

REFERENCES

Note: Only post-2000 sources only are listed [for earlier references, see ADB (2001)]. If the problem faced by a reviewer of Mongolia's environment management in 2001 was shortage of data and suitable reports, the situation in 2004 is almost the opposite. No pretence is made of the completeness of the list given below.

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Annex 1: Summary of the 2001 CEA

The Report contains a broad review of the current environmental status of Mongolia and the emerging trends as a basis for formulating recommendations for future ADB-Government of Mongolia co-operation in the environmental domain.

Among the environmental consequences of the dismantling of the old economy and the subsequent pattern of economic transition in Mongolia have been:

- Return to land and increasing pressure on the country's commons
- Temporary worsening of prospects for solutions to environmental problems that rely on cost recovery
- Reduced pollution discharges by industrial entities being offset by reduced treatment and deterioration of urban environmental services
- Enhanced prospects for eco-tourism, but also more illegal exports of wildlife products
- Steady flow of ODA, some of it environment-oriented

Pastureland degradation in Mongolia has been in part the result of the disappearance of the transport subsidy. Greater spatial imbalance in pastureland use and lowered livestock mobility rather than increasing livestock numbers are key to the observed pattern of degradation.

There has been substantial progress in the organization and regulatory backing of the protected area system. It is uncertain, however, whether these efforts are sufficient to stem a growing pressure on the country wildlife including illegal exports of wildlife products.

Forest management continues to be in disarray and forestry something of an institutional orphan. Increased frequency of forest fires in recent years is a major problem, linked to greater reliance of the local population on forest resources for livelihood maintenance. Models and practices of decentralized forest management use are needed.

The trend towards greater urbanization has resumed, after a temporary reversal in the mid-1990s. Ulaanbaatar, in particular, has continued to expand at a fast pace. Much of the existing urban growth has been in peri-urban areas; this has exacerbated the already pressing issues of air pollution, water supply, municipal wastewater treatment, and others.

Unsafe and incomplete waste disposal is a major and growing problem in all Mongolian cities. The provisions for dealing with hazardous and toxic waste are inadequate. Other specific problem areas include coal ash disposal, increasing proportion of non-degradable waste, existing incineration practices, and littering behavior. No significant re-cycling of waste takes place in Mongolia.

Air pollution is a significant problem in Ulaanbaatar during winter although not as serious as some reports indicate. However, given the continued growth of the capital, its likely future spatial pattern and the likelihood of continued rapid increase in vehicle registrations, a concerted program of remedial action is required, based on a comparison of relative abatement costs of a large number of remedial options.

Coal-using power sector continues to be environmentally backward despite some retrofitting that took place during the 1990s. Even with substantial donor assistance in recent years, there is a continued need to replace or improve *soum*- and *aimag*-level diesel generators

and improve their functioning. It is the renewables where a number of promising options are found. The use of solar and wind power by individual herding families has been technically proven in Mongolia and could be a major source of improved livelihoods.

There continues to be a serious misallocation of water in Ulaanbaatar and many other cities, with apartment dwellers consuming the bulk of available water supply. Water is mis-allocated and mis-priced and *de facto* under-priced. In rural areas, existing wells continue to fall into disrepair and are unlikely to be re-habilitated until new forms of co-operative herd management emerge. Wastewater treatment plants and facilities continue to suffer from lack of repair and maintenance, as well as from absence of appropriate incentive structure for treatment and arrangements for cost recovery.

Vast amount of work was undertaken, directly as well as indirectly, on environmental planning in Mongolia during the 1990s. The same is true of the development of the legislative and regulatory framework for environmental management. Improvements are still possible and needed but key challenge now is better implementation. Here, improved funding of local governments' environmental activities is essential, in turn necessitating a review of natural resource taxation, the manner of assigning tax proceeds to different levels of the government, and the revenue raising potential of different administrative units.

Environmental impact assessment has been successfully incorporated into Mongolia's environmental practices and substantial practical experience in EIA conduct now exists. Compliance with EIA provisions should be the focus of future attention.

There has been extensive and steady donor support for environment-related activities in Mongolia. UNDP has continued to perform the usual co-ordinating role, with some hiccups. Several projects in Mongolia have been financed or co-financed by the Global Environmental Facility (GEF). Major bi-lateral programs are in place in Mongolia. Among those with important environment-related components are those of GTZ, the Netherlands, JICA, USAID and EU.

Environmental conditions and poverty have been linked closely in Mongolia especially as safety net provisions and social services provided by *soums* and *aimags* got substantially scaled down. Environmental problems and livelihood pressures overlap both in rural and peri-urban areas, suggesting potential directions of assistance that simultaneously targets environmental improvement and better livelihood. Improving the efficiency of domestic stoves in peri-urban areas of Mongolia typifies such complementary opportunities.

The review of principal environmental problems and the scale and direction of existing government and foreign-assisted programs directed at the problems resulted in nine priority areas for ADB consideration. It is from this group that elements of modification of the design of existing pipeline projects or widening of the Country Assistance Plan, should mainly come. The priorities, in a random order of importance, are as follows:

The Study makes the following recommendations:

a. General

ADB needs to build on, and periodically return to, the best work already done in Mongolia. Some of ADB's previous technical assistance retains its validity and should be used to the full.

Continuity is not desirable where stated objectives have been substantively achieved. New projects should then not be pursued simply because of ADB's past involvement. This is the case, for instance, with further development of EIA in Mongolia.

ADB should not necessarily create new environmental programs and projects, but try to enhance the positive environmental repercussions of many ongoing or proposed activities. In many cases, these promise to be greater than the impact of projects with more explicit environmental goals.

The effectiveness and "Government of Mongolia ownership" of ADB's environment-and-livelihood-improvement projects is substantially enhanced whenever the success of project implementation does not call for, and depend mainly on, the availability of more counterpart resources but demonstrates either an income-generating or revenue-generating potential.

ADB grant resources likely to be available for environmental management objectives in Mongolia are relatively modest compared with those of some of the bi-lateral agencies. ADB has never actively sought to match them, nor should it. Neither should ADB compete with UNDP and its co-ordination role with one exception: access to GEF resources. The principal vehicles for ADB to maintain or increase its effectiveness in Mongolia's environment should be (1) stepping up its technical and loan co-financing efforts involving bi-laterals but also GEF; (2) conscious efforts to shape the design of TAs and loan projects in ways that provides for a maximum overlap between the objectives of livelihood improvement and environment; and (3) maximizing impacts through a fuller use of the Mongolia Resident Mission.

ADB should not finance any action- or master plans related to the environment unless the preparation of such plans has a support of MFE, besides the relevant technical ministry.

While remaining supportive of MNE, ADB should not equate environmental management in Mongolia with MNE only. ADB should encourage MNE to work more effectively with MID than hitherto and shed some its reluctance to be a major player in areas such as water management and sanitation policy or industrial pollution control.

ADB should consistently seek ways of making environmental policy formulation and execution in Mongolia more informed by economics. There are a large number of situations in Mongolia where planning and investment decisions would benefit from economic valuation of natural resource use. Second, very little use has so far been made of existing public health statistics and other suitable proxies in attempting to approximate the economic cost of pollution and resource degradation.

There is a general support for the idea of environmental funds in Mongolia. The important debate surrounding such funds' pluses and minuses has not taken place in Mongolia yet. ADB should promote such debate, supported by the experience in other DMCs such as Thailand.

- b. Review of the terms of reference and influencing the design of several existing TA and loan candidates

If reluctant to change the composition of CAP 2001-2003, ADB should at least consider modifying the design of some of the TA and loan candidates in directions suggested by the nine environmental priorities listed above. Specifically, the following is proposed

Rural Finance (2001 loan)

- If still possible, consider a component for solar/wind power for financing under the Japan Fund for Poverty Reduction, to be integrated into the support to savings and credit unions, the focus of the proposed loan.

Crops Sector Study (2001 ADTA)

- If still possible, give specific attention to sustainable farming (use of organic fertilizers, crop rotations, water harvesting, low or no-till practices, IPM, etc.).

NSO Capacity Building in Social Statistics (2001 TA)

- Strengthen the quality of public health data to support estimates of the health impact of pollution and contamination in Mongolia

Capacity Building for Aid Co-ordination (2001 ADTA)

- Ensure a prominent place is given to ADB-GEF partnership having prepared the ground for it beforehand.
- Include a sub-topic of closer coordination between MNE and MID (and possibly MFA) in implementing environment-oriented projects.

Provincial Towns Urban Services II (2001 PPTA and 2002 loan):

- The PPTA to consider the possibility of incorporating (1) a component for upgrading medium-sized boilers in selected *aimags* and *soums*, possibly with GEF co-financing; (2) a component for installation of hybrid solar/wind/diesel systems for selected communal facilities in *aimags* and *soums*, possibly with GEF co-financing.
- Make solid and THW management a significant component of the loan. Draw from the list of priority areas in the section above to strengthen the project design.

Integrated Management of Urban Development (2002 ADTA)

- Incorporate the consideration of topics identifies in the section above as an environmental priority (solid and THW disposal, water and air pollution, possibly even management of peri-urban grasslands and pollution permitting and charges).

Rural Sector Employment Generation (2002 PPTA)

- Prepare a component for ADB-GEF co-financing supporting livelihood improvement and employment generation in zones adjacent to areas of global biodiversity or international-waters importance.
- Draw from the list of priority areas in the section above to strengthen the project design (e.g. forestry, peri-urban grasslands, etc.).

Rural Sector Capacity Building (2003 ADTA)

- Consider modifying it in the direction of local land-use planning and zoning in line with the brief description in the above section
- Consider deliberate re-formulation of the entire TA as a PPTA for ADB-GEF co-financing with emphasis on improved management of buffer-zone resources of arid areas. Rename it as Dry Ecosystems Land Management.

c. Possible modifications of CAP: Part I

This is a matter of possibly including components that are not, or cannot be, easily addressed by projects already in the existing pipeline or under implementation. In terms of technical assistance, the best candidate would be:

- Improved financing of local environmental management

[As a new ADTA expanding the theme (9) above of economic valuation of natural resources and environmental sinks as a tool of improved implementation of environmental laws and regulations].

d. Possible modifications of CAP: Part II: ADB-GEF partnership

ADB should pursue an ADB-GEF partnership in Mongolia because Mongolia offers an unusually large number of opportunities for simultaneously generating global benefits and reducing poverty. The decision actively to seek such an association, however, has programming consequences. The existing CAP makes little room for it or is insufficiently well articulated to judge whether such room exists. The pursuit of ADB-GEF partnership requires that a dialogue be established with the main competitors for GEF grant funds in Mongolia, i.e. UNDP and the World Bank. In overcoming this omission, three approaches suggest themselves, namely (1) formulation of components for GEF funding to be included into projects already in CAP (as suggested in *Section 2* above), (2) suitable re-formulation of some of the existing pipeline projects (also mentioned in *Section 2* above) and (3) formulation of new stand-alone TA or loan projects for ADB-GEF co-financing. The most suitable in the last-mentioned category would be

- Activities designed to lessen land degradation pressures on the Mongolian side of transboundary watersheds; and
- Promotion of solar and wind power among the dispersed (and, in Mongolia, mobile) rural population. This should initially be structured to fit GEF's Operational Program 6 rather than necessarily conceived in the expectation of financing by the Clean Development Mechanism of the FCCC. The experience of ALGAS project should be reviewed to assist possible search for attractive GHG-reducing options with low policy barriers applicable to Mongolia

MNRM is well placed to act as a facilitator in any ADB-GEF partnership initiatives in Mongolia and should be assigned such a responsibility.

e. Regional activities

ADB should continue to assist Mongolia in integrating itself into emerging regional groupings, especially those involving ADB's DMCs. In particular, the Regional Cooperation for Sustainable Mountain Development in Central Asia, based on RETA 5876, should be enlarged to include Mongolia.

ADB should give consideration to formulating a transboundary livelihood improvement and environmental conservation project involving Mongolia, Kazakhstan, PRC and possibly Russia, and seek GEF or bi-lateral co-financing for it.

The Mongolia Resident Mission should encourage Government of Mongolia *immediately* to respond to the invitation to participate in RETA 5972 (Promotion of Renewable Energy, Energy Efficiency and GHG Abatement Projects).

Annex 2 : Conclusions and Recommendations of the Case Study on Environment and Natural Resource Management (CAPE, 2002)

Choice of ENRM priorities and strategy formulation:

- ADB's ENRM program in Mongolia was highly relevant. The Program was based more on the Bank's accumulated regional experience and internal loan-processing requirements than on detailed assessment. Nevertheless, and with only a small number of exceptions, the accumulated experience proved to be largely transferable and contributed to ADB starting "on the right foot" in Mongolia (through TA on development of EIA procedures). The absence of country-specific environmental analysis until 2001 turned out not have had serious consequences on the choice of priorities but may have resulted in insufficient advantage being taken of certain design possibilities not apparent without a detailed assessment.
- Unlike priority setting in genuine sectors which could (and were) supported by strategic (master, action-) plans, the cross-sectoral nature of environmental management embraced by ADB early on argued against an ENRM-specific blueprint that would guide the prioritization process.
- ADB initial environmental interventions (1992-1995) were formulated at a time when domestic priorities were articulated incompletely. Thereafter, ADB's program was well within Government of Mongolia's own statements of environmental priorities. Throughout the period, no strong pressure by Government of Mongolia was put in policy dialogues conducted on ADB to defend its strategic direction.
- The fragmentation of environmental insights within the Bank was among factors contributing the relatively low degree of strategic "informedness" by ADB throughout the decade.

Fit with the operational strategy and internal consistency:

- ENRM elements of ADB assistance conformed reasonably well to the overall country operational strategy. Problems lay more in omissions or underestimation of several transition-related problems such as the effect of privatization on the country's commons or the changing pattern of pollution in the wake of temporary de-industrialization, rural-urban population movements and other factors.
- Few components are present in the current ADB assistance program that effectively link poverty alleviation with environmental improvement but scope does exist for identification of such components under solid waste management, heating efficiency/stoves improvements, semi-intensive livestock management, and others. Opportunities to modify country assistance program exist, were made little use until the completion of CEA, but increasing willingness to consider such modification is evident now.
- ADB practices varied across sectors and projects/programs in Mongolia. The lack of consistency of approach did not have any particularly serious consequences for implementation effectiveness as far as ENRM management was concerned. Sector specifics often dictated the balance of approach and militated against excessive uniformity.

“Ownership” of ENRM projects:

- Government of Mongolia “ownership” of ADB-funded ENRM activities was invariably strong at the stage of country programming but vacillated in some cases in the course of implementation, especially in policy loans with ENRM conditionalities.
- Arguably, ADB’s environmental activities were not “sold” effectively outside Government of Mongolia. There was little involvement by the public and NGOs. “Ownership” of ADB activities was rather narrow. ADB was in part handicapped by received (and reinforced) notions in Mongolia that “environment” is only or mainly about nature conservation. ADB needs better to publicize the environment impacts of its mainstream activities such as urban environmental improvements.
- Capacity to program ENRM activities on Government of Mongolia’s side varied and has been particularly weak at the local level. This could adversely affect the degree of Government of Mongolia “ownership” under the latest COS that indirectly envisages some decentralization of development efforts.

Design and implementation:

- In Mongolia, effectiveness of ENRM assistance tends to suffer from insufficient integration across sectors (e.g. lack of cross-sectoral approach to air-pollution-control interventions in Ulaanbaatar). In the past, ADB was not successful enough in overcoming this fragmentation. Novel implementation arrangements are needed (e.g. greater use of multi-sector working groups) as well as a greater appreciation by ADB of its “contribution” to the local implementation overload.
- ADB’s assistance to ENRM (MNE capacity building, energy-efficiency projects) had a strong Ulaanbaatar bias. Weak local capacity reduced the effectiveness of some of the financed activities (e.g. use of EIA)
- Provisions for monitoring and evaluation of environmental impacts were consistently weak and largely excluded the civil society. Partly as a result of the balance of ADB program, the civil society also played no or minimal role in project design.
- Heavy reliance on policy-based lending in ADB’s assistance to Mongolia during the past decade may have facilitated environment-positive reforms (e.g. in pricing of environmental resources).

Continuity and sustainability:

- Sustainability of ADB funding of selected activities needs to be distinguished from the long-term viability of the activities themselves. What deserves to be sustainable is the desired pattern of economic development, not necessarily the mechanisms selected to bring this about.
- ADB is more business-like than most bi-lateral donors and more ready not to renew certain activities for the sake of continuity. This can be a plus. Yet it is important to identify cases where changes in the direction of COS threaten to leave ADB’s environmental agenda half-finished (e.g. energy) and seek to ensure that a suitable

successor can be found even if the ultimate credit may go to others.

GEF:

- ADB did not make any use of GEF co-financing possibilities in shaping its ENRM program. The Bank should seek GEF co-financing for projects the design of which is improved if the delivery of global benefits (GEF responsibility) are strengthened by delivery of local benefits (ADB responsibility). Considering current financial situation of GEF and its existing commitments in Mongolia with a heavy focus on biodiversity conservation, the main areas for potential ADB-GEF partnership should be desertification control and GHG reduction through renewable energy provision. ADB should pursue these possibilities more actively.

Annex 3 : ADB Lending and TA Program in Mongolia, 2001-2003

A. Technical assistance

Year 2001

Sector	Project name	Type and TA number	Amount (\$'000)
Agriculture and Natural Resources	Crop Production	PP 3686	500.0
Social Infrastructure	1. Integrated Development of Basic Urban Services in Secondary Towns	PP 3685	700.0
Governance	2. Second Health Sector	PP 3750	600.0
	1. Improving Social Statistics	AO 3684	500.0
Other	2. Improving Aid Coordination and Management	AO 3811	300.0
	Strengthening Policy for Social Security Reform	AO 3709	600.0
Total			3,200.0

Year 2002

Sector	Project name	Type and TA number	Amount (\$'000)
Social Infrastructure	Capacity Building for Integrated Regional Development Planning	AO 3948	600.0
Governance	1. Capacity Building for Accounting and Auditing Professionals	AO 3913	500.0
	2. Strengthening Public Sector Administration and Financial management	AO 3920	650.0
	3. Retraining of Legal Professionals in a Market Economy (Phase II)	AO 4077	150.0
Finance, trade	1. Trade Policy Review	AO 3934	150.0
	2. Support to Privatization in the Banking Sector	AO 3904	150.0
Energy	Renewable Energy development in Small Towns and Rural Areas	AO 3965	400.0
Transport	1. Civil Aviation Policy Development	AO 3938	300.0
	2. Third Roads Development	PP 3990	600.0
Other	Expanding Employment Opportunities for Poor Disabled	JFPR 9014	1,000.0
	Improving the Living Environment of the Poor in Ger Areas on Mongolia's Cities	JFPR 9015	2,200.0
Total			7,350.0

Year 2003

Sector	Project name	Type and TA number	Amount (\$'000)
Social Infrastructure Governance	Support for Health Sector Reform Procurement Management Capacity Building	PP 4123 AO 4304	650.0 150.0
Finance	Third Financial Sector Program	PP 4236	500.0
Total			1,250.0

B. Loans

Year 2001

Sector	Project name	Loan No.	Amount of loan (\$ mil)
Social Infrastructure	Housing Finance (Sector)	1847	15.0
Transport	Roads Development	1364	25.0
Multisector	Social Security Sector Development Program	1836/ 1837	4.0 8.0
Total			52.0

Year 2002

Sector	Project name	Loan No.	Amount of loan (\$ mil)
Social Infrastructure	1. Second Education Development Project	1908	14.0
	2. Integrated Development of Basic Urban Services	1907	20.1
Total			34.1

Year 2003

Sector	Project name	Loan No.	Amount of loan (\$ mil)
Social Infrastructure	Second Health Sector Development Project	1998	14.0
Others	1. Governance Reform Program II	2010	13.5
	2. Capacity Building for Governance Reforms	2011	2.0
Total			29.5

Annex 4 : ADB Technical Assistance and Lending Projects of Relevance to Mongolia's Environmental Management, 1992-2003

A. Technical assistance

No.	Title	Type of TA	Amount (\$'000)	Year appr.
1647	Strengthening Environmental Assessment Procedures	A&O	370.0	1992
1653	Egiin Hydropower	PP	1,400.0	1992
1750	Energy Audit, Efficiency and Conservation Study	A&O	407.5	1992
2093	Power Rehabilitation	PP	100.0	1994
2095	Power Sector Master Plan Study	A&O	595.0	1994
2208	Strengthening the Env. Management Capability of MNE	A&O	574.0	1994
2350	Energy Conservation	PP	100.0	1995
2458	Strengthening Land Use Policies	A&O	580.0	1995
2582	Provincial Towns Basic Services	PP	600.0	1996
2602	Study of Extensive Livestock Production System	A&O	600.0	1996
2610	Ulaanbaatar Heat Rehabilitation	PP	450.0	1996
2819	Agriculture Sector development Program	PP	492.0	1997
2881	Capacity Building for the Provision of Urban Services in Provincial Towns	A&O	825.0	1997
2887	Egiin Hydropower BOT	PP	60.0	1997
3016	Energy Rehabilitation		900.0	1998
3029	Improving Energy Authority's Billing and Collection System	A&O	450.0	1998
3299	Capacity Building for Energy Planning	A&O	700.0	1999
3395	Capacity Building for Cadastral Survey and Land Registration	A&O	990.0	2000
3685	Integrated Development of Basic Urban Services in Secondary Towns	PP	700.0	2001
3686	Crop Production	PP	500.0	2001
3948	Capacity Building for Integrated Regional Development Planning	A&O	600.0	2002
3965	Renewable Energy Dev. in Small Towns and Rural Areas	A&O	400.0	2002
9015	Improving the Living Environment of the Poor in Ger Areas on Mongolia's Cities	JFPR	2,200.0	2002
	Total		14,593.5	

B. Loans

Number	Title	Loan amount (\$'mil)	Year approved
1152	Egiin Hydropower	3.8	1993
1334	Power Rehabilitation	40.0	1994
1409	Agriculture Sector Program	35.0	1995
1492	Energy Conservation	10.0	1996
1548	Ulaanbaatar Heat Efficiency	40.0	1997
1560	Provincial Towns Basic Urban Services	6.8	1997
1736	Cadastral Survey and Land Registration	15.0	2000
1821	Agriculture Sector Development Program- Program Loan	7.0	2000
1822	Agriculture Sector Development Program- Project Loan	10.0	2000
1907	Integrated Development of Basic Urban Services	20.1	2002
	Total	187.7	

Annex 5 : Mongolia CEA Consultation, 12 April 2004, List of Participants

Mr. Erdenebulgan	International Cooperation Department, MNE
Dr. Avirmed	Deputy Director, Nature, Forest and Water Resource Agency, MNE
Mrs. Munkhzul	Nature, Forest and Water Agency, MNE
Mr. Ihanbaia	Director, Policy Coordination Department, MNE
Ms. Tuul	Mongolian Business Development Agency
Mr. K. Rutter	Team Leader, Agriculture Sector Development Program, MFA
Mr. Batsaikhan	Environment Management Department, Ulaanbaatar City Government
Dr. Enkhtsetseg	Public Health Department, Ministry of Health
Dr. Batima	National Agency for Hydrology and Meteorology, Climate Change Project
Ms. Gantigmaa	Tuul 21 Project, Ministry of Infrastructure
Mr. J. Wingard	World Bank consultant
Mr. H. Hoffmann	Adviser, Community-based Natural Resource Management, GTZ
Dr. S. Schmidt	New Zealand Nature Institute - Initiative for People-Centered Conservation
Mr. H.-T. Moeller	GTZ
Ms. Elbegzya	Program Officer, UNDP
Mr. Batnasan	Program Coordinator, WWF
Prof. Dorjdagva	National Council for Sustainable Development
Mr. B. Erdene-Ochir	Mongolian Consortium for Environment and Nature
Mr. D. Teter	Mongolia Resident Mission, ADB
Mr. I. Ruzicka	ADB consultant

Annex 6 : Post-2000 Foreign-aided Environment-related Projects in Mongolia

A. Implemented by MNE

No.	Project name	Financial Source	Budget (\$'000, unless otherwise specified)	Time -frame
A. Environmental policy formulation				
1.	Development of Bio-safety National Action Plan	UNEP	160.0	2002-2004
		Sub-total	160.0	
B. MNE Capacity strengthening				
1.	Strengthening Environmental Management Capacity at National and Local Level	World Bank	300.0	2003-2004
		Sub-total	300.0	
C. GEF-supported projects				
I. Biodiversity				
1.	Nature Conservation Pilot Projects in Western Mongolia	GEF/WWF	Sfr 60.0 (\$ 41.8)	1997-2001
2.	Altai -Sayan Conservation Community-based Conservation of Biological Diversity in the Mountain Landscapes of Mongolia's Altai-Sayan Eco-region	GEF/UNDP	3,070.0	2001-2008
3.	Biodiversity Conservation and Sustainable Livelihood Options in Eastern Mongolia	GEF/UNDP	6,174.0	1998-2004
4.	Conservation of the Gobi Desert Using Bactrian Camels as an "Umbrella Species"	GEF/UNDP	979.0	2003-2007
5.	Conservation of Eg-Uur Watershed	GEF/World Bank	213.0	2003-2004
6.	Dynamics of Biodiversity Loss and Permafrost Melt in Lake Hovsgol National Park	GEF/World Bank	830.0	2001-2005
7.	Enabling Activities to Facilitate Early Action on the Implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs)	GEF/UNIDO	492.0	2002-2005
II. Energy efficiency, climate change				
8.	Improved Household Stoves in Mongolian Urban Centers	GEF/World Bank	750.0	2001-2005
9.	Commercialization of Superinsulating Building Technology in Mongolia	GEF/UNDP	750.0	2003
10.	Technology Needs Assessment in Energy Sector	GEF/World Bank	98.0	1999-2001
11.	Provision of Energy Efficient Social Services	GEF/Norway/ UNDP	2,020.3	1997-2002
12.	Energy Efficient House	GEF/NLM/ NORD/ UNDP	1,750.0	2002-2005
III. Others				
11.	Strengthening of Montreal Protocol Implementation Structure	GEF/UNEP	66 .0	2000-2002
		Sub-total GEF	13,463.8	
D. Biodiversity conservation, protected areas, buffer zones				
1.	1. Nature Conservation and Buffer Zone Development, Phase II 2. Conservation and Sustainable Management of Natural Resources	Government of Germany /GTZ	DM 5,000.0 (\$ 2,970.0)	1998-2004
2.	Hustai Nuruu Mountain Steppe Reserve, Biodiversity Project, Phase II	Netherlands	3,200.0	1998-2003
3.	Assessment of Capacity Building Needs and Country-Specific Priorities in Biodiversity	GEF/World Bank	195.0	2002- 2003
4.	Sustainable Management of Common Natural Resources in Mongolia Phase I	IDRC	30.0	2000-2001
5.	Sustainable Management of Common Natural	IDRC	n.a.	2002-2004

No.	Project name	Financial Source	Budget (\$'000, unless otherwise specified)	Time -frame
6.	Resources in Mongolia Phase II Pasture Management Improvement and Anti-Desertification Measures	GTZ	580.0	2000-2003
		Sub-total	6,975.0+	
F. Forest resources				
1.	Friendship Afforestation	Hyogo Pref., Japan and Kobe Steel	JPY1.0M (\$ 8.9)	2000
2.	Reforestation	Hyogo Prefecture, Japan	JPY2.0M (\$ 17.8)	2001
3.	Conservation and Sustainable Use of Forest Resources in the Western Region of the Khan Khentii Protected Area	GTZ	580.0	2000-2003
4.	Reforestation and Propagation of Trees	Netherlands /UNDP	100.0	2000-2001
5.	Community Based Natural Resource Management (Phase II)	FAO	198.0	n.a.
6.	Emergency Measures to Fight Forest Pest	FAO	395.0	n.a.
		Sub-total	1,299.7	
J. Others				
1.	Support to the Government for Tourism Development	UNDP	50.0	2002 -2004
2.	Environmental Public Awareness	Sheikh of Kuwait	300.0	2000-2002
		Sub-total	2,687.5	
K. Regional				
1.	Transboundary Environmental Cooperation in Northeast Asia	ADB	350.0	2000-
2.	Combating Desertification in Asia	ADB/CCD	450.0	2000-
3.	Acid Rain Monitoring System	Japan, JICA	n.a.	1999-2001
4.	Preparation of a Strategic Action Programme (SAP) for the Tumen River Area, Its Coastal Regions and Related Northeast Asian Environs	Secretariat of the Tumen River Program GEF/UNDP	5,000.0 5,199.9	2000-2001 2001-2003
5.	Information System for Environment and Agriculture Monitoring	EU TACIS	800.0	1999-2001
6.	Promotion of Renewable Energy, Energy Efficiency and GHG Abatement Projects	ADB/ Netherlands	5,000.0	2001-
6.	Prevention and Control of Dust Storms in North-East Asia	ADB/RETA 6068		2003-
	Assessment of Impact and Adaptation to Climate Change in Multiple Regions and Sectors (AIACC) Programme	GEF/UNEP/STA RT/TWAS	n.a.	2002-2004
7.	Greenhouse Emission Reduction from Industrial Sources In Asia Pacific (GERIAP)	SIDA	2,500.0	n.a.
Total (without regional projects and with omissions)			42,042.2	

B. Implemented by MID

No.	Project name	Financial Source	Financing	Budget (\$,000 unless otherwise stated)	Time frame
Energy-related					
1.	Baganuur, Shivee Owoo Coal Mine Project-1 1997.02.25/MON	Japan, JBIC	Soft loan	25,922.1	1997-2001
2.	Baganuur, Shivee Owoo Coal Mine Project-2 1997.02.25/MON	Japan, JBIC	Soft loan	19,120.0	1997-2001
3.	Energy Project	WB/ IDA	Soft loan	30,000.0	2001-2006
4.	Utilization of Renewable Energy in Rural Areas of Mongolia	GTZ	Grant	DM 3,000.0 Euro 3,000.0	1999-2007
5.	Research and Experimental Project on Photovoltaic Power Plant	NEDO (Japan)	Grant	n.a.	2002-2004
6.	Nomadic Electrification	JICA	Grant	2,500.0	2002
7.	Rehabilitation of Bogd River Hydropower Plant	GTZ	Grant	Euro 3,000.0	2002-2005
8.	Erdenbulgan Hydropower Plant	DANIDA	Grant	1,000.0	1997-2004
9.	Development of Renewable Energy for Small Towns and Rural Areas	ADB	Grant	400.0	2002
10.	Taishir Hydropower Plant	Kuwait Fund/ Abu Dhabi/	Grant/Soft loan	20,000.0 13,000.0 5,000.0	1997-2006
11.	Study of Hydropower Plant on Orkhon River	JETRO	Grant	700.0	2000-2001
Urban environmental infrastructure /Water					
1.	Provincial Towns Basic Urban Services (TA 2582 and Loan 1560)	ADB	TA grant Soft loan	600.0 6,800.0	1998-2001
2.	Second Ulaanbaatar Urban Services Improvement Project (under processing)	WB	Soft loan	18,000.0	2004-2009
3.	Cleaner Production and Waste Water Pollution Abatement by Mongolian Industries	Netherlands	Grant	2,000.0	1999-2003
4.	Solid Waste Management UB Wastewater Treatment Plant Rehabilitation	Netherlands Spain	Grant Soft loan	n.a. n.a.	2000-2003 2003-2004

Note: * Jointly implemented by MID and MNE

C. Implemented by Government agencies other than MNE and MID

No.	Project name	Financial Source	Financing	Budget (\$,000 unless otherwise stated)	Time -frame
1.	Strategy development Mongolian Action Program for the 21 st Century (MAP-21) Phase II	UNDP/ Capacity 21	Grant	n.a.	2001-2003
Land reform					
1.	Cadaster System Development	Sweden	Grant	470.0	2000-2002
2.	Cadastral Survey and Land Registration * (TA 3395 and Loan 1736)	ADB	TA grant Loan	990.0 9,900.0	2000-
Rural development					
1.	Gobi Regional Economic Growth Initiative Phase I Phase II (under preparation)	USAID	Grant	10,000.0 10,000.0	1999-2004 2004-2007
2.	Organized Rural Self Help*	GTZ	Grant	DM 6,000.0	1998-2007
3.	Privatization of Veterinary Services*	GTZ	Grant	DM 6,500.0	1999-2005
4.	Arhangai and Khovsgol Restocking Project	IFAD	Loan	5,000.0	1999-2003
5.	Integrated Crop and Livestock	EU-TACIS	Grant	????	2002-2004

No.	Project name	Financial Source	Financing	Budget (\$,000 unless otherwise stated)	Time -frame
6.	Household Livelihoods Support Program	World Bank	Loan/grant	12,000.0	2002-2009
7.	Rural Poverty Reduction Project	IFAD/ Government of Mongolia	Loan	17,400.0 2,300.0	2003-2010
8.	Sustainable Grassland Management	UNDP/ Netherlands	Grant	3,300.0	2002-2007
9.	Promotion of Organized Self-Help Groups in Rural Areas	GTZ	Grant	n.a.	1998-2004
10.	Study for Improvement of Livestock Farming in Rural Areas	JICA	Grant	190.0	2003-2004
11.	Pastoral Ecosystem Management Program (under preparation)	Swiss Dev. Corp.	Grant	n.a.	2004-
Public health					
1.	Healthy Settings and Environments Phase I, Phase II,	WHO	Grant	260.0 171.0	2002-2003 2004-2005
2.	Health Information and Evidence for Policy, Phase I: Phase II:	WHO	Grant	218.0 132.0	2002-2003, 2004-2005,

Annex 7: Laws and Regulations Relating to Environmental Management in Mongolia

Law	Year enacted	Number of related regulations, orders, etc. as of end of 2000
Law on Environmental Protection	1995	
Law on Water and Mineral Water Resource Fee	1995	21
Law on Water	2004	
Law on Special Protected Areas	1995	16
Law on Buffer Zones	1998	
Law on Natural Plants	1995	3
Law on Natural Plant Use Fees	1995	
Law on Forests	1995	38
Law on Fees for Timber and Fuelwood Harvesting	1995	
Law on Prevention of Steppe and Forest Fires	1996	
Law on Underground Resources	1988	18
Petroleum Law	1991	
Law on Minerals	1997, 2002	
Law on EIA	1998	
Law on Hunting	2000, 2003	6
Law on Fauna	2000	
Law on Hunting Reserve Use Payments and on Hunting and Trapping Authorization Fees	1995	
Law on Reinvestment of Natural Resource Use Fees for Conservation	2000	
Law on Protection for Toxic Chemicals	1995	18
Law on Air	1995	n.a.
Law on Tourism	1998	n.a.
Law on Hydrometeorology	1997	n.a.
Law on Land Cadaster and Mapping	1999	
Law on Land Fees	1997	
Land of Land	1995, 2002	
Law on Land Possession	2003	
Law on Solid Waste	2002	

Sources: Wingaard and Ogderel (2001), MNE

Annex 8 : Special Protected Areas and National Parks in Mongolia, 2003

No	Names and classification of PAs	Area (000ha)	Year established
1.	Great Gobi SPA	5,311.7	1975
2.	Khokh Serg	65.9	1977
3.	Bogdkhan Mountain SPA	41.6	1978
4.	Khasagt Khairkhan Mountain SPA	27.4	1965
5.	Khan Khentii Mountain SPA	122.7	1992
6.	Nomrog SPA	311.2	1992
7.	East Mongolia SPA	570.3	1992
8.	Mongolian Daguur SPA	103.0	1992
9.	Orgontenger Mountain SPA	95.5	1992
10.	Uvs Lake SPA	712.5	1993
11.	Small Gobi SPA	1,839.2	1996
12.	Khoridol Saridag SPA	188.6	1997
	Total SPAs	10,494.3	
1.	Khovsgol Lake NP	838.0	1992
2.	Khorgo-Terkh Tsagan Lake	77.3	1995
3.	Gobi Gurvan Saikhan NP	2,694.7	1993/2000
4.	Gorkhi-Terelj NP	293.2	1993
5.	Altai Tavan Bogd	636.1	1996
6.	Khangai Mountain Range NP	888.5	1996
7.	Khar Us Lake NP	850.3	1997
8.	Noyon Khangai NP	59.1	1998
9.	Khustai Mountain NP	50.6	1993/1998
10.	Khan Lhokii-Kyarghas NP	553.3	2000
11.	Siilkhem Mountain Range NP	140.1	2000
12.	Tsambagarav Mountain NP	111.0	2000
13.	Tarvagatai Mountain Range NP	525.4	2000
14.	Onon-Balj NP	415.7	2000
15.	Tujiin Nars NP	60.0	2002
16.	Myangan Ugalzat Mountain NP	80.7	2002
	Total NPs	8,274.1	
	16 Nature Reserves	2,020.2	1957-2000
	6 Natural and Historical Monuments	79.3	1995-1996
	GRAND TOTAL	20,867.9	

Annex 9 : List of Companies Licensed to Perform Detailed EIA In Mongolia, 2001

No	Name of the company	Director	Phone, fax, email	Location
1	"Orchlon-Urtenz"	B. Bayasgalan	Phone: 327271 o, 329150h, 99190346 Fax: 976-11-329150	Institute of Water and Meteorology
2	"ENCO"	A. Namkhai Ph.D.	Phone: 312655 o, 322378h, 99192168 Fax: 312655	Agricultural Mapping Institute
3	"Ecology"	J. Garigkhuu Ph.D.	Phone: 99142221	New Capital Hotel
4	"Eco-trade"	D. Dorjsuren Ph.D.	Phone: 323569 o, 368980 h, 99190403 Fax: 323569	Baga-toiruu-2-35
5	"ECOS"	Ts.Sosorbaram Ph.D.	Phone: 328215 o, 311505h, 99115116 Fax: 328215	Institute of Geoecology
6	"Nature and Energy"	S. Jargalsaikhan	Phone: 322199 o, 329601h, 99116675 Fax: 322199	Institute of Water and Meteorology
7	"JEMR"	R. Oyun Ph.D.	Phone: 326489 o, 322230h, E-mail: jemr@magicnet.mn	Institute of Water and Meteorology
8	"SATU"	G. Tuvaansuren Ph.D.	Phone: 314170 o, 682397h	Construction Mapping Institute
9	"Mongol Khairkhan"	Oyuntsetseg	Phone: 451837 o, 329150h, 99295146	n.a.
10	"Eco-mon"	Dr K. Ulikpan	Phone: 311347 o	Cultural Center
11	"Agrar"	N. Otgonbayar Ph.D	Phone: 312771 o, 99191449	Institute of Geoecology
12	"Nemer international"	P. Khukhuu	Phone: 328592 o, 369695h, 99190346	Institute of Geoecology
13	"Mongeo-ecotech"	M. Myagmarjav	Phone: 350554	Inst. of Construction Research
14	"Min-tech"	S. Avirmed	Phone: 318317 o, 302216h, 991616885	Near Mothers Clinic II
15	"TC-Eco"	B. Tumendemberel	Phone: 99115397	Construction Mapping Institute
16	"Nature-Ecology"	B. Ikhbayar Ph.D	Phone: 355910 o, 99192565	Taxation Office, Bayanzurkh district
17	"JNEP"	J. Natsag	Phone: 365762 99163225	Institute of Geography
18	"Hydro-Eco"	Ts. Baldandorj	Phone: 322187 o, 325993h	Institute of Geoecology
19	"Ecos-OSM"	R. Mijiddorj	Phone: 315387 o, 96114212	Technical University of Mongolia
20	"TEKOL"	G. Tomortulga	Phone: 99197700	Cultural Center

21	“Gazar-Eco”	Ch. Gonchisumlaa	Phone: 99175720	National University of Mongolia, Building 2
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Additional information

No.	Name of the company	Date licensed	License extension date	Number of EIA reports completed	Emplo yees	Resident experts
1	“Orchlon-Urtenz”	1995.5.12	2000.7.28	12	5	18
2	“ENCO”	1996.2.9	1997.3.24	38	7	14
3	“Ecology”	1996.7.23	2000.7.28	16	4	16
4	“Eco-trade”	1996.10.16	1998.4.28	27	5	12
5	“ECOS”	1997.4.22	1998.4.28	40	8	20
6	“Nature and Energy”	1998.2.13	2000.2.29	6	8	12
7	“JEMR”	1998.4.28	1998.4.28	8	8	12
8	“SATU”	1998.4.28	2000.7.28	14	4	10
9	“Mongol Khaikhan’	1998.4.28		2	3	10
10	“Eco-mon”	1998.4.28	2000.7.28	10	3	12
11	“Agrar”	1998.4.28	2000.7.28	5	6	10
12	“Nemer international”	1998.4.29	2000.7.28	8	3	12
13	“Mongeo-ecotech”	1998.4.29				
14	“Min-tech”	1998.4.29	2000.7.28	10	4	11
15	“TC-Eco”	1998.4.29	2000.7.28	3	3	8
16	“Nature-Ecology”	2000.1.13	-	9	4	16
17	“JNEP”	2000.1.13	-	12	4	6
18	“Hydro-Eco”	2000.1.13	-	3	4	12
19	“Ecos-OSM”	2000.7.28	-	2	3	14
20	“TEKOL”	2001.1.19	-	1	5	12
21	“Gazar-Eco”	2001.1.19	-	4	5	12

Annex 10 : Principal Environment-related NGOs in Mongolia

These are all Ulaanbaatar-based and include, by orientation:

A. General

Mongolian Association for the Conservation of Nature and Environment
 Mongolian Green Movement
 "Mother Earth" Foundation
 Parachuting Environmental Helpers Association
 "Development and Environment"
 Mongolian Society for Environment and Development
 Women's Society for Environment and Development
 Mongolian Nature and Environment Consortium
 Union of Mongolian Environmental NGOs

B. Narrower focus

Mongolian Protected Areas Society
 Mongolian Integrated Association of Foresters
 Mongolian Ecotourism Association
 Khan Altai Foundation
 Mongolian National Water Foundation
 Mongolian Meteorological Society
 Mongolian Society for Combatting Desertification
 "Khustai" International Research Center
 Mongolian Forest Forum
 The Ochirbat Foundation

C. Species Conservation

The Argali Research Center
 Mongolian Society for the Protection of Birds
 Mongolian Society for the Protection of Marmots
 Society for the Protection of Elk
 Mongolian Snow Leopard Center
 Mongolian Butterfly Society
 "Blue Wolf" Center
 Mongolian Society for the Protection of Rare Animals and Plants
 Mongolian Bird Research Foundation
 Mongolian Hunters' Society

Sources: Mongolian NGO Directory, (Soros Foundation)
 MNE et al (2003) Assessment of Biological Diversity Conservation Capacity of
 Mongolia