RAS/98/G31 - UNDP/Global Environment Facility

TumenNET
Strategic Action Programme

Eco-regional Cooperation on Biodiversity Conservation and Protection of International Waters in NE Asia

Prepared by:
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Under guidance from the lead agent:
Republic of Korea (Ministry of Environment)

October 2002

This TumenNET Strategic Action Programme was adopted and signed by the Ministers of the respective countries:

On behalf of the Democratic People's Republic of Korea:

Secretary General of the National Coordinating Committee for Environment

…… Date:……

On behalf of Mongolia:

Minister of Nature and Environment

…… Date:……..

On behalf of the People's Republic of China:

Minister of the State Environmental Protection Administration

…… Date: ……..

On behalf of the Republic of Korea:

Minister of Environment

…… Date: ……..

On behalf of the Russian Federation:

Minister of Natural Resources

…… Date: ……..

Desiring to manage development and conserve the ecosystems of the Tumen River basin, Mongolian Plateau, the Daurian Steppe, and the TumenNET region in general in an integrated and sustainable manner,

The Governments of:

The Democratic People's Republic of Korea,
Mongolia,
The People's Republic of China,
The Republic of Korea,
and the Russian Federation,

Continuing in the spirit of the United Nations Declaration on Environment and Development (Rio Declaration), Agenda 21, as well as the 1995 MOU on Environmental Principles Governing the Tumen River Economic Development Area and Northeast Asia.

Appreciating the progress that has been made towards sustainable development and environmental protection of the TumenNET ecosystems through, *inter alia*, actions taken by TRADP, UNESCO, the Eastern Steppe Biodiversity Project (GEF), UNESCAP, NEAC, and NEASPEC as well as various national and local actions to date;

Recognizing the unique biological heritage of the TumenNET region, with its diverse array of environmental challenges and their global importance in relation to climate change and conservation of wild fauna and flora;

Intending, based on national priorities, to mobilize funds and resources and reinforce cooperation with international financial institutions and donors to support concrete activities in the TumenNET region designed to protect transboundary biodiversity and water resources;

Relying on the political will of all TumenNET countries to realize this SAP through cooperation at the regional level and the executive national level, including the commitment to create all the national prerequisites for effective implementation and to mobilize national, local, public, and private resources;

Welcoming the national initiatives taken to ratify or accede to international conventions to manage living resources sustainably and to protect the TumenNET ecosystems, including the Convention on Biological Diversity, Convention on International Trade in Endangered Species of Wild Fauna and Flora, Ramsar Convention on Wetlands, World Heritage Convention, UN

Framework Convention on Climate Change, UN Convention to Combat Desertification, and the Stockholm Convention on Persistent Organic Pollutants.

Conscious of the importance of the initiatives taken by non-governmental organisations towards biodiversity conservation and safeguarding international water resources;

Concerned about the fragmented nature of regional environmental management and the urgent need to strengthen and jointly engage TumenNET countries in the co-ordination and conservation of the natural resources and ecosystems of the TumenNET in an integrated fashion;

Convinced of the pressing need to take further concrete actions nationally and collectively, at local, national and regional levels, to ensure transboundary co-operation and the integrated sustainable management and protection of living resources in the TumenNET region;

Committed to capacity building for sustainable development at national and regional levels;

Acknowledging the significant contribution made through the results of the Transboundary Diagnostic Analysis (TDA) in the development of the Strategic Action Programme (SAP) and towards integrating the information necessary for policy planning throughout the TumenNET region;

Commit themselves to agree on the following principles, policies, and actions.

SUMMARY

The overarching goal of the TumenNET Strategic Action Programme (SAP) is to elucidate a suite of regional policy priorities and national action commitments to address the international dimensions of biodiversity loss and water issues in a manner that is sustainable, transparent, and democratic. This SAP should be considered a living document that builds upon the significant cooperative work already completed by the participating countries to protect their shared natural heritage as responsible stewards allegiant to present and future generations.

Based largely upon a series of bi-lateral and multi-lateral agreements and a Transboundary Diagnostic Analysis (TDA) conducted under the project, this SAP prioritizes the threats to transboundary biodiversity and international waters, lists regionally negotiated policies designed to remedy the priority threats, and elaborates concrete national actions to follow-up on the regional policies. These threats, policies, and actions are grouped according to the four TumenNET zones: the Tumen River basin, Daurian Steppe, Mongolian Plateau, and the Supra-Regional Zone (which encompasses the entire region).

The main regional threats can be thematically grouped as follows:

- Water pollution in the Tumen River basin from urban, industrial, and agricultural sources negatively affects international waters, wetlands, fauna and flora, the Tumen River estuary, as well as local residents;

- Worsening land degradation/desertification and inadequate water management in the Mongolian Plateau and Daurian Steppe negatively affects biodiversity and drives region-wide impacts such as dust storms;

- Accelerating loss of habitats and ecosystem functions throughout the region due to development activities degrades biodiversity.

The policy actions to remedy the threats above center on, but are not limited to, the following:

- Strengthened environmental management structures and environmental awareness raising to more effectively implement and enforce laws and regulations;

- Enhanced cooperative mechanisms and international ties to better respond to regional environmental threats.

- Improved management and extension of Nature Protected Areas (NPA), as well as the establishment of eco-corridors to link the NPAs;

All of the TumenNET countries have already devoted financial and human resources to protect the region's biodiversity and international water resources, and are seeking funding sources and strategies to sustain and enhance their respective national interventions in order to implement this SAP.

It is anticipated that this SAP will help channel resources and green investment to assist the TumenNET countries' cooperative initiatives to protect the region's shared environmental endowment.

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INTRODUCTION

The aim of the TumenNET Strategic Action Programme is to protect transboundary biodiversity and international waters, and to facilitate the achievement of this goal by attracting green investment to the region.

Safeguarding the environment in the TumenNET area is one of the great challenges for Northeast Asia. This is not only because of the globally significant variety of flora and fauna present, or the complexity of the environmental issues themselves (water pollution, land and soil degradation, poaching, wetland deterioration, loss of species, and shrinking habitats for migratory birds), but also to the complex interplay between population growth and rapid economic growth. Especially in the urban areas, this dynamic has resulted in high population densities in some areas, and has exacerbated land degradation, deforestation, and loss of biodiversity and ecosystem functions. There was therefore an urgent need to develop this SAP for the TumenNET area.

TumenNET is the abbreviated name for UNDP/GEF project RAS/98/G31, otherwise known as *Preparation of a Strategic Action Programme and Transboundary Diagnostic Analysis for the Tumen River Area, its coastal regions and related Northeast Asian Environs*. The project is a 2-year, 6.8 million USD initiative by the Governments of Mongolia, the People's Republic of China, the Republic of Korea, and the Russian Federation, and received funding from the Global Environment Facility (GEF) and support from the United Nations Development Programme (UNDP). The United Nations Office for Project Services (UNOPS) managed the project. The Democratic People's Republic of Korea has decided to become involved in selected components of the project, most notably negotiating a tri-lateral agreement with the PRC and RF to address issues related to the Tumen River watershed and marine pollution.

TumenNET can be considered under the umbrella of the Tumen River Area Development Programme (TRADP), a long-term UNDP economic development initiative with similar geographic coverage as TumenNET.

The GEF expects that the TumenNET SAP will contribute to the protection of global biodiversity and international water resources through the mitigation of regional and national threats, and by strengthening cooperation and capacity in the five-country area.

This SAP is organized around four zones that overlay international borders – the Tumen River basin (TRZ), Daurian Steppe (DSZ), the Mongolian Plateau (MPZ), and the Supra-Regional Zone (SRZ) (see regional map on page 3). The SAP formulation process required the region's countries to first identify national priorities and threats by zone (first elucidated in the TDA), negotiate regional interventions for each zone, and finally, elaborate specific national action

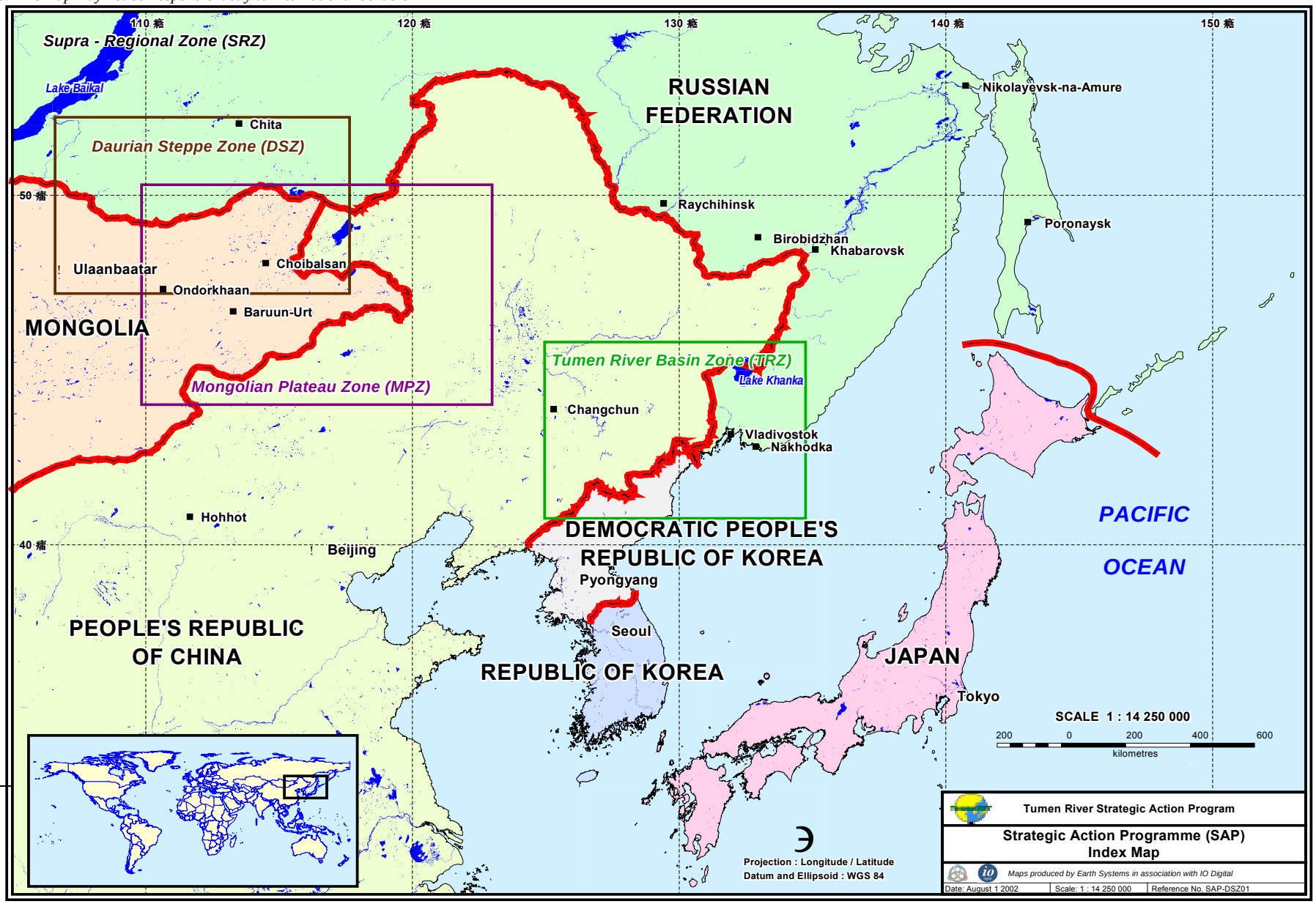
commitments to support environmental improvements. To facilitate this process, national consensus was secured via national workshops of decision makers and stakeholders.

This SAP document also draws upon the national development strategies and legal and environmental management frameworks of the participating countries, as well as international conventions such as the CBD, Ramsar Convention on Wetlands, and CITES, among others. Also informing SAP are various inputs resulting from project activities such as a Governor's Memorandum of Understanding, outputs from SAP and TDA workshops, recommendations on SRZ interventions and issues, an agreement with the Federation of Korean Industries, and EIA workshop recommendations.

This SAP was prepared with the financial assistance of the GEF, whose support is greatly appreciated. The SAP preparation is a collaborative effort that drew upon the resources of the GEF and the participating countries themselves. The ROK Ministry of Environment, as lead agent, contributed to the collection and analysis of the information, coordinated the combination of the different components, and drove the SAP formulation process.

Community involvement and extensive stakeholder consultations are integral aspects of the SAP process. Under the project's AWARE component, funds were provided to conduct media campaigns in the immediate target areas and to inform and educate local stakeholders (government, business, communities) about the project's goals and objectives. At the same time, the Small Grants Programme (SGP) provided resources to local villagers, assisting in environmental grassroots education and self-help measures. Under the project's "Green School" initiative, 17 primary and secondary schools in the region introduced environmental information in their curricula. The project's "Clean-up Day" initiative mobilized local communities to collect rubbish from local rivers and waterways. A total of ten websites were set up under the project's EIS component to provide current information on the project and on local and regional biodiversity and international water issues in English, Chinese, Korean, Mongolian, and Russian languages.

Note: This map may not correspond exactly to international borders



I. CURRENT STATUS: TRANSBOUNDARY MANAGEMENT OF BIODIVERSITY AND INTERNATIONAL WATER RESOURCES

The TumenNET region is a mosaic of socio-economic factors, geography, resources, management practices, opportunities, and administrative and institutional capacities, necessitating differentiated interventions and responses. It is not surprising, then, that the current status of biodiversity and water resources varies dramatically in each of the four TumenNET zones. Until now, transboundary biodiversity and international water resources in the region have benefited from very few targeted, internationally coordinated interventions at the national level.

There is a legacy of fragmented national and international environmental management in the four zones of the TumenNET region – an absence of co-ordinated planning and integration, poor legal frameworks, lack of enforcement and implementation of existing regulatory instruments, insufficient public involvement, unbalanced regional capacity development, inadequate financial mechanisms of support, as well as inadequate capacity to monitor and assess ecosystems.

These human factors are superimposed on complex, sensitive transborder ecosystems which have highly variable environments, resulting in declines in populations of key species, compromised water quality and loss of watershed functions, unsustainable agriculture and forestry, uncertainty regarding ecosystem status and yields, increasing residential and industrial pollution, worsening desertification and dust storms, habitat destruction and alteration, and loss of biotic integrity. All of these effects have significant transboundary implications. The challenge is to halt this changing state of the TumenNET region and, where possible, to reverse the process through co-operative regional actions at the national level to manage shared ecological resources on an integrated and sustainable basis.

This challenge is heightened by ambitious national development plans that are certain to result in additional ecological stress if national actions are not taken promptly to integrate economic planning with environmental concerns.

Current Environmental Issues

Unsustainable agricultural activities and forestry as well as inadequate land-use planning are driving land degradation and desertification near the borders between Mongolia, the PRC, and Russia; in the Tumen River basin these stresses combine with industrial activities to severely compromise water quality. In particular, land degradation in eastern Mongolia (driven in large part by open

access) results in increasingly severe dust storms across the entire TumenNET region and beyond. In both the steppe and Tumen basin, various ecosystems, biological diversity, and ecological integrity suffer as a result.

Deterioration in water quality at local and regional levels poses a threat to sustainable development, community livelihoods, ecosystem integrity, and human health, especially in the Tumen River basin. Although most impacts of chronic deterioration in water quality are localised national issues, they are common to all countries and require collective, transboundary action to address them. Moreover, chronic pollution and catastrophic events can have widespread transboundary consequences, requiring co-operative management and sharing of knowledge, equipment, and technology.

Habitat destruction and ecosystem degradation are occurring at an accelerated pace in all TumenNET zones. Although most impacts appear localised, habitat alterations attributable to unsustainable agricultural and livestock management practices, urbanization, mining, industrial and residential waste, and land transport are causing migration of biota, extinction of species, and systemic change throughout ecosystems.

Throughout the region, declining populations of rare wildlife, especially large mammals and migratory birds, continue to be a major cause for concern requiring immediate remedial action. Endemic species such as the Amur tiger, Far-eastern leopard, white-tailed gazelle, cranes and other birds are now on the threshold of extinction. Increased loss of biotic integrity, such as changes in community composition, species, and diversity, threaten the biodiversity of the TumenNET region as a whole.

Complicating this trend is the fact that national boundaries do not coincide with ecosystem boundaries, and much of the region's important biota is shared between countries or move across national borders. Dangers to a species in one country due to past and continued habitat fragmentation or alteration, poaching, or general mismanagement can therefore lead to depletion of that species in another country, as well as negative changes to the ecosystem as a whole. Many natural resource management challenges are transboundary in nature and require collective and co-operative action by member states to address them.

Current Constraints

There is vastly unequal distribution across countries of institutional, infrastructural, financial, and human capacity to fully assess, jointly or nationally, the ecological status of the TumenNET region as a whole, or to adequately assess and respond to transboundary resources and impacts.

The main constraints to remedial action include: governmental policies that correspond insufficiently or inadequately to environmental requirements and to

cross-border issues like poaching and smuggling of wildlife artefacts; uncertainty about land ownership; lack of proper legal frameworks and standards; weak policy implementation caused by lack of capacity and financial resources; disregard of government regulations; lack of adequate eco-tourism infrastructure; missing agreements and mechanisms for management of transboundary protected areas; outdated technologies and farming systems; administrative and financial bottlenecks for investors; inadequate physical and economic development planning; and, last but not least, the absence of jointly managed monitoring and management systems for transboundary environmental issues.

Anticipated Situation Without Intervention

Without coordinated national actions, the current situation will continue to deteriorate, threatening the ability of communities to provide livelihoods, compromising sustained and balanced economic development, and preventing future generations from enjoying their inalienable right to the natural heritage stewarded by TumenNET countries. In particular, these negative impacts include: increasingly serious fragmentation of large ecosystems; further reduction of rare and precious plants and animals in both numbers and species; malfunction of water systems; further loss and modification of forest ecosystems; further loss of habitats; accelerating water and soil erosion; further decrease of soil quality; gradual decrease of wetlands area; and unsustainable development of natural resources.

II. THREAT ANALYSIS

The root causes of the major transboundary threats to biodiversity and international waters across the region are complex, intertwined, and varied, depending on the diverse natural environments, socio-economic profiles, and administrative structures in the four TumenNET zones. For this reason, unique threats to biodiversity and water resources are presented in the text below by zone, prioritized by the participating countries through bilateral or multilateral negotiations. However, there are some common themes across all zones, which are highlighted in table 1 below. Greater detail is presented in the *Transboundary Diagnostic Analysis* (TDA), which forms the basis for this analysis.

Table 1: Summary of the major root causes of ecological threats in the TumenNET region

Environmental problems	Natural Issues (Causes)	Human Issues (Causes)
Land and wetlands degradation (local and region-wide dust storms, desertification, loss of topsoil and other erosion, decrease in fertility of pasture and croplands)	• Low rainfall • High winds • Extreme temperature • Thin topsoil • Steep slopes • Fires • Aridisation	•Livestock herds too big or intensive in some areas (due to open access) • Inappropriate mining and industry practices • Inappropriate cultivation practices • Multi-tracking (off-road traffic) • Fires • Wetland reclamations • Inappropriate development projects
Deforestation (depletion of limited but available forest resources)	• Fires • Insects • Slow growth rates for natural and replanted regeneration	• Destructive and unregulated commercial logging techniques • Insufficient and poorly managed reforestation • Unregulated cutting for domestic fuel • Fires
Loss of biodiversity	The same natural causes of land degradation lead to loss of species and habitats	• Hunting and poaching • Inappropriate development projects • Overgrazing • Pollution • Deforestation • New transport routes • Military activities
Water and air pollution (generally localized or urban problems)	• Fires • High winds • Low flow-rates in rivers for most of the year • Localized temperature inversions	• Overall inefficiency in manufacturing and natural resource extraction, which results in excessive energy/inputs use and waste • Coal burning in power plants and industrial boilers • Increase in the number of vehicles, often old and poorly maintained • Inappropriate use and disposal of chemicals • Inappropriate disposal of solid and liquid waste

A. Tumen River Basin Zone (TRZ)

A.1 The major transboundary threats in the Tumen River basin are, in order from highest to lowest priority: industry (including coal mining and paper manufacturing in The PRC and iron ore mining in the DPRK), urbanization, agriculture, inappropriate management of water and land-use, unsustainable forestry, forest fires, transport networks, unsustainable management of protected areas and species, and high-impact tourism.

A.2 Water pollution in the Tumen River and its tributaries is a particularly significant problem, requiring urgent action to address the root causes, which are waste and run-off from industry, agriculture, and municipalities.

B. Daurian Steppe Zone (DSZ)

B.1 Russia and Mongolia have prioritized the major transboundary threats in the Daurian Steppe as land degradation, deterioration of wetlands, poaching or over-utilization of species, and habitat loss. The root causes driving these threats are identified largely as overgrazing due to unsustainable water, land, and pasture management; lack of use of environmentally friendly technology in the mining and agricultural sectors; as well as natural disasters such as strong sand and dust storms and steppe fires.

B.2 The participating countries are concerned about significant knowledge gaps in the status of biodiversity, as well as lack of data on sources or amounts of transboundary water and air pollution.

C. Mongolian Plateau Zone (MPZ)

C.1 Mongolia and the PRC agree that the most significant threats in the Mongolian Plateau are: land degradation and desertification (driven by poor agricultural practices including overgrazing), wetland deterioration, ecosystem fragmentation, deforestation, poaching, as well as natural disasters such as strong sand and dust storms and steppe fires.

C.2 Land degradation and desertification is a particularly serious problem requiring concerted cooperation to remedy, as the resulting dust storms negatively affect economic activities and human health throughout and beyond the TumenNET region, in addition to the local economic impacts resulting from lost pasture and agricultural land.

D. Supra-Regional Zone (SRZ)

D.1 The Supra-Regional Zone, covering the entire TumenNET region, has a number of assets that are crucial components for maintaining transboundary biodiversity and water resources; these assets have been identified by the

countries as wetlands, migratory birds and other fauna, marine ecosystems, forest and steppe ecosystems, air quality, and rare plants.

D.2 Threats not specific to one location occur throughout the region and have been identified by the participating countries as follows: degradation of wetlands, urbanization impacts, soil erosion and land degradation, transport networks, poaching and illegal trading, forest and steppe fires, transboundary dust and sand storms and air pollution, high-impact tourism, inappropriate agriculture, and unsustainable forest exploitation.

D.3 The TumenNET countries are concerned about rapidly emerging threats that have not been fully analyzed in the TDA due to their timely nature. These include a recently planned project in Russia to provide oil products to the Asia-pacific region via oil pipelines in the DSZ and TRZ and a proposed oil terminal in Khasansky district, etc.

III. REGIONAL AND NATIONAL ACTION COMMITMENTS

In order to protect shared biodiversity and water resources, the governments of the Democratic People's Republic of Korea, Mongolia, the People's Republic of China, the Republic of Korea, and the Russian Federation have committed themselves to the development of sustainable integrated management and utilisation of living resources and international waters through the following suite of policy actions:

Assumptions Common to all Actions

Recognizing that there are common themes and assumptions underlying coordinated national actions in and across all four TumenNET zones, the participating countries agree on the following assumptions as crucial components of regionally negotiated policies and national actions designed to remedy threats to transboundary biodiversity and waters in each TumenNET zone.

● The concept of sustainable development shall be used in a way that does not destroy the ecological integrity of the TumenNET region, or otherwise foreclose on options for use by future generations.

● The precautionary principle shall be applied, and preventive measures taken when there are reasonable grounds for concern that an activity may increase potential hazards to human health or ecosystems, or that may damage amenities, even when there is no conclusive evidence of a causal relationship between the activity and undesirable effects.

● The use of economic and policy instruments that foster sustainable development shall be promoted through, *inter alia,* the implementation of economic incentives for introducing environmentally friendly technologies, activities and practices; the phasing-out of subsidies or incentives which encourage the continuation of environmentally unfriendly technologies, activities and practices; the introduction of user fees and the polluter pays principle; as well as the auditing of natural resources and environment.

● Environmental, ecosystem, and human health considerations shall be incorporated into all relevant policies and sectoral plans, especially those concerning agriculture, animal husbandry, forestry, wetlands, transport, and industry, including mining and power generation.

A. Tumen River Basin Zone (TRZ)

TRZ Regional Policy Actions

The Democratic People's Republic of Korea, the People's Republic of China, and the Russian Federation have agreed on the following prioritized suite of regional policy actions (followed by concrete national action commitments below) to address transboundary threats to biodiversity and international waters in the TRZ:

A.1 *Improve water quality in the Tumen River basin*
The three riparian countries agree to protect water quality of the Tumen River through such activities as establishing a monitoring system, conducting studies on water quality, exchanging information and data, improving management of wastewater and sewage, and enhancing public awareness.

A.2 *Regularly exchange information: monitoring data and techniques, standards, and national pollutant inventories*
The DPRK, PRC, and Russia agree to regularly exchange environmental information on the Tumen River basin, in accordance with national laws and regulations. Items include monitoring data and techniques, standards, and national pollutant inventories. To facilitate the information exchanges, the countries agree to explore and identify administrative procedures, establish a timetable for exchanges, and implement related capacity building measures such as regional training courses, personnel exchanges, and possible assistance in compiling pollutant inventories.

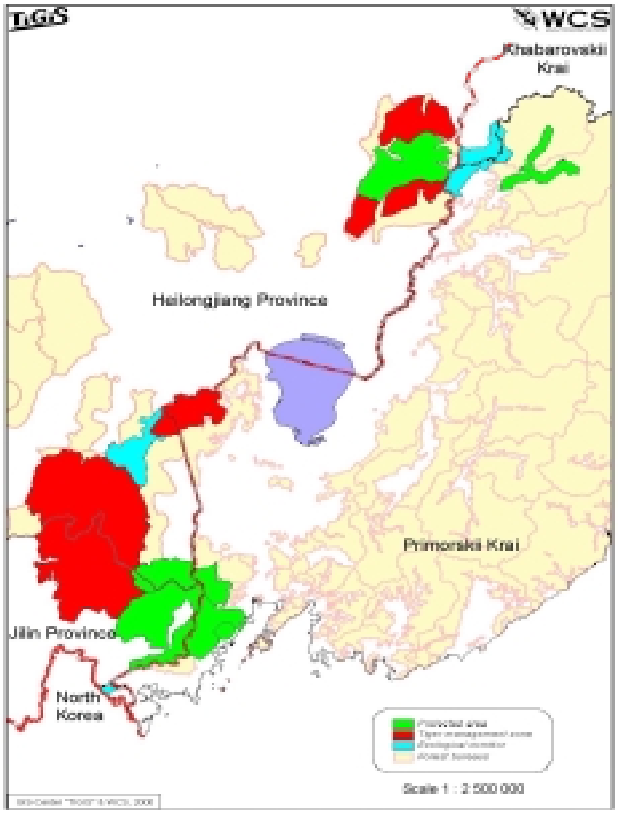
A.3 *Exchange know-how on wastewater treatment techniques and information on regulatory frameworks*
All TRZ countries agree that wastewater treatment is key to alleviating water pollution. To this end, the countries agree to carry out capacity building measures (e.g., regional training courses, expert exchanges) and fix a timetable/schedule to exchange know-how on wastewater treatment techniques and information on regulatory frameworks.

A.4 *Initiate regional pilot projects for remediation of polluted areas*
The DPRK, PRC, and Russia resolve to identify and prepare pilot projects to attract funding for large-scale remediation projects. The countries will exchange know-how on remediation methods and techniques and implement capacity building measures such as regional training courses and personnel exchanges.

A.5 *Support Nature Protection Areas*
The three countries agree to enlarge, enhance, and/or establish Nature Protection Areas (NPA) to protect ecosystems as well as threatened species such as the Amur tiger, Far-eastern leopard, and various migratory birds (as

noted in the TDA). Goals include strengthened NPA management, stricter and more comprehensive ecosystem management, increased public information and awareness raising measures.

A.6 *Establish eco-corridors between NPAs*
Three co-corridors shall be established in the PRC and Russia to link NPAs. These corridors are situated within national boundaries, as may be seen on the map below in light blue shading.



Note: The map above may not correspond exactly to international borders.

A.7 *Protect wetlands*
The PRC and Russia agree to initiate concrete projects to recover and protect wetlands in southwestern Primorie and in Yanbian Autonomous Prefecture.

A.8 *Protect the marine environment*
The DPRK, PRC, and Russia agree on the need to implement a collection of measures to protect the marine environment. In particular, the countries aim to enhance national and regional capacities for monitoring the Tumen River mouth and coastal areas by securing monitoring equipment and materials, holding regional training courses, and exchanging personnel. The TRZ countries will also compile and share inventories of pollutant sources, and

lastly, jointly develop a plan for the sustainable management of marine resources.

A.9 *Raise public awareness of environmental threats in the TRZ*
The riverine countries are in agreement of the necessity to raise public awareness of environmental issues in the Tumen River basin. Specific efforts include enhancing capacity of grassroots organizations, implementing targeted mass media campaigns, continuing community initiatives such as Green Schools and Clean Up Day, implementing small grants programmes and/or micro-credits at the community level, preparing and distributing environmental education materials, developing a web-based EIS for the Tumen River basin, and other activities to mainstream public awareness of environmental issues.

A.10 *Cooperate on sustainable development*
The three countries agree on the need to harmonize development plans and economic activities with environmental goals. To this end, the countries aim to develop a regional programme of activities to improve or introduce sustainable techniques the natural resource sector, including agriculture, forestry, water management, wetlands, and mining. Lastly, the riverine countries will exchange information on biodiversity regularly, including endangered and rare species and their habitats, potential ecological corridors, biodiversity inventories, etc.

A.11 *Cooperate on funding for environmental interventions*
All three countries face limited financial resources to fully address threats to biodiversity and international waters, and thus resolve to cooperate in seeking funding. Specific actions include establishing a joint data base and/or publication on potential projects in national and donor country languages, encouraging inter-ministerial collaboration among countries for project proposal formulation and pursuing joint approaches to donors, creating or enhancing favourable investment conditions to attract private sector funding, and lastly, working with industry associations to promote investment opportunities.

A.12 *Promote eco-tourism*
The PRC and Russia agree to promote eco-tourism where appropriate and establish the necessary infrastructure to support tourism that is environmentally sound and sustainable.

A.13 *Build legal and policymaking capacity*
The three countries agree that, while environmental laws governing the TRZ are generally well-crafted, capacity must be strengthened in two critical areas: 1) implementing and enforcing national environmental laws, and 2) strengthening diverse stakeholder participation in policy and legal formulation.

TRZ National Actions

To support to the six regional policy actions above, the DPRK, PRC, and Russia have developed and committed themselves to implementing the following prioritized concrete national actions, the details of which are elucidated with cost estimates and financial resources in annexes 2A, 2B, and 2C, respectively:

North Hamgyong Province and Rason City, DPRK

A.14 *Recover forest ecosystems with integrated water basin management*
This project aims to recover degraded forest ecosystems through the following actions: development of an integrated water basin management plan by 2010; large-scale afforestation and reforestation of damaged forests, including establishment of tree nurseries/plantations to facilitate sustainable transplanting of tree cover; and creation of a forest management and monitoring system for the entire area, especially focusing on reforested/afforested areas. The implementation of these actions will help alleviate land degradation, soil erosion and flooding, recover and protect threatened flora and fauna, and restore wetlands in the Tumen River estuary. Pre-requisites for achieving these project objectives include capacity building for developing an integrated water basin management plan, improving necessary infrastructure, enhancing public awareness, and securing financial support.

A.15 *Build capacity at the Rason Environment and Development Center (REDC)*
The purpose of this project is to strengthen the ability of the REDC to perform its intended role as the principal environmental research institution responsible for managing ecological and technical issues in the area, including surveys, studies, and analyses on natural resources, environmental planning, providing technical services, and training. The project will also enable the REDC to participate to a greater extent in information exchange and cooperation with domestic and international entities. The most important constraint to environmentally sound development in the area is the lack of capacity for the REDC to fully respond to environmental issues in the area.

A.16 *Treat tailings from the Musan Mining Complex*
This project, proposed by the TumenNET fact finding mission in summer 2001, aims to treat the tailings of the Musan Mining Complex, which is one of the major contributors to water pollution in the Tumen River basin. In particular, Musan engineers have already developed plans and designs to modernize and improve tailings treatment facilities, but these plans must be updated in line with international standards in order to facilitate a 2003 pre-feasibility study of the Mining Complex.

A.17 *Conserve Bonpo wetlands*

This action seeks to establish the Bonpo Wetland Reserve, conduct and inventory of the Bonpo ecosystem, recover damaged habitats, and identify income sources from sustainable use of wetlands. Specifically, the DPRK and Russia plan to conduct joint research on the Tumen estuary including Bonpo Lake, develop infrastructure required for wetland reserve management, and conduct training for wetland managers.

A.18 *Initiate oil spill prevention measures in Rason ports*
This project aims to build capacity, where none currently exists, to respond to and prevent oil spills in the Rajin-Sonbong area. Detailed actions include developing related laws and regulations, institutional and technical capacity building, and conducting training courses on treating oil spills.

A.19 *Introduce municipal sewage treatment in Rason and Hoeryong*
This project aims to establish the first municipal sewage treatment plants for these two cities with a combined population of 100,000. There are currently no activities or measures for treating urban sewage in Rason and Hoeryong cities; Hoeryong is one of the largest contributors of domestic sewage to the Tumen River. Specific items in this project include purchasing equipment and facilities, plant construction, and conducting training programmes.

A.20 *Construct a wastewater treatment system at Hoeryong Paper Mill*
Hoeryong Paper Mill lacks basic water treatment facilities, and discharges untreated wastewater into a branch of the Tumen River. This project aims to counter this pollution source by establishing a wastewater treatment process for the mill. This effort requires securing equipment and constructing facilities.

A.21 *Establish a wastewater treatment system at Undok Chemical Factory*
The Undok Chemical Factory aims to establish capacity to treat its organic wastewater by purchasing equipment and developing facilities to enable adoption of a purification process.

Jilin Province, PRC

A.22 *Conserve biodiversity and enhance management at Hunchun provincial NPA*
This project aims to restore wetlands and other natural habitats for wild fauna, and recover and protect threatened vegetation through the following concrete actions: monitor Amur tiger and Far-eastern leopard populations and construct migratory passages; disseminate education materials on biodiversity conservation; implement various activities to rehabilitate and protect wetland habitats of migratory birds including the restoration of habitats; restore and protect endemic vegetation; and establish a wild animal rescue center.

A.23 *Conserve biodiversity and enhance management at Changbai* (Baekdu) *mountain national NPA*

The Changbai project's central goals are to establish and clarify a management system for park management and ecosystem-level conservation, strengthen ecological research capacity, and strengthen protection of threatened flora, fauna and ecosystems. These goals will be accomplished by building and improving necessary infrastructure; enhancing ecosystem monitoring and research capacity; implementing remote sensing; training park staff; establishing a rescue center for wild animals and a garden for rare plants; and improving the current museum.

A.24 *Create an education/awareness network in the Tumen River basin*
The objective of this broad array of activities is to raise public awareness of threats to the Tumen River watershed and involve residents in solutions. Specific actions include organizing network contacts and disseminating materials, acquiring equipment, creating new materials in a variety of media, conducting training seminars, establishing green schools (i.e., continuing the network started under TumenNET), and maintaining a hotline.

A.25 *Raise awareness and build capacity in the Changbai Mountain area*
This collection of activities aims to enhance environmental awareness among the public and tourists, raise administrative capacity, and conduct promotional activities concerning environmental issues affecting the Changbai Mountain area. Concrete actions include producing and disseminating a video and other media on conservation issues; building a comprehensive database of flora and fauna in the Changbai area; filling research gaps; establishing a website for Changbai National Park, and miscellaneous public outreach programmes.

A.26 *Treat wastewater in Yanji City*
This intervention will enhance and protect water quality in the Tumen River basin by building a wastewater treatment plant (partially funded) in Yanji City, along with the accompanying sewerage (already funded). Additional actions include conducting staff training courses and securing equipment needed for plant operation and water analysis.

Primorskii Krai, Russian Federation

A.27 *Monitor distribution and reduce generation of water pollutants*
The goals of these interventions are to enhance and protect water quality and landscape elements, and minimize pollution generation (especially industrial waste and solid waste). Concrete measures include the establishment of a permanent monitoring station at the Tumen estuary; research on transboundary pollution transfers including marine pollution; creation of a regional database; and implementation of regular monitoring data exchanges.

A.28 *Minimize and reverse degradation of ecosystems in southwestern Primorie*

Targeted ecosystems include grasslands, primary forests, wetlands, and marine ecosystems. Concrete actions to which budget resources have been allocated include: introduction of fire fighting and prevention measures (i.e., fire fighting brigades and a fire prevention belt system); conversion of low-value plantations into woodland habitats; efforts to combat illegal logging; the addition of wetlands to the Ramsar list and strengthened monitoring and protection of existing Ramsar sites; and alteration of Primorskii Krai legislation to encourage landowner responsibility for biodiversity conservation.

A.29 *Prevent biodiversity loss*

This series of actions aims to ameliorate activities that lead to ecosystem transformation and biodiversity loss through the following suite of concrete measures: create a unified NPA system (targeting tiger and leopard habitats) in southwestern Primorie; initiate zoning process and legislative review for the establishment and management of eco-corridors and new public lands for the NPA system in the border area; strengthen the status of Khasansky Nature Park; initiate an incentive system for local land managers to enforce conservation of selected endangered species; and purchase deer farms to support eco-tourism and leopard feeding.

B. Daurian Steppe Zone (DSZ)

DSZ Regional Policy Actions

Mongolia and the Russian Federation have agreed on the following prioritized suite of regional policy actions (followed by concrete national action commitments below) to address threats to transboundary biodiversity and international waters in the DSZ:

B.1 *Expand and strengthen Nature Protection Areas*
The Russian Federation and Mongolia agree to coordinate efforts to establish new NPAs in border areas, strengthen legal and regulatory systems, raise public awareness and community involvement, help secure sustainable livelihoods for human communities in the buffer zones, establish joint management of border NPAs, and consider nomination of protected areas as UNESCO World Heritage sites.

B.2 *Prevent land degradation and ecosystem fragmentation*
Both countries will focus efforts on addressing land degradation and fragmentation by expanding reforestation and soil improvement activities, conducting surveys and establishing monitoring systems to fill knowledge gaps, utilizing selected traditional agricultural practices that are inherently sustainable (i.e., nomadic livestock breeding, natural meadow management, etc.), improving regional and urban planning, encouraging greater community involvement, and by reviewing and implementing legislative and economic tools to encourage sustainable land-use.

B.3 *Conserve water quality and water ecosystems*
The two countries recognize the importance of being good stewards of their shared water resources. Cooperative efforts will center on managing and monitoring water quality in the Onon and Ingoda rivers, introducing programmes for the conservation and sustainable use of wetlands, developing databases to help assess and manage wetlands important for endangered waterfowl, and promoting ecologically sustainable mining practices.

B.4 *Conserve species and ecosystems*
The two countries agree to collaborate on ecosystem conservation, especially near economic centers, in order to protect endangered species' habitats. Efforts include applying seasonal hunting restrictions in transboundary flyways during migrations, building and publishing a comprehensive inventory of vertebrates in the DSZ and adjacent territories, regular monitoring of migratory birds, and protecting valuable and medicinal plants.

B.5 *Regularly exchange information on transboundary issues*

The Russian Federation and Mongolia together seek to better manage transboundary environmental issues (including eco-tourism and steppe and forest fires) by encouraging the regular, transparent flow of environmental information to raise public awareness and facilitate coordinated environmental management. The governments have committed themselves to publish materials for public and professional use, develop eco-tourism opportunities, organize training programmes for eco-tourism providers, improve operational communication between Russian and Mongolian firefighters, build local capacity for SAP implementation, increase transparency in environmental management, and exchange personnel.

DSZ National Actions

To support the five regional policy actions above, Mongolia and Russia have developed and committed themselves to implementing the following prioritized concrete national actions, the details of which are elucidated with cost estimates and financial resources in annexes 3A and 3B:

Dornod Aimag and Khentii Aimag, Mongolia

B.6 *Protect biodiversity from natural disasters*
This suite of actions aims to renovate and improve the emergency response system to enable proper responses to natural disasters. Included among the concrete actions are the following: initiating education/training programmes, establishing volunteer emergency response teams, securing equipment, conducting research, greater monitoring, creating a fire protection belt, more frequent transborder exchange of information, and enhancing transborder cooperation.

B.7 *Strengthen NPA management*
Mongolia will strengthen the management of its parkland near international borders by implementing the following actions: identify and help secure sustainable livelihoods for residents in or near NPAs; conduct an inventory of biological resources; expand or create new NPAs where necessary; institute training programmes and secure equipment for park managers; develop an eco-tourism masterplan for NPAs; encourage NPAs to develop and implement autonomous management plans; conduct research on environmental change in NPAs; prevent poaching; and raise public awareness of NPAs and involve them in NPA management;

B.8 *Protect transboundary water resources*
This suite of activities aims to conserve water and safeguard water quality by creating a monitoring system, collaborating with neighbouring countries on water protection activities including greater information exchange, conducting research on the status of water quality, and raising public awareness of water issues.

B.9 *Restore and protect forests*
Mongolia, particularly Khentii Aimag, aims to modernize its forestry sector by introducing techniques and practices designed to safeguard and encourage the sustainable use of forests. Specific actions include building capacity through increased training and access to information, personnel exchanges, and encouraging production of alternative products from forest resources.

B.10 *Prevent biodiversity loss*
Mongolia has identified a number of concrete actions to reverse the ecosystem transformation that drives biodiversity loss, including creating a unified NPA in cooperation with the PRC and RF, discouraging centralization of human settlements near NPAs, developing national education/training programmes, enhanced monitoring and observation techniques, improving enforcement of anti-poaching regulations, revising hunting laws, improving customs clearance procedures, improving land-use management and especially transportation planning in sensitive areas, and improving *in-situ* management of rare fauna and flora.

Chita Oblast, Russian Federation

B.11 *Jointly monitor and survey species*
The Russian Federation intends to implement with Mongolia a joint system for surveying rare and endangered species. Specific actions include founding a network of monitoring stations along flyways, creating a shared database to track species' characteristics and dynamics, and building capacity for research and park management through additional training and education.

B.12 *Minimize land degradation, ecosystem fragmentation, and fire damage*
These goals will be accomplished through a number of actions such as forest restoration and reforestation, creating and expanding forest belts, cataloguing parcels of degraded land and rehabilitated land, implementing wetlands rehabilitation and conservation programmes, conducting research on the causes and ecological impacts of fires, creating volunteer fire fighting brigades near borders.

B.13 *Catalogue assets in the NPA system*
In order to ensure that the NPA system near borders protects biodiversity resources, various concrete actions must be implemented, including: cataloguing key landscape components and values, determining rare and endangered species distribution, and determining attractive tourist zones. Based on this initial work, mapping of park boundaries will be initiated, land secured, eco-corridors created, zoning or re-zoning conducted, altering existing legislation if needed, and integration with existing NPAs will begin.

B.14 *Reverse biodiversity loss via strengthened NPAs*

This series of actions aims to decrease or modify negative tendencies that lead to biodiversity loss through the following suite of actions centered on creating a network of Strictly Protected Nature Areas: prohibit spring hunting in flyways during migration periods, create website devoted to DSZ biodiversity, rehabilitate habitats for rare and endangered species in the upper Amur river basin, and create a comprehensive inventory of vertebrate fauna in the DSZ.

B.15 *Develop eco-tourism and other sustainable livelihood opportunities*
In order to provide sustainable livelihoods to local residents and help meet development goals, eco-tourism and other potential sources of alternate income will be pursued through the following concrete actions: conduct research together with Mongolia on the recreation potential of the border areas, build capacity in the tourism industry, establish a pilot transboundary project for experiential tours, provide training on eco-tourism business opportunities to local residents, and initiate support programmes for processing natural non-wood products from forests and steppes.

B.16 *Raise public awareness of biodiversity and conservation*
This series of actions encourages sustainable stewardship practices among local communities of their natural assets. Specific actions include increasing public access to environmental information including impacts arising from major development projects, conducting a mass media campaign to promote sustainable development concepts and conservation values, founding a periodical on transboundary environmental news, and establishing an annual festival of birds.

C. Mongolian Plateau Zone (MPZ)

MPZ Regional Policy Actions

Mongolia and the People's Republic of China and have agreed on the following prioritized suite of regional policy actions (followed by concrete national action commitments below) to address threats to transboundary biodiversity and international waters in the MPZ:

C.1 *Strengthen and enhance Nature Protection Areas*
Mongolia and the PRC agree to establish new NPAs in border areas, improve legal and regulatory systems, enhance public awareness and community involvement, implement measures to secure sustainable livelihoods for local communities in NPA buffer zones, and explore joint management of transboundary NPAs. In particular, a portion of the Kherlen-Menen steppe is to be listed as a World Heritage site as a representative of the Central Asia grassland ecosystem (only 1% of the temperate grassland ecosystems on the planet are included in NPAs).

C.2 *Prevent land degradation and desertification*
Because land degradation and desertification threaten biodiversity and the water regime, the two countries agree to address these issues in an integrated manner. In particular, reforestation and soil remediation activities will be pursued, along with efforts to improve land management practices (especially sustainable use of pastures), and regional and urban planning.

C.3 *Conduct joint consultations and information exchange*
Consistent with national laws, Mongolia and the PRC pledge to consult with each other and exchange information on environmental impact assessments of economic activities in the MPZ, such as construction of transportation infrastructure and so on.

C.4 *Conserve grassland ecosystems*
The two countries agree to apply concerted efforts to conserve Mongolian Plateau's unique grassland ecosystems and dependant wildlife, notably gazelles, through such approaches as restoration and remediation, particularly in areas that experience high stress from economic activities.

C.5 *Conserve wetlands and dependant wildlife*
Mongolia and the PRC agree that Buur and Dalai lakes and their dependant wildlife will be protected by complying with Ramsar and other related conventions; establishing biodiversity inventories and conducting regular censuses; consider wetlands as part of a broader ecosystem approach; restoring degraded wetlands; improving environmental monitoring and inspections; and conducting joint actions to prevent poaching and illegal

harvesting. In particular, Tashain Tavan and Ganga lakes (Mongolia) will be listed in the Ramsar Convention.

C.6 *Improve management of transboundary rivers*
Both countries agree to conserve the Kherlen and Khalkhiin rivers by building wastewater treatment plants in the city of Arxan (PRC) and in Aimag capitals (Mongolia); promoting ecologically sound economic activities and the associated infrastructure (such as eco-tourism) in Arxan and the Khalkh and Numrugiin Gol areas; and by applying measures to conserve the highly endangered Taimen fish species in these rivers.

C.7 *Enhance public awareness of biodiversity issues*
Mongolia and the PRC agree that efforts to protect biodiversity and water resources can only succeed with greater information flow and public awareness and participation in concrete actions.

C.8 *Build local administrative capacity*
Local capacity will be enhanced by integrating diverse stakeholders into the environmental planning process. In particular, local community-based organizations and the business sector will be encouraged to fully participate in biodiversity and water conservation.

C.9 *Strengthen implementation of local regulatory regimes*
To assist in SAP implementation, Mongolia, and the PRC agree to strengthen enforcement of regulations and procedures at the local level concerning biodiversity conservation and water management.

C.10 *Conduct a joint survey on region-wide dust storms*
The PRC and Mongolia wish to express their joint commitment to addressing the dust and sand storms that affect the entire NE Asian region by conducting joint surveys using the existing research on the phenomenon, including root causes and counterstrategies.

C.11 *Emphasize conservation of medicinal and useful flora*
Special attention will be given to medicinal and other useful plants in the appendices of CBD and CITES that list highly endangered species (as noted in the MOU).

C.12 *Identify, assess and monitor hotspots*
On-site investigation and satellite information will be used to identify, assess, and monitor environmental hotspots, to facilitate improved environmental management.

MPZ National Actions

To support the six regional policy actions above, Mongolia and the PRC have developed and committed themselves to implementing the following prioritized concrete national actions, the details of which are elucidated with cost estimates and financial resources in annexes 4A and 4B, respectively:

Aimags of Dornod, Khentii, and Sukhbaatar, Mongolia

C.13 *Prevent land degradation and desertification*
This series of actions aims to establish a regime of appropriate land-use; restore overused pastures and abandoned cropland affected by wind and water erosion by 20% in five years; strengthen land management capacity; and increase public awareness of issues related to biodiversity conservation and sustainable pastureland. Specific actions include: develop and implement a land management plan at the Aimag level and below; create a favourable legal regime for pasture use; create a land restoration fund from land-use proceeds; improve water supply in pastureland areas; carry out reforestation; and establish herders' cooperatives and community-based pasture management systems.

C.14 *Conserve Buur and Dalai lakes, related wetlands, and dependant wildlife*
Goals include improved assessment and monitoring of wetland habitats; reduced anthropogenic pollution; protection of flyways, biodiversity, and wetland functions. Concrete actions for which Mongolia has committee financial resources include strengthening the existing hydro-meteorological monitoring network by applying modern equipment and techniques and enhancing training programmes; developing a unified water monitoring programme for Buur and Dalai lakes; demineralizing and softening rural water supplies, especially in the steppe area; building and improving water treatment plants in the Kherlen and Khalkhiin Gol; creating a pollution inventory and database on transboundary water; institute measures to improve waste management; and strengthening EIA of mining.

C.15 *Raise capacity to conserve biodiversity and natural resources*
This series of actions aims to help build a base for sustainable development in the region by reversing and preventing biodiversity and habitat loss; helping implement international conventions and treaties, and identify appropriate uses of biological resources. Specific actions to meet these general goals include: strengthen enforcement of environmental conservation laws and regulations; develop and implement comprehensive wetlands management programme for Ramsar sites; reduce illegal hunting and cross-border trade; and organize training programmes on biodiversity conservation.

C.16 *Create joint NPAs along Mongolian-Russian-Chinese borders*
By forming new transboundary NPAs involving the three countries, this project aims to protect migratory species, prevent biodiversity loss, recover damaged ecosystems, develop eco-tourism, generate income for local residents, and enhance sub-regional cooperation. Among the specific actions are: developing the justification, comprehensive management plan, and legal framework; establishing an NPA monitoring network; promoting public awareness; conducting training programmes for NPA staff and local communities; and develop action plans for eco-tourism.

C.17 *Implement disaster prevention measures*
To counter biodiversity loss resulting from disasters, these measures focus on mitigating effects arising from disasters and instituting systems for preventing disasters. A number of specific actions are planned, including enhancing disaster management capacity; altering legislation; improving early warning systems and preparedness; establishing a transboundary fire prevention belt; combating invasive species; providing biotechnological remedies to affected fauna; and raising public awareness on fire prevention.

Inner Mongolia Autonomous Region, PRC

C.18 *Strengthen Sino-Mongolian cooperation on Ba Er Hu grassland NPA*
This project aims to protect endemic wildlife especially gazelles, conserve the grassland ecosystem, develop transboundary eco-tourism, mitigate negative effects of economic activities, and protect rare or endangered flora and fauna. Among other concrete actions, IMAR plans to build scientific research capacity; construct an exhibition hall and laboratory; create a natural pasture demonstration site; rehabilitate degraded grasslands, and secure equipment for communication and patrols.

C.19 *Build management capacity of Dalai Lake national NPA*
Strengthening the management of Dalai Lake NPA will help conserve biodiversity in the MPZ. Outcomes include improved monitoring and research; better education and public outreach; improved international cooperation issues affecting the park; and increased eco-tourism opportunities for visitors and local communities. Specific actions include construction of a field laboratory, training and monitoring centers and hides; creation of demonstration sites for rehabilitated habitats; and a project to involve local communities in park management.

C.20 *Build management capacity of Xi Lin Guo Le national NPA*
This project aims to stabilize and restore the grassland ecosystem and improve overall management and monitoring of park assets through a number of concrete actions to which financial and human resources have already been committed, including: constructing necessary facilities for rangers,

ecologists, fire-fighters, and tourists; better signing; securing communication, research, and transportation equipment; building an exhibition hall; and training staff;

C.21 *Conduct ecological rehabilitation of Hui He NPA*
This project to be conducted by the Hui He management bureau aims to restore degraded grasslands, stabilize wetlands, and counter desertification through remediation techniques and infrastructure construction.

C.22 *Extend conservation efforts in border areas*
This collection of actions aims to counter land degradation and desertification around Arxan City as well as strengthen protection of wetland and forest ecosystems and wild fauna and flora. Specific measures include recovering and protecting 20,000 *ha* of forests and 20,000 *ha* of grassland, building infrastructure as needed (breeding center, exhibition hall, bridges, etc.), and relocating local residents currently in sensitive areas.

D. Supra-Regional Zone (SRZ)

SRZ Regional Policy Actions and Approaches

The participating countries have agreed on the following suite of regional policy actions (followed by concrete national action commitments below) to address threats to transboundary biodiversity and international waters throughout the TumenNET area that are not location-specific:

D.1 *Ecosystem conservation*
All countries agree that in order to protect regional biodiversity and water, sustainable use of natural resources in the context of an ecosystem-level approach to environmental protection is necessary. Throughout the TumenNET region, transboundary, national, and provincial NPAs will be created, expanded, and/or enhanced and eco-corridors created. Receiving special attention will be various endangered flora and fauna as listed in the TDA.

D.2 *Sand and Dust storms*
The countries agree that dust storms have undesirable effects throughout the entire TumenNET region and beyond, and warrant specific national actions to remedy the root causes of the storms. Such actions include the establishment and later expansion of a region-wide monitoring network to track occurrence, transport, and deposition; the introduction of sustainable land/pasture management systems and practices in areas with fragile soils (DSZ, MPZ, and further west); establishment of grass and tree planting demonstration sites in Mongolia and the PRC; capacity-raising and greater joint research among experts, focusing on root causes and mitigation; and the improvement of water resources management.

D.3 *Protect wetlands and migratory birds*
All countries agree on the need to conserve and protect wetlands and to use them sustainably, so that these symbolic and economic resources exist in perpetuity for future generations. The TumenNET countries agree that a number of endangered migratory birds such as cranes, ducks, and geese that move throughout the SRZ deserve the strongest protection. To this end, efforts will be continued throughout the region to survey migratory birds, restore and conserve wetlands, and prepare a regional convention to establish and/or build upon conservation networks of wetlands and migratory birds.

D.4 *Maintain a regional environmental information system (EIS)*
The countries agree to maintain and regularly update the regional TumenNET website which will provide integrated environmental information within the TumenNET region. This will be accomplished in part by integrating regional environmental information systems, enhancing collaboration between existing

networks (i.e., NEASPEC, NEACEDT, ARDN, EANET, TEMM, etc.), and improving information exchanges among the countries. Until a regional cooperation mechanism is created or identified, the ROK MOE will host and maintain the TumenNET regional website with the support of other countries.

D.5 *Regional cooperation mechanism*
All the countries agree on the need to coordinate national and local efforts to protect shared resources, and recommend the creation of a regional cooperation mechanism to implement the SAP. A regional cooperation mechanism should fairly represent the TumenNET countries in its composition; among other duties, it should explore the possibility of creating regional legal mechanisms for addressing biodiversity and water-related issues.

D.6 *Transboundary EIA*
Anticipatory and co-operative actions, such as contingency planning, environmental impact assessment, monitoring, and strategic environmental assessment shall be taken, as related to biodiversity, water resources, and transboundary environmental impacts arising from government policies, programmes, and plans.

In particular, the countries agree that transboundary EIA guidelines are needed to properly evaluate the sustainability of development projects in TumenNET border areas. The countries intend to harmonize and/or standardize EIA procedures and reporting statements, raise national and local assessment capacity, and establish mechanisms for ensuring that assessments are conducted on transboundary development projects. Specifically, the following actions will be taken by all parties: (a) organize a SEA/EIA training course to standardize the content of regional environmental impact statements for transborder projects; (b) establish an ad-hoc SEA/EIA Committee (including major stakeholders) for identifying alternatives and negotiating mitigation measures; and (c) create a Monitoring Commission composed of each affected or involved government to ensure project-level compliance with EIA approval criteria. The Commission should operate on a project-to-project basis, be funded from the project budgets, operate for the lifetime of the projects, and utilize national experts (see Annex 11 for the full text of the EIA recommendations).

D.7 *Green investment initiatives*
The participation and co-operation of the private sector and international donor community shall be encouraged and is seen as integral to the successful management and implementation of the SAP. Investors require a clear road map of how capital will be used and how it can generate return on investment, and donors increasingly desire measurable results; for these reasons, TumenNET countries shall clarify procedures for foreign direct investment, especially in environmentally sensitive or extractive industries.

The countries recognize that public-private partnerships are a useful tool in this regard.

The countries note a number of opportunities and priorities, such as the use of clean technologies requiring the replacement or phase-out of waste-intensive technologies.

Within economic sectors and industries, exemplary practices in environmental management will be promoted.

Where possible, alternative sustainable livelihoods should be secured for local residents when actions to counter environmental threats are taken that may remove or dilute a potential or actual income source.

D.8 *Local governmental cooperation*
The countries agree that effective local implementation is needed to ensure that biodiversity and water resources are protected and express the intention to build upon the example set by the TumenNET Governors' MOU (see Annex 13). Local governments are encouraged to incorporate transboundary biodiversity and international water conservation issues into local development strategies and planning. Procedures on border crossings by rangers, firefighters, and inspectors for environmental purposes shall be simplified, where appropriate. Lastly, local governments are invited to organize regional environmental conferences with their counterparts within and outside their countries, in order to enhance regional communication and networking.

D.9 *Public awareness raising and environmental education*
The participating countries shall continue to promote public awareness raising and education on issues related to this SAP, with particular emphasis placed on outreach to communities in or near national or NPA boundaries. Concrete actions may include activities conducted under the AWARE component of TumenNET, such as the small grants programme, the annual TumenNET clean-up day, bi- and tri-lingual transboundary environmental newsletters and websites, green school initiatives, and so on. In addition, the continued involvement of NGOs and other stakeholders in awareness raising shall be promoted.

D.10 *Eco-tourism*
National policies, plans, and programmes shall reflect appropriate modes of eco-tourism as both an environmentally and culturally viable source of national economic development and a tool for ecosystem conservation. The countries agree to cooperate on establishing eco-tour networks of local organizations to help generate revenue from environmentally sensitive tourism and draw attention to transboundary biodiversity and water issues.

SRZ ROK National Actions

To support the regional policy actions above, and to add value to the other countries' national actions related to the SRZ priorities, the ROK has developed and committed itself to implementing the following well-funded concrete national actions, the details of which are elucidated with cost estimates and financial resources in Annex 5:

D.11 *Establish a regional cooperation mechanism*
The ROK, with the cooperation and agreement and joint efforts of the other participating countries, intends to suggest a regional cooperation mechanism for SAP implementation. The organizational structure of this cooperation mechanism would be defined at a regional workshop funded by the ROK.

D.12 *Implement ROK wetlands conservation project*
This on-going GEF PDF-B project adds considerably to the protection of habitats for migratory birds in Korea's important wetlands. Among the specific actions are: law/policy modification, formulation of a long-term management plan for the sustainable use and conservation of globally significant wetlands, and government purchases of private land in and around important wetlands.

D.13 *Create and maintain a TumenNET SAP regional website*
With the agreement and cooperation of countries in the region, the ROK aims to create and maintain a website to facilitate the exchange of information related to SAP, including data exchange, updates, identifying and appealing investors and donors, assisting in implementation, promoting eco-tourism, etc.

D.14 *Raise public awareness of SAP issues throughout the region*
This action focuses on raising public awareness by organizing study tours to the Tumen basin and Baekdu Mountain (*Changbai*), identifying and promoting eco-tourism opportunities, and by establishing or strengthening networks among NGOs and other stakeholders.

D.15 *Protect ecosystems in the Baekdu mountain range*
Baekdu (*Changbai*) Mountain is part of a mountain range that extends deep into to the southern tip of the Korean peninsula, deserving ecosystem-wide conservation measures. The ROK government has already applied financial resources to establish an inventory of biological/ecosystem resources (ideally including the DPRK and PRC portions as well, if agreed), formulate a long-term management plan for southern half of the Baekdu range, amend laws and policies, and establish a GIS system to facilitate ecosystem management and production of ecosystem maps.

D.16 *Enhance water quality analysis for the Tumen River and other international waters*

The aim of this collection of actions is to devise a program for enhancing the standardization of water quality analysis methods among the TumenNET countries. These funded activities include preparing and distributing samples, analyzing and reporting results, and raising capacity among countries to participate in joint water quality analysis by delivering targeted training courses.

D.17 *Initiate and implement transboundary EIA/SEA*

This suite of actions aims to institute a system to properly evaluate transboundary development projects by, among other activities: designing and conducting training programs, standardizing EIS and EIA methodologies; adopting SEA for transboundary policies, plans, and programmes; and by establishing and/or enhancing environmental cooperation mechanisms in the TumenNET region.

D.18 *Initiate inter-Korean/Russian joint cooperation to conserve East Sea coastal marine biodiversity*

These interventions, if approved by the DPRK and Russian Federation, will identify and implement strategies for ensuring the sustainable use of shared marine resources along the three countries' eastern coasts, including the Tumen River estuary. Specific actions include establishing systems for monitoring seawater, sediment, and living resources, and developing regional strategies to reduce pollution and encourage sustainable use.

D.19 *Support green investment: supply wastewater treatment chemicals and consulting to the TumenNET region*

This 7-year bilateral green investment program initiated by the MOE and Hankook Titanium Co will enhance the quality of international waters in the region by providing over 40 million USD in sulfates and consulting services to wastewater treatment facilities and plants in environmental hotspots identified in this SAP. The particular sulfates to be provided are commonly used by the pulp and paper manufacturing and iron ore manufacturing industries. This intervention also includes an FKI funded regional workshop designed to attract green investment into and within the TumenNET area.

IV. NATIONAL RESOURCES ANALYSIS

The countries and provinces in the TumenNET region possess different capacities and abilities to finance interventions to address threats to transboundary biodiversity and water resources.

A. Finance and Budgets

The participating central and local governments have inadequate funding availability to fully implement all actions in this SAP, although considerable financial, institutional, and human resources have already been mobilized in each country in light of the recognition that degraded biological and water resources compromise national development goals.

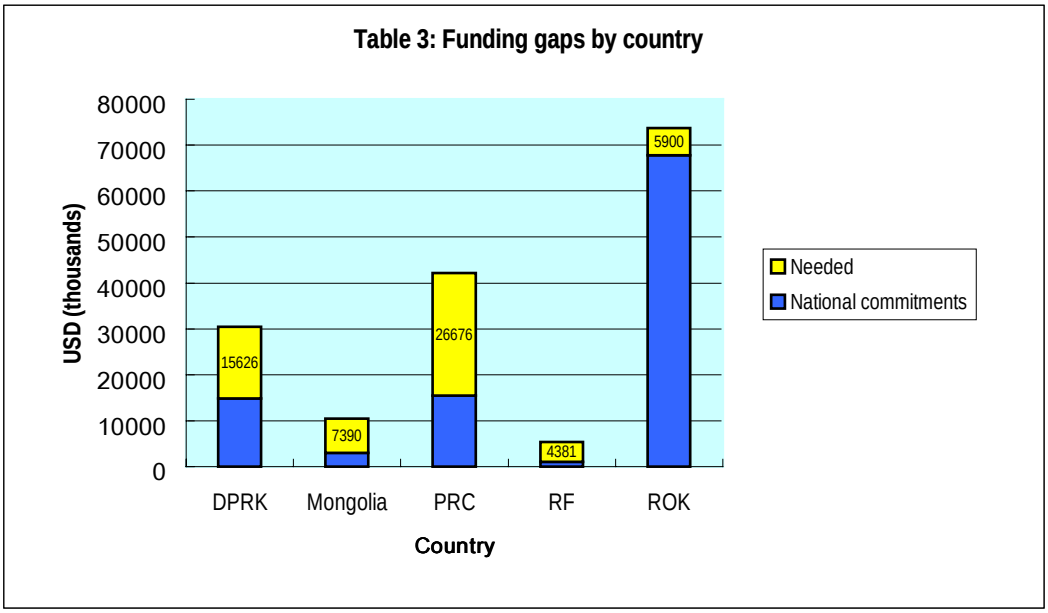
Financing for projects has been and will be secured from national funding sources (local and national governments), aid programmes (multilateral, bilateral, other), private equity participation (securities), and direct investment or private finance initiatives. So far, a total of over 100 million USD has been earmarked by the TumenNET countries themselves to implement the SAP; however, about 60 million USD in additional funding is needed, which is elucidated in tables 2, 3, and 4 below. Per zone, the Tumen River basin requires approximately 41 million USD to leverage existing national financial commitments of almost 30 million USD, while the Mongolian Plateau needs nearly 8 million USD on top of national budgets, and the Daurian Steppe requires roughly 5 million USD. Meanwhile, less than 6 million USD would enable the ROK to complete its national actions to support SAP goals and interventions throughout the region.

Table 2: Funding gaps by country (2002-2010)

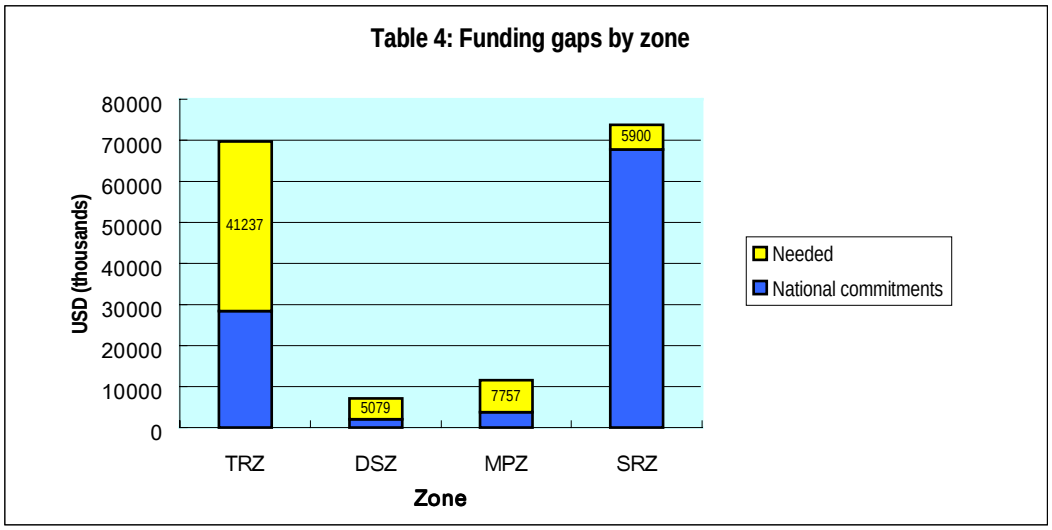
USD (thousands)

Country	Zone	Total Cost	National Commitment	Needed
DPRK	TRZ	30 442	14 816	15 626
Mongolia	MPZ	4 180	1 483	2 697
	DSZ	6 235	1 542	4 693
	subtotal	10 415	3 025	7 390
PRC	TRZ	34 725	13 109	21 616
	MPZ	7 395	2 335	5 060
	subtotal	42 120	15 444	26 676
RF	TRZ	4 525	530	3 995
	DSZ	874	488	386
	subtotal	5 399	1 018	4 381
ROK	SRZ	67 836	61 936	5 900

Note that some SRZ interventions could be categorized in other zones, resulting in a different distribution of figures.



Note that some SRZ interventions could be categorized in other zones, resulting in a different distribution of figures.



Note that some SRZ interventions could be categorized in other zones, resulting in a different distribution of figures.

The TumenNET countries respectfully call upon the international donor community, the private sector, and bilateral and multilateral agencies to assist in funding and otherwise enabling implementation of the regional and national policy actions listed herein. In return, governments should help secure returns on investment and/or demonstrable outcomes from projects. Each country has secured or will secure the budgets needed to begin implementing the priority actions listed in this document. The financial resources committed by each country are elaborated in their respective national actions collected in Annexes 2, 3, 4, and 5.

B. Policies and Strategies

The four signatories to the original project document (Mongolia, PRC, RF, ROK) have in place detailed policies and regulations concerning water and land management. Furthermore, these TumenNET countries have acceded to the Convention on Biological Diversity and CITES and have formulated national biodiversity strategies to help guide national policymaking in this area.

However, there is great variation among the TumenNET countries in formulating and executing environmental policies, and in their ability to integrate those policies with economic decision-making and national development goals.

The greatest policy constraint faced by the countries is implementation and/or enforcement of strategies, policies, and regulations at local and national levels (often due to lack of funding).

This SAP aims to address the transboundary dimensions of water protection and biodiversity conservation. Until now, the countries have lacked formal mechanisms or strategies for addressing the incremental costs associated with transboundary policy coordination, although as noted in a 1995 MOU, the countries agreed on general principles for the Tumen River Economic Development Area (see Annex 15), which informs this SAP.

In order to help solidify the local political commitment needed to realize SAP activities and goals, six provincial governors in the region have reached agreement on a number of actions and activities, including: their intent to establish provincial-level TumenNET committees with the power to integrate biodiversity, water, and green investment issues into local development planning; the organization of annual TumenNET governors' meetings to review regional development efforts as they apply to the TumenNET agenda; and a pledge to make counterpart resources available for SAP implementation (see Annex 13 for the full text of the Governors' MOU).

C. Community Involvement

All five countries in the TumenNET region have participated in and plan to continue various community outreach and public awareness raising programmes initiated under TumenNET. These include the Small Grants Programme, Green Schools, an annual Tumen River Clean-up Day, and programmes to more closely involve NGOs in regional activities and decision-making processes.

NGOs and other community groups offer a particularly valuable human and institutional resource that countries pledge to closely involve in the governments' environmental agendas and activities.
The TumenNET Small Grants Programme (SGP) has funded local and regional micro-projects in local communities throughout the region to help raise public

awareness and accomplish simple, localized objectives on the ground. In particular, the DPRK has implemented a number of activities such as a project to protect river water in the Musan area, and a reforestation project in Onsong Mountain in the Tumen River basin. The Tumen River Green Pilgrimage, a regional SGP, brought together NGOs and communities from different countries in a study tour of the Tumen River corridor. Regional SGPs involving all five countries included a survey of migratory birds, and a five-country effort to identify specific eco-tourism opportunities in the TumenNET area.

Green Schools were initiated in all five TumenNET countries to help draw attention to biodiversity and water issues affecting the region. Seventeen primary and secondary schools participated in introducing environmental issues into their curricula. This programme can easily be expanded with the support of local governments.

It is expected and hoped that future TumenNET activities will extend the SGP, Green Schools, and Tumen River Clean-Up Day programmes as crucial components of community involvement and awareness raising.

D. Green Investment and Industry

Green investment is defined broadly here as a private or public sector activity that has environmental net benefits and which aims, directly or indirectly, to protect the environment, reduce environmental risk or minimise pollution and the unsustainable use of resources, in part by employing “best-practice” environmental management principles.

The status of green investment in the region is highly varied. There is now emerging among economic and business planners in certain areas or sectors a recognition that preventive environmental protection is more cost-effective and efficient than merely treating the by-products of unsustainable or wasteful processes. The TumenNET countries hope to encourage this growing recognition in such a way as to promote sustainable and profitable economic activity while meeting national development goals.

The TumenNET countries also realize that providing clear channels and favourable conditions for investors and industry is critical. To maximize the appeal of investing in TumenNET projects, the participating countries aim to minimize financial risks and help ensure returns on investments.

It is important that TumenNET projects be financially competitive to attract capital or other contributions. Investors prefer clarity on a number of issues including land availability, government or international subsidies and other assistance, pricing mechanisms and revenue guarantees, foreign exchange stability, force majeure, insurability, project termination, taxation, and competition. The

TumenNET countries will attempt to clarify these issues to the extent possible, and in accordance with national laws and regulations.

The Federation of Korean Industries has pledged its intent to assist TumenNET countries in attracting green investments (see Annex 14). In particular, FKI has pledged to sponsor the costs of holding a regional workshop in 2003 on attracting green investment to and within the TumenNET region (see Annex 5). Other activities may include, but are not limited to, cooperation in seeking business partnerships or sponsorships for project assessment, and pre-feasibility or feasibility studies.

One example of this approach is the Hankook Titanium Company's pledge, in cooperation with the ROK MOE, to provide during the next seven years 40m USD in chemicals needed for operating modern wastewater treatment facilities, especially in the iron ore mining and pulp and paper industries. Both of these industries are major water polluters in the Tumen River basin. The company has offered this investment in pursuing partnerships with governments throughout the TumenNET region (For more information, refer to Annex 5: ROK National Actions, action 9).

E. Information Management

Environmental management requires timely access to relevant information across institutions and throughout various levels of society, such as communities, researchers, policymakers, the media, enterprises and industry, farmers, and schools.

The countries in the region have highly variable capacities to produce, disseminate, and even consume environmental information; this dynamic is amplified where transboundary issues are concerned.

The participating countries therefore resolve to regularly generate and share useful and relevant information on shared biological and water resources, particularly as it applies to the evaluation of potential impacts and proposed development projects. To this end, environmental impact assessment (EIA) and strategic environmental assessment (SEA) systems will be enhanced, as outlined in section III.D, SRZ National Actions (see Annex 11 for the full text of the EIA workshop recommendations).

The TumenNET countries plan to integrate their EIS websites to facilitate the sharing of information, in order to offer a single clearinghouse of environment-related information to investors, donors, managers, educators, researchers, and stakeholders.

V. SAP IMPLEMENTATION

The implementation of this SAP over the next decade will enhance long-term measures to sustain and protect the TumenNET region's biodiversity and water resources. Participating states agree to commit themselves to continuing the SAP beyond the current GEF assistance, and will endeavour to:

(a) adopt or alter legislation as needed,
(b) implement economic instruments needed to realize the national actions in this SAP,
(c) dedicate resources to manage SAP interventions and activities,
(d) integrate biodiversity conservation and international water issues into national and local development plans,
(e) implement (or accede to) related international conventions and protocols such as the CBD, Ramsar, UNCCD, and UNFCCC, and CMS
(f) maintain the cooperative networks set up under TumenNET (e.g., Green Business, AWARE, Green Schools, and EIS); and
(g) consider establishing a semi-permanent regional environmental cooperation/management mechanism that might include a supporting commission or secretariat.

The TumenNET countries recognize that implementation of this Strategic Action Programme requires a number of crucial elements: the political resolve of central and local governments, clear financing arrangements, clear management mechanisms and procedures at all levels (e.g., from project-level to regional cooperation), changes to existing legislation in certain cases, and finally cooperation and awareness-raising among stakeholders.

Funding for the national actions agreed upon in this SAP will be secured from the mobilization of national, regional, and international financial sources, through private and general public funding or through the application of specific economic instruments, as well as through grants and loans. Specific funding arrangements and gaps for the national action commitments in this SAP are available for review in Annexes 2, 3, 4, and 5, and on overview is provided in section IV.A above.

All participating countries agree on the need to establish a formal, semi-permanent cooperation mechanism to implement this SAP and continue to coordinate cooperation on regional environmental issues. This mechanism could build on existing infrastructure and/or be located within an existing institution.

To enable these and other follow-up actions, the participating states agree on the necessity to establish collaborative TumenNET working groups by December

2002 to transition to SAP implementation. These working groups will be zonal-based and will regularly communicate with their counterparts in the other

TumenNET countries, and will continue to perform their duties until a formal TumenNET SAP mechanism is clarified. The working groups will be responsible for:

(a) monitoring and following up on SAP implementation;
(b) developing and refining joint projects;
(c) setting up joint and shared databases and maintaining regional websites;
(d) organizing seminars, workshops, training courses, and other meetings related to SAP;
(e) exchanging experience, personnel, research, and information;
(f) driving and following up on national legislative changes as noted in the zonal agreements;
(g) promoting awareness and education through existing TumenNET networks such as the AWARE and green school networks;
(h) updating the TDA/SAP as needed; and
(i) following up on the establishment of a regional environmental cooperation mechanism.

The SAP shall be formally reviewed by the TumenNET countries once every three years starting from mid-2004 and updated when and where necessary. If all the TumenNET countries agree, the SAP may be updated as needed.

It is envisioned that the TumenNET SAP will continue to develop strong links with institutions, NGOs, and the private sector within member states and throughout the TumenNET/TRADP region.

VI. LIST OF ANNEXES

1. **List of Abbreviations**
2. **TRZ National Actions**
   A. DPRK
   B. PRC
   C. Russian Federation
3. **DSZ National Actions**
   A. Mongolia
   B. Russian Federation
4. **MPZ National Actions**
   A. Mongolia
   B. PRC
5. **SRZ National Actions** (ROK)
6. **TRZ Bilateral MOU** (PRC-RF)
7. **DSZ Bilateral MOU** (Mongolia-RF)
8. **MPZ Bilateral MOU** (Mongolia-PRC)
9. **TRZ Trilateral Recommendations** (DPRK-PRC-RF)
10. **SRZ Recommendations**
11. **EIA Workshop Recommendations**
12. **TDA Final recommendations**
13. **TumenNET Governors' MOU**
14. **FKI Agreement**
15. **MOU on Environmental Principles Governing the Tumen River Economic Development Area and Northeast Asia (1995)** (all TumenNET/TRADP countries)

Note on contributors

Annex 1: List of Abbreviations

ADB: Asian Development Bank
ARRINP: All Russian Research Institute for Nature Protection
CBD: Convention on Biological Diversity (1992)
CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973)
CMS: Convention on the Conservation of Migratory Species of Wild Animals (1979)
DPRK: Democratic People's Republic of Korea
DSZ: Daurian Steppe Zone
EPB: Environmental Protection Bureau (Yanbian and IMAR, PRC)
EIA: Environmental Impact Assessment
EIS: Environmental Information System
EABRN: East Asia Biosphere Reserve Network (under UNESCO's Man and Biosphere programme)
EIS: Environmental Information System
EANET: Acid Deposition Monitoring Network in East Asia
FAO: Food and Agriculture Organization of the UN
FEBRAS: Far Eastern Branch of the Academy of Science (RF)
GEF: Global Environment Facility
IMAR: Inner Mongolia Autonomous Region (PRC)
IUCN: International Union for Conservation of Nature and Natural Resources
KEI: Korea Environment Institute (ROK)
MFA: Ministry of Food and Agriculture (Mongolia)
MI: Ministry of Infrastructure (Mongolia)
MJIA: Ministry of Justice and Internal Affairs (Mongolia)
MLEP: Ministry of Land and Environmental Protection (DPRK)
MMC: Musan Mine Complex (DPRK)
MMMI: Ministry of Metal and Machine Industry (DPRK)
MNE: Ministry of Nature and Environment (Mongolia)
MNR: Ministry for Natural Resources (RF)
MOE: Ministry of Environment (ROK)
MOMAF: Ministry of Maritime Affairs and Fisheries (ROK)
MPZ: Mongolian Plateau Zone
MTI: Ministry of Trade and Industry (Mongolia)
MUM: Ministry of Urban Management (DPRK)
NCCE: National Coordinating Committee for Environment (DPRK)
NEAC: Northeast Asian Conference on Environmental Cooperation
NEACEDT: Northeast Asian Centre for Environmental Data and Training
NEASPEC: Northeast Asian Sub-regional Program on Environmental Cooperation
NFM: National Finance Ministry (PRC)
NIER: National Institute for Environmental Research (ROK)
NPA: nature protected area
PCU: Project Coordination Unit (TumenNET)
PRC: People's Republic of China
REDC: Rason Environment and Development Center (DPRK)
RF: Russian Federation
ROK: Republic of Korea
SAP: Strategic Action Programme
SEA: Strategic Environmental Assessment
SEPA: State Environmental Protection Administration (PRC)
SGP: Small Grants Programme (a TumenNET component)
SPAA: Special Protected Area Administration (Mongolia)
SRZ: Supra-Regional Zone
TDA: Transboundary Diagnostic Analysis
TEMM: Tripartite Environment Ministers Meeting (PRC-ROK-Japan)
TRADP: Tumen River Area Development Programme
TREDA: Tumen River Economic Development Area
TRZ: Tumen River Basin Zone
UNCCD: UN Convention to Combat Desertification
UNDP: UN Development Programme
UNEP: UN Environmental Programme
UNESCAP: UN Economic and Social Commission for Asia and the Pacific
UNESCO: UN Educational, Scientific, and Cultural Organization
UNOPS: UN Office for Project Services
YEPB: Yanbian Environmental Protection Bureau (PRC)

Annex 2A: TRZ National Actions (DPRK)

All figures are USD, rounded to the nearest thousand
(150 won = 1 USD)

Priority action	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Sources
Action 1	**Recover forest ecosystems with integrated water basin management**						
Outcomes:	1. Integrated water basin management plan formulated 2. Recovery of 50% of forests damaged by illegal logging in TREDA within 5 years 3. Conversion of all arable lands reclaimed from forests since 1990 into reforested areas 4. Strengthened growth of saplings – up to one billion per year						
Main budget items:	MLEP, People's Committee of Rason City, People's Committee of North Hamgyong Province	**13 880**	**0**	**11 640**	**1-2 years**	**2 240**	
1. Develop an integrated water basin management plan		57	0	7		50	
2. Plant saplings in damaged forest areas		8 350	0	8 000		350	
3. Establish tree nurseries		5 000	0	3 300		1 700	
4. Management and monitoring of reforested and afforested areas		473	0	333		140	
Existing major activities: The government has taken positive measures to recover forests damaged by recent flooding, drought, forest fires and illegal deforestation, and to initiate sustainable management of forest resources. The government is currently implementing the Ten-Year Plan for Afforestation/Reforestation for recovering/rehabilitating 2 million *ha* of degraded forests with suitable tree species. A regular forest management system was established from provinces and cities to counties, while the MLEP is responsible for forestry. March 2nd is Tree Planting Day.							

Priority action	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Sources
Action 2	**Capacity building at the Rason Environment and Development Center (REDC)**						
Outcomes:	1. New building constructed for REDC (1000m³ floor space) 2. Environmental monitoring posts in Undok, Saebyol, Onsong, Musan, and Heoryong established 3. Modern equipment and facilities acquired to enable environmental research, analysis, and monitoring in TREDA 4. Experts trained 5. Regular environmental monitoring and analysis across TREDA conducted						
Main budget items:		**1 137**	**0**	**174**	**1-2 years**	**963**	
1. Construct building and posts	People's Committee of Rason City	80	0	80	1-2 years	0	
2. Purchase equipment for environmental analysis	MLEP	667	0	67		600	
3. Establish environmental monitoring and analysis system for TREDA	MLEP, People's Committee of Rason City	283	0	20	-	263	
4. Conduct training	MLEP	107	0	7	1-2 years	100	

Priority action	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Sources
Action 3	**Treatment of tailings from Musan Mining Complex (MMC)**						
Outcomes:	1. Tailings no longer discharged into Tumen River tributaries 2. Degraded forest around the MMC recovered						
Main budget items:		**10 777**	**0**	**1 494**	**1-2 years**	**9 283**	
1.Build new tailings dam	MMMI, MMC	2 900	0	667		2 233	
2.Construct tailings pumping station		3 900	0	400		3 500	
3. Install new pipelines		3 900	0	400		3 500	
4. Plant trees around the MMC	MMC, Dept of Land Mgt in People's Committee of Musan County	77	0	27		50	

Priority action	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Sources
Action 4	**Conservation of Bonpo wetland**						
Outcomes:	1. Bonpo Wetland Reserve established 2. Bonpo wetland ecosystem inventory conducted 3. Habitats recovered 4. Alternative income sources from wetlands identified						
Main budget items:		**504**	**0**	**134**	**1-2 years**	**370**	
1. Develop an integrated water basin management plan	People's Committee of Rason City, MLEP	177	0	27	1-2 years	150	
2. Plant saplings in damaged forest areas	Academy of Sciences, MLEP, People's Committee of Rason City, MLEP	140	0	40		100	
3. Establish tree nurseries	People's Committee of Rason City, MLEP	167	0	67		100	
4. Manage and monitor reforested and afforested areas	MLEP	20	0	0	-	20	
Existing major activities: Due to lack of funds and expertise, there are currently no conservation activities for the Bonpo wetlands, an important area for migratory birds.							

Priority action	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Sources
Action 5	**Oil spill prevention in Rason ports**						
Outcomes:	1. Laws and regulations developed to prevent oil spills/dumping 2. Capacity established to respond to and treat oil spills 3. Experts trained in treating oil spills						
Main budget items:		**325**	**0**	**35**	**1-2 years**	**290**	
1. Develop laws and regulations to prevent oil spills and dumping	MLEP	2	0	2	1 year	-	
2. Build institutional and technical capacity for responding to and treating oil spills in Rason ports	People's Committee of Rason City	250	0	0	-	250	
3. Conduct training on treating oil spills		73	0	33	1-2 years	40	
Existing major activities: There are currently no measures or capacity to prevent or respond to oil spills in or near the Rason ports due to lack of funds and expertise.							

Priority action	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Sources
Action 6	**Municipal sewage treatment in Rason and Hoeryong cities**						
Outcomes:	1. Sewage treatment plants constructed in Rason and Hoeryong cities 2. Personnel trained in sewage treatment						
Main budget items:		**3 113**	**0**	**1 333**	**1-2 years**	**1 780**	
1. Construct two sewage treatment plants – one each in Hoeryong and Rason cities	People's Committee of Rason City, People's Committee of North Hamgyong Province	1 833	0	1 333	1-2 years	500	
2. Purchase plant equipment and facilities	People's Committee of Rason City, MUM	1 200	0	0	-	1 200	
3. Conduct training for personnel		80	0	0	-	80	
Existing major activities: Hoeryong and Rason cities currently lack any sewage treatment facilities.							

Priority action	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Sources
Action 7	**Treatment of wastewater from Hoeryong Paper Mill**						
Outcomes:	1. Wastewater treatment process established for Hoeryong Paper Mill						
Main budget items:		**303**	**0**	**3**	**1 year**	**300**	
1. Establish wastewater treatment process	MLEP	**53**	0	**3**	1 year	50	
2. Purchase of equipment and facilities		250	0	0	-	250	
Existing major activities: Hoeryong paper Mill currently lacks any wastewater treatment facilities due to lack of funds and technology.							

Priority action	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Sources
Action 8	**Treatment of wastewater from Undok Chemical Factory**						
Outcomes:	1. Wastewater treatment process established for Undok Chemical Factory						
Main budget items:		**403**	**0**	**3**	**1 year**	**400**	
1. Establish wastewater treatment process	MLEP	**153**	0	**3**	1 year	150	
2. Purchase of equipment and facilities		250	0	0	-	250	
Existing major activities: Hoeryong paper Mill currently lacks any wastewater treatment facilities due to lack of funds and technology.							

Annex 2B: TRZ National Actions (PRC)

All figures are USD, rounded to the nearest thousand
(8.3 CNY = 1 USD)

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Sources
Action 1	**Hunchun provincial NPA biodiversity conservation project**						
Outcomes:	1. Advanced facilities and equipment acquired 2. Endangered species protected *in-situ* (e.g. Amur Tiger and Far Eastern Leopard) 3. Wetlands important for migratory birds protected 4. Endemic vegetation restored 5. Rescue center established for wild animals						
Main budget items:	EPB (Hunchun), NPA Management Bureau (Hunchun), SEPA	**6 795**	**272**	**1 087**	1-2 years	**5 436**	WWF, GEF
1. Initiate restoration project for tigers and leopards - Establish a monitoring system for wild animals - Secure food sources for tigers and leopards - Construct passages for tiger and leopard migration - Disseminate educational materials on tiger and leopard conservation		1554	102	247		1205	
2. Protect wetlands important for migratory birds - Convert cultivated land into wetlands - Designate biological resource protection zones - Establish an ecosystem monitoring system - Restore habitats - Disseminate education materials on wetlands conservation		3253	108	373		2771	
3. Protect and restore endemic vegetation		1386	24	398		964	
4. Establish a rescue center for wild animals		602	37	69		496	

Existing major activities:
Hunchun regional NPA is located near Hunchun City in eastern Jilin Province, on the border with the RF and DPRK. One of the functions of the NPA is to provide for the conservation and protection of habitats for endangered animals such as the Amur Tiger and Far Eastern Leopard, as well as wetland habitats. Hunchun NPA was designated a provincial-level NPA in 2001, when its management bureau was established. Tree felling and hunting are now forbidden in the park. The main constraint to Hunchun NPA operation is budgetary. However, the park is listed as one of the main development activities of the "National Trans-century Greening Projects" and in the 10th five-year plan for environmental protection in Jilin Province.

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 2	**Changbai Mountain National NPA biodiversity protection project**						
Outcomes:	1. Management capacity improves, in part through better information access and use 2. Forest ecosystems and resources protected 3. Staff capacity enhanced 4. Working conditions improved for conducting scientific research						
Main budget items:	EPB of Changbai Mountain Tourism and Economic Development Area	**6 050**	**181**	**726**	1-2 years	**5 143**	GEF
1. Establish NPA management system		800	36	108		655	
2. Construct infrastructure		500	36	96		367	
3. Establish garden/zoo for rare animals and plants		400	24	96		280	
4. Install GPS		780	18	60		702	
5. Purchase laboratory facilities and equipment		820	42	96		681	
6. Rebuild management station		200	8	60		131	
7. Construct water treatment and power generation stations		1100	4	60		1035	
8. Update communication facilities		350	—	27		323	
9. Train staff		200	12	—		188	
10. Establish rescue center for wild animals		500	—	60		440	
11. Update/improve museum		400	—	60		340	

Existing major activities:
The Changbai Mountain NPA was established in 1960 in Jilin Province along the border of the DPRK at the headwaters of the Tumen River. With an area of almost 200,000 hectares, this important NPA is 88.5% forested. In 1980, the Changbai NPA joined UNESCO's Man and Biosphere program and six years later was designated a national NPA. The park is listed as one of the main development activities of the "National Trans-century Greening Projects" and in the 10th five-year plan for environmental protection in Jilin Province.

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 3	**Creation of an education/awareness network in the Tumen River basin**						
Outcomes:	1. Network established for education extension and dissemination 2. Advanced equipment acquired 3. Green schools and districts established 4. Educational materials produced and distributed to enhance public awareness						
Main budget items:	Jilin Province EPB, SEPA, NFM	**1 446**	**181**	**361**	1-2 years	**904**	GEF
1. Establish and maintain educational networks		120	30	36		54	
2. Disseminate educational materials		169	24	48		96	
3. Publish a series of books		193	12	48		132	
4. Establish green schools		120	24	12		84	
5. Establish green districts		60	30	–		30	
6. Produce audio-visual tapes		193	12	48		133	
7. PR/media outreach		169	6	48		114	
8. Purchase equipment for dissemination and education		241	12	72		157	
9. Provide training on environmental reporting		36	–	12		24	
10. Provide training for villagers		36	–	12		24	
11. Provide training for grassroots network workers		48	18	12		18	
12. Maintain a telephone hotline		60	12	12		36	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 4	**Awareness raising and capacity building in the Changbai Mountain area**						
Outcomes:	1. Videos produced on environmental issues, scientific publications acquired, and educational materials printed 2. Database assembled of wild flora and fauna in the Changbai area 3. Official website for Changbai Mountain National NPA created and maintained 4. Public and tourists' awareness enhanced of the need to improve environmental protection						
Main budget items:	EPB of Changbai Mountain Tourism and Economic Development Area, Changbai Mountain NPA Management Bureau	**434**	**151**	**151**	1-2 years	**133**	GEF
1. Purchase equipment		96	24	24		48	
2. Publishing and printing		108	30	42		36	
3. Conduct research		72	24	24		24	
4. Disseminate educational materials		60	42	—		18	
5. Produce video		96	30	60		6	
Existing major activities: Various small-scale community PR activities.							

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 5	**Wastewater treatment in Yanji City**						
Outcomes:	1. Sewerage constructed in selected areas 2. Wastewater treatment plant established 3. Water quality improved in the Tumen river basin 4. Capacity raised for the staff of the treatment plant						
Main budget items:	EPB of Yanji City, Construction Bureau of Yanji City, EPB of Jilin Province, Ministry of National Construction	**20 000**	**5 000**	**5 000**	1-2 years	**10 000**	GEF
1. Install sewerage		3 000	2 500	500		—	
2. Construct treatment plant		10 000	2 500	2 500		5 000	
3. Purchase facilities and equipment for plant construction and operation		6 950	—	1 980		4 970	
4. Conduct staff training courses		50	—	20		30	

Annex 2C: TRZ National Actions (Russian Federation)

All figures are USD, rounded to the nearest thousand
(31.6 RUB = 1 USD)

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 1	**Monitoring of pollutants' distribution in affected landscapes in Tumen River basin and coastal zone. Short-middle- and long-term prognosis of background pollution. Preparation and implementation of measures to decrease and minimize anthropogenic pressures.**						
Outcomes:	1. Landscape elements protected from pollutants and ecosystem degradation halted 2. Anthropogenic pollution minimized.						
Main budget items:		**139**	**14**	**27**		**98**	
Establish a permanent pollution monitoring station at Tumen estuary (and its role in the framework of a special regional coordination program)	Committee of Natural Resources Primorskii Krai, FEBRAS, Roshydromet Service, Pacific Institute for Geography	47	5	9	1 year	33	GEF, USAID
Monitor transboundary transfer processes that play a main role in degrading the marine ecosystem	Committee of Natural Resources Primorsky Krai, FEBRAS, Roshydromet Service	11	2	3	Permanent basis	6	GEF
Prepare short-, middle- and long-term prognosis of background pollution in affected landscapes	Institute of Marine Biology (Vladivostok), Pacific Institute of Geography, FEBRAS, Roshydromet Service, Hydroproject RF, ARRINP	8	1	2	2 years	5	GEF
Devise a series of measures for decreasing and minimizing anthropogenic pollution to secure the same benefits and incomes which local communities possessed before modernization; initiate implementation of measures	Committee of Natural Resources Primorsky Krai, FEBRAS Hydroproject, ARRINP (Moscow)	47	3	4	2 years	40	GEF, USAID, WWF
Regular monitoring data exchanges (e.g., on-line) and the creation of a united regional data bank	Committee of Natural Resources Primorsky Krai, Primorskii Krai Administration, Administration of the Khasanskii Rayon	26	3	9	2 years	14	GEF

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 2:	**Prevent or minimize degradation and rehabilitate natural ecosystems (primary forests, wetlands, marines, grasslands) in southwestern Primorie**						
Outcomes:	1. A variety of natural ecosystems in southwestern Primorie rehabilitated and protected						
Main budget items:		**3 311**	**154**	**264**		**2 893**	
Create fire fighting brigades under the Khasansky District Administration (including salaries and technical support)	Khasansky District Administration, Committee for Natural Resources Primorskii Krai	1 424	93	123	3 years	1 208	USAID, GEF
Implement a fire prevention belt system in southwestern Primorie	Committee of Natural Resources Primorskii Krai, Gov. Authority for Forest Management in Primorskii Krai, Gov. Authority for Fire Prevention in Primorskii Krai, Gov. Ecological Fund RF	633	33	100	3 years	500	USAID, GEF, ROU
Raise public awareness	Far Eastern Alliance of NGOs, Far Eastern Branch of Ministry for Emergency Situations	4	1	1	1 year	2	INTAS, WWF
Develop and implement a program for converting low-value plantations into important habitats (broad-leaved and coniferous forests) in southwestern Primorie	Gov. Authority for Forest Management in Primorskii Krai, Gov. University of Forestry, Dept. of Forest Management (MNR), FEBRAS, Gov. Ecological Fund, Gov. Forest Subsidy	1 013 (including program preparation and restoration of 2500 *ha* on the basis of 400 USD/*ha*)	6	7	5 years	1 000	American Forests, WWF, GEF
Develop and implement measures for preventing illegal felling	Committee of Natural Resources Primorskii Krai, Gov. Authority for Forest Management of Primorskii Krai, Authority for Fire Prevention of Primorskii Krai	38	9	14	1 year	15	WWF, IUCN, Traffic Int.
Develop & implement a practical program for conservation and rehabilitation of wetlands: A. prevent erosion along Tumannaya river; B. add wetlands to the Ramsar List C. monitor and protect Ramsar sites	Committee of Natural Resources Primorskii Krai	190 *itemized:* *158* *10* *22*	9 *itemized:* *6* *1.5* 1.5	16 *itemized:* *13* *1.5* *1.5*	2 years 1 year 2 years 2 years	165 *itemized:* *139* *7* *19*	WWF, Wetlands International, IUCN, GEF
Improve regional legislation to make landowners responsible for biodiversity protection	Primorskii Krai Duma, Administration of Primorskii Krai	9	3	3	1 year	3	WWF, GEF

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 3.	**Prevention of biodiversity loss**						
Outcomes:	1. Negative tendencies that lead to biodiversity loss and ecosystem transformation ameliorated						
Main budget items:		**1 075**	**23**	**48**		**1 004**	
Create a unified NPA system covering leopard and tiger habitats on the basis of the existing NPAs in southwestern Primorie	Khasanskii District Administration, Committee for Natural resources Primorskii Krai, FEBRAS, Gov. Ecological Fund	41	3	6	3 years	30	WWF, "Rhino" Fund, IUCN
Prepare zoning for the NPA system (including determination of ecological corridors) in the border areas between southwestern Primorie and China	Khasanskii District Administration, Committee for Natural resources Primorskii Krai, FEBRAS	10	2	2	1 year	6	WWF, IUCN
Plan and implement ecological corridors system in the border areas between southwestern Primorie and China	Committee for Natural Resources Primorskii Krai, Authority for Hunting – Hunting Inspection of Primorskii Krai, Authority for Forestry Primorskii Krai, Authority for fishery Primorskii Krai	949	16	33	1 year	900	WWF
Elaboration of legislation for ecological corridors	Committee for Natural Resources Primorskii Krai, Authority for Hunting – Hunting Inspection of Primorskii Krai, Authority for Forestry Primorskii Krai	9	1	2	3 years	6	WWF
Strengthen the status Khasansky Nature Park	Committee for Natural Resources Primorskii Krai, FEBRAS, Khasanskii District Administration	4	1	-	3 years	3	WWF, IUCN
Apply hunting charges and incentives for hunting and forestry inspectors to conserve endangered species (especially tigers and leopards)	Committee for Natural Resources Primorskii Krai, FEBRAS, Khasanskii District Administration	30	-	5	2 years	25	GEF, WWF, TIGRIS Foundation
Purchase deer farms to support ecotourism and leopard feeding	NGOs focusing on leopard protection	32	-	-	2 years	32	GEF, WWF, TIGRIS Foundation

Annex 3A: DSZ National Actions (Mongolia)

All figures are USD, rounded to the nearest thousand
(Mongolian budget information originally submitted in USD terms)

Priority actions	Ministries/ Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 1	**1. Protect biodiversity from natural disasters**						
Outcomes:	1. Legal, economic, and management systems created to minimize loss from natural disasters 2. Forest fires prevented/minimized, harmful insects neutralized, and diseases/blights countered 3. Anthropogenic pollution minimized 4. Disaster monitoring system improved 5. Regional disaster management centre established in eastern Mongolia 6. Economic mechanisms introduced/enhanced to minimize loss from disasters and increase responsibility 7. Capacity strengthened, local voluntary teams established						
Main budget items:		**2 125**	**101**	**300**		**1 724**	
Develop national plans for education, training, and information on biodiversity protection	MNE, MECS	20	3	10	2003-2006	7	GEF
Establish local voluntary teams to reduce damage from natural disasters near border areas	Governmental offices of Dornod and Khentii aimags, MNE, MFA	30	3	10	2003-2006	17	GTZ, UNDP, FAO
Develop and enforce economic incentives to reduce damages from natural disasters	MNE, MFA, Local Admin.	70	10	30	2003-2006	30	Other
Acquire equipment, machinery, and communications to fight fires; train local residents to respond to forest and steppe fires	Civil Defence Admin., Local Admin.	900	10	50	2003-2006	840	GTZ, UNDP, FAO
Conduct/expand research on insects harmful to Forests; take prevention measures in one mil. *ha*	MNE	290	20	40	2002-2005	230	Donors
Establish a research centre for natural disaster impact mitigation	Administration of Dornod Aimag, State Civil Defence Admin.	140	20	40	2003-2006	80	Others
Establish a monitoring system of forest and steppe fires using GIS, terrestrial observation, etc.	Information and Computing Center, MNE, Local Admin.	400	15	35	2003-2012	350	JAICA, other donors
Create a fire protection belt	Local Admin., Natural Resources Office	150	10	40	2003-2006	100	Donors
Acquire meteorological equipment; explore possibility of using remote sensing methods in local satellite networking	MNE, Hydro-Meteorological Institute	100	5	25	2003-2006	70	TASIS, and others
Prepare and conduct a 20-50 hour training course on mitigating and responding to natural disaster impacts (at all levels of school-based training programs)	Civil Defence Admin., Local Admin.	25	5	20	2003-2006	0	-

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 2	**2. Strengthen NPA networks near border regions**						
Outcomes:	1. Livelihoods of local residents improved in and around NPAs near borders 2. Natural resource assets inventoried 3. Sustainable natural resource management systems established 4. Poaching dramatically reduced						
Main budget items:		**2 050**	**117**	**188**		**1 745**	
Identify territories near border regions with specific ecological importance	MNE, Local Admin.	10	2	3	2003-2012	5	UNDP
Establish NPA in cooperation with neighboring countries to protect rare biological resources, migratory birds, and ecosystems	Local administrations in Mongolia and PRC (as per approval by parliaments)	130	10	30	2003-2006	90	RF, PRC
Prepare specialists for NPA management and secure equipment	MNE, Local Admin., donors	300	5	25	2003-2006	270	Donors
Develop and implement an eco-tourism master plan for NPAs	MI, MNE, Local Admin.	300	10	30	2003-2006	260	Donors
Develop and implement management plans for each NPA; plans should be designed by local park managers and include local short- and long-term priorities	MI, MNE, MFA, Local Admin.	50	50		2002-2006	0	-
Organize analytical research to determine ecological status of NPAs, in order to improve park management	MNE, Local Admin., WWF, GEF	1000	30	70	2002-2008	900	GEF, WWF, project, donors
Involve local residents in NPA protection activities	NPA Admin.	250	5	25	2002-2006	220	Donors
Develop and implement measures to stop poaching, involving local people in this activity	Local Admin., border military forces, NPA Admin., local communities	10	5	5	2002-2006	0	-

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 3	**Protect transboundary water resources**						
Outcomes:	1. Monitoring system created 2. Transboundary water protection activities extended with neighboring countries 3. Research conducted on water resources; inventories assembled 4. Mongol Daguur wetland designated as a new Ramsar site 5. Public awareness raised on the importance of protecting water and environmental resources						
Main budget items:		**450**	**24**	**102**		**324**	
Establish water management system to improve protection and sound use activities	NR Office, Local Admin., MNE	200	10	50	2002-206	140	Donors
Monitor water pollution, establish small management stations near transboundary rivers, and lakes, and streams	MNE, Local Admin., donor organizations	60	1	5	2003-2010	54	Donors
Implement inter-governmental agreement on sound use and protection of transboundary water resources; exchange information on issues related to transboundary rivers, lakes, and streams; initiate research on water issues	Local administrations in Mongolia and PRC, MNE, SEPA (PRC)	90	3	17	2002-2010	70	WWF, GEF, IUCN and other donors
Designate Mongol Daguur wetland (210,000 *ha*) as a Ramsar sites	MNE, Dornod Aimag	100	10	30	2003-2005	60	WWF, Ramsar

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 4	**Protect and restore forests**						
Outcomes:	1. Achieving sustainable development results by improving quality of forest sound use, protection and restoration activities 2. Increase in family income of local people by improving use of non-timber forest products 3. Improvement of local people participation in forestry, creating of work place						
Main budget items:		**600**	**110**	**240**		**250**	
Improving knowledge and specialization of forestry specialists, exchanging experts and experiences	MNE, MECS, RF	100	10.0	30		60	Donor
Forest restoration work in 3000 hectares, involving local people	MNE, Dornod, Khentii, Sukhbaatar aimags' Governors offices	450	90	210	2002-2011	150	Donors
To separate 400 ha field for regularly producing tree seeds in each forest-vegetation species.	MNE, MECS	50	10	-	2002-2004	40	Donor

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 5	**Combat land degradation**						
Outcomes:	1. Legal and regulatory mechanisms introduced 2. Land restoration activities implemented 3. Community involvement in land management secured 4. Harmful impacts from rodents reduced						
Main budget items:		**1 010**	**100**	**260**		**650**	
Develop and enforce a general land-use plan for Dornod and Khentii aimags	Governmental offices of Dornod and Khentii aimags, MNE, Land Authority	40	30	10	2003-2004	0	-
Assess of land degradation by land-use categories	Governmental Office of Dornod, Khentii aimags, MNE, Land Authority	120	10	10	2003-2004	100	Donors
Implement land restoration in 2000 *ha*	Governmental Office of Dornod, Khentii aimags, Land authority	200	40	160	2003-2010	0	-
Implement measures to fight epidemics and disease, and insects and rodents harmful to agriculture	Governmental offices of Dornod and Khentii aimags, MNE, MFA	400	10	50	2003-2006	340	Other financ'l org's
Introduce pasture management systems based on local people and community traditions	Governmental offices of Dornod and Khentii aimags, MNE, MFA	200	5	15	2003-2006	180	Donors
Improve productivity of monitoring and observation activities using remote sensing techniques	MNE, Hydro-Meteorological Institute, Academy of Science	50	5	15	2002-2008	30	TASIS

Annex 3B: DSZ National Actions (Russia)

All figures are USD, rounded to the nearest thousand
(31.6 RUB = 1 USD)

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 1	**Russian-Mongolian joint program for monitoring predominant, rare, and endangered species in the DSZ**						
Outcomes:	1. Monitoring system initiated and implemented for monitoring migratory species along main migration routes 2. Monitoring stations established targeting migratory birds (e.g., the Torei Lakes, Aginsky Okrug, Ivano-Arakhleisky Reserve, etc.)						
Main budget items:		**34.5**	**2**	**2.5**		**30**	
Establish stations for monitoring migratory birds during global migrations (e.g., Torei Lakes, Aginsky Okrug, Ivano-Arakhleiskey Reserve, etc.)	Local governments, Chita Oblast Committee for Nature Protection, Governmental Pedagogical University	19	1	1	1.5 years	17	GEF
Set-up database to track dynamic changes in species populations and periods of migration, especially for rare and endangered species; include factors influencing predominant, rare, and endangered species		9.5	0.5	1	1.5 years	8	Asia Foundation, Turner Foundation, MacArthur Foundation, Eurasia Foundation, World Bank
Enhance efficiency and raise researchers' capacity at the "Dauria" international reserve		6	0.5	0.5	1 year	5	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 2	**Countering land degradation and ecosystem fragmentation in border territories, including preparation of a program for preventing steppe fires**						
Outcomes:	1. Land degradation brought under control using special programs: 2. Reforestation and forest belt planting conducted; 3. Wildfires in border territories prevented and managed; 4. Daurian wetlands rehabilitated and protected						
Main budget items: *pending*		**116**	**9**	**7**		**100**	
Develop and implement reforestation and forest belts planting programs	Local governments, Chita Oblast Committee for Nature Protection, SBR Daursky	25	5	3	2 years	17	Asia Foundation, MacArthur Foundation, Eurasia Foundation, Turner Foundation, World Bank
Create an inventory of degraded land due to mining, erosion, agricultural activities, etc.; rehabilitate degraded land	Local governments, Chita Oblast Committee for Nature Protection, Committee for Land-use etc.	3	0.7	0.3	1 year	2	
Prepare and implement a program for wetlands rehabilitation and conservation in the DSZ	Local governments, Chita Oblast Committee for Nature Protection, committee for land-use Chita Institute of Natural Resources (SB of Russian Academy of Sciences)	5.6	0.3	0.3	1 year	5	Wetlands International, GEF
Collect information on causes of fires and subsequent damage to steppe and forest-steppe ecosystems.	Chita Oblast Committee for Nature Protection, Committee for Land-use	3.6	0.3	0.3	1 year	3	Asia Foundation, MacArthur Foundation, Eurasia Foundation, Turner Foundation, World Bank
Creation of local volunteer fire fighting brigades in border areas; acquire needed equipment	Chita Oblast government, local governments	79	3	3	2 years	73	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 3	**Cataloging assets in the NPA system (determination of rare and endangered flora and fauna species distribution, key landscape components etc.)**						
Outcomes:	1. Optimal scheme developed for biodiversity and landscape preservation (using the territorial protection tool)						
Main budget items:		**53**	**11**	**7**		**35**	
Design a series of various scale maps of existing a prospective networks of NPAs [*sic*]	Chita Oblast Administration and Local Governments, Chita Oblast Duma, Greenpeace of Russia, Chita Oblast Committee for Nature Protection, SRB Daursky, Chita Institute of Natural Resources	29	6	5	2 years	18	Asia Foundation, MacArthur Foundation, Eurasia Foundation, Turner Foundation, World Bank
Implement regional laws on NPAs in Chita Oblast (with the addition of ecological corridors and ecosystem networks)	Chita Oblast Duma, Chita Oblast and Administration and Local Governments	5	1	1	2 years	3	WWF, GEF
Design a series of various scale maps of existing a prospective networks of NPAs [*sic*]	Institute of Natural Resources, Chita	6	3	0	1 year	3	Asia Foundation, MacArthur Foundation, Eurasia Foundation, Turner Foundation, World Bank
Conduct full-scale functional zoning of the territory and establish a network of ecological corridors	Chita Oblast Committee for Nature Protection, SRB Daursky, Chita Institute of Natural Resources	13	1	1	1 year	11	Asia Foundation, MacArthur Foundation, Eurasia Foundation, Turner Foundation, World Bank

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 4	**Conservation of biological and landscape diversity in new and existing NPAs in the transboundary territories (with attention paid to commercial value)**						
Outcomes:	1. Effective network created of Strictly Protected Natural Areas and ecosystem networks 2. Natural conditions restored to ensure safe migrations of animals and the growth of endemic, rare, and disappearing plants.						
Main budget items:		**108**	**2**	**3**		**103**	
Restrict (or provisionally prohibit) hunting in the spring season along migratory flyways of birds (the so-called bottle-neck)	Chita Oblast Duma, Administration for Hunting Management, Chita Oblast Committee for Nature Protection, SRB Daursky, SPA Mongol-daguur	3	0.7	0.3	1 year	2	Ecological fund Chita Oblast, WWF, Wetlands International, Bird Life International
Create a website on Daurian steppe biodiversity	SRB Daursky, SPA Mongol-daguur	3	0	0	1 year	3	Now-How Fund, WWF, IUCN
Rehabilitate habitats of rare and disappearing animals in the upper reaches of the Amur basin	Chita Oblast Duma, Administration for Hunting Management, Chita Oblast Committee for Nature Protection, SRB Daursky	79	0.5	3	2 year	76	Asia Foundation, MacArthur Foundation, Eurasia Foundation, Turner Foundation, World Bank
Conduct an inventory of vertebrates inhabiting the DSZ and its adjacent territories and publish a complete annotated list in four languages (Buryat, English, Mongolian, Russian)	Administration for Hunting Management, Chita Oblast Committee for Nature Protection, SRB Daursky, Chita Institute of Natural Resources	22	0	0	1 year	22	Asia Foundation, MacArthur Foundation, Eurasia Foundation, Turner Foundation, World Bank

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 5	**Reduction of ecological and social risks in DSZ river basins by securing alternative livelihoods and income sources** (e.g., eco-tourism and natural/green products)						
Outcomes:	1. Eco-tourism opportunities identified and promoted 2. Sustainably produced natural/green products promoted						
Main budget items:		**507**	*pending*	*pending*		**78**	
Conduct joint Mongolian-Russian field research on the recreational potential of river basins in the DSZ and other border areas (e.g., the Onon)	Chita Oblast Administration, Onon District Administration, Chita Regional Committee for Nature Protection, Chita Institute of Natural Resources, SRB Daursky SPA Mongol-daguur Tourist agencies	16	0	0	2 years	16	Ecological fund Chita Oblast, Asia Foundation, MacArthur Foundation, Eurasia Foundation, Turner Foundation, World Bank
Hold a joint Russian-Mongolian Workshop for tourism agencies (training, exchange of information, signing agreements)	Chita Institute of Natural Resources, Chita Oblast Administration, Onon District Administration, Chita Regional Committee for Nature	6	0	0	1 year	6	
Initiate pilot transboundary projects to establish aquatic, horseback, and walking/trekking routes for eco-tourists (e.g., sports, education, pilgrims, photo tours, etc.)	Center for tourism (Russia) Chita Oblast Administration, Onon District Administration, and Mongolian part	158	*pending*	*pending*	2 year	16	
Train local residents in tourism-related businesses (souvenirs, local cuisine, photo and guide services, etc.)	Tourism-related organizations and associations, various NGOs	11	*pending*	*pending*	3 years	10	
Initiate programs to support businesses that sustainably produce non-wood products from forest and steppe resources (medicinal herbs, etc.)	Chita Oblast Administration, Onon District Administration, Chita fund for small business support	316	-	8	2 years	30 (5 years)	

Priority actions	Ministries / Departments involved	**Estimated total cost**	**National sources of funds**			**Other sources**	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 6	**Public awareness raising for biodiversity and landscape conservation**						
Outcomes:	Public awareness raised or enhanced						
Main budget items:		**55**	**7.5**	**7.5**		**40**	
Enhance public access to ecologically vital information on major projects, including transboundary pipelines	Chita Oblast governments, Local governments, Chita Oblast Committee for Nature Protection, committee for land-use, various NGOs	4	1	1	1 year	2	Asia Foundation, MacArthur Foundation, Eurasia Foundation, Turner Foundation, World Bank, Ecological fund Chita Oblast
Initiate a mass media campaign for educating local communities on the theme: environmental conservation as the foundation for a high quality of life	Chita Oblast Administration, Onon District Administration, Chita Regional Committee for Nature Protection, SBR Daursky, various NGOs, Chita radio and TV networks, TV Altes, regional press campaigns	32	5	5	2 years	22	
Start a quarterly newsletter: "Transboundary Environmental News"	Fund "Baikal" Chita Institute of Natural Resources, SBR Daursky, SBR Sokhondinskii	14 (per year)	-	-	1 year	14 (per year)	
Hold an annual "Festival of Birds" and drawing contests	SBR Daursky, SBR Sokhondinskii, various NGOs	5	1.5	1.5	1 year	2	Ecological fund Chita Oblast, IUCN, WWF, Wetlands International

Annex 4A: MPZ National Actions (Mongolia)

All figures are USD, rounded to the nearest thousand
(Mongolian budget information originally submitted in USD terms)

Priority actions	Ministries/ Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 1	**Prevention of land degradation and desertification in selected areas**						
Outcomes:	1. Legal, economic, and management systems created to encourage appropriate land-use 2. Overused pasture and abandoned agricultural land affected by wind and water erosion restored by 20% within 5 years 3. Land management capacity strengthened at regional and local levels 4. Public awareness increased of the need to protect and use land sustainably						
Main budget items:		**1 385**	**210**	**264**		**911**	
Develop and implement land management plan in all administrative units (sum and aimag level); create land cadastre and registry	MNE, Land Management Authority, Aimag and Sum administrations, Governors' offices	450	50	100		300	
Elaborate a favorable legal environment for sustainable use of pastureland	MNE, MJIA, Aimag Governors' offices	15	3	2		10	
Renovate and implement legislation and regulations on land-use payments, and establish a land restoration fund from the revenues	Tax Department, MNE, local governments	10	2	2	1-3 years	6	GEF, UNDP, ADB
Enhance public awareness and improve pastureland management education	MNE, Aimag and Sum administrations, NGOs	100	10	20		70	
Acquire and apply technology to rehabilitate degraded land; implement pilot projects for land restoration (Zamiin uud, Dariganga)	MNE, MFA, MTI, Aimag Governors' offices	80	10	5		65	
Improve pastureland water supply	MNE, MFA, Aimag Governors' offices	600	100	100		400	
Undertake measures against pests that harm pastureland and forests	MFA, Aimag Governors' offices	200	50	100		50	
Establish forest nurseries and carry out reforestation activities in Khentii and Sukhbaatar Aimags	MNE, Aimag Governors' offices	60	25	15		20	
Establish herders' cooperatives and community based pasture management system	MNE, various stakeholders	70	10	20		40	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 2	**Conservation of wetlands (e.g., Buur and Dalai), their migratory birds and other wildlife**						
Outcomes:	1. Capacity improved to assess and monitor wetlands and water resources 2. Wetlands and associated biodiversity protected 3. Anthropogenic pollution minimized 4. Inventory conducted of water pollution sources 5. Water quality improved						
Main budget items:		**1 305**	**253**	**232**		**820**	
Strengthen existing hydro-meteorological monitoring network by applying modern monitoring equipment and conducting training	MNE, local authorities IMAR EPB (PRC)	400	100	50		250	
Develop unified water monitoring program and methodology in the Dalai and Buur lakes	MNE; National Agency for Meteorology, Hydrology and Environmental Monitoring; local authorities	80	8	7	1-2 years	65	JICA
Carry out measures to demineralize and soften water supplies, especially in the steppe area where water quality is a threat to health	MNE, Ministry of Health, Project Preparation Administration, local governments	80	15	10		55	
Conduct an inventory of water pollution sources and establish database on transboundary water resources	National Agency for Meteorology and Hydrology and Environmental Monitoring, research institutes	90	25	15		50	
Build and renovate water treatment plants for settlements and water quality management in the Kherlen and Khalkhiin rivers	MI, MNE	340	60	40		240	
Create management system for waste collection, transportation, disposal and treatment process	MNE, Aimag and Sum Governors' offices	280	40	100		140	
Develop and implement public awareness programme on waste	MNE, Aimag Governors' offices, NGOs	35	5	10		20	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 3	**Enhancing biodiversity conservation and sustainable use of natural resources**						
Outcomes:	1. Key habitats protected; biodiversity loss prevented 2. Ecological balance maintained; conditions for sustainable development secured 3. Relevant international conventions and treaties implemented 4. Sustainable use of biological resources encouraged						
Main budget items:		**285**	**42**	**45**		**198**	
Ensure enforcement of laws and regulations regarding biodiversity conservation	MNE, Aimag and Sum environmental inspectors and rangers	35	8	2		25	
Develop and implement a comprehensive program of conservation and restoration of valuable Ramsar wetlands	MNE, NPA administrations, Aimag and Sum governors' offices	15	3	1		11	
Take measures to reduce poaching and illegal international trade of natural resources	MNE, Aimag environmental protection agencies, inspectors, Mongolian border troops, relevant PRC and RF authorities	25	3	5	1-2 years	17	
Deliver training on biodiversity conservation techniques at various levels	Aimag and Sum environmental protection agencies, NGOs	15	3	2		10	
Implement special projects on propagation of rare plants and protection of endangered species	MNE, SPAA, Aimag and Sum, NGOs	195	25	35		135	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 4	**Creation of joint NPAs along the Mongolia-Chinese border**						
Outcomes:	1. Migratory species protected and biodiversity loss prevented 2. Damaged ecosystems recovered 3. Alternative income sources and livelihoods for local residents identified; eco-tourism opportunities developed 4. Sub-regional international cooperation enhanced						
Main budget items:		**325**	**40**	**40**		**245**	
Develop formal justification and legal framework for joint NPA	MNE, relevant ministries from RF and PRC	15	5	2		8	
Develop a comprehensive NPA management plan		15	5	1		9	
Establish NPA monitoring network; secure equipment and establish communication methods	MNE, SPAA, local authorities, schools	80	10	2	1-2 years	68	GEF
Conduct public awareness training for NPA staff and communities	MNE, SPAA	140	10	30		100	
Develop and implement action program for eco-tourism in the region	MNE, MI, SPAA, Aimag and Sum Governors' offices	75	10	5		60	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 5	**Natural disaster prevention**						
Outcomes:	1. Damages to biodiversity and ecosystem reduced 2. Effective disaster management system established 3. Potential disasters mitigated						
Main budget items:		**880**	**247**	**110**		**523**	
Improve legislative framework and institutional capacity for disaster management	MNE, MJIA, State Board for Civil Defense, State Emergency Commission	50	15	35		0	
Enhance disaster preparedness, including improvements to early warning systems	MNE, National Agency for Meteorology and Hydrology and Environmental Monitoring State Emergency Commission	700	200	50	1-2 years	450	GEF, FAO
Establish transboundary fire prevention belts	Governors' offices	30	17	10		3	
Raise public awareness of fire prevention	MNE, MJIA, State Board for Civil Defense, State Emergency Commission	100	15	15		70	

Annex 4B: MPZ National Actions (PRC)

All figures are USD, rounded to the nearest thousand
(8.3 CNY = 1 USD)

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 1	**Capacity building of Ba Er Hu Mongolian Gazelle NPA (especially international cooperation)**						
Outcomes:	1. Wild fauna protected (especially gazelles) and threatened animal populations increased 2. Grassland ecosystems recovered and conserved 3. Transboundary eco-tourism opportunities identified and developed 4. Anthropogenic environmental pressures reduced 5. Regional biodiversity resources protected						
Main budget items:	Ba Er Hu NPA Management Bureau, EPB of Xin Ba Er Hu You Banner, EPB of Hu LunBei Er City, SEPA	**2 567**	**231**	**542**	1.5-2 years	**1 794**	GEF
1.Construct infrastructure		460	36	72		352	
2. Develop sustainable use plan for ecological resources A. establish sustainable pasture demonstration site B. develop eco-tourism opportunities		569	60	120		388	
3. Construct and acquire facilities and equipment A. exhibition hall B. vehicles		257	24	48		184	
4. Build capacity for scientific research A. build laboratory B. purchase equipment and vehicles		446	54	108		283	
5. Enhance natural resource management A. define permissible levels of local residents' ability to use natural resources B. post boundary signage C. acquire patrol and communication equipment D. establish a species propagation center E. recover degraded grasslands		837	57	193		587	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 2	**Capacity building project for Dalai Lake National NPA**						
Outcomes:	1. Facilities and infrastructure established for advanced conservation activities; management capacity improved 2. Scientific/monitoring equipment acquired; research and monitoring capacity improved 3. Modern environmental education center built and capacity to disseminate information improved 4. Staff trained and public awareness of environmental issues raised 5. International cooperation capacity enhanced 6. Transboundary eco-tourism opportunities identified and developed						
Main budget items:	Management Bureau of Dalai Lake NPA, IMAR EPB, SEPA	**1 528**	**183**	**428**	1-2 years	**917**	GEF
1.Construct resource protection system A. signage B. buildings and essential facilities C. miscellaneous facilities		449	84	84		281	
2. Develop an ecological monitoring system: A. construct monitoring center B. construct field lab C. conduct research on endangered birds D. develop mechanism for distributing findings		313	48	96		169	
3. Initiate an education, dissemination, and training system A. construct training center B. construct facilities for field observation of birds C. train staff		477	32	84		361	
4. Develop a framework for international co-operation A. address international NPA issues B. train staff		16	16	0		0	
5. Develop a system for sustainable use of natural resources A. prevent land degradation and combat desertification B. conduct demonstrations of livestock breeding		270	0	163		107	
6. Involve local communities in NPA management		3	3	0		0	
Existing major activities: Da Lai lake NPA became a member of the International Wetland Organization in February 2002, and participated in the Man and Biosphere program under UNESCO.							

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 3	**Capacity building project for Xi Lin Guo Le Grassland National NPA**						
Outcomes:	1. Grassland ecosystem and stability restored 2. Biodiversity protected 3. Infrastructure improved and monitoring capacity enhanced						
Main budget items:		**500**	**45**	**106**		**349**	
1. Construct infrastructure: A. signage B. facilities in core area C. work station D. Tourist facilities E. fire-fighting facilities and equipment F. communication equipment	Management Bureau of Xi Lin Guo Le NPA, IMAR EPB, SEPA NFM, FB of Xi Lin Hao Te city	292	24	69	1-2 years	199	GEF
2. Construct and acquire educational facilities: A. exhibition hall B. various equipment C. vehicles		60	0	24		36	
3. Construct research facilities construction: A. monitoring and field B. vehicles		102	14	0		87	
4. Train staff		46	6	12		28	
Existing major activities: The NPA participated in the Man and Biosphere program initiated by UNESCO in 1987 and the PRC Human and Ecosphere network in 1993. Because of lack of funds and staff, the main activities are limited to periodic monitoring and patrols in a limited area each year.							

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 4	**Ecological rehabilitation project of Hui He NPA**						
Outcomes:	1. Degraded grassland restored 2. Desertified land rehabilitated and measures implemented to combat on-going desertification 3. Wetlands and water flow stabilized						
Main budget items:		**1 000**	**72**	**128**		**800**	
1. Restore degraded grassland	Management Bureau of Hui He NPA	400	36	43	1-2 years	321	GEF
2. Treat desertified land		450	24	24		402	
3. Rebuild dam and bridge to stabilize water flow at wetlands site		150	12	60		78	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 5	**Conservation extension in border areas**						
Outcomes:	1. Land degradation and desertification effectively controlled around Arxan City 2. Wetlands, wild flora and fauna effectively protected 3. Rehabilitation of forest ecosystems along Sino-Mongolian border accelerated						
Main budget items:	Arxan City EPB，Arxan City Construction Bureau，IMAR EPB，Ministry of National Construction	**1 800**	**240**	**360**	1-2 years	**1 200**	GEF
1. Afforestation, reforestation, and forest rehabilitation (20,000 *ha)*		360	160	—		200	
2. Build infrastructure for in-situ species conservation (breeding center, exhibition hall, laboratory, etc.)		420	—	120		300	
3. Convert 20,000 *ha* of agricultural land into grassland		220	35	35		150	
4. Build infrastructure to assist wetlands conservation efforts (water pipeline, dam, bridge, roads, etc.)		400	45	205		150	
5. Relocate residents in selected areas		400	—	—		400	

Annex 5: SRZ National Actions (ROK)

All figures are USD, rounded to the nearest thousand
(ROK budget information originally submitted in USD terms)

Priority actions	Ministries/ Departments involved	**Estimated total cost**	**National sources of funds**			**Other sources**	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 1	**Regional cooperation mechanism for TumenNET SAP implementation**						
Outcomes:	1. Regional environmental cooperation improved and sustained 2. Regional cooperation mechanism for SAP established 3. Agreed-upon SAP national actions implemented via monitoring and follow-up						
Main budget items:		**785**	**0**	**385**	**1 year**	**400**	
Develop organizational structure for a regional cooperation mechanism based on the Tumen Secretariat and River commissions in Europe	MOE, KEI	50	0	50	2003	0	-
Hold a regional workshop on establishing regional cooperation mechanism		35	0	35	2003	0	-
Establish regional cooperation mechanism for TumenNET SAP	MOE	700	0	300	2003 - onwards	400	GEF, UNDP, TumenNET countries

Priority actions	Ministries/ Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 2	**ROK wetlands conservation project**						
Outcomes:	1. Current legislative and regulatory framework rationalized regarding wetlands conversation 2. Long-term management plan established for the conservation of globally significant ROK wetlands 3. Important ROK wetlands conserved, targeting sites crucial for migratory birds and biodiversity						
Main budget items:		**5 900**	**1 050**	**2 900**	**1-4 yrs**	**1 950**	
Establish inventory of globally significant ROK wetlands	MOE, MOMAF, NIER, KORDI	1 600	100	1 000	2003-2007	500	GEF
Conduct stake holder analysis, recommend an efficient regulatory mechanism, and encourage the participation of local communities and stakeholders	MOE, MOMAF, NIER, KORDI, NGOs	2 100	100	1 000		1 000	GEF
Formulate a long-term wetland management plan		950	50	600		300	GEF
Amend existing laws related to wetland management and conservation	MOE, MOMAF	550	100	300		150	GEF
Purchase private land in and around wetlands to ensure/enable effective wetland conservation	MOE	700	700	0	2003	0	-

Priority actions	Ministries/ Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 3	**Establishment of an interactive SAP website with the agreement of TumenNET countries**						
Outcomes:	1. Access to regional environmental information enhanced 2. Information exchange enhanced among participating countries 3. SAP cooperation facilitated through the website 4. Green investment sources and opportunities identified and promoted through the website 5. Eco-tourism opportunities promoted through the website						
Main budget items:		**110**	**15**	**95**	**1-3 yrs**	**0**	-
Integrate existing websites (TumenNET, MOE, NIER, etc.)	MOE, NIER	20	5	15	2003 - 2004		
Create and manage TumenNET SAP website		40	10	30	2003-2006		
Incorporate information about green investment	MOE, other relevant ministries	10	0	10	2004		
Provide information on eco-tourism		10	0	10	2004		
Build technical and cooperative capacity among website operators in the participating countries	MOE, NIER	30	0	30	2004 - 2006		

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 4	**Public awareness raising**						
Outcomes:	1. Public awareness of SAP issues raised throughout the TumenNET area 2. Formal and informal cooperation strengthened among the countries involved 3. Green investment sources identified from the public and private sectors						
Main budget items:		**40**	**0**	**40**	**1-2 yrs**	**0**	-
Organize a study tour in the Tumen River basin and Mt. Baekdu (*Changbai*) to help raise recognition of the environmental importance of the region and to seek possible eco-tourism opportunities	MOE, Ministry of Unification.	20	0	20	2003-2005		
Establish networks among related NGOs and other stakeholders to publicise the environmental importance of the region	MOE, Gangwon Province, NGOs	20	0	20	2004 - onwards		

Priority actions	Ministries/ Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 5	**Baekdu Mountain Range (Baekdu Daegan) ecosystem conservation**						
Outcomes:	1. Current legislative and regulatory framework rationalized for Baekdu Daegan ecosystem conservation 2. Long-term management plan established for the conservation and sustainable use of the range 3. Biodiversity resources identified and protected throughout the southern range						
Main budget items:		**17 500**	**4 000**	**11 400**	**1-4 yrs**	**2 100**	
Establish inventory for the Baekdu mountain range (in cooperation with DPRK and PRC)	MOE, KEI	2 000	0	1 000	2003 - 2007	1 000	GEF
Conduct stakeholder analysis, recommend regulatory mechanisms, encourage participation of local communities and stakeholders	MOE, KEI, NIER, NGOs	1 000	0	600		400	GEF
Formulate long-term management plan for Baekdu Daegan	MOE, KEI, NIER, NGOs	900	0	500		400	GEF
Amend existing laws related to Baekdu range management and conservation	MOE	600	0	300		300	GEF
Establish a GIS system for monitoring ROK Baekdu mountain range conservation and updating ecosystem maps every 5 years (1st period: 2003-07)	MOE, KEI	5 000 (5 years)	0	5 000 (5 years)	2003 - onwards	0	-
Purchase private land in and around the range to ensure/enable effective ecosystem and habitat conservation	MOE	8 000	4 000	4 000	2004	0	-

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 6	**Analytical Quality Control (AQC) project for international waters**						
Outcomes:	1. Framework devised for comparing water quality data among TumenNET countries 2. Regional AQC program established for joint monitoring of the Tumen River 3. Comparative water quality data generated 4. Capacity enhanced to monitor water quality and standardize data						
Main budget items:		**131**	**99**	**32**		**0**	**-**
Prepare and distribute samples	NIER, Korea Research Institute of Standards and Science	20	0	20	2 years		
Analyze samples and report results	National and local laboratories of TumenNET countries	8	0	8			
Evaluate analytical results	NIER	4	0	4			
Conduct training workshop for TumenNET countries on integrated water quality management for the Tumen watershed (02-03)		99	99	0	current project		

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 7	**Transboundary EIA initiation project**						
Outcomes:	1. Transboundary EIS standardized in all TumenNET countries 2. EIA review methodology standardized 3. SEA adopted for transboundary policies, projects, and programmes 4. Regional transboundary EIA cooperation mechanisms established						
Main budget items:		**1 520**	**0**	**980**	**6 mos. – 3 yrs**	**540**	
Develop EIS textbook	MOE	40	0	40	6 months	0	
Conduct EIS training		60 (per yr)	0	40	1.5 years	20	World Bank, ADB
Develop EIA/SEA textbook		80	0	80		0	-
Conduct EIA/SEA training		60 (per yr)	0	40		20	World Bank, ADB
Explore options and establish regional cooperation mechanism		1 000	0	200	5 years	800	World Bank, UNDP, private sector, TumenNET countries

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 8	**Inter-Korean/Russian cooperation for protection of coastal environments in the East Sea**						
Outcomes:	1. Marine biodiversity in coastal regions conserved and used in a sustainable manner 2. Monitoring systems implemented for seawater, sediment and biological resources in the coastal zone, including the Tumen River estuary 3. Strategies identified to reduce pollution in the coastal zone, including the Tumen River estuary 4. Survey completed of coastal ecosystems, including the Tumen River estuary 5. Anthropogenic pollution minimized						
Main budget items:		**1 800**	**0**	**900**	**2-3 years**	**900**	
Monitor seawater and sediment in the Tumen river estuary and East Sea coastal zone	MOMAF, National Fisheries Research and Development Institute DPRK, RF (if agreed)	600	0	300 (3 years)		300 (3 years)	GEF, World Bank
Monitor marine and estuarine resources in the Tumen estuary and coastal zone		600	0	300 (3 years)		300 (3 years)	
Develop strategies and systems to encourage the sustainable use of biological diversity in the Tumen river estuary and coastal zone		600	0	300 (3 years)		300 (3 years)	

Priority actions	Ministries / Departments involved	Estimated total cost	National sources of funds			Other sources	
			Amount from existing budget for FY 2003 onwards	Amount for which new budget will be required	Time needed to get new budget approved	Amount	Source
Action 9	**TumenNET water quality improvement and green investment workshop**						
Outcomes:	1. Water quality improved in Tumen River and other international waters in the TumenNET region 2. Management of wastewater treatment plants improved in DPRK, Mongolia, PRC, and RF (if agreed) 3. Chemicals provided for wastewater treatment processes/facilities 4. Regional investment opportunities and channels identified, improved, and sustained 5. Recommendations produced on creating green investment framework						
Main budget items:		**40 050**	**10 010**	**30 030**		**10**	
Provide chemical materials for modern wastewater treatment processes (ferrous sulfate and liquid polyferric sulfate)	Hankook Titanium Co.	40 000	10 000	30 000 (5 000 for each of 6 years)	-	-	Recipient country provides transport of chemical materials
Provide consultant on construction of wastewater facility	MOE	10	5	-	Depends on recipient country	5	Recipient country provides matching funds
Provide consultant on management of wastewater treatment facility		10	5	-		5	
Hold a regional workshop on attracting green investment into and within the region for SAP interventions	FKI, MOE, KEI	30	-	30	2003	-	Recipient country pays travel costs

Note: liquid polyferric sulfate is commonly used in water and sewage treatment in the pulp and paper industry, while ferrous sulfate is used in general wastewater treatment applications. More information is at www.titanium.co.kr.
Conditions: Supply of the sulfates to the recipient governments requires a water quality analysis survey to first be submitted to the MOE/Hankook Titanium, as well as treatment facilities able to process the sulfates. Hankook Titanium can assist in facility design to allow the use of its sulfate products. Detailed multi-party agreements will be made directly between recipient governments, the recipient plant, MOE, and Hankook Titanium Co.

Annex 6: TRZ bilateral MOU (PRC-RF)

Memorandum of Understanding of
TumenNET SAP TRZ Meeting

Changchun, People's Republic of China
June 5-6, 2002

We, representatives of the P.R. China and the Russian Federation, participating in the TumenNET Strategic Action Program (SAP) Tumen River Basin Zonal (TRZ) meeting,

***recognizing* the importance of the TRZ as the treasure of Northeast Asian ecosystem, where human beings should live in harmony with the nature and its wild life,**

***welcoming* the initiatives countries have taken and the progress in protecting the transboundary biodiversity and international water resources**

***further recognizing* the Transboundary Diagnostic Analysis(TDA) as a basic document on which concrete measures should be taken to address the root-causes for environmental degradation**

have reached an agreement as follows, with the TumenNET Project Coordination Unit(PCU) and SAP Lead Agent (the R.O.K.) as witnesses

The meeting identified each country's National priorities as follows:

The P.R. China

1) **Biodiversity protection in the Tumen River Area, especially the protection of Northeast Tiger (Amur tiger), Far East Leopard, migratory birds, cold-water fishes, etc.;**
2) **Wetland rehabilitation and protection in the Tumen River Area;**
3) **Biodiversity protection in the Changbai Mountain Area and improvement of management and supervision in particular the monitoring and warning system;**
4) **Publicity, awareness-raising and education network on environmental protection including web site establishment, human resource development and public participation.**

The Russian Federation

1) Monitoring of pollutants' distribution in affected landscapes in Tumen River basin and coastal zone.
   - regular complex field research for pollutants' distribution in affected landscape to fill up gaps in our knowledge about river and coastal zone;
   - establishing a permanent monitoring station at Tumen river estuary and its coordination in a framework of special regional program.
2) Valuable ecosystem fire-protection in Primorskii territory in order to protect rare and endangered species.
3) Prevent or minimize degradation and rehabilitate the most valuable ecosystems (primary forests, wetlands, marines, grasslands).
4) Optimization of a system of nature protected areas (NPA), including strictly reserves (zapovednics), national parks and others as its main elements. Creation of ecological networks, including cores, ecological corridors, buffer and restoration zones.
5) Support and development the measure system for Amur tiger and Far-Eastern leopard in wildlife and migratory birds.

The P.R. China and the Russian Federation agreed to fully cooperate in the following regional priorities;

1) **establishing and enlarging Nature Protected Areas (NPA) to protect threatened species like the Amur tiger, the far-eastern leopard, migratory birds in each country, This may involve actions;**
   - **strengthened NPA management**
   - **strengthen the ecosystem management in strict accordance with national laws and regulations.**
   - **public information and awareness raising measures**
   - **comprehensive ecosystem approach**
2) **establishing eco-corridors connecting NPAs across the bordering countries (see attached map)**
3) **protecting wetlands in southwestern Primorskii Krai of the Russian Federation and in the Tumen River Area of the P.R. China**
4) **promoting eco-tourism where it is appropriate and establish the necessary infrastructure for it.**
5) Organization of regular monitoring data exchange according to national laws;
6) **Capacity building for strengthening activity in instrumental tools for implementing national juridical legislation in practice, and for strengthening participation of stakeholders from related ministries/agencies, local communities, private sectors, etc.**

The representatives from the P.R. China and the Russian Federation agree that

1) **water pollution of the Tumen River and its subsidiaries is of common concern. Significant levels of pollution from industry, agriculture, municipal sewage enter the Tumen River Basin and urgent action is needed to address this problem.**

   - The P.R. China has made significant progress in improving the situation. Indicative of these efforts are: a system of national and provincial laws and regulations that set maximum levels of pollutants for waste water and solid waste in Jilin Province; sewage

treatment facilities for Kaishantun pulp and paper mill and for Shixian paper mill are under construction; work has commenced to build a municipal wastewater treatment plant for the city of Yanji, a water treatment plant for the city of Hunchun is under preparation; and garbage treatment plants for Yanji city and Longjing city have been completed.

- The Russian Federation too has been active in setting and enforcing national regulations that limit effluent discharge. In addition Russia has established a long-term monitoring plan of the Tumen River Basin and its offshore areas.

- The PCU informed that the DPRK has been active in seeking international support to reduce mine effluents from Musan Iron Ore Mine in North Hamgyong Province, and also commenced a small community-based education program targeted at municipal and household waste management

2) Russian water quality monitoring data in the Tumen Estuary shows some improvement during the past 10 years. Despite this encouraging trend, more needs to be done however and further regional cooperation is required to address pollution of the Tumen River in a comprehensive and integrated manner.

3) The main constraint lies in the fact that the Tumen River is a border river between the DPRK, Russia and China. Any cooperative mechanisms to jointly address pollution of the Tumen River Basin must therefore involve the Government of the DPRK and both China and Russia seek the support from the TumenNET PCU to obtain DPRK participation in this important issue.

The P.R. China and the Russian Federation recommended

1) **that DPRK fully participates in regional efforts to better manage the Tumen river basin ecosystem**
2) **participating countries to further explore the possibility of establishing cooperation mechanism to effectively address environmental issues.**

Signed at Changchun, the P.R. China, June 6, 2002

On behalf of the Peoples Republic of China

Mr. Wang Guocai

Deputy Chief, Environmental Protection Agency of Jilin Province

On behalf of the Russian Federation

Mr. Konstantin M. Kutchenko

Deputy Head, Committee for Natural Resources for Primorskii Krai, Ministry for Natural Resources, RF

Annex 7: DSZ bilateral MOU (Mongolia-RF)

Memorandum of Understanding

of TumenNET SAP DSZ Meeting

Chita, Chita Oblast, Russia

June 25-26, 2002

We, representatives from Chita Oblast, the Russian Federation and and the eastern Aimags (Dornod and Khentii) in Mongolia, hereinafter referred to as "the Parties", participating in the TumenNET Strategic Action Program (SAP) for the Daurean Steppe Zone (DSZ) Workshop, which was held in Chita city, Chita Oblast, the Russian Federation, on 25- 26 June, 2002,

bearing in mind existing bi-/multi-lateral cooperation agreements such as the Agreement between the Governments of Mongolia and the Russian Federation on Cooperation for environment conservation, 15 February 1994, the Agreement between the Governments of Mongolia and the Russian Federation on the Protection and Use of Border Waters, 15 February 1995 and the Agreement between Mongolia, the Russian Federation and the People's Republic of China on the Daurian International Nature Protection Area, February 1994;

recognizing the importance to preserve the biological diversity on Russian - Mongolian transboundary territories as globally significant for the entire Northeast Asian Region;

considering centuries-long traditions of the people who had lived on these territories in harmony with nature and its wildlife;

welcoming the initiatives Northeast Asian countries have taken in the sphere of protecting biological and natural diversity of the transboundary territories and wetlands;

ascertaining that the preliminary study of the political, socio-economic and legal situation within the concerned countries provides for the implementation of measures to minimize or exclude the threat to the biological and landscape diversity of the transboundary territories;

further recognizing the Transboundary Diagnostic Analysis (TDA) as a foundation document on which concrete measures should be taken to address the root-causes for environmental degradation, particularly land and wetland degradation;

stressing the importance of protecting the transboundary biodiversity and water resources in border areas and promoting the rational use of these resources;

considering that efforts must be made to initiate a treaty as a cooperative mechanism for implementing the SAP in future,

have reached the following understanding, with the TumenNET Project Coordination Unit and the SAP Lead Agent (Republic of Korea) as witnesses:

The Russian party (Chita Oblast) focuses its efforts on

- Developing in Daurian steppe zone an ecological network of territories with a status of national protection (reserves, national parks, zapovedniks):
  - strengthening regional legislative mechanism and legislating special laws supporting ecological network and land reservation;.
  - providing a protective status to ecological corridors; expanding buffer PA zones, etc.
- Promoting eco-tourism and recreational infrastructures in the border areas:
  - data base preparation for potential tourism and recreational resources of the border territories;
  - preparation of pilot eco-tour projects.
- Biodiversity and landscape conservation of the Daurian Steppe Zone and other territories in border zones as basis for the sustainable development:
  - restricting (up to prohibiting) hunting in the spring season on the territories of the global migratory flyway of birds (so-called "bottleneck");
  - implementing a system of measures to preserve rare and endangered species: antelope "zeren", Bustard, Japanese White-naped Crane, Demoselle Crane, Mongolian Marmot, Manul cat in the Russian part of the Daurian Steppe Zone;

- strengthening the regional legislative basis for regulating the natural resources management and environmental conservation (environmental auditing).

- System of measures for wetlands conservation:
  - inventorization of wetlands and assessment of their ecological functions on border territories;
  - elaboration and implementation of program for wetlands rehabilitation and conservation in the Daurian Steppe Zone.
- Controlling and decreasing the land degradation and ecosystem fragmentation on border territories:
  - reforestation and forest–belts plantations;
  - inventorization of degraded land due to mining, erosion, agricultural activities etc., and subsequent rehabilitation;
  - promoting public access to ecologically vital information on major projects, including those of prospective transboundary pipelines.
- Public awareness raising for the responsible attitude towards biological and landscape conservation.
  - using the informational potential of regional NGOs to involve the local population and public opinion in handling transboundary environmental issues;
  - starting a wide public awareness program to prevent illegal hunting and to facilitate wildlife conservation on border territories;
  - enforcing government and public control of the quality of surface and ground water in the border territories (rivers Menza, Onon and others).

The Mongolian party (Eastern Aimags - Dornod and Khentii) focuses its efforts on:

- **Protecting biodiversity by reducing damages of natural catastrophes** (renovating legal, economic structure, management systems to reduce loss from natural disasters, preventing forest and steppe fires and neutralizing harmful insects and diseases, minimizing the anthropogenic pollution, improving scientific and technological basis to forecast natural disasters in Aimags and Sum areas, exchanging information with neighboring countries, monitoring catastrophes, evaluating risks and environmental sensibility to catastrophes, establishing the regional catastrophe combating center in Eastern zones, establishing the biogeocoenosis stations).
- **Strengthening natural protected areas' networking near border regions** (improving the quality of life of local people in nature protected areas near borders, investigating environmental resources providing appropriate conditions for their sustainable use and biological regenerating and reduction of illegal hunting).
- **Protecting transboundary water resources** (creation of monitoring system, extension of transboundary water protection activities together with neighboring countries including research and investigations of water resources, obtaining accurate data base of water resources and promoting the public awareness for water conservation)
- **Preventing of land degradation and desertification** (forest protection and restoration, improvement of land management, sustainable pasture management practices and restoration of degraded land in mining areas).

The Parties agreed to pursue cooperation in the following regional priorities:

- **Strengthening the bilateral and multilateral cooperation for the existing and future transboundary Nature Protected Areas (NPA) and nature reserves through**
  - establishing new NPAs in border areas;
  - improving and strengthening legal and regulatory systems;
  - raising public awareness and community involvement;
  - improving ecologically sustainable quality of life of local communities in the buffer zones;
  - establishing joint management of border NPAs;
  - considering the possibility to include some protected areas of the Daurian Steppe Zone (Russian and Mongolian parts) in the World Heritage List.
- **Prevention of land degradation and ecosystem fragmentation through**

- extension of reforestation, plantation and soil improvement activities;
- conduction of surveys to identify the environment hot spot areas in the Daurian Steppe Zone using GIS and establishing proper monitoring systems in the above cited areas;
- utilizing the traditional agricultural way of local communities in the border zone (e.g. nomadic livestock breeding, improving the quality of natural meadows and pastures by using sustainable practices);
- improving the regional and urban planning;
- enhancement of community involvement for preventing the land degradation;
- elaboration and implementation of the legislative tools and economic stimulation of the local community for sustainable land use.

- **Conservation of water quality and fresh water ecosystem through**
  - controlling and monitoring fresh water quality in Onon and Ingoda rivers by increasing the number of hydrological stations or posts and by strengthening the technical capacity of hydro- chemical laboratories in order to prevent pollution of Amur river;
  - elaborating programs for wetlands conservation and sustainable use of their resources;
  - developing and maintaining data bases for the assessment and management of nominated and recognized wetlands as Ramsar sites and other valuable wetlands for waterfowl birds;
  - promoting ecologically sustainable mining activities to prevent the water pollution.

- **Conservation and enhancement of rare, endangered and most valuable fauna and flora species, among these, using restoration of ecosystems, particularly in areas suffering from from economic activities pressure:**
  - restricting (up to prohibiting) hunting in the spring season on the territories of the global migratory route of birds (so-called "Bottleneck");
  - inventorizing the vertabrates inhabiting the Daurian steppe zone and its adjacent territories and publishing a complete annotated list (in Latin, English, Russian, Mongolian languages);
  - establishing the regular birds monitoring on their migration flyways in the wetlands of the Daurian Steppe Zone;
  - conserving valuable and medicinal plants, particularly the endangered species.

- **Exchange of information and consultations consistent with national laws on environmental impact assessment on the development activities in border areas, such as roads, bridges and railways construction, e.g. over Onon and Ingoda rivers.**
  - raising public awareness on conservation transboundary biodiversity and international water protection by publishing the periodical newsletter " Environmental Transboundary News " (draft) in Mongolian, Russia, English languages, in the electronic and printed formats;
  - developing eco-tourism depending on the potential of protected areas:
    - developing a series of pilot eco - tours;
    - disseminating the information on eco tourism resources/potential;
    - designing, issuing and distributing the posters on the protection of eco tourism resources of the Daurian Steppe Zone;
    - organizing training courses for the sustainable eco - tourism in the protected areas; developing and implementing the joint eco – tourism projects;
  - preventing steppe and forest fires through improving the operational communication, training the local communities in fire management, and raising public awareness
  - building local capacities for effective implementation of the SAP through integrating stakeholders, local community-based organizations and the business sector in biodiversity conservation, enhancing people's awareness and involvement in the planning and management of biodiversity conservation and water protection.

- **To implement the above activities, the Parties will explore joint cooperation mechanisms that may involve:**

- Elaboration of the convention on protection the transboundary biodiversity and international water protection for the implementation of the SAP utilizing the mechanism of bi-lateral commission;
- exchange of research experiences, experts and researchers;
- seminars, symposia and meetings of specialists, as well as training courses and study programs;
- exchange of research, methodologies and other information for setting up data bases consistent with relevant national laws and regulations;
- development and implementation of joint programs and projects;
- creation of joint working groups.

Parties kindly request the international donor communities to assist in mobilizing financial resources for the development and implementation of jointly agreed priority projects.

Signed at Chita, Russia, 2002-06-12

Vice – Governor of Dornod province

Mr. R. Rinchinbyamba

Director of Environment and Agriculture, Industry division of the Governor's Office of Khentii Province

Mr. Ts. Chinzorig

Vice- Governor, Chita oblast Administration

Mr. V. Petukhov

Annex 8: MPZ bilateral MOU (Mongolia-PRC)

Memorandum of Understanding
of TumenNET SAP MPZ Meeting

Hohhot, People's Republic of China
June 11-12,2002

We, representatives from Inner Mongolia Autonomous Region of P.R.C. and the eastern aimags of Mongolia, hereinafter referred to as "the Parties", participating in the TumenNET Strategic Action Program (SAP) for the Mongolian Plateau Zonal (MPZ) meeting, which was held in Hohhot, China on 11-12 June, 2002,

Bearing in mind existing bi-and multi- lateral cooperation agreements such as the Agreement between the Government of Mongolia and the People's Republic of China on Cooperation for Environment Protection, 05 June 1990, the Agreement between the Government of Mongolia and the People's Republic of China on the Protection and Use of Border Waters, 04 April 1994, and the Agreement between Mongolia, Russia and the People's Republic of China on the Daurian International Nature Protection Area, February 1994.

Welcoming the initiatives Northeast Asian countries have taken and the progress made in protecting the transboundary biodiversity and international water resources;

Further recognizing the Transboundary Diagnostic Analysis (TDA) as a basic document on which concrete measures should be taken to address the root-causes for environmental degradation particularly land and wetland degradation;

Stressing the importance of protecting the transboundary biodiversity and water resources in border areas and promoting the rational use of these resources;

Considering, that protection of natural environment and its restoration is an important issue in economic and social development for the benefits of next generations;

Have reached the following understanding, with the TumenNET Project Coordination Unit and the SAP Lead Agent (Republic of Korea) as witnesses:

(a) The Parties agreed to pursue cooperation in the following regional priorities:

- Strengthening the administrative cooperation capacities for the existing and future transboundary nature protected areas (NPA) and nature reserves through, eg:
  - establishment of new NPAs in border areas;
  - improving and strengthening legal and regulatory systems, where required;
  - improve public awareness and community involvement;
  - improve ecologically sustainable livelihood of local communities in the buffer zones;
  - explore joint management of border NPAs.
- Prevention of land degradation and desertification through, eg:
  - extension of reforestation, plantation and soil improvement activities;
  - improvements to land management;
  - sustainable pasture management practices;
  - improved regional and urban planning.

- Exchange of information and consultations, consistent with national laws, on environmental impact assessments for economic activities in border areas, such as construction of roads, bridges and railways, eg Numrug river.

- Conservation and enhancement of grassland ecosystems, endemic wild life (eg gazelles) and plant species, including restoration of ecosystem, particularly in areas that experience high pressure from economic activities.

- Conservation of wetlands (eg Buur and Dalai), their migratory birds and other wildlife:
  - comply with relevant RAMSAR and other conventions;
  - establish biodiversity inventories and conduct regular census;
  - study wetlands as part of a broader ecosystem approach;
  - restore degraded wetlands;
  - improve environemntal monitoring, inspection;
  - conduct joint actions to prevent illegal fishing, hunting and other economic activities.

- Promotion of improved water management for border rivers, through eg:
  - conserve the Kherlen and Halkhiin [Khalkiin] Gol rivers;
  - establish wastewater treatment plants in aimag capitals (Mongolia) and in Arxan city (China);
  - promote ecologically sustainable economic activities such as eco-tourism in the Halkh [Khalkhiin] and Numrugiin Gol areas and in Arxan city and establish the necessary infrastructure;

- conserve the highly endangered Taimen fish species in these rivers.

- Improved information and awareness of biodiversity issues including biosafety, and increase public participation in actions to conserve and enhance biodiversity.

- Promote local capacities to effectively implement the SAP through integrating stakeholders participation, including full participation of local community-based organization and the business sector in biodiversity conservation and encourage people's awareness and involvement in planning and management of biodiversity conservation and water protection.

- Strengthening the implementation of local-level regulatory systems and procedures for biodiversity conservation and water management for SAP implementation.

- Conduct a joint survey into Yellow dust research

- Conservation of useful and medicinal plants listed in the appendices of CBD and CITES, particularly the highly endangered species of *Medicago Alaschanica Vass; Astragalus Monghholicus Bunge; Glycine soja et Zucc; Glycyrrhiza Uralensis Fish; Tulipa Uniflora Bess; Medicago Falcata (L).*

- Conduct surveys on identification of environment hot spot areas in the MPZ using ground and satellite data and establish proper monitoring system in the above areas

(b) To implement the above activities, the Parties will explore joint cooperation mechanisms that may involve:

- Exchange experiences of research activities and studies, exchanging specialists and researches;

- Organize seminars, symposia and meetings of specialists, as well as providing training courses and study programmes;

- Exchange research and methodologies and other information, setting up data bases, consistent with relevant national laws and regulations;

- Develop and implementing joint programs and projects.

- Create joint working groups.

(c) Parties kindly requested the international donor community to assist in mobilizing financial resources for development and implementation of jointly agreed priority projects.

Signed at Hohhot, the People's Republic of China, 12 June, 2002-06-12

On behalf of Dornod, Khentii and Sukhbaatar Aimags, Mongolia

Mr. Kh. Gerelt-od,

Director of Environment and Agriculture, Industry division of the Governor's Office of Sukhbaatar, Province

Mr. Baldan

Director of Environment and Agriculture, Industry division of the Governor's Office of Dornod Province

Mr. Gurtseden

Director of Environment and Agriculture, Industry division of the Governor's Office of Khentii Province

On behalf of the Inner Mongolia Autonomous Region EPB, China

Mr. Yong Hong,

Deputy Director of Environment Protection Bureau, IMAR, China

Annex 9: TRZ Trilateral Recommendations (DPRK-PRC-RF)

Tripartite Tumen River SAP Meeting
(DPRK, PRC, Russian Federation)

Recommendations

We, representatives of Democratic People's Republic of Korea, the People's Republic of China, and the Russian Federation, participating in the Tumen River Strategic Action Program (SAP) Trilateral Meeting, held in Beijing, PRC, on 28-29 August 2002,

Welcoming the initiatives that Northeast Asian countries have taken and the progress made in protecting transboundary biodiversity and international water resources,

Further **recognizing** the Transboundary Diagnostic Analysis (TDA) as a basic project document on which concrete measures should be taken to address the root causes of environmental degradation,

Stressing the importance of protecting transboundary biodiversity and water resources in border areas and the TumenNET region and promoting the rational use of these resources,

Considering the protection of natural environment and its restoration in the region as an important issue in sustainable economic and social development for the benefits of the future generations,

Have **recommended** to pursue cooperation on collaborative efforts for protecting and conserving globally important ecosystems in the following regional priorities:

1. Exchange of know-how on monitoring techniques and information on monitoring data, standards and national pollutant inventories, according to respective national laws and regulations
   - explore administrative procedures for periodic exchange
   - fix timetable/schedule for preparation and exchange
   - implement capacity building measures (e.g., regional training courses, expert exchanges, assistance in compilation of pollutant inventories, if necessary)

2. Exchange of know-how on wastewater treatment techniques and information about regulatory frameworks
   - carry out capacity building measures (e.g., regional training courses, expert exchanges)
   - fix timetable/schedule for exchange

3. Regional pilot/demonstration projects on remediation of polluted areas
   - identify/prepare pilot projects to attract funding for large-scale actions
   - exchange know-how on remediation methods/techniques
   - implement capacity building measures (e.g., regional training courses, expert exchanges)

4. Marine environment protection
   - establish a national and regional capacity for environment monitoring in the Tumen river mouth and in marine coastal areas (e.g., equipment/materials supply, regional training courses, expert exchanges)
   - compile inventories of pollutant sources
   - develop a plan for sustainable management of marine resources

5. Public awareness raising
   - enhance capacity of grassroots organizations
   - implement mass-media campaigns for different stakeholder groups
   - carry on community initiatives (e.g., clean-up day, green school)
   - implement small grant programs and/or micro-credits at community level
   - prepare and distribute environmental education materials
   - develop website with the Environment Information System
   - other measures mainstreaming public awareness raising on environmental issues

6. Cooperation for sustainable development
   - develop a regional program of activities to harmonize natural resources exploitation including sustainable agriculture, forestry, mining, water management
   - prepare a program of sustainable wetlands management
   - exchange information on biodiversity regularly, including endangered and rare species and their habitats, potential ecological

corridors, biodiversity inventories, etc.

7. Cooperation to seek funds

- establish joint data base and/or publication on potential projects in national and donor country languages
- encourage inter-ministerial collaboration among countries for project proposal formulation and joint approach to donors
- create/enhance favorable investment conditions to attract private sector funding
- work with industry associations to promote investment opportunities

The meeting participants agreed to further explore the possibility of establishing cooperation/networking mechanism, building on existing infrastructures, to effectively address environmental issues.

The meeting participants agreed on these Recommendations (the list of participants is attached).

29 August 2002

Beijing, People's Republic of China

Annex 10: SRZ Recommendations (Mongolia-PRC-RF-ROK)

TumenNET SAP Supra-regional Zone Meeting

Recommendations
for Supra-regional Zone Priority Actions

We, representatives of Mongolia, the People's Republic of China, Republic of Korea, and Russian Federation, participating in the TumenNET Strategic Action Program (SAP) Supra-regional Zone (SRZ) meeting, held in Ulaanbaatar, Mongolia on 1-2 July 2002,

Welcoming the initiatives that Northeast Asian countries have taken and the progress made in protecting transboundary biodiversity and international water resources,

Further **recognizing** the Transboundary Diagnostic Analysis (TDA) as a basic document on which concrete measures should be taken to address the root causes of environmental degradation,

Stressing the importance of protecting transboundary biodiversity and water resources in border areas and the TumenNET region and promoting the rational use of these resources,

Considering the protection of natural environment and its restoration in the region is an important issue in sustainable economic and social development for the benefits of the future generations,

Have made the following recommendations with the TumenNET Project Coordination Unit as a witness.

The meeting participants agreed to pursue cooperation on collaborative efforts for protecting and conserving globally important ecosystems in the following regional priorities:

Ecosystem Conservation

- conserve biodiversity resources in the region
- promote sustainable utilization of natural resources
- expand and improve the management of transboundary protected areas and encourage their nomination for globally significant sites for the international recognition
- take specific measures to protect endangered and endemic species (e.g., Amur tiger, Far East leopard, goral, gazelle, elk)
- create new eco-corridors
- promote alternative eco-friendly livelihood options for people living in protected areas and its buffer zones

Sand and Dust Storms (Yellow Sand)

- establish/expand monitoring network (e.g., occurrence, transport and deposition)
- promote sustainable land management system particularly in pasture land in order to prevent desertification and deforestation
- establish grass and tree planting demonstration sites in Mongolia and the People's Republic of China
- build capacity among experts in the TumenNET region
- improve water resources management based on the scientific research outcomes
- strengthen joint research on the root causes and mitigation methods

Migratory Birds & Wetlands

- continue efforts to conduct regional surveys on migratory birds
- conserve wetlands in the Tumen river estuary, inland and coastal wetlands in the Russian Federation, People's Republic of China, Mongolia, and Korean peninsula and restore where it is necessary
- prepare regional convention and build conservation networks of wetland ecosystems and migratory birds including Crane, Duck and Geese and Wader

Regional Environmental Information System

- maintain and update regional portal site which could provide the integrated information within the TumenNET region
- integrate the regional EIS (e.g., enhance collaboration among existing environmental information networks, such as TumenNET, NEA SOM, EANET, ARDN, NEACEDT, etc.)
- improve information sharing among the countries (e.g., national and local policies and regulations, state of the environment and perspectives)

Regional Cooperation Mechanism

- establish Northeast Asian Environmental Cooperation Body as recommended by TumenNET TDA and the cooperation body should be represented by the participating countries
- assist in implementation of the SAP and explore the possibilities of regional legal mechanisms
- continue existing TumenNET regional website after the completion of the TumenNET project by ROK MOE with support of participating countries

Tumen River Basin Water Resources/Quality

- coordinate and expand (where necessary) the existing monitoring network of surface, underground and coastal waters
- strengthen capacity for water quality monitoring and assessment of Tumen River riparian countries
- enhance sewage and industrial wastewater treatment capacities in the region
- explore the possibilities of exchanging water quality data among the riparian countries

EIA on the transboundary projects

- develop regional EIA guidelines as recommended at the Ulaanbaatar Workshop (Oct. 2001) and the Beijing Workshop (Apr. 2002)
- promote harmonization and standardization of Environmental Impact Statement/Assessment for development projects in the transboundary areas and/or the projects that may have adverse impacts on the transboundary areas
- strengthen national and local capacity to assess transboundary projects
- establish mechanisms for joint monitoring of the implementation of EIA for above mentioned projects

Green Investment Initiatives

- promote introduction of cleaner production techniques
- advocate partnership with industry and private business sector

- promote stakeholders involvement in clean environment campaigns
- promote adoption of the best practice environmental management principles in industry
- improve a livelihood options of people living in the buffer/experimental zone area by attracting green investments

Local Government Cooperation

- establish a local government network on conservation of transboundary biodiversity and international waters in the region, building on full support of the existing TumenNET Governors' MOU
- incorporate transboundary biodiversity and international water conservation issues into local sustainable development strategies
- simplify existing procedures on border crossing by rangers and inspectors for environmental purposes, where appropriate
- organize regional conferences on conservation of transboundary biodiversity and international waters and other environmental issues in order to strengthen regional communication and networking

Public Awareness Raising & Environmental Education

- promote public awareness programs at local, national and regional level including SGPs (Small Grant Program)
- improve the cooperation mechanism for development and implementation of transboundary environmental awareness projects
- enhance strategies to promote support from private sector for ensuring the continuation of SGPs in TumenNET area
- advance local public awareness campaigns on transboundary issues, specifically in buffer zone of protected areas
- strengthen the participation of local NGOs in conjunction with local governments in transboundary biodiversity conservation
- continue annual TumenNET clean up day
- enhance formal and informal environmental education and improve the educational materials for the diverse stakeholders including children and students
- promote and sustain TumenNET green school initiatives among the participating countries through local governments and NGO's support
- design, publish and distribute transboundary newspaper/bulletin in local languages to generate the continuous public support
- promote all stakeholder groups participation in the awareness raising program

Eco-tourism

- reflect the eco-tourism development in the national policy, plan and program
- establish eco-tour networks of NGOs or relevant local organisations for capacity building in TumenNET area
- develop action program to initiate NGO eco-tour network with the participation of local/national governments and other organisations in the region

The meeting participants agreed on this Recommendations and its due signing by each national SAP Task Force.

2 July, 2002
Ulaanbaatar, Mongolia

Reviewed and Signed by National SAP Task Forces in Moscow, 6 July 2002

On behalf of the SAP Task Force of ***Mongolia***

Ms. Navaan-Yunden Oyundar,
Director, International Cooperation Department,
Ministry of Nature and Environment

On behalf of the SAP Task Force of ***the People's Republic of China***

Mr. Wu Shunze
Director, Department of Environmental Consulting,
Chinese Academy for Environmental Planning

On behalf of the SAP Task Force of ***the Republic of Korea***

Dr. Keumhee JUNG
Director, Global Environment Office, Ministry of Environment

On behalf of the SAP Task Force of ***the Russian Federation***

Dr. Andrei Peshkov
Director, All-Russian Institute for Nature Protection

Annex 11: EIA Workshop Recommendations

TumenNET EIA/SEA Workshop
Beijing, 11-12 April 2002

Recommendations

The Workshop participants recognize the "Memorandum of Understanding on environmental principles governing the Tumen River Economic Development Area and Northeast Asia, 1995" (MOU) as the key framework document for the environmentally sound and sustainable development in the Northeast Asia. The following recommendations were prepared in accord with this MOU (especially paragraphs 1.1-1.7, 2.3).

1. Organize SEA/EIA Training Course in order to standardize the content of the regional EIS related to transborder projects to meet minimum requirements of the affected countries (to be funded through countries cost-sharing; TRADP, including TumenNET; see MOU, para 2.3).

2. Establish an SEA/EIA Committee on an ad hoc basis for consulting and negotiating the alternatives and mitigation methods, including major stakeholders, e.g. representatives from oil and gas companies (TRADP, including TumenNET; see MOU, para 1.1-1.7 and 3.1).

3. Establish a Monitoring Commission composed of each involved (affected) government in order to ensure that activities are implemented in compliance with the EIA approval conditions related to transboundary environmental issues caused by the construction and operation of the projects. The Commission should operate on a project-to-project basis, be funded from the budgets of these projects and operate for the lifetime of these projects (TRADP, including TumenNET; see MOU, para 1.1-1.7 and 3.1).

4. To recommend to the governments to use national expertise available while preparing EIS for transboundary projects, e.g., oil and gas exploration and pipelines (TRADP, including TumenNET).

Workshop participants suggest TRADP National Teams and key national ministries to consider possible mechanisms of funding of these recommendations.

These recommendations were developed by EIA experts from Mongolia, People's Republic of China, the Republic of Korea and the Russian Federation.

Annex 12: TDA Final Recommendations

RESOLUTION
of the TDA Workshop
Vladivostok, 3-4 April 2002

The participants of the TDA WS discussed the results of the TDA component implementation and concluded:

1. To agree the regional TDA prepared by international team leaded by FEBRAS in collaboration with institutions from participating countries of the TumenNET project.
2. Regional TDA should be the basis for the SAP preparation.
3. Conclusions and recommendations from Regional TDA should be taken into account and developed by SAP preparation team.
4. To ask national governments accelerating work on country endorsement and providing comments on the Regional TDA in order to follow SAP preparation timeline.
5. To ask national authorized agencies participation of individuals involved in Regional TDA preparation in the national SAP Task Forces in order to translate the TDA's scientific recommendations into the political language for the national and international negotiations.
6. To include in Regional TDA publishing version all comments provided by participating countries. These comments should be submitted as soon as possible in accordance with the SAP workplan schedule.
7. To ask PCU starting Regional Survey of Tumen River Basin not later 15 May 2002.
8. To ask PCU applying to GEF/UNDP/UNOPS proposals on TDA revision (extension) taking into account new regional issues and lack of data.
9. To recommend establishing the Regional Environmental Cooperation body to monitor and follow up the TumenNET SAP implementation.

Annex 13: TumenNET Governor's MOU

Meeting of TumenNET Governors
Memorandum of Understanding

Sokcho, Republic of Korea
29 November 2001

The Governors of Dornod Aimag (Mongolia), Khentii Aimag (Mongolia), Sukhbaatar Aimag (Mongolia), the Governor of Gangwon Province (Republic of Korea), and the Vice Governors of Chitinskaya Oblast (Russian Federation) and Primorski Krai (Russian Federation) have reached agreement as follows, with the UNDP and the TumenNet Project Coordination Unit as witnesses:

DECLARE

(1) Their commitment to the protection of transboundary biodiversity and international water resources in Northeast Asia and the promotion of green investment to support that process.

(2) Their willingness and intent, within the framework of their national sovereignty, to cooperate in establishing appropriate mechanisms for regional cooperation on transboundary biodiversity, international water protection and green investment for the ecologically sustainable economic development of Northeast Asia.

(3) Their intent to establish provincial-level TumenNET Committees to be headed by an appropriate high level official of the province/oblast/aimag/region. Committees should be empowered to facilitate integration of transboundary biodiversity, international water protection and green investment issues into provincial development planning.

(4) Also their intent to organize annual TumenNET Governors meetings to review regional environmentally sound development efforts, the main agenda of which should be transboundary biodiversity, international water protection and green investment issues in TumenNET.

NOTE

(5) The visible progress made to date in the development of TumenNET that has matured into an effective mechanism of regional cooperation.

(6) That, with the end of the project less than 12 months away, the challenge will be to maintain that high level of engagement and expertise after the present project has come to an end in mid 2002.

WELCOME

(7) The engagement of the Government of Japan in TumenNET activities and also the recent accession of Chitinskaya Oblast in Russia. TumenNET is an open association of like minded partners.

(8) Their colleagues in the Democratic Peoples Republic of Korea, notably the peoples representatives of North Hamgyong and Ryanggang Provinces, and extend their warm and heartfelt invitations to joint the TumenNET.

RECOMMEND

(9) That the international donor community provide resources for the transition from formulation of the strategic action program (the current project) towards its eventual implementation.

(10) That these transition funds be used for enabling measures at national, local and/or regional level, to support and facilitate the sustainable implementation of the strategic action program.

PLEDGE

(11) To make available appropriate counterpart resources for these enabling measures, and to make every effort, within the obvious constraints of their existing budget and policy framework, to help implement them.

Signed this 29th day of the Month of November in Sokcho, Republic of Korea

HE, Mr D Odbayar, Governor of Dornod Aimag

HE, Mr Ch Erdenebaatar, Governor of Khentii Aimag

HE, Mr T Dashsuren, Governor of Sukhbaatar Aimag

HE, Mr Jin-Sun Kim, Governor of Gangwon Province

HE, Mr Vjacheslav M Petukhov, Vice Governor of Chitinskaya Oblast

HE, Mr Vladimir P Vedernikov, Vice Governor of Primorski Krai

Annex 14: FKI Agreement

LETTER OF INTENT ON COOPERATION

The Federation of Korean Industries (FKI) hereby expresses its intent to cooperate with the TumenNET, a regional initiative to protect transboundary biodiversity and international water resources in Northeast Asia and to promote green investment in the region.

DEFINITION

TumenNET is an initiative by the Democratic People's Republic of Korea, Mongolia, the People's Republic of China, the Republic of Korea, the Russian Federation, the Global Environment Facility (GEF) and the United Nations Development Program (UNDP). TumenNET is a partnership program that involves government, private business, the community and the academic & research sector.

Green investment or green business is defined broadly as a private or public sector activity that has environmental net benefits and which aims, directly or indirectly, to protect the environment, reduce environmental risk or minimise pollution and the unsustainable use of resources. Green investment or green business is socially responsible and involves those parts of civic society that are affected by its impact. It employs best practice environmental management principles.

For the purposes of this agreement the term Northeast Asia shall be defined in its broadest possible sense, including, but not limited to, those parts of Northeast Asia that are presently the focus of TumenNET activities.

ACTIVITIES

Jointly implemented activities between FKI and TumenNET will be decided in consultations with one another.

Possible joint activities for the year 2001- 2002 include :
Cooperation in seeking and developing business partnerships or sponsorships for project assessment, pre-feasibility and/or feasibility study in DPRK and other TumenNET countries.

OTHER PROVISIONS

The Federation of Korean Industries reserves the right to review its cooperation with TumenNET after a period of 24 months from the date of signature of this letter of intent.

Gunther MAU
Chief Technical Adviser
TumenNET Project Coordination Unit

Tae-Seung Chung
Deputy Secretary General
The Federation of Korean Industries

Signature

Signature

Date: Nov. 29. 2001

Annex 15: MOU on Environmental Principles Governing the Tumen River Economic Development Area and Northeast Asia (1995) (all TumenNET countries)

MEMORANDUM OF UNDERSTANDING ON ENVIRONMENTAL PRINCIPLES GOVERNING THE TUMEN RIVER ECONOMIC DEVELOPMENT AREA AND NORTHEAST ASIA

The Governments of the Democratic People's Republic of Korea, Mangolia, the People's Republic of China, the Republic of Korea and the Russian Federation, hereinafter referred to as the "Contracting Parties" have agreed as follows:

OBJECTIVES

The Contracting Parties affirm that an overall goal is to attain environmentally sound and sustainable development of northeast Asia and the Tumen River Economic Development Area in particular (hereinafter "the Region") in accordance with:

(a) the obligations undertaken by such Contracting Parties in the Agreement on the Establishment of the Consultative Commission for the Development of the Tumen River Economic Development Area and Northeast Asia;

(b) the international consensus reached at the United Nations Conference on Environment and Development;

(c) the requirements of national laws and regulations and of bilateral and multilateral environmental agreements; and

(d) the environmental requirements of the multilateral development banks of which the Contracting Parties are members.

For purposes of this Memorandum of Understanding, the Tumen River Economic Development Area shall mean that area (as delineated in Appendix I) within the Democratic People's Republic of Korea, the People's Republic of China and the Russian Federation, in each case as modified from time to time by such Contracting Party upon consultation with and notice to the other Contracting Parties.

For purposes of this Memorandum of Understanding, Northeast Asia means the Tumen River Economic Development Area (as delineated in Appendix I) and other territories of the Contracting Parties in which projects and programmes of mutual interest to the Contracting Parties will be conducted.

The Contracting Parties affirm their intention to cooperate and coordinate with each other to protect and enhance the environment of the Region and to conduct all development activities in the Region in a manner that does not damage the environment of any Contracting Party, of any other state or of areas beyond the limits of national jurisdiction.

The Contracting Parties will implement this Memorandum of Understanding on the basis of the principles of international laws governing relations between states, notably mutual respect of the sovereignty and independence of all states, equality, mutual benefit and good neighbourliness

ENVIRONMENTAL ASSESSMENT, MITIGATION AND MANAGEMENT

1.1 The Contracting Parties agree to undertake national, coordinated and joint efforts to collect, collate, share, make compatible and analyse pertinent environmental baseline and other data on the Region and to identify and fill in data gaps.

1.2 The Contracting Parties will conduct jointly (and periodically update) a regional environmental assessment ("EA") evaluating the local, national, regional and global environmental implications of contemplated development plans for the Region as a whole, and will prepare jointly a regional environmental mitigation and management plan ("EMMP") for preventing and mitigating harm to, and promoting enhancement of the environment, based on the results of the regional EA and other relevant data.

1.3 The Contracting Parties will prepare and adopt appropriate national laws, regulations, bilateral and multilateral environmental agreements and/or policies. Including regional, sub-regional and national institutional arrangements in case these laws, regulations, agreements or policies are required to attain environmentally sound and sustainable development of the Region.

1.4 The regional EMMP will include appropriate measures, including but not limited to land use management planning, and a schedule for their implementation for:

- protecting land resources, particularly wetlands, fragile coastal areas, forests and sensitive ecosystems;
- preservation of biodiversity, including threatened or endangered species and their habitats;
- establishing nature preserves, parks and conservation areas;
- protection and improvement of air and water quality;
- protection of the marine environment and marine living resources;
- sound disposal, management, treatment and movement of hazardous and solid wastes;
- contingency planning and release prevention;
- sanitation;

- toxic substances use/transport;
- efficient generation/use of energy;
- monitoring of pollution and environmental conditions.

1.5 The Contracting Parties will conduct (or cause to be conducted) a project-specific EA and prepare (or cause to be prepared) a project-specific EMMP with respect to any proposal for a development project in the Region with potentially significant environmental impacts. The preparation of such project-specific EAs and EMMPs will be led by the Contracting Parties on whose territories the project is located and will include participation by experts from other affected Contracting Parties.

1.6 The Contracting Parties further agree to coordinate and cooperate with each other to ensure that the results of the regional and project-specific EAs are taken into account in development planning activities for the Region, and to implement the regional and project-specific EMMPs.

1.7 All EAs and EMMPs will be conducted in accordance with internationally accepted procedures and guidelines.

OTHER ENVIRONMENTAL RESPONSIBILITIES OF CONTRACTING PARTIES

2.1 The Contracting Parties will strive, both individually and in cooperation with each other, to meet the objectives of international environmental agreements and norms with respect to their activities in the Region.

2.2 The Contracting Parties will coordinate with each other regarding implementation of their respective national environmental laws with respect to their activities in the Region and will consider proposals for progressive harmonisation of such laws.

2.3 The Contracting Parties will cooperate with each other to strengthen capacity-building for sustainable development through exchanges of scientific and technical knowledge, technology transfer, sharing of environmental management and legal and regulatory expertise and experience, and other appropriate means.

2.4 The Contracting Parties will consult with, give access to information to, and provide opportunities for involvement by affected citizens and interested NGOs at appropriate stages of the development and environmental planning processes for the Region.

2.5 The Contracting Parties will provide or seek necessary funding for preparation of EAs and EMMPs and to carry out their other environmental responsibilities under this Memorandum of Understanding.

OTHER PROVISIONS

3.1 The Contracting Parties will agree upon institutional arrangements to implement this Memorandum of Understanding. Such Institutional arrangements will be consistent with institutional arrangements specified in the Agreement on the Establishment of the Consultative Commission for the Development of the Tumen River Economic Development Area and Northeast Asia.

3.2 This Memorandum of Understanding shall be subject to the legal procedures of each Member State's domestic law and shall enter into force on the date of deposit of the last instrument of such procedure by a Contracting Party with the Secretary General of the United Nations.

3.3 The Contracting Parties, acting through consensus, may invite other interested governments in Northeast Asia to become Contracting Parties under this Memorandum of Understanding.

3.4 This Memorandum of Understanding will be valid for a period of ten (10) years from the date of its entry into force and be renewed for successive periods of ten years, unless agreed otherwise by the Contracting Parties.

3.5 Any Contracting Party may withdraw from this Memorandum of Understanding by giving a written notice of withdrawal to the other Contracting Parties six (6) months in advance. At the end of such period, the withdrawal of such Contracting Party shall become effective.

This Memorandum of Understanding, done in the English language on 30 May 1995, in Beijing, will be deposited with the Secretary General of the United Nations, who will transmit a certified copy to each Contracting Party and will register this Memorandum of Understanding with the Secretariat of the United Nations.

For the Government of the Democratic People's Republic of Korea (Signature)
For the Government of Mongolia (Signature)
For the Government of the People's Republic of China (Signature)
For the Government of the Republic of Korea (Signature)

Contributors to the SAP Document

Although a total list of contributors would be too exhaustive to list here, each country provided key people to cooperate on formulating the content of the SAP document. The TumenNET SAP has been informed by a number of inputs, organizations, and individuals, most notably the MOUs in this appendix, the TDA, national action commitments, various TumenNET workshops, and so on, with the collective guidance of National SAP Task Forces performing domestic coordination functions. The ROK Ministry of Environment was responsible for drafting and coordinating the SAP document.

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