assisting with public awareness campaigns and in lobbying at the *aimag khural* level. In addition, national NGOs will be involved also with public awareness campaigns and lobbying.

Several activities in the project are aimed at disseminating the results of biodiversity conservation initiatives at the local and provincial levels. These include materials disseminated via radio, newspapers, brochures, contests and summer festivals.

National UNVs will be employed by the project as local level extension agents, living and working with the buffer zone communities. They will be trained and equipped to provide the necessary outreach activities to ensure the participation of the local community. Particular emphasis is placed on participatory evaluation and monitoring and a specialist will be brought in to provide the training and knowledge of such activities to the National UNVs, PAA staff and local government, something that is very much lacking in Mongolia at the moment.

b. Equity and gender issues

Of particular concern is the interest of the lower income population in the Eastern Steppe of participating in the project, as poverty is deemed to be the root cause of biodiversity loss. The project will coordinate with the NPAP, which, as part of the baseline, will be assisting with small grants for this vulnerable group. In addition, the project will experiment with innovative ways of providing alternative livelihoods in the buffer zones in order to comply with biodiversity conservation measures.

Gender issues have not been singled out by the project, because of the need to prevent them from being treated in a vacuum. The project will ensure that women are effectively represented in all project activities (committees, workshops, sub-contracts, etc.). Women traditionally carry out certain economic activities, such as the collection and transformation of medicinal plants. Therefore any project activities in this sector should automatically involve women.

One possible conflict that may occur is between small businesses that are anticipating the eventual industrialization of the Eastern Steppe and the PAA and the project. Modifications to land zoning plans may negatively affect their potential benefits from planned industrialization. As long as the project process is participatory and involves all stakeholders, it should be possible to negotiate and resolve such conflicts early on in the project cycle.

c. STAP review

The STAP reviewer's comments are fully incorporated into this project proposal. For example, the proposal now further clarifies the nature of transhumance and livelihoods dominant in the Eastern Steppe. It considers the linkages between land tenure and buffer zone management and with provincial and local level land use planning. It reflects that an adaptive management approach will be used, combining targeted research, monitoring and resource use in the implementation of the buffer zone management plans and alternative livelihood options.

The present proposal also addresses the issue of insufficient research and experimentation by adding critical targeted research topics such as economic incentives for sustainable uses of grasslands and their biodiversity and restoration of degraded areas. An activity for the development and incorporation of incentives into laws and regulations has been added. These changes, among others, are reflected in the budget, notably for the implementation of the buffer zone management plans, targeted research, incentive development and incorporation into laws and regulations and the addition of an additional grasslands wildlife/range management specialist.

7. **Coordination arrangements**

The Pilot Phase GEF Project was able to leverage considerable amounts of additional co- and associated financing. The proposed project is not expected to do less. Considerable co-financing and associated financing have already been identified.

The Trust Fund was established under the Pilot Phase GEF Project as an endowment fund consisting of contributions from the Government of Mongolia, UNDP, GEF, International NGOs and the private sector. A few Mongolian private enterprises have already pledged contributions to capitalize the trust fund. The GOM will provide local currency funds (US\$ eq. 20,000 per year) for the management of the trust fund. The fact that both GOM and private sector contributions have been identified shows that there is considerable interest on the part of Mongolians to assist with biodiversity conservation. It is anticipated that this early seed capitalization will further leverage additional resources for the Trust Fund. Recurrent costs after project termination will be absorbed by the GOM and the Trust Fund.

The International Cooperation Department of the MNE will coordinate inputs of other donors. UNDP-Mongolia will provide additional coordination between UNDP/GEF, other donors and the project.

The PALD (Policy Alternatives for Livestock Development) research project has generated many lessons and recommendations on livestock development, local institution building and land tenure issues. These have been incorporated where appropriate into this document. The PALD project continues under Asian Development Bank financing and its future activities and recommendations will be of use to the project. Wherever necessary, the project will coordinate its targeted research activities with other on-going research, such as in PALD.

Both the MAP-21 and the Governance and Management Development Programme are generating important lessons that could develop an appropriate model for local level institution building for sustainable development. The National Poverty Alleviation Programme's experiences with local level revolving funds will also be very useful. The preliminary results of these projects are expected in 1998 and therefore, would be extremely useful for the fine-tuning of the design of the proposed project.

The GTZ's work in northern Khentii (mountainous) and in the Gobi (desert) on assistance to protected areas and buffer zone management will be an important model to keep in mind. Ecological differences and therefore the mode of production of the local people will have to be taken into account when transferring that model to the Eastern Steppe.

8. Counterpart support capacity

The tradition of protecting the environment has a long history in Mongolia. For example, Bogd Khan Mountain has been protected since the 12th Century and was the first protected area in the world to receive this status in 1778. The GOM plans to increase the protected areas to 30% of the country in the long-term. The new government, elected in August 1996, has shown its commitment to all previous legislation and policy through its re-organization of the MNE. Its creation of the Cabinet-level Council for Sustainable Development has shown its commitment to environmental causes. The same process has marked the various pre-formulation phases of this proposal including its identification and also its formulation.

The project is under national execution because of the evident absorptive capacities as demonstrated during the Pilot Phase GEF Project. It will sub-contract activities to NGOs, academic institutions and individual scientists according to their capacities. It will strengthen the capacities of local governments and PAA during the seven years of the project, so that the activities can be handed over effectively at that time.

The GOM and provincial governments have given their assurance that baseline activities will be conducted with non-GEF funds, using their own and associated (donor-assisted) resources.

C. GLOBAL ENVIRONMENT OBJECTIVE

The global environment objective of this project is to promote and ensure the long-term conservation and sustainable use of biological diversity in the protected areas and buffer zones of the Eastern Mongolian grassland ecosystem. Its global significance is as one of the last remaining temperate grasslands and habitat for many endangered and rare endemic species and unique species associations.

The Eastern Steppe is seen by the GOM as the next frontier for industrial and agricultural development because of its specific ecological potentials. Biodiversity conservation in the Eastern Steppe is imperative and should be related to prevention of harmful impacts and promotion of sustainable development taking biodiversity conservation into account.

The global environment objectives of the project are:

- Long-term conservation and sustainable use of protected areas and their buffer zones in the Eastern Steppe; and

Incorporation of biodiversity consideration into sustainable development for the Eastern Steppe.

D. IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

The project's goal is to provide a model for biodiversity conservation and sustainable development that addresses the priority threats to biodiversity. It will be applied in a well-defined, targetable area of Mongolia's Eastern Steppe that can later be replicated throughout the Steppe region as well as in other ecological regions of the country and the world. Because of its re-focus onto the Eastern Steppe, this proposed project must be seen as separate from the Pilot Phase GEF Project and constitutes a new GEF-assisted project for Mongolia.

Baseline sectoral and regional objectives in the Eastern Steppe are to promote agricultural and industrial development in an environmentally friendly way (see Incremental Cost Analysis, Annex 2). The activities described below represent the increment, or what is to be added onto the existing baseline.

The immediate objectives of the project are:

To ensure that the management of the seven existing protected areas in the Eastern Steppe are strengthened for effective protection of critical biodiversity within them.

To support biodiversity conservation and sustainable alternative livelihoods in the buffer zones of the protected areas.

- To incorporate and internalize components of biodiversity conservation into provincial and local development plans, so as to ensure the sustainability of activities and provide institutional frameworks for the replication of these initiatives. To support general measures for the long-term sustainability of all these efforts.

Table 11 provides a matrix linking each proposed output and activity with specific threats to biodiversity. The project focuses on the three Strictly Protected Areas of Dornod Mongol (570,400 ha.), Numrug (311,200 ha.) and Mongol Dagurian (103,000 ha.); the three Nature Reserves of Lkhachinvandad (58,800 ha.), Ugtam Uul (30,000 ha.) and Jaran Togoo (800,000 ha.); and the Natural and Historical Monument of Ganga Nuur (28,800 ha) (Table 6). These project sites are located in the two *aimags* of Dornod and Sukhbaatar (Map 2).

1. Immediate objective 1: To ensure effective management of the eight protected areas in the Eastern Steppe.

In order to remove threats to biodiversity in protected areas, the project will assist the Protected Areas Administration (PAA) in aggressive implementation of management plans for the protected areas. Activities of this component will be implemented in the protected areas of the Eastern Steppe. The capacity of the PAA will first have to be enhanced to a nationally acceptable and replicable standard. The PAA will then be assisted in the development and implementation of the management plans. Activities here are additional to what is being done by the GOM and by GTZ's small programme in Dornod.

The KhuvsGol management plan was developed during the Pilot Phase GEF Project and used as a basis of consultations with the local communities to prepare the indicative management plan for this project.

A wide range of training took place under the Pilot Phase GEF Project and included government officials at all levels, PAA staff, teachers and others. This project will provide more detailed training on protected area management to PAA staff and park rangers in the Eastern Steppe, taking off from where the pilot phase project left off. Equipment was provided in the pilot phase to a number of protected areas, including some to the Dornod PAA. This project will fill the gap in additional equipment needs.

The Pilot Phase GEF Project provided minimal training on GIS and database management. This project will build upon this training, focusing on the needs of the protected areas of the Eastern Steppe.

The Pilot Phase GEF Project provided training on protected area management and eco-tourism-tourism with a national scope. This project will build upon this, focusing on the protected areas of the Eastern Steppe. It will allow for targeted management-oriented small and medium term research, to assist in protected area management during the life of the project.

Output 1.1:

Management Plans finalized and implemented for the three Strictly Protected Areas, three Nature Reserves and one Monument in the Eastern Steppe. Work to be done by project and PAA staff, under supervision of CTA, National Coordinator, PA Director and international consultants.

Activity 1.1:

- Conduct a process of diagnosis and analysis for the finalization of the design of management plans that include protected area management techniques as well as public participation in SPA management.
- Prepare and place placards and signs on boundaries of all protected areas.
- Conduct exchange visits for PAA staff with other projects and programmes in the country working on protected area management plans (particularly those assisted by GTZ in Northern Khentii).

Prepare and distribute publications and public information material on the protected areas for use at the *sum* and *aimag* levels. Work to be sub-contracted to suitable NGO or other institution.

Implementation of the protected area management plans.

Output 1.2:

Staff of the Protected Area Administration of the Eastern Steppe equipped and trained for effective implementation of the management plans of protected areas. Work to be done by project staff (in-situ) and through workshops.

Activity 1.2:

- Procure and distribute equipment and vehicles for 12 park rangers and six PAA professional staff.
- Train park rangers in the use of equipment and in methods of inspection and reporting.

Train PAA staff and staff of the *aimag* Environmental Monitoring Unit, in use of survey equipment, basic biometry and in methods of inventorying and monitoring.

Train PAA professional staff in protected area management, basic grassland ecology and rangeland management for joint wildlife and domestic livestock.

Output 1.3:

Long-term monitoring and inventory systems established in the protected areas for biodiversity dynamics and threats, including basic GIS capability. Work to be done by project GIS experts (international and national) and PAA staff.

Activity 1.3:

- Develop and implement a five-year inventory and monitoring plan for the protected areas and buffer zones, linked to the needs of protected area management plans.
- Conduct a range condition and inventory survey taking into account the needs of both wildlife and domestic livestock.
- Develop and operationalize a GIS sub-unit base in Choibalsan (including small generator), linked electronically to the national GIS center (BMIS) at the MNE's Hydrometeorology and Environment Monitoring Agency.

Output 1.4:

Preparation of management and decision-making reports based on medium-term (two to four years) action-oriented research sub-contracts needed for the management of the protected areas in the Eastern Steppe and directly linked to project implementation. Work to be sub-contracted to suitable institutions and/or persons.

Activity 1.4:

- Identify critically relevant targeted research topics, from among topics already discussed with protected area administration, such as protection of wildlife and fire management.

Advertise, review, award and monitor four to seven medium-term (two to four years) research contracts related to the list of critical topics, to national scientists for work on the protected areas.

2. Immediate objective 2: To support biodiversity conservation and alternative livelihoods in the buffer zones of all protected areas.

Buffer zone management of all protected areas of the Eastern Steppe will be considered as focus areas, in order to remove threats to biodiversity in the protected areas themselves. Buffer zone management will focus on participatory methods to manage biodiversity in and out of the protected areas.

The Pilot Phase GEF Project funded two rural development projects adjacent to protected areas in Dornod under the Small Project Fund Programme. The first was on solar energy for television in Numrug and a traditional medicine centre in Choibalsan. This project will focus on developing alternative livelihood options and activities in the buffer zones of the protected areas, which will produce little negative impact on biodiversity conservation, will ensure effective protection and will be sustainable. These initiatives will become demonstrations of sustainable land uses for biodiversity conservation that can eventually be replicated elsewhere.

- Participatory management committees will be elected for each buffer zone. There will be one committee each for Numrug SPA, the three nature reserves and the Ganga Nuur monument.

Mongol Dagurian SPA and Dornod Mongol SPA will each have two committees for a total of nine buffer zone management committees.

A necessary precondition, before the land can be formally allocated and boundaries delineated for each buffer zone, is the registration of current residents and the election of the buffer zone committees, to whom the land would be allocated.

Another precondition is that some studies will have to be conducted (either through PRAs or through targeted studies) to understand property rights in the Eastern Steppe. This will be crucial in designing and implementing the Buffer Zone Management Plans.

The Buffer Zone Management Committees will be trained in land use planning, biodiversity conservation, protected area impacts and participatory planning. An adaptive management approach will be used to effectively use the results of targeted studies and monitoring by experts (scientists, NGOs, etc.) and to adapt local level resource use to the information generated. The end result will be adaptive, iterative and participatory buffer zone management plans.

Mobility of livestock must be maintained and improved within the buffer zones. This may require investment in key sites (water points, salt licks, barns, etc.) by the community. Such investments would be identified and included in the Buffer Zone Management Plans.

Mobility of livestock from outside the buffer zones must also be taken into account. Buffer Zone Management Plans must establish inclusive processes and regulations permitting the temporary use of the buffer zones by non-resident pastoralists.

Buffer Zone Management Plans should not be seen as a crisis management process, but as a flexible, holistic, participatory process. Therefore, the pace at which each buffer zone will arrive at their management plan will vary. It is expected that most plans will be finalized within the first two years of the project. As soon as they are finalized, the management plans will be implemented using a Community Fund established for each buffer zone committee. With the finalization of the buffer zone management plans, the kinds of activities that are envisaged in the short-, medium- and long-term will have been outlined. The implementation of these activities will be funded through a community fund, which will be flexible to allow for the financing of projects throughout the seven-year lifecycle of the project. The returns from activities that generate an economic return would plow back into the community fund, allowing for it to continue beyond the project's seven-year life.

A flexible approach is needed for the implementation of the Buffer Zone Management Plans because of the participatory nature of the project. It is not possible to say exactly what types of activities the Buffer Zone Management Plans will entail at this beginning stage of project formulation, because it would preempt the very process that the project is trying to achieve. Therefore a flexible mechanism has to be created in order to allow the effective implementation of the management plans. The Community Fund is one option that has been tested in various countries in the region.

The Community Fund would be an 'envelope' of funds held in trust by the project and divided into grants and soft loans because of the expected nature of proposed activities within the management

plans. Half will be disbursed as grants for community-level activities directly related to biodiversity conservation (e.g., afforestation, soil conservation, water point development etc.). The size of the grants will vary, but on average will be approximately US\$ 3,000. The other half of the community fund will be allocated into a revolving fund that will be managed and disbursed by a local private company with small business/revolving fund expertise sub-contracted by the project.

The sub-contracted company will be responsible for the activities related to the participatory implementation of the buffer zone management plans and will also provide training to local people on the process of proposal submission, economic analysis of proposals, among other related activities. Proposals for activities linked directly to biodiversity conservation would be solicited from the local community on a competitive-bid basis. In addition to the training provided by the company, National UNVs and Peace Corps volunteers will assist the local community in proposal writing and submission. Proposals for the loans would come from groups or from individuals, and will be selected on the basis of highest economic rate of return. This, in order to ensure the sustainability of the revolving fund.

Accountability and performance criteria will assure oversight of the company's management of the Community Fund by the project and its auditor. In each buffer zone a Local Revolving Fund Committee will be established, headed by the National UNV. S/he will overlook small project implementation and monitor the projects in their *sums* and buffer zones. The Local Revolving Fund Committee will also ensure that loans taken out by members of the community are paid back promptly.

At the end of the project, the responsibility for the management of the revolving fund will be reviewed by the buffer zone management committees and be given to the same or another local company or institution, as appropriate. Lessons from the implementation of revolving funds in other countries and local people's perceptions and opinions regarding rules of disbursement, repayment and renewal will be useful in designing these funds.

For each approved credit and grant aid application a project agreement will be prepared by the revolving fund staff members in direct exchange with the applicant. It is signed by the applicant and by the National Revolving Fund Committee. After a project agreement has been signed the funds will be disbursed according to the agreed schedule and implementation of the project starts.

The approved applicant(s) ("Loaner") will submit community-defined collateral against the loan, as well as a capital statement. If the Loaner cannot payback a loan, the collateral will automatically become property of the Revolving Fund in accordance with the agreement conditions. The capital statement has to be certified by a notary public and has to be insured in order to prevent emergency situations.

The project and its counterparts will work together to further develop the final criteria for proposal selection, eligibility, periodicity and other design elements. It will build on the experience of similar successful schemes in neighbouring countries. Special attention will be paid to methods used to encourage payback of loans, as this is crucial for the success of the Revolving Fund.

One of the main activities of the Pilot Phase GEF Project was implementation of a Small Projects Fund to improve of biodiversity conservation and sustainable livelihood in the buffer zones of protected areas.

The Small Projects Fund assessed in the Implementation Phase I Project Evaluation Report (March 1997) were implemented very successfully to help solve social problems (such as a mobile hospital, kindergarten, bakery etc.) of local people in buffer zones of protected areas. During the Pilot Phase GEF Project a Small Projects Fund description for both grant and loan selection was developed and implemented successfully.

Public awareness campaigns will be conducted in and outside buffer zone areas to assist in the process of implementation of management plans. Suitable material includes brochures, posters, weekly talks on radio, competitions, festivals and traveling shows.

Given the severity of periodic fires in the Eastern Steppe, the project will enhance the capacity of the local PAA and buffer zone communities in preventing and fighting fire. In addition, the problem of deforestation, subsequent soil erosion and shortage of fuelwood will be addressed by the project in terms of soil conservation and afforestation measures around selected population centers in the buffer zones. This would include incentives for voluntary participation by residents in the physical work (e.g., feasts and planting festivals), methods of protecting the seedlings and rehabilitated areas from livestock and human use. The use of exotic versus endemic fuelwood species will be also addressed.

Output 2.1:

Establishment of buffer zone management committees in a democratic and participatory manner, including capacity building and implementation of alternative livelihood systems for biodiversity conservation and sustainable management of buffer zones. Work to be done by project experts in community development, biologists and small business/revolving fund company.

Activity 2.1:

- Selection and training of National UN Volunteers in community development, participatory rural appraisals (PRAs), public awareness methods, biodiversity conservation and community outreach methods. This work will be done by project staff and through sub-contracts.
- Establishment of National UNVs for each buffer zone. The project will equip National UNVs with horse saddles, writing materials and other communication equipment.
- Participatory Rural Appraisals will be conducted with the households in the buffer zones by NUNVs and project staff to involve local people in the plans for buffer zone management and to initiate the process of election of representatives. Work to be done by project community development experts, Peace Corps Volunteers and NUNVs.

Creation of Buffer Zone Management Committees, membership to be designed and elected through participation of all buffer zone households in that *sum*. Work to be done by project community development experts, Peace Corps volunteers and NUNVs.

- Buffer Zone Management Committees and local leaders trained and operational in biodiversity conservation and sustainable development planning. Work to be done by project staff and NUNVs.

Participatory preparation of multi-use Buffer Zone Management Plans for all buffer zones, taking into consideration results of targeted studies and monitoring being conducted in Output 2.2.

- ~~Implement buffer zone management plans, including alternative livelihood options.~~ Training on the management of the community fund and development of project proposals will be provided to the buffer zone management committees as part of this activity. A community fund will be developed that includes grants and a revolving fund for each buffer zone committee. Funds will be disbursed on a competitive-bid basis for proposals submitted by local people. Work to be supervised by the sub-contracted small business/revolving fund company and Peace Corps Volunteers. The project accountant will assist with the auditing.
- Participatory monitoring and evaluation of buffer zone management, including training of committees and establishment of an appropriate participatory methodology.

Output 2.2:

Management and decision-making reports based on medium-term (two to four years) action-oriented research sub-contracts, within an adaptive management approach. These are needed for some very specific issues regarding the management of the buffer zones and implementation of these measures at the pilot level.

Activity 2.2

Targeted studies, monitoring and resource use, in an adaptive management approach. Under this scheme, qualified people from academia, NGOs and government will be brought together to conduct research and monitoring and to feed information to the buffer zone management committees. Expatriate expertise will backstop this component. This approach will also ensure training of local peoples in adaptive management of grasslands ecosystems.

- Identify critical, relevant, targeted research topics. For example: investigation into alternative measures for the management of the population cycle of Brandt's vole; interactions of wildlife and domestic livestock; rangeland carrying capacities and variability; methodology for the development of gardens to ensure medicinal species are not lost; measures to control trade in endangered species; economic incentives for sustainable uses of grasslands and their biodiversity; restoration of degraded areas; and status of property rights in the Eastern Steppe and their impact on buffer zone management and on land use planning.

Advertise, review, award and monitor four to seven medium-term (two to four years) research contracts related to the list of critical topics, to national scientists for work on the buffer zones.

Output 2.3:

Public awareness campaign on biodiversity conservation within and outside of protected areas among residents of the buffer zones to facilitate the design of and compliance with buffer zone management plans. Work to be sub-contracted to a suitable NGO or other institution.

Activity 2.3:

Preparation of public awareness material and dissemination within buffer zones. Work to be done by sub-contracting to a local NGO, with assistance from the project and PAA.

Output 2.4:

Fire management model implemented in the buffer zones. Work to be supervised by project and PAA staff and implemented by local people. This will involve the fire management expert, the project biologists and project sociologist.

Activity 2.4:

- Fire management model consistent with people's needs and wildlife requirements to be designed according to local prerequisites and context, by the national fire management consultant in collaboration with PAA and local government staff.
- Public awareness campaigns on fire management and safety.
- Establishment of Volunteer Fire Fighter Corps in each buffer zone *sum*.

Output 2.5:

Afforestation with fuelwood species and soil conservation around at least six population centers in the buffer zones (at least 10 ha. per center), targeting hot spots of over-concentration and land degradation. Work to be supervised by project and PAA staff and implemented by local people. This will involve the project biologist, rangeland experts and land use planner.

Activity 2.5:

Rapid Rural Appraisal conducted in all buffer zones to select centers in the buffer zones with greatest problems of land degradation and need for land rehabilitation.

- Workshop with buffer zone committees, PAA and local government officials on the design of afforestation and soil conservation measures.

Procurement of seeds, seedlings, equipment and rehabilitation and protection of degraded areas.

3. Immediate objective 3: To incorporate components of biodiversity conservation into provincial and local development plans, provision of frameworks for the replication of these initiatives and provision for sustainability of biodiversity conservation.

In order to remove or reduce threats to biodiversity originating outside protected areas, this component will enhance the capacity of the local and provincial governments to incorporate biodiversity conservation into on-going development plans (livestock, agriculture, infrastructure, industry, etc.). This effort will reinforce and sustain the gains achieved within the protected areas and their buffer zones.

The Pilot Phase GEF Project facilitated the development and passage of 14 environmental laws (of the present 17 total). It also provided support to the completion of the Biodiversity Conservation Action Plan, advice on the early stages of discussions on tourism policy, and support to the MAP-21 project for the development of Mongolia's sustainable development strategy. Notwithstanding these efforts, the Pilot Phase GEF Project has done minimal work in bridging the gap between conservation of biological diversity and economic development.

The benefits achieved through the project activities related to protected area and buffer zone management will be institutionalized by supporting national level upstream activities as they relate to the Eastern Steppe. This would include policy formulation, further development and amendment of laws related to biodiversity conservation, regional treaties on protected area management and illegal hunting, public awareness campaigns, lobbying at the national level for biodiversity conservation and seeding the capitalization of the Mongolia Environmental Trust Fund.

Output 3.1.

Provincial and local level government administration trained for effective incorporation of biodiversity considerations into development plans. Work to be done by CTA, national coordinator, project biologists and sociologists, with assistance from PAA staff.

Activity 3.1:

- Training of *aimag* and *sum* government professional staff in biodiversity conservation issues and their incorporation into land use plans and sustainable development.
- Training of *sum* and *aimag* environment inspectors on sustainable biodiversity issues, their monitoring and inventorying, inspection and reporting.

Training of *bag* governors in community development, sustainable development, land use planning and monitoring and elemental biodiversity conservation.

- Training to add biodiversity components and issues into impact assessment procedures, to be used in future development plans.

Output 3.2:

Provincial and local level public awareness strengthened on biological diversity, in order to facilitate future reduction and/or removal of threats to biodiversity. Work to be sub-contracted to a suitable NGO or other institution.

Activity 3.2:

- Development of publications and information material on biodiversity conservation for dissemination to herders via radio, newspapers, brochures, posters, videos, etc.

Commissioning of traveling (mobile) awareness campaigns, such as video shows at *sum* and *bag* centers, traveling theatrical groups, contests, summer festivals and other programmes on various biodiversity themes.

Dissemination of all relevant materials (pamphlets, posters) and organization of local discussion groups by *bag* governors and National UNVs.

Output 3.3:

Incorporate biodiversity components into land-use and zoning plans for each province, including identification of threats to biodiversity hot spots and measures for their removal and/or reduction. Incremental assistance for the integration of biodiversity components of the plans into *sum* level plans will also be given. Work to be done by project biologists, land use planner and sociologists.

Activity 3.3:

- Rapid Rural Appraisals of land degradation and biodiversity loss and their causes and identification of biodiversity hotspots outside protected areas and their buffer zones.

Workshops at the *aimag* level for local government officials, to incorporate biodiversity components into five-year land-use and zoning plans for the three *aimags*.

Incremental assistance to *sum* governments for integration of biodiversity components of provincial plans into *sum* level plans. This would be primarily through workshops for *sum* governments and training in refinement of their existing land use and development plans.

- Development of an appropriate monitoring and early warning system, using GIS capabilities, to facilitate the monitoring of biodiversity hotspots in the Eastern Steppe, results of which would be used in future development plans. Work to be done by the project and HEM and PAA staff.

Output 3.4:

Other activities strengthening the sustainability of the efforts in the protected areas, buffer zones and at provincial and local levels, including the seed capitalization of the existing Mongolia Environmental Trust Fund to provide a financial mechanism for sustaining and replicating

biodiversity conservation in Mongolia. Work to be mainly sub-contracted to suitable institutions or persons.

Activity 3.4:

- Six national workshops (once a year) on coordination among on-going activities and dissemination of project results. Participating relevant sectoral government agencies will thus be informed of project advances. Workshops to be organized with MAP-21, NPAP, GTZ, WWF, NGOs and MNE staff. A final seventh workshop will be reserved for the dissemination of the project's results in the seventh year to a wider audience.
- At least four one-year training programmes abroad will be awarded as upgrade courses for PAA staff, in park management, participatory development, GIS application and environmental law. The training will be provided early on so that the staff can apply their knowledge to the implementation of the project.
- At least two overseas Masters-level training programmes will be provided to PAA, other MNE staff from the Environment Protection Agency or the Hydrometeorology and Monitoring Agency. The Masters programmes identified are (1) grassland ecology/range management; and (2) biodiversity conservation/sustainable development. The Masters programmes will be administered early in the project so that the trainees can return to assist the project before its termination.
- A study on the extent of illegal hunting of highly mobile mammal species in Mongolia and across the border with Russia and China will be commissioned and the results disseminated to relevant stakeholders. A regional encounter will be organized on the basis of this study, targeted to executive level (ministerial) officials of the three countries, on the problem of transboundary illegal hunting and coordination of biodiversity conservation.
- Amendment and development of existing environmental laws in order to update them to support biodiversity conservation in the Eastern Steppe. Work to be supervised by project's environment lobbyist and lawyers.
- A system of incentives will be developed and incorporated into laws and regulations. This is to ensure that sustainable use practices and biodiversity conservation in the buffer zones can be maintained and replicated elsewhere in the Eastern Steppe. Work to be supervised by project's environment lobbyist and lawyers.
- Capitalization of a trust fund for the long-term replicability and sustainability of the project in the steppe ecosystem. GEF funds will be added to other co-financing for the capitalization of a biodiversity account in the Mongolia Environmental Trust Fund. They would allow eventual replication and long-term support to the protection of biodiversity in the Eastern Steppe.

E. INPUTS

The inputs identified for the project are listed in Table 12, by year and by component. Most of the equipment and materials will be purchased in country, except for the international components, such as vehicles, specialized computer equipment, including the international consultants, which will be procured with assistance from UNOPS.

The project will have two bases. The first, Headquarters (HQ) in Ulaanbaatar consisting of the National Coordinator, an administrative assistant, two translators, and a driver. The office space, equipment and office material left over from the Pilot Phase GEF Project will be transferred to this HQ base. A landcruiser will be assigned to this HQ base.

A second field base will be established in Choibalsan, Dornod Province, at or near the PAA offices. All equipment, remaining vehicles and office materials provided for in this project document will be allocated to the Dornod base. The Chief Technical Advisor and the remainder of the project staff will also be based in Dornod.

The list of personnel is provided in Table 12. Annex 3 provides the job descriptions for all experts.

The CTA (a biologist or equivalent) will assist in the initiation and smooth running of the project in the first four years. In his/her last year, the International Community Development Expert will be recruited in order to overlap one year with the CTA and to take over his/her responsibilities for management/administration during the last three years of the project. This overlapping and transfer of expertise is designed to: (1) reduce costs; and (2) coincide with the gradual change in workload of the project from a heavy focus on protected area planning and implementation in the first years, to a focus on buffer zone planning and implementation in the last.

F. ISSUES AND RISKS

The design of the project has taken into account several risk-reducing steps, by ensuring that the best available knowledge is used. This includes the experience from the Pilot Phase GEF Project, which was used to establish the necessary baseline and indicators to monitor impacts. During the implementation phase the project should use and adapt the best practices learned from elsewhere to the Mongolian context. It should also ensure that all activities and programmes are culturally sound, fitting local customs and gain strength from community dynamics. The people should also recognize and receive benefits while respecting the limits on biological resource extraction. The design of the project has been such as to ensure a participatory process.

Almost all activities of the proposed project take off where other agencies and donors have left off, thus ensuring inter-agency coordination.

One important external risk to the project is if national development goes ahead without respecting the positive results from the biodiversity conservation increments within development plans. Another external risk is insufficient cooperation from neighbouring countries on respecting sustainable use guidelines of wildlife and plant species. The project hopes to reduce these risks by

organizing high-level meetings and research on relevant issues, leading to protocols of understanding between the countries.

Since 1924, land in Mongolia has been state property. A new Land Law was passed by the post-collective Parliament in 1995 which recognizes the privatization of land, while imposing strong obligations on the individual property holder to protect the environment. It prohibits the privatization of common grazing land and explicitly recognizes the ecological necessity for mobility within the extensive livestock production system.

The Land Law has a number of important strengths. It provides for the leasing of common land, it limits the transfer of rights to other people and provides for compensation on termination of ownership of land. It also has a number of weaknesses. It does not guarantee the rights of land users to renew their lease provided they meet certain conditions, it is not clear what will be the state authority to administer the law and there are insufficient safeguards against the transfer of high quality land into private individual ownership. The Land Law continues to be debated in parliament and revisions are expected in the near future. The project will be in a fortuitous position to assist the MNE in influencing the process. The outcome will be extremely important for the Eastern Steppe, since land tenure security, whether on a communal or private basis, is one of the more important incentives for sustainable land use practices.

G. PROJECT REVIEW, REPORTING AND EVALUATION

Yearly tripartite meetings will be used to periodically review project objectives in line with experiences learned. Local participatory evaluation workshops will also be held biannually. A mid-term evaluation will be conducted by the end of year 2000 and a final evaluation by the end of year 2003. Annex 4 provides the schedule of reviews and evaluations and an activity framework for the duration of the project. Annex 5 provides an indicative management plan for the first year of the project. The following are guidelines for the monitoring and evaluation of the project.

The first three months are reserved for start-up (procurement of equipment, personnel recruitment, office allocation, etc.). The rest of the first year (until end 1998) will be spent with participatory rural appraisals, land use and degradation surveys, training of local government counterparts, National UNVs and project staff and sub-contracts given out for public awareness campaigns and scientific research.

By mid-term (beginning year 2000), the project should have achieved the following milestones:

- completion of all preliminary in-situ training and some refresher courses;
- completion of all overseas fellowships;
- completion of all preliminary surveys, PRAs, etc.;
- completion of management plans for all SPAs;
- one-half of buffer zones covered by programme;
- completion of half of all public awareness programmes;
- completion of almost all afforestation and soil conservation activities;

- disbursement of one-quarter of all grants and loans for alternative livelihood systems in buffer zones;
- implementation of fire management model in selected *sums* and beginning of monitoring;
- completion of half of targeted studies;
- completion of all support to preparation/amendment of environmental laws ; and
- capitalization of the Mongolia Environmental Trust Fund.

A number of useful indicators for monitoring the impact of the project are:

1. Ecological indicators

The following are considered as ecological indicators:

- vegetation cover and composition (species distribution and density, population of native species, species diversity, plant vigor);
- wildlife performance (natality rate, mortality rate, spatial distribution, diversity);
- soil erosion (plant cover, gullies and dunes);
- populations, distribution, and abundance of key, alien, invasive species; and
- populations, distribution, and abundance of endemic, threatened and endangered species.

The Government will provide the Resident Representative with certified periodic financial statement, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the procedures set out in Section 30503 of the UNDP Policies and Procedures Manual (PPM) and Section 10404 of the UNDP Finance Manual. The Audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

2. Socio-economic indicators

The following are considered as socio-economic indicators:

- real and effective participation by local people in project;
- community projects successfully done through grants and loans from the revolving fund relevant directly to biodiversity conservation and natural resource management;
- respect of land use planning guidelines;
- local governments' and NGOs' institutional capacity; and
- capacity of PAA staff to manage protected areas.

H. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Mongolia and UNDP, signed by UNDP and the Government. The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government cooperating agency described in that agreement.

The following types of revisions may be made to this project document with the signature of the UNDP Resident Representative only. Provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

revisions in, or addition of, any of the annexes of the project document;

revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of inputs already agreed to or by cost increases due to inflation; and

- mandatory annual revisions which re-phase the delivery of agreed project inputs of increased expert or other costs due to inflation or take into account agency expenditure flexibility.

I. BUDGETS

The total cost of the project is US\$ 12.025 million. This includes the GEF financing, the amount that was and is leveraged by the project, preparation costs by UNDP and the associated financing of parallel projects and activities which constitute the baseline. Table 13 provides a summary of the UNDP-managed funds by component and by source of funding. Table 14 provides the project budget by component and category of expenditure. The GEF share of the total budget is US\$ 5.164 million, that of UNDP is US\$ 1 million and that of other associated financing is US\$ 5.822 million. Please see Annex 2 Incremental Cost Analysis.

1. Government contribution

The government contribution is calculated as a total of US\$ 1.35 million in kind (Table 15) and US\$ 700,000 in cash equivalents. The cash contribution of the government is earmarked for specific projects under the Trust Fund, at yearly allocations of US\$ 100,000 local currency equivalent and can be used only in Mongolia. Its main sources are the National Environmental Protection Fund and the Wildlife Protection Fund managed by the MNE. Additional sources are the Nature Conservancy Fund and the Endangered Species Fund.

2. Other co-financing

The UNDP Country Office has expressed interest in contributing a total of US\$ 1 million, a portion of which is to be earmarked to the Trust Fund. The funds are to be made available from IPF sources and cost-sharing.

The Government of The Netherlands has already committed one expert associate to the Pilot Phase GEF Project, whose contract will extend one year into the proposed project. In addition, the Finnish Government has committed one UNV (biologist) who started work in February 1997 for two years. The US Peace Corps has two volunteers in Dornod and will extend these and add a third.

Expected contributions from private businesses in Mongolia are: US\$ eq. 2,000 from Juulchin Tours for the Trust Fund, US\$ eq. 2,000 from Mongol An Corporation for the Trust Fund, and US\$ eq. 2,000 from Nukht Ecotourism Company for the Trust Fund. Additional co-financing is expected to be identified by UNDP and the Government.

3. Associated financing

There is a significant amount of associated financing associated with the project. Table 16 provides a list, showing a total of US\$ 1.74 million. Other projects and programmes as they come on line are expected to be associated with this project, such as the ADB study on livestock development and WWFs on-going activities. In addition, work done through international research organizations is expected to become associated with the project. These include the Smithsonian Institute, Wildlife Conservation Society of New York and the Natural Resources Ecology Laboratory of Colorado State University.

4. Preparation costs

Preparation costs were incurred by UNDP (US\$ 38,953) and the Government of Mongolia.

5. Incremental costs

The incremental cost analysis is presented in Annex 2.

Table 1. Population And Growth In Eastern Steppe: 1960-1990
(in thousands)

Aimag	1960	1965	1970	1975	1980	1985	1990	Average annual growth (thousands)
Dornod	37.9	38.7	44.4	50.2	62.0	70.8	76.5	1.28
Sukhbaatar	34.0	34.2	37.0	42.9	44.6	49.3	53.4	0.65
Khentii*	37.5	38.7	42.1	48.4	55.6	63.0	74.2	1.22
Total Eastern Steppe	109.4	111.6	123.5	141.5	162.2	183.1	204.1	3.16
Total Country	936.0	1104.3	1264.4	1466.1	1685.4	1914.7	2103.3	38.91
% Eastern Steppe	11.7	10.1	9.8	9.6	9.6	9.6	9.7	

* Includes all *sums* of Khentii *aimag*.

Source: Health Statistics of Mongolia, 1960-1992

Table 2. Population And Growth Of Eastern Steppe: 1990-1995
(in thousands)

Aimag	1990	1991	1992	1993	1994	1995	Average annual growth (thousands)
Dornod	76.5	79.6	80.7	85.0	83.4	84.6	1.62
Sukhbaatar	53.4	55.6	56.1	57.0	58.7	59.1	1.14
Khentii*	74.2	75.0	77.6	73.9	73.9	75.2	0.2
Total Eastern Steppe	204.1	210.2	214.4	215.9	216.0	218.9	2.96
Total Country	2103.3	2187.2	2215.0	2250.0	2280.0	2317.5	42.84
% Eastern Steppe	9.7	9.6	9.7	9.6	9.5	9.4	

* Includes all *sums* of Khentii *aimag*.

Source: Mongolian Economy and Society in 1995: Statistical yearbook. State Statistical Office of Mongolia.

Table 3. General Statistics On Eastern Steppe Aimags

Aimags (Province)	Total land area (km²)	Aimags capital	% urban population in 1990	Total population density/km² in 1990
Dornod	125,000	Choibalsan	46%	0.42
Sukhbaatar	82,000	Baruun-Urt	32%	0.65
Khentii*	82,000	Ondorhaan	22%	0.93
Country	1,564,000		50%	1.50

* = All of province

Source: UN Habitat. 1991. Human Settlements Sector Review - Mongolia.

**Table 4. Livestock Population Of Country; 1989-1995
(in millions of heads)**

Livestock	1989	1990	1991	1992	1993	1994	1995	% change '89-'95
Sheep	14.27	15.08	14.72	14.66	13.78	13.79	13.72	-3.85
Goat	4.96	5.13	5.25	5.6	6.11	7.24	8.52	+71.77
Cattle	2.7	2.85	2.82	2.82	2.73	3.01	3.32	+22.96
Horse	2.2	2.62	2.26	2.2	2.19	2.41	2.65	+20.45
Camel	0.56	0.54	0.48	0.42	0.37	0.37	0.37	-33.93
Total	24.67	25.86	25.53	25.69	25.18	26.81	28.57	+15.81

Sources: Ministry of Food and Agriculture (1994) and Mongolian Statistical Yearbook (1995).

**Table 5. Total Livestock Population In The Eastern Steppe; 1991-1995
(In Thousands Of Heads)**

Livestock	1991	1992	1993	1994	1995	% change '91-'95
Dornod	888.9	802.1	712.7	650.3	591.4	-33.47
Sukhbaatar	1035.8	1098.7	1133.1	1086.9	1015.6	-1.95
Khentii*	1380.4	1352.7	1183.4	1104.0	1100.9	-20.25
Total Eastern Steppe	3305.1	3253.5	3029.2	2841.2	2707.9	-18.07
% of country	13.0	12.7	12.0	10.6	9.5	

* Includes all *sums* of Khentii *aimag*.

Source: Mongolian Statistics yearbook, 1995.

Table 6. Protected Areas of Mongolia and of The Eastern Steppe

Protected Areas of the Eastern Steppe	Area (Hectares)	Year Of Establishment
Mongol Dagurian SPA	103,000	1992
Mongol Dornod SPA	570,400	1992
Numrug SPA	311,200	1992
Lkhachinbandad NR	58,800	1965/1995
Ugtum Uul NR	46,200	1993
Jaran Togoo NR	800,000	1997
Ganga Nuur NHM	28,800	1993
Total	1,918,400	

Table 7. Mongolian Biodiversity Action Plan. Action of High Priority Relevant to the Eastern Steppe

BAP priority action	Project output
1. Improve public support for protected areas and buffer zones surrounding them.	1.1,2.1,2.3, 2.4,2.5,3.2
2. Aggressively protect and manage protected areas using ecologically sound principles.	1.1, 1.2, 1.4, 2.4, 2.5, 3.4
3. Establish environmental units in all the main development ministries in order to oversee adequately the EIA processes and to ensure EIA are considered in decision making.	1.2, 1.3
4. Develop accurate population and distribution information for animal and plant species with priority given to threatened and endangered species, endemic species and species that are hunted or fished.	1.1, 1.4, 2.1, 2.2, 3.4
5. Establish a nationwide information and monitoring system for biodiversity conservation, capable of being used at the <i>aimag</i> level.	1.3
6. Establish a biodiversity conservation training center to provide high quality training in ecology and conservation biology for staff of the MNE, legislators, judges, other government officials and interested members of the public.	3.1, 3.2, 3.4
7. Establish a public information programme to improve people's knowledge of biodiversity and the importance of conserving it.	1.1, 2.3, 3.2
8. Establish, through research, grazing capacities.	1.4, 2.2
9. Establish effective land-use planning control and transportation policy.	3.3
10. Introduce modern, environmentally sound, energy technology and the wider use of renewable energy sources.	1.4, 2.2
11. Clarify lines of responsibility and strengthen local government capacity to implement environmental protection laws.	3.1

Table 8. Gap Analysis of Biodiversity Conservation Activities in the Arid and Semi-Arid Zones of Mongolia

Activities	Recently completed projects	On-going Projects	Planned Projects
1. Develop and implement management plans, and strengthen capacity for protected areas in the arid and semi-arid zone: Eastern Steppe Gobi gurvansaikhan NP Khangai Mountain NP		GTZ GTZ GTZ	GEF
2. Local level government capacity building for sustainable development		MAP-21 MDP	GEF (Eastern Steppe)
3. Research and monitor highly endangered species	MAS RAS	on-going GEF Project	GEF
4. Reintroduce globally important species and rehabilitate/restore degraded lands		Dutch Foundation for Przewalski's Horse, MACNE, MNE	
5. Work with communities to promote conservation and sustainable use of biodiversity in: buffer zones of protected areas biodiversity areas not protected		On-going GEF project, GTZ	GEF GEF
6. Public awareness of interactions between wildlife and sustainable development	WWF, MACNE	Dutch/UNDP DANIDA	GEF
7. Strengthen capacity of Mongolian scientists in biodiversity conservation		on-going GEF project	GEF NREL
8. Strengthen the managerial capacity of Ministry of Agriculture and Industry		ADB	
9. Strengthen the technical capacity of the Ministry of Nature and Environment		ADB, on-going GEF project	GEF
10. Promote sustainable range management and land use planning including development of appropriate policies on livestock	NEW ZEALAND MAS, PALD	DANIDA IFAD	PALD GEF
11. Local level credit and grants		NPAP, IFAD (Ahrangai)	GEF (Eastern Steppe)

Notes: i) Empty cells show activities where no action has been taken or planned
ii) GEF = gaps to be addressed by the proposed GEF project

Table 9. Activities of the Mongolian Environmental Trust Fund for the first year of operation.

ACTIVITY	Oct 1997	Nov 1997	Dec 1997	Jan 1998	Feb 1998	Mar 1998	Apr 1998	May 1998	Jun 1998	Jul 1998	Aug 1998	Sept 1998
ADMINISTRATION												
* Establishment of the Fund Administration Office		Establish office				Staff training continues...				Prepare for project support		
* Establishment of proper administrative procedures/manual*		Ongoing process										
Establishment of Board operations		First meeting. Manual produced										
Establishment of the STAC					Selection, bylaws							
Establishment of the FAC			Selection bylaws									
Organisation of meetings/reports of Board and committees		Board			Board		STAC	Board				
Liaison with external consultants		Ongoing process										
* Liaison with donors		Ongoing process										
Organisation of MBTF general meeting								Organisation Meeting				
FUND-RAISING ACTIVITIES												
* Researching potential sources of income												
* Discussions on debt re-negotiation												
* Disseminating information on the MBTF												
* Approaching / liaison with potential donors												
* Negotiating with the Government of Mongolia												
* Review and revision of fund-raising strategy.												
MILESTONE EVENTS:		Board meeting				Board meeting		STAC meeting	Board meeting	General meeting		

Table 10. Possible sources of co-financing for the METF and progress to date.

POTENTIAL SOURCE OF INVESTMENT	PROGRESS TO DATE; FUND-RAISING STRATEGY
Major public international donors	20 major donors have been given priority, and background information has been collected. An initial approach has been made to gauge their interest in the METF, and systematic follow-up will take place over the next two months.
Other international donors	A list of other potential donors is continually being updated. It is hoped that both UNDP and the TFO will be able to contribute to the identification of potential donors. Some may be approached during current project, depending on the response from the initial 20 priority donors.
Debt re-negotiation	A complete debt-schedule for Mongolia will be obtained, and the potential for a debt re-negotiation to capitalise the METF was discussed at some length during the visit to Mongolia. The next stage will be to gather more background information, to brief the Board and the Trust Fund Office in Mongolia, and to begin to arrange discussions on the potential for a debt-re-negotiation with creditor countries / banks.
International private sector	Some preliminary work has been undertaken to identify international companies who are investing in Mongolia. Further background information is needed. Other international companies that are being considered include those involved in carbon sequestration.
Mongolian private sector	Some preliminary work has been undertaken to identify Mongolian companies, particularly ecotourism operations, who might be interested in making a donation. Further background information is needed.
National source of income	The potential to tap National sources of income, such as taxes, fines and levies on the use of natural resources, was discussed at the National Workshop. Many felt that these sources of income should be used as part of the governments contribution to the METF, or to finance the MNE, and that this source should not be a priority for the METF in the foreseeable future.
Loans	Research will be undertaken to investigate the potential for, and benefits of, seeking low-interest loans (e.g. from the Asian Development Bank) to capitalise the METF.
Government subventions	While a preliminary agreement was reached between the previous government of Mongolia concerning subventions to the METF, further work is needed to determine the nature and size of this contribution.

Table 11. Matrix of Biodiversity Threats and Project Outputs in the Eastern Steppe

Threat to Biodiversity	Output	Description of Output
Increasing land degradation.	3.3	- Incorporation of biodiversity into land-use and zoning plans
	1.1	- Implementation of protected area management plans
	2.5	- Afforestation and soil conservation
	1.2	- Protected area staff equipped and trained to implement management plans
	1.3	- Long-term monitoring and inventorying
	1.4, 2.2	- Action-oriented research
	2.3, 3.2	- Public awareness campaigns
	2.4	- Fire management model implemented
	3.1	- Training of local and provincial government administrations
Potentially negative impact of proposed industrial development.	3.3	- Incorporation of biodiversity into land-use and zoning plans
	3.4.5	- Amendment and development of environmental laws
	3.4.6	- System of incentives developed and incorporated into environmental laws
	1.3	- Long-term monitoring and inventorying
	1.4, 2.2	- Action-oriented research
	2.1	- Establishment of buffer zone committees
	2.1.6	- Implementation of alternative livelihood alternatives
	2.3, 3.2	- Public awareness campaigns
2.5	- Afforestation and soil conservation	
Increasing frequency of wildfires.	2.4	- Fire management model implemented
	3.3	- Incorporation of biodiversity into land-use and zoning plans
	2.5	- Afforestation and soil conservation
	1.1	- Implementation of protected area management plans
	1.2	- Protected area staff equipped and trained to implement management plans
	1.3	- Long-term monitoring and inventorying
	1.4, 2.2	- Action-oriented research
	2.3, 3.2	- Public awareness campaigns
3.1	- Training of local and provincial government administrations	
Illegal hunting of mammals.	3.3	- Incorporation of biodiversity into land-use and zoning plans
	3.4.4	- A study and regional encounter on illegal hunting
	1.1	- Implementation of protected area management plans
	1.2	- Protected area staff equipped and trained to implement management plans
	1.3	- Long-term monitoring and inventorying
	1.4, 2.2	- Action-oriented research
	2.3, 3.2	- Public awareness campaigns
3.1	- Training of local and provincial government administrations	
Over-exploitation of fuelwood and medicinal plants.	3.3	- Incorporation of biodiversity into land-use and zoning plans
	2.5	- Afforestation and soil conservation
	1.1	- Implementation of protected area management plans
	1.2	- Protected area staff equipped and trained to implement management plans
	1.3	- Long-term monitoring and inventorying
	1.4, 2.2	- Action-oriented research
	2.3, 3.2	- Public awareness campaigns
	2.4	- Fire management model implemented
3.1	- Training of local and provincial government administrations	
Indiscriminate use and aerial pesticide application.	3.3	- Incorporation of biodiversity into land-use and zoning plans
	1.1	- Implementation of protected area management plans
	1.2	- Protected area staff equipped and trained to implement management plans
	1.3	- Long-term monitoring and inventorying
	1.4, 2.2	- Action-oriented research and implementation of pilot cases
	2.3, 3.2	- Public awareness campaigns
3.1	- Training of local and provincial government administrations	
Inadequate mechanisms to sustain and replicate biodiversity conservation in the Steppe Ecosystem	1.3	- Long-term monitoring and inventorying
	1.4, 2.2	- Action-oriented research
	3.4.1	- National workshops
	3.4.2-3	- Student fellowships
	2.3, 3.2	- Public awareness campaigns
	3.1	- Training of local and provincial government administrations
	3.3	- Incorporation of biodiversity into land-use and zoning plans
	3.4.5	- Amendment and development of environmental laws
3.4.6	- System of incentives developed and incorporated into environmental laws	
3.4.7	- Capitalization of the Trust Fund	

* To be procured or sub-contracted by UNOPS	OBJECTIVE 1: PA MANAGEMENT						
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
	1998	1999	2000	2001	2002	2003	2004
TOTAL							
Short range radios x9	2,700						
Handsets & manual microscopes*	500						
Clippers & calipers x4	310						
Medicines & preservatives	300	100					
Oven for biomass drying*	850						
Textbooks*	750						
Plastic bags, labels	200	200					
Camping equipment*	1,550						
para. boundary signs x150	15,000						
GIS capability*	30,000	400	400	400	400	400	400
Russian light truck & spares	13,000	1,000	1,000	3,000	1,000	250	19,000
motorcycles and spares x 5	5,250	250	50	250	250	50	6,500
motor bike & spares*	2,000	50	50	50	50	50	2,300
rubber boat with oars*	500						500
Ultra-light (Russian Delta Lot)	2,500	200	200	200	200	200	3,800
horses and saddles x 12	2,400						2,400
BASIC PROJECT EQUIPMENT							
Russian jeep for Dornod & OM	12,000	2,000	14,000	4,000	4,000	4,000	44,000
Russian van for Dornod & OM	15,600	3,600	3,600	3,600	3,600	3,600	37,200
handtruck for HQ & OM*	70,000	10,000	10,000	10,000	10,000	10,000	130,000
PC Computer & laptop for Dornod*	37,000						37,000
Telephone, fax, e-mail	4,000						4,000
misc. office materials	12,000	12,000	12,000	12,000	12,000	12,000	84,000
GPS x1*	250						250
biocular & other survey eqpt*	10,000						10,000
camping equipment*	1,750						1,750
office vehicles	8,000	8,000	8,000	8,000	8,000	8,000	56,000
TOTAL EQUIPMENT OBJ 1	248,710	37,500	49,550	41,500	39,500	38,500	493,760
TRAINING (DSA & transport)							
PA staff in-situ training	1,550	1,650	1,520	1,000	500		6,320
PA staff ultra-light train in Russia	4,400						4,400
Exchange visits for PA staff	740						740
TOTAL TRAINING OBJ 1	6,790	1,650	1,520	1,000	500		11,460
SUB-CONTRACTS							
Range carrying capacity & inventory	15,000						15,000
Targeted research	25,000			25,000			50,000
Regional conference, Russia & China		10,000		10,000		10,000	30,000
Evaluation missions			30,000			30,000	60,000
TOTAL SUB-CONTRACT OBJ 1	40,000	10,000	30,000	35,000	10,000	30,000	155,000

(Does not include government-kind contribution or associated financing)

Table 12. Project inputs and personnel by year and component

	YEAR 1 1998	YEAR 2 1999	YEAR 3 2000	YEAR 4 2001	YEAR 5 2002	YEAR 6 2003	YEAR 7 2004	TOTAL
PERSONNEL								
CTA - 4my (first 4 years)*	94,500	94,500	94,500	94,500				378,000
Intern. GIS Associate Expert	84,000							84,000
UNV biologist	30,000	30,000						60,000
Peace Corps volunteer, biologist	63,000	63,000						126,000
National Coordinator - 7my	9,828	9,828	9,828	9,828	9,828	9,828	9,828	68,800
Project Manager - 7my	8,814	8,814	8,814	8,814	8,814	8,814	8,814	61,700
Admin. Assistants - 14 my	11,642	11,642	11,642	11,642	11,642	11,642	11,642	81,500
National GIS expert - 7my	8,014	8,014	8,014	8,014	8,014	8,014	8,014	56,100
National rangeland expert - 7my	8,014	8,014	8,014	8,014	8,014	8,014	8,014	56,100
National biodiversity expert - 7my	8,014	8,014	8,014	8,014	8,014	8,014	8,014	56,100
National Sociologist - 7my	8,014	8,014	8,014	8,014	8,014	8,014	8,014	56,100
Translators - 21 my	14,142	14,142	14,142	14,142	14,142	14,142	14,142	99,000
Secretary - 14 my	9,428	9,428	9,428	9,428	9,428	9,428	9,428	66,000
Accountant - 7my	5,414	5,414	5,414	5,414	5,414	5,414	5,414	37,900
Drivers - 32 my	13,085	13,085	13,085	13,085	13,085	13,085	13,085	91,600
Int. consult. PA/biodiv. expert- 2mm*	12,000		12,000					24,000
Int. consult. Grassland/wildlife*	12,000	12,000	12,000	12,000	12,000	12,000		72,000
TOTAL PERSONNEL, OBJ. 1	399,909	303,909	222,909	210,909	116,409	116,409	104,409	1,474,900
TOTAL INPUTS, OBJECTIVE 1	695,409	353,059	303,979	288,409	156,409	164,909	172,909	2,135,120
OBJECTIVE 2: BUFFER ZONE MANAGEMENT								
EQUIPMENT								
Saddles for NUNVs x9	900							900
Participatory rural Appraisals	2,400	2,400						4,800
Monitoring buffer zone plans		2,000	2,000	2,000	2,000	2,000	2,000	12,000
TOTAL EQUIPMENT, OBJ. 2	3,300	4,400	2,000	2,000	2,000	2,000	2,000	17,700
TRAINING								
Train NUNVs	3,600							3,600
Create and train Buffer Zone Committees		1,250	1,250					2,500
Preparation of buffer zone plans		1,900	1,900					3,800
TOTAL TRAINING, OBJ. 2	3,600	3,150	3,150					9,900
SUB-CONTRACTS								
Implement Buffer Zone Plans			40,402	40,402	40,402	40,402	40,402	202,013
Public awareness campaigns	1,300							1,300
Fire management model			4,000					4,000
Afforestation & soil conservation			9,600					9,600
Targeted research/reports		20,000	20,000	20,000	20,000	20,000	20,000	120,000
TOTAL SUB-CONTRACTS, OBJ. 2	1,300	20,000	74,002	62,000	62,000	62,000	62,000	336,913

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	TOTAL
	1998	1999	2000	2001	2002	2003	2004	
PERSONNEL								
Int. community devel. expert*				80,000	80,000	80,000	80,000	320,000
Peace Corps community devel	63,000	63,000						126,000
Peace Corps small business			63,000					126,000
National small business expert	8,014	8,014	8,014					24,042
National land use planner	8,014	8,014	8,014					24,042
National UNVs - 45/mo	5,616	5,616	5,616					16,848
Int coms. PR/academic eval.*		2,010						2,010
National fire consultant								
TOTAL PERSONNEL OBJ 2	84,644	86,654	84,644	176,644	101,644	96,028	96,028	726,290
TOTAL INPUTS OBJECTIVE 2	92,844	114,204	163,796	240,644	165,644	160,028	160,028	1,090,803
OBJECTIVE 3: SUSTAIN BIODIV. CONS.								
TRAINING								
Train local govt. personnel	8,733	8,733	8,733					26,200
Incorporate biodiv. into land use	12,317	12,317	12,317					37,051
Disseminate project results	7,500	7,500	7,500					22,500
One-year training programs x 4*	160,000							160,000
Master training programs x 2*	80,000							80,000
TOTAL TRAINING OBJ. 3	268,550	108,550	28,550	28,550	28,550	28,550	28,550	491,306
SUBCONTRACT								
Public awareness campaign	27,931	27,931	27,931					83,793
Illegal burning study & encounter		22,500	22,500					45,000
Assess & devel. envt. laws		3,500	3,500					7,000
Incentives into laws		5,000						5,000
Capitalize trust fund	4,000,797							4,000,797
TOTAL SUBCONTRACT OBJ 3	4,028,728	58,931	53,931	31,931	27,931	27,931	27,931	4,237,320
PERSONNEL								
Int coms environmental lobbyist*		9,000						9,000
National environmental lawyer		670						670
TOTAL PERSONNEL OBJ 3		9,670						9,670
TOTAL INPUTS OBJECTIVE 3	4,297,278	177,151	82,481	60,481	56,481	56,481	56,481	4,758,296
PROJECT SUPPORT								
TOTAL PROJECT SUPPORT SERVICES	121,225	20,200	10,100	10,100	20,200	10,100	10,116	202,041
TOTAL PROJECT BUDGET	5,206,756	664,614	560,356	599,634	398,734	391,518	399,534	8,186,260

Output	Objective 1	UNDP	GEF	Total
1.1	Management plans finalized and implemented for the protected areas		45,740	45,740
1.2	Protected area staff trained		33,380	33,380
1.3	Long-term monitoring and inventory systems		32,400	32,400
1.4	Management and decision-making reports		50,000	50,000
1.1 - 1.4	Basic protected area equipment	130,000	308,700	438,700
1.1 - 1.4	Monitoring and evaluation missions (2x)		60,000	60,000
1.1 - 1.4	Protected Area Personnel (GIS Expert, UNV Biologist and Peace Corps)		286,100	556,000
Sub-total		130,000	816,320	946,320
	Objective 2			
2.1.1, 2.1.2	Training of National UNVs	3,600	900	4,500
2.1.3	Participatory rural appraisals	2,400	2,400	4,800
2.1.4, 2.1.5	Buffer zone management committees created and trained	1,250	1,250	2,500
2.1.6	Participatory preparation of buffer zone management plans	1,900	1,900	3,800
2.1.7, 2.1.8	Implementation and monitoring of buffer zone management plans, with alternative livelihood options	202,013	12,000	214,013
2.3	Public awareness campaign for residents of buffer zone		1,300	1,300
2.4	Fire management model	3,200	800	4,000
2.5	Afforestation and soil conservation	7,680	1,920	9,600
2.2	Management and decision-making reports	60,000	60,000	120,000
2.1 - 2.5	Personnel (Peace Corps 2x)		432,200	684,200
Sub-total		282,043	514,670	796,713
	Objective 3			
3.1	Trained provincial and local level government administration		52,400	52,400
3.2	Public awareness campaign at national, provincial and local level		195,523	195,523
3.3	Incorporate biodiversity components into land-use and zoning plans. Surveys of biodiversity hotspots		73,906	73,906
3.4.1	Dissemination of project results		45,000	45,000
3.4.2	Four one-year training programmes		160,000	160,000
3.4.3	Two Masters training programmes		160,000	160,000
3.4.4	Study and regional encounter on illegal hunting		45,000	45,000
3.4.5	Amendment and development of environmental laws		11,000	11,000
3.4.6	Development and incorporation of incentives into laws	5,000		5,000
3.4.7	Capitalization of trust fund	500,797	2,000,000	2,500,797
Sub-total		505,797	2,742,829	3,248,626
	General Project Personnel			
	CTA		378,000	378,000
	National Coordinator		68,800	68,800
	Administrative Assistant		81,500	81,500
	Translators		99,000	99,000
	Secretary		66,000	66,000
	Accountant		37,900	37,900
	National UNVs	22,480	5,600	28,080
	Drivers		91,600	91,600
	Grasslands wildlife/range management specialists	36,000	36,000	72,000
	Protected area/biodiversity management specialist		24,000	24,000
	PRA/participatory evaluation	12,000		12,000
	Environmental lobbyist	9,000		9,000
	Fire management specialist	2,010		2,010
	Environmental lawyer	670		670
Sub-total		82,160	888,400	970,560
	Project support services		202,041	202,041
TOTAL		1,000,000	5,164,260	6,164,260

Table 14. Project Budget by Item and Component

(Please see Table 12 for further details)

Component	Equipment	Training	Sub-contract	Personnel*	Total
Objective 1	493,760	11,460	155,000	1,474,900	2,135,120
Objective 2	17,700	9,900	336,913	726,290	1,090,803
Objective 3	0	491,306	4,257,320**	9,670	4,758,296
Project Support Services					202,041
Total	511,460	512,666	4,749,233	2,210,860	8,186,260

* This includes the contribution from the Netherlands, Finland and USA/ Peace Corps for the protected area and buffer zone personnel. It does not include the remaining associated financing and government contribution.

** This includes capitalization of the Mongolia Environmental Trust Fund from bilateral donors.

Table 15. Agreed Government Contribution for seven Years (in dollars) ¹

Item	Headquarters Expenditures (US\$)	Eastern Steppe Expenditures (US\$)	Total
OFFICE			
Office space	50,400	88,200	
heating and electricity	13,440	26,880	
repairs/maintenance	7,000	8,000	
cleaning	7,000	8,000	
SUB-TOTAL	\$77,840	\$131,080	\$208,920
FUEL AND O&M	\$56,000	\$112,000	\$168,000
SALARIES			
Regional Coord.(40%)		1,790	
3 <i>aimag</i> gov. (10%)		1,740	
35 <i>sum</i> gov. (30%)		36,790	
5 Env't. Inspectors (100%)		13,480	
3 <i>aimag</i> Head of Plan. (30%)		3,190	
140 <i>bag</i> gov. (60%)		377,300	
Dornod PAA staff (100%)		114,000	
3 <i>aimag</i> EMU staff (30%) ²		155,150	
EPA Director (20%)	1,060		
HMA Director (20%)	1,060		
10% of MNE national budget	12,240		
SUB-TOTAL (US\$)	\$14,360	\$703,440	\$717,800
EQUIPMENT AND OPERATIONS			
10% of MNE budget	21,760		
100% PAA operations budget		76,000	
100% PAA operations budget		103,440	
30% EOA operations budget		50,000	
<i>aimag</i> forest rehab. budget	9,000		
value of equipment from Pilot GEF project ³			
SUB-TOTAL (US\$)	\$30,760	\$229,440	\$260,200
TOTAL	\$178,960	\$1,175,960	\$1,354,920

1. Exchange rate: 700 tg = 1 US\$

2. EMU = Environment Monitoring Unit of MNE, based in each *aimag*.

EPA = Environment Protection Agency

HMA = Hydrometeorology and Monitoring Agency

3. Total value estimated at US\$ 30,000, depreciated for 3 years.

Table 16. Associated Financing, Relevant To Eastern Steppe And Biodiversity Conservation (on-going or pipeline)*

Source	Amount (US\$)
MAP-21	5000/ <i>aimag</i> = 15,000
NPAP	452,000/ <i>aimag</i> = 1,130,000
MDP	50,000 for Sukh-baatar
GTZ	250,000 for Dornod
Dutch/UNDP Environment Public Awareness Programme	300,000 (national)
Total	US\$ 1,742,500

* This does not include the associated financing from the Netherlands, Finland and USA-Peace Corps for project personnel for the protected areas and buffer zones. This is included in Table 14.

Figure 1. Operational structure of the METF

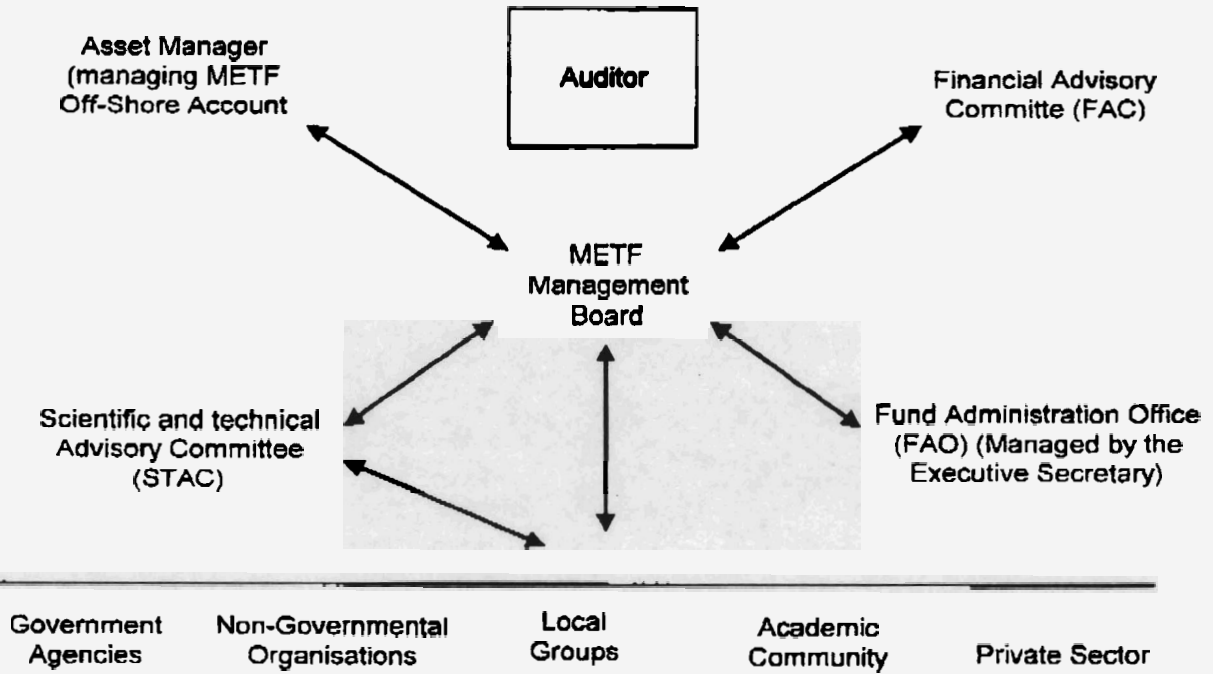
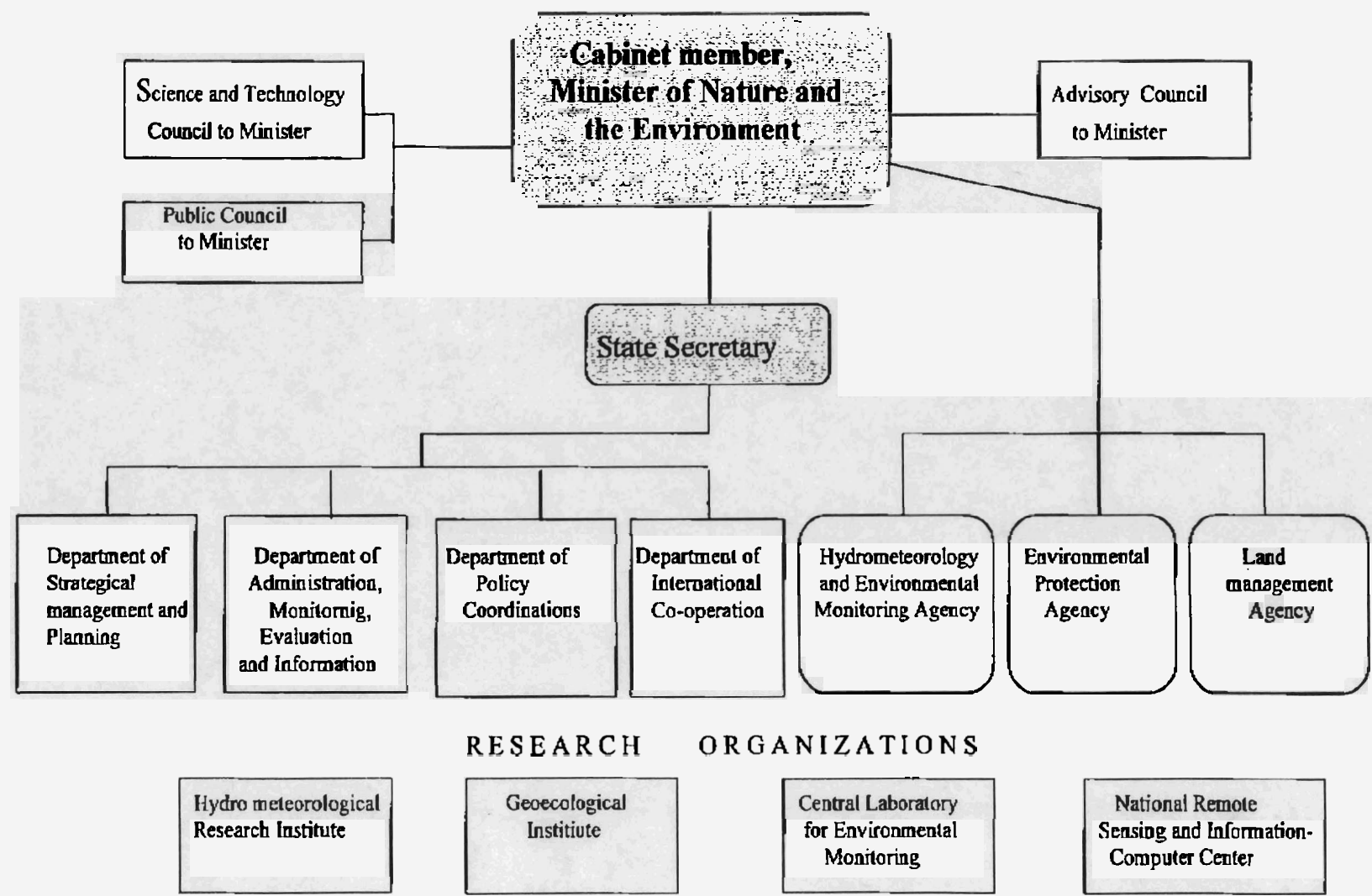
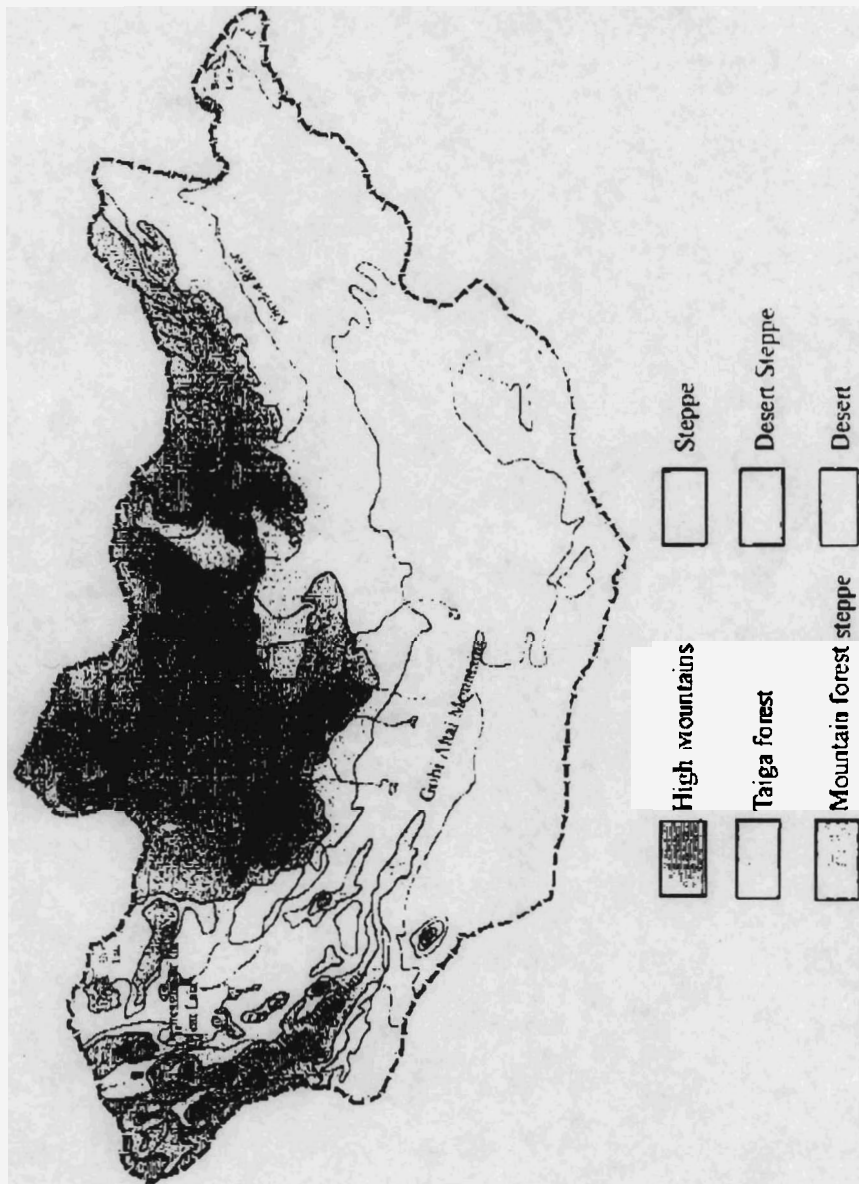


Figure 2. STRUCTURE OF THE MNE

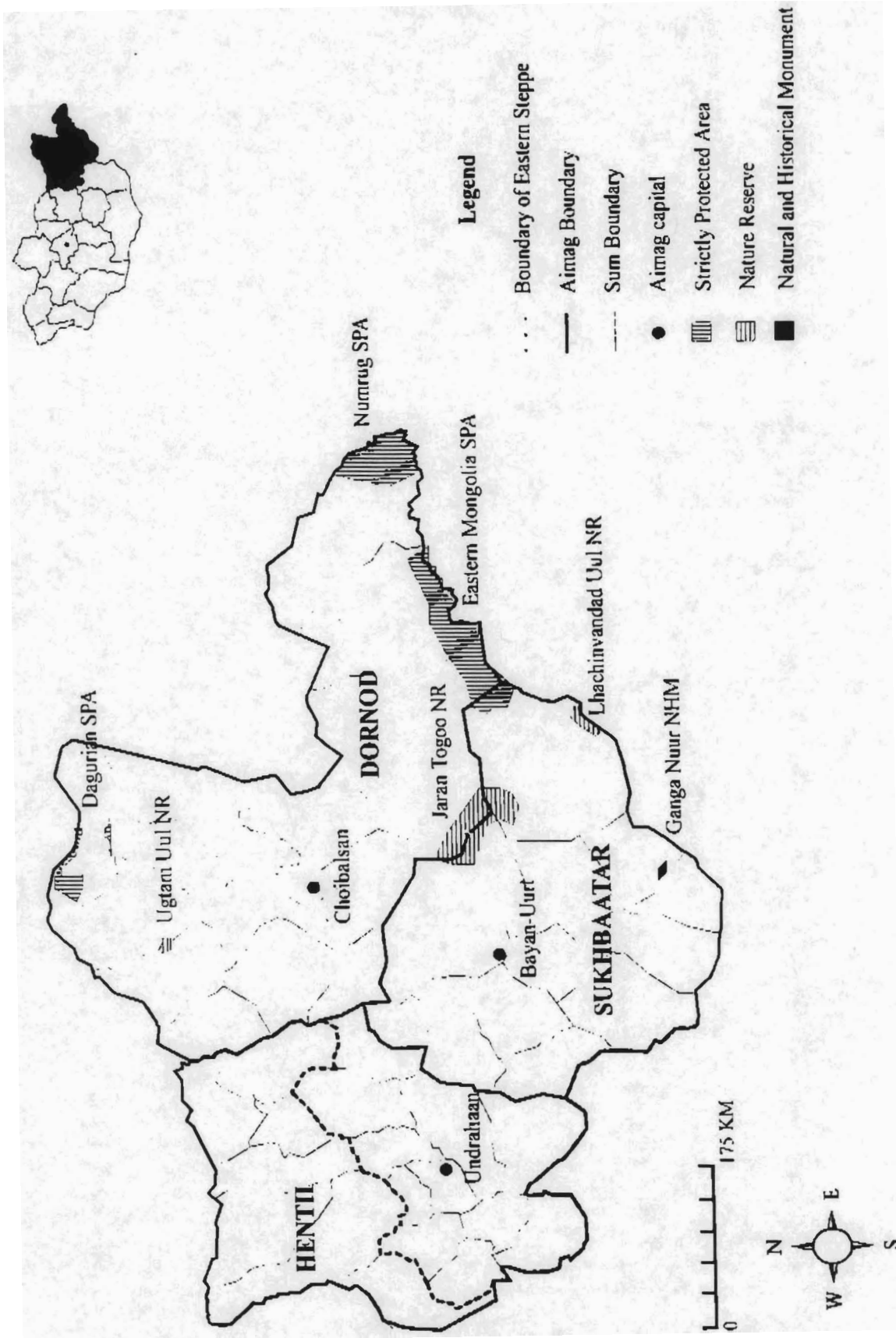


Map 1. Natural Zones of Mongolia

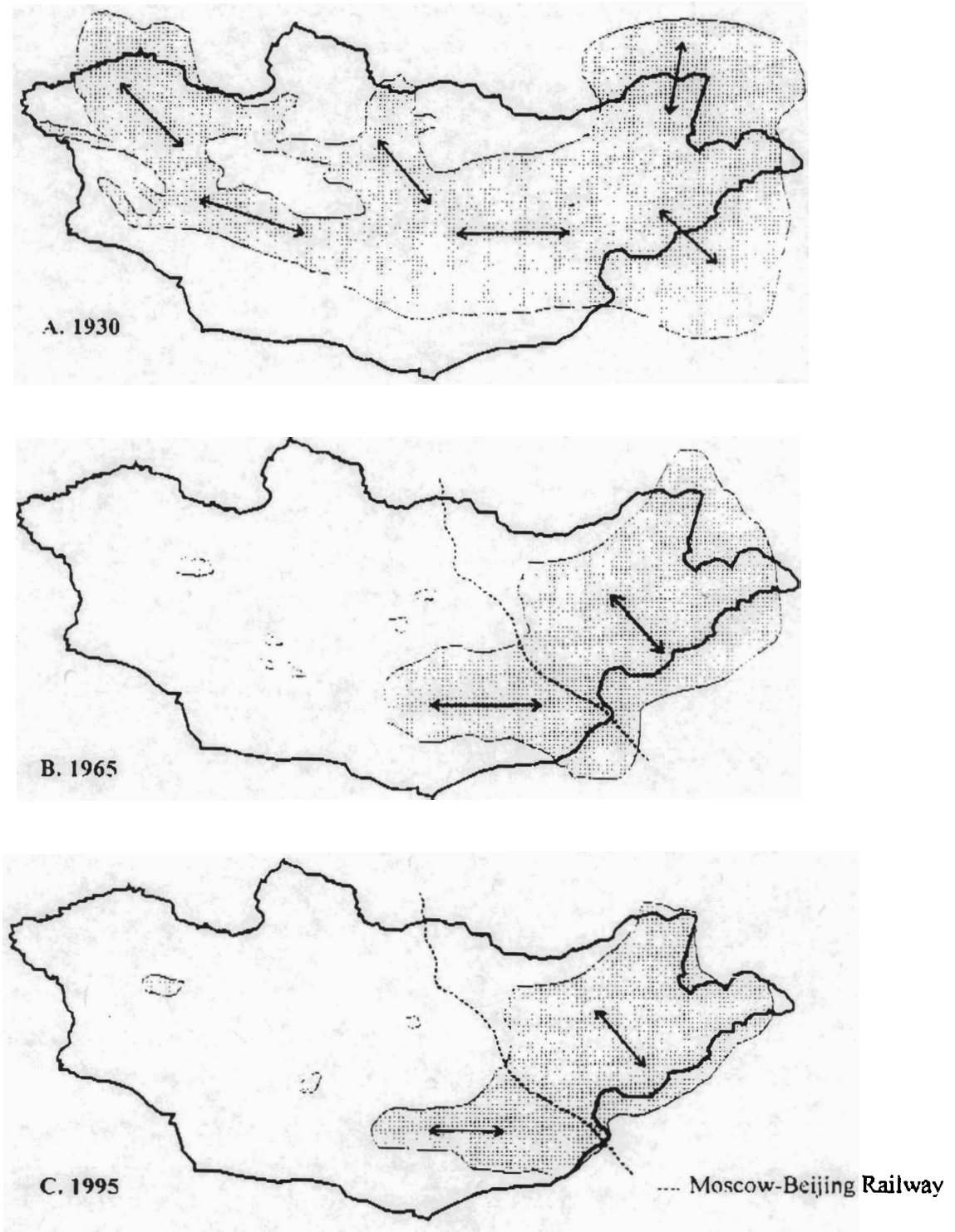


Source: Wild Heritage of Mongolia, 1996

Map 2 Protected Areas in the Eastern Steppe of Mongolia

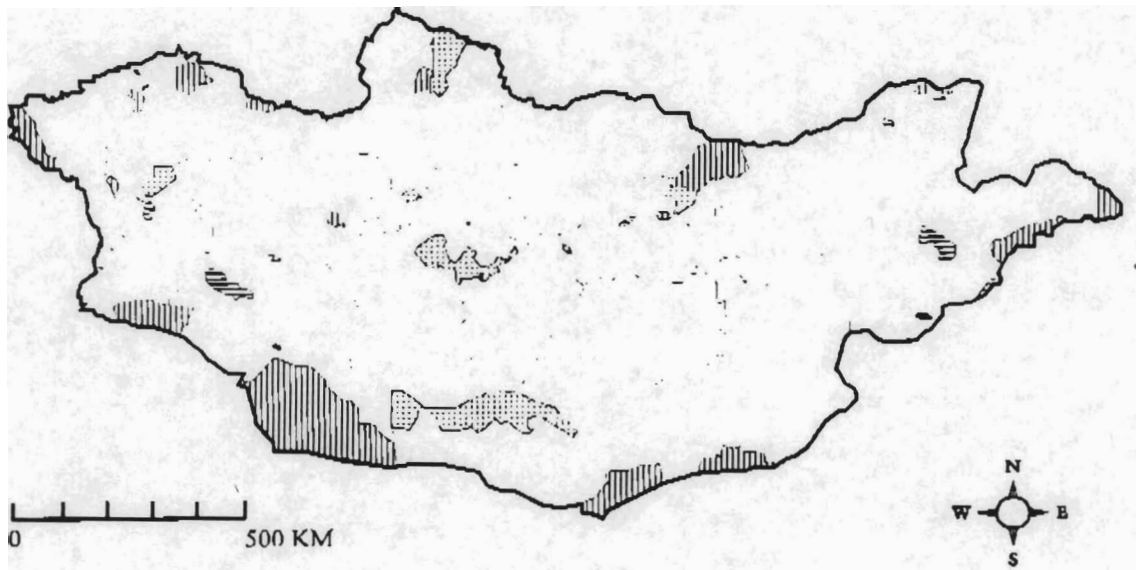


Map 3. Decline in the distribution of Mongolian Gazelle (*Procarpa gutturosa*) . 1930-1995







Source: Wingard, J. R., 1996. Report on Mongolia's Environmental Laws. Mongolia Biodiversity Project. Ulaanbaatar

Map 4. Protected Areas of Mongolia



Legend

-  Strictly Protected Areas
-  National Conservation Parks
-  Nature Reserves
-  Natural and Historical Monuments

Source: MNE, 1997

Map 5. Geographical distribution of site-specific threats to biodiversity in the Eastern Steppe

