



Freshwater Issues in Mongolia and WWF Mongolia's planned contribution towards a solution

Mongolia's freshwater ecosystem is under increasing threats of degradation and resource depletion. Identifying and prioritizing the major issues and addressing their root causes will remain a major challenge due to the nature of the threats. The complexity and magnitude of the threats are subject to a combination of several factors, often with interdependent root causes.

Issue 1. Water scarcity

Water shortage and scarcity is becoming inevitable with alarming numbers of dried-out rivers and lakes. UNDP (2005) commissioned a "Study on Economic and Ecological Vulnerability and Human Security for Mongolia", which pointed out water shortage as a major socio-economic problem that *may soon create* serious economic challenges throughout the country.

Despite its limited and finite nature, the water has been subject to both natural and anthropogenic factors. Global climate change, which adversely impacts the natural dynamics of freshwater ecosystems, is one of leading natural factors. It causes water levels to rise in some areas due to glacier and permafrost melting. In other, arid areas, lower water tables are due to drought and loss of water retention capacity in riparian areas that have been heavily deforested. Increased permafrost melting advances further sedimentation in riverbeds, destroying habitat for aquatic and benthic life. For example, in the Altai Sayan Eco-region's Bayan-Olgii province alone, 217 marshes have disappeared due to intensified evaporation and drying out. Intensive glacier melting has been observed in Uvs province, with Tsagaan Deglii mountain's glacier retreating at a rate of 800mm per year (1996) compared to 500 mm in 1965. This also has a negative impact on the landscape, with gullies and ravines formed by land slides. The National Survey on Surface Water in 2003 confirmed the phenomenal rate of the destruction of water resources.

Anthropogenic activities causing excessive extraction and depletion of water resource include mining/gravel extraction; deforestation and wasteful irrigation systems. Socio-economic implications of water scarcity are gravest for those vulnerable to the poverty trap and water scarcity also escalates adverse change on an ecosystem level.

Mining & Gravel Extraction: Extraction and morphological changes of rivers associated with mining activities cause severe environmental problems. Flush mining dries out small rivers and causes the siltation of downstream water. Furthermore, in some arid areas, water extraction for mining activities causes severe shortages in drinking water available to local people and livestock.

Deforestation: Clear cutting practices within riparian forest for fuel and manufacture are leading factors causing the lowering of water tables and loss of water retention capacity in soils for the Altai Sayan eco-region. An example can be cited from Khar Us Lake National Park, where the local community clears riparian forest for fuel wood. It causes water runoff due to decreased soil capacity for water retention, thus limiting recharge of groundwater and eroding fertile top soil. Forest fires caused by both natural drought and man are the other main source of deforestation in

the region.

Issue 2. Water Pollution

Water quality has been decreasing with increasing pollution from a variety of sources, the majority of which are point-sources. This eases pollution-mitigation efforts by having a clear sense of the pollution originators and liability. A list of pollution point-sources includes:

- Outdated and irresponsible mining technologies applying extensively heavy metals such as mercury and cyanide;
- Chemicals from leather processing;
- Agricultural practices such as overgrazing by livestock changing run-off conditions, damaging river banks and increasing nutrient content from livestock manures leading to eutrophication.

All these sources of pollution pose irreversible damage to the freshwater ecosystems of Mongolia.

The region's groundwater sources are also under serious threat of pollution from the discharge of untreated and raw sewage; leachate from the current practice of solid waste management; and downstream effects of agricultural practices that result in soil siltation.

Issue 3. Dwindling of Aquatic Resource

Altai Sayan is a mosaic of diverse ecosystems represented in a variety of wild fauna and flora species endemic to the region. It is home to many endangered species such as the Hucho taimen fish (*Hucho hucho*) and the last population of Dalmatian Pelicans (*Pelicanus crispus*) in Mongolia.

Issue 4. Disturbance of connectivity (interaction and linkage of ecosystem processes)

Maintaining inter-linkage of ecosystem processes such as river dynamics, flow discharge and aquatic species migration is pivotal for healthy freshwater ecosystems. Despite natural factors of global climate change resulting in the increased frequency of flooding and melting of permafrost/glaciers, anthropogenic impacts (e.g. dam construction) cause the greatest disturbance to ecosystem processes. The Altai Sayan Eco-region is abound with mountain rivers and has thus been targeted by the Government of Mongolia to fulfill its policy on meeting national energy security through utilization of hydropower. There are two of on-going projects on Durgun HPP and Ider River HPP. It has been concluded that a dam of 18m in height – an integral part of the proposed Durgun power plant – and the subsequent operation of a hydropower station would cause considerable fluctuations of the lake water levels and downstream water. This would have severe consequences on the freshwater ecology, the livestock during winter months and the local population according to the IUS-Weisser & Ness's preliminary findings (2000). As a result of WWF Mongolia's Position Paper on Dams and numerous working sessions with the Altan Eco Company, a detailed Environmental Impact Assessment for Durgun HPP has been undertaken.

Issue 5. Lack of Enabling Policy Framework and Management Capacity

Numerous national policy documents have been generated in line with global commitments on Sustainable Development; Millennium Development Goals and IRBM concepts. Nevertheless many of them do not evolve into practical actions and remain on paper only. Policies are generic in nature, advocating competing short term economic interests. In most cases they are centrally designed, with piece-meal approaches dominating due to a lack of inter-sectoral coordination and interactive dialogue/involvement of a broad range of stakeholders. Lack of a reliable database up to now has clearly hindered effective management processes based on solid scientific data,

routine monitoring and evaluation processes.

Non-enforcement of policies and programs already in place has been highlighted as one of the major policy and institutional gaps in the UNDP commissioned “Study on Ecological Vulnerabilities and Human Security in Mongolia” (UNDP, 2005). Over-ambitious and controversial policy initiatives that could be named “Adventurous Projects” (such as the transfer of rivers from the Khangai region to the Gobi desert and the “Green Fortress Project” on reforestation), are not well-grounded and suffer from a lack of support from local communities, insufficient scientific backing and flaws in project sustainability.

An institutional framework for freshwater resource management is in the process of evolving, with frequent restructuring and numerous institutions involved in coordination at inter-ministerial level. Please refer to the following website for detailed information on the Water Authority, the Government regulatory agency: www.mne.mn/water

OUR ASPIRATIONS

Facts state that Mongolia’s freshwater ecosystem is maintained in a *relatively* better condition compared to other places. Unfortunately, to our knowledge this state of relative well-being is challenged with ever growing pressure on water resources. Multiple demands on water are becoming increasingly competitive, posing imminent threats to existing freshwater ecosystems, with new and overarching challenges arising from the potential adverse impacts of global climate change.

With our aspirations of protecting Mongolia’s freshwater ecosystem and maintaining its relatively good status in line with WWF’s global conservation targets, we at WWF Mongolia believe that the following national-level, urgent measures are to be taken to ensure sustainable use, conservation and equitable sharing of the benefits of freshwater ecosystems and its resources:

1. At policy level: Improve enforcement of policies and programs; Promote and implement integrated conservation approaches such as Integrated River Basin Management for freshwater ecosystems; Actively employ conservation methods such as greater integration of management for rivers and lakes, thus expanding an existing network of protected areas; Invest in the creation of an enabling environment for sound freshwater ecosystem management by urgently setting up a consolidated database for water resource management to allow scientifically sound decision making, increased transparency and access to information.
2. Fulfill obligations and duties of the Government under international and multilateral agreements such as the Ramsar Convention. With regard to wetlands and water bodies: develop National policy and management plans for internationally important wetlands and watersheds registered under the Ramsar Convention. Implementation of concrete conservation projects and initiatives should also take place for Ramsar Sites. Strictly comply with provisions of bilateral and tri-partite agreements on trans- boundary water bodies.
3. Promote the application of renewable energy sources, showing alternatives to hydropower plants in order to prevent adverse environmental impacts.

OUR CONTRIBUTIONS

Acknowledging the importance of Mongolia’s freshwater ecosystems for our conservation program, we at WWF Mongolia are determined to make the following contributions by 2010 while prioritizing two of the “Global 200” eco-regions, namely Altai Sayan and Daurian Steppe Eco-

Regions:

- WWF Mongolia will advocate through its policy level interventions an increased public participation and transparency in Environmental Impact Assessments (EIA) for any economic activities related to freshwater resource use. This will help the country to practice improved EIAs that are multi-sectoral and where the local community has equal involvement and power in pre and post EIA stages involving monitoring of EIA compliance. Through this process, the originators of development projects will be kept liable and accountable for impact mitigation and sustainability aspects will be considered as major criteria to meet intergenerational equity. The EIAs are used as preventive tools for development projects to minimize, prevent and mitigate potential environmental impacts. Irresponsible mining and dam construction are the targets for improved EIA provisions as they lead to potentially harmful activities that enjoy loopholes in current EIA legislation.
- We will assist Mongolia in meeting its commitments to the Convention on Biological Diversity for the protection of biodiversity and the Durban Action Plan for the *expansion of protected area network* (PA network). We will put forward our efforts to integrate more freshwater sources such as rivers and lakes into the PA Network; encourage and support local community initiatives on establishing more and more community conservation areas and increase the coverage of Ramsar Convention sites by identifying and nominating wetlands and watersheds.
- WWF will strongly advocate *responsible mining practice* for balanced growth in Mongolia. We, at WWF Mongolia, view responsible mining, using internationally accepted best practice, as having the potential of minimizing environmental damage, improving social responsibility and increasing economic return to livelihood of Mongolian people. In partnership with decision makers, mining investors and local communities, WWF Mongolia will push for the introduction of environmentally sound technologies; compliance with national laws and regulations; and respect and understanding for the value of Mongolia's unique freshwater ecosystem.
- Integrated River Basin Management (IRBM) is the worldwide accepted conservation tool for managing river basins and watersheds at ecosystem level in an integrated manner. IRBM should be inclusive of all components of the watershed, from its source to mouth, regardless of political boundaries. The concept has been provisioned in the newly amended Law of Water (2004), yet much needs to be done in terms of practical implementation of these provisions. In this regard, WWF Mongolia will lead practical implementation of the IRBM concept at national level by establishing model IRBM sites where River Basin Councils are formed, Management Plans developed, and their implementations initiated.

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