

Central Asia: Towards Sustainable Forest Management

by Karen Ter-Gazarian

Forests constitute a key part of the Central Asian environment, but are under threat of deforestation. In this article Karen Ter-Gazarian analyses the causes of deforestation in Central Asia and offers some ways to counteract it. This review is based on the notes taken during the author's several visits to Central Asia's former Soviet Union Republics as well as his personal communications with local forest authorities and international experts.

The breakup of the USSR left the five republics of Central Asia—Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan (total area of all countries exceeds 4,000,000 km² which is equivalent to slightly over 40 percent of the U.S. territory) with economic structures which are highly dependent on the import of materials, food and technology. Although the countries have implemented certain land reform programs, a large portion of population (especially women) live well below the subsistence line. Emigration rates are still following an upward trend. Corruption remains common and widespread.

Central Asia's natural resources are vast and unique. In particular, forested areas represent an indispensable element of the region's precious landscape and contribute various tangible (e.g., wood supply), and intangible benefits (clean air and water, recreation, carbon storage, and anti-erosion benefits) for the local population. From both the ecological and botanical points of view, the extremely diverse forests of the region are an important source of non-timber products: fruits, nuts, berries, honey, medicinal plants, and mushrooms. The region's forests are remarkably rich in biodiversity, giving shelter to hundreds of rare flora and fauna species such as endemic (wild) apples, pears, and snow leopards.

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Central Asia has limited forest resources mainly due to its arid continental conditions. The forested areas constitute ten percent of land cover in Uzbekistan, and are lowest in Tajikistan (four percent). Forested areas in other countries fluctuate from six to nine percent. The most commonly found forest types include saxaul associations (arid zones of Kazakhstan and Turkmenistan), riparian/riverside forest associations (tugai) dominated by poplars, willows, and tamarisk, highland broadleaved forests in Tien-Shan, Pamir-Alai, and Kopet-dag comprised by various fruit and nut trees (apple, pear, plum, almond, and walnut species), juniper open woodland associations (especially in Kyrgyzstan), spruce and fir forest on the moist northern slopes of the Tien Shan, and pistachio communities of which Badkhyz nature reserve in Turkmenistan is the most well-known location.

Although state-owned forests occupy only a minimal amount of land, they play significant role in the socio-economic development of the region, specifically through the enhancement of natural resources protection, especially the protection of water resources. However, current forest management policies and planning rarely support the sustainable use and conservation of forest resources in an adequate manner. For instance, uncontrolled firewood collection and improper logging operations (especially in Kyrgyzstan and Tajikistan) work to impoverish forest capital and destroy biodiversity. This happens due to inadequate forest management, including selection and cutting of the best quality trees, damaging young growth during the removal of wood, and chaotic road building, to name but a few contributing factors.

Illegal logging as well as uncontrolled livestock grazing, extensive haymaking, and game poaching are widespread in the region. Afforestation and reforestation programs are limited, adequate rehabilitation of degraded ecosystems and eroded lands



Charyn river is one of the biggest rivers of Kazakhstan (Alma-ty province) with a picturesque canyon. Riparian vegetation includes poplars, willows, ashes, and various bushy species.

Credit: Karen Ter-Gazarian

is lacking, and the survival rate of new plantings is low. Although the majority of the rural population in Uzbekistan, Kyrgyzstan, and Tajikistan depend on forest firewood as a main source of heat and for cooking, the governments provide few legal and management incentives to offset the restricted access to fuel wood resources.

There are also large losses of wood at sawmills mostly because of outdated machinery, lack of trained technicians, and poor technology (especially in Kyrgyzstan). Forest certification and wood legality verification processes are still in their infancy. Insufficient forest use planning and law enforcement as well as a complete disregard for appropriate engineering guidelines, and health and safety standards during forest operations, further exacerbate the situation.

It is important to make some brief contextual notes to assist understanding of the present situation in terms of the adequacy of current forest management performance. Although each country of the region has its own specific peculiarities in terms of forest management, it is possible to categorize some priority issues in order to address them within a broader regional context.

The first significant issue to be highlighted is the fact that the legal regime for forestry in the region remains in a state of transition from the Soviet framework. The re-drafting of state forestry regulations to meet the specific needs of each country has not yet been completed, nor any revised set of required regulations endorsed by the governments. This represents a major legal hiatus at the present time. In practice, the previous regulations are still in use, although they no longer hold legal force.

Secondly, although it appears that forest management systems in the region are extremely thorough, and, with a small number of exceptions, seem to comply with sustainable forest management standards. However, the state forest agencies – enterprises which follow the old Soviet organizational structure of *leskhozes* –, in common with other public sector organizations, are currently experiencing serious budgetary constraints. This currently prevents state forestry agencies from implementing many fundamental forest management activities, and results in legal non-compliance in many areas. Given this situation, the work that is actually still being performed by forestry employees, where salaries are very low, is extremely dedicated.

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The critical areas where basic forest management activities are in legal non-compliance are:

- Silvicultural systems are not being fully implemented, e.g. thinning and sanitary felling, pest and disease control, and wood harvesting
- Regulations relating to road construction, maintenance, drainage, and river crossings are not being fully implemented
- Hunting activities are not currently being adequately controlled or managed
- Protection and management of conservation zones is not fully maintained
- Health and safety standards inadequate.

In addition, a number of other activities that are necessary for the maintenance of medium/long-term forest management such as forest census, inventory, and management planning are currently in abeyance due to funding limitations.

Thirdly, the prevailing economic situation also contributes to the pressure on forests from local communities, in terms of people's need for access to, and inability to pay for, forest resources. For instance, while visiting Osh province in Kyrgyzstan (2000) I found a lack of consultation mechanisms and social impact assessment, as well as evidence of illegal activities and social conflicts such as local residents displeased with government's ban on free access to fuelwood resources turned to mass felling of the trees.. These social issues are clearly related.

A number of recent research reports and national NGO's reviews have suggested that in spite of several positive institutional tendencies in the forest sector in Central Asia (e.g., capacity building, split of management, supervision, and monitoring functions between different agencies, adoption of the new Forest Codes, development of forest policy, strategy, and national forest programs, etc.), day-to-day forest management remains insufficient and forest resources are still under serious threat of desertification, while certain flora and fauna species may face extinction.



An ancient city Merv near Ashgabat (Turkmenistan) with typical desert vegetation
Credit: Karen Ter-Gazarian

To this end, a comprehensive balancing of relevant economic, environmental, and socio-cultural aspects of rural development plans, including forestry as a landscape-forming element upon which the most economically deprived sector of the population relies, should be considered a priority concern for both governments and donors. In particular, long-term tenure and usage rights for land and forest resources should be clearly defined, documented, and legally established. Sites of special ecological, economic or cultural and religious significance to local communities should be clearly identified in cooperation with indigenous people, and recognized and protected by forest managers.

Additionally, during my personal communications with a number of forest authorities in Kazakhstan (2010) and Kyrgyzstan (2011) they highlighted a new set of issues associated with climate change. In particular, they acknowledged that climate



Djety Oguz valley is located about 30 km from Karakol lake (Kyrgyzstan) and is famous by its red sandstone cliffy landscape, and gorgeous Tien-shan fir stands
Credit: Karen Ter-Gazarian

change in the region is strongly contributing to forest ecosystem degradation by escalating soil erosion and reducing the resilience and productivity of the region's forests. On the other hand, unsustainable forest management and land use, as well as poor agricultural practices accompanied with climate aridization results in the depletion of carbon sinks and storages. Thus the achievement of sustainable forest resource management will be predetermined also by the countries' abilities to develop specific management regimes and adaptive mechanisms to offset climate change impacts, including, among others, the establishment of forest shelterbelt buffer zones, carbon sequestration monitoring system and required safeguards.

To summarize, the national development strategies of the Central Asian republics, which are yet to be designed and/or initiated for the 21st century, need to incorporate forest management and biodiversity conservation into rural development plans. This will help to balance the economic and environmental priorities of the forest sector along with the national, regional, and international concerns. In general, the quest for more appropriate socio-economic policies, regulatory mechanisms, financial incentives, organizational structures, and land ownership arrangements in order to promote sustainable forestry practices, including the conservation and sustainable use of the forest biodiversity in Central Asia should be at the center of planning and decision-making in the region. Forest information and databases (presently, not always available) derived from forest census, differentiated forest assessments, and mandated forest inventory programs, should become a principal source of information for forest authorities.

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Overall, the safeguards, regeneration, and sustainable use of the forest resources in the region should be radically improved through the strengthening of policy, planning, and supervision capacities. In this sense, carefully designed and supervised forest management plans, which should include detailed characterization of land, water, and forest management elements, wildlife habitat protection and management, public use and education or extension services, landscape monitoring, and annual work plan's timetable as well as outlines of operational management, would be essential pre-requisites toward sustainable forest management.

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