

Key environmental problems and action priorities

The main environmental problems identified by the NEAP (NATIONAL ENVIRONMENTAL ACTION PLAN) teams include: resources of the nation, particularly in

- Severe pollution damage caused by industries, oil exploration and production, and energy;
- Threat of irreversible collapse of the sturgeon stock triggered by loss of reproductive ability, pollution, and overfishing;
- Deteriorating water quality, especially of drinking water, both in rural and urban areas, causing increase of water born diseases;
- Loss of fertile agricultural land from erosion, salinization, pollution with heavy metals and chemicals, and deteriorating irrigation systems; loss of forestry cover, mainly in war-affected areas; and threats to protected areas leading to losses in biodiversity;
- Damage to the Caspian coastal zone caused by flooding from sea level rise and pollution.

Deterioration of the cultural heritage, due to natural causes, aggravated by modern environmental problems such as acid rain and uncontrolled development.

Pollution Damage from Industries, Oil Production, Energy and Transport. These sectors have been source of severe air, water, and soil pollution in Azerbaijan, particularly in Sumgayit and parts of Baku. The main reasons are outdated technology, malfunctioning or even lacking end-of-pipe pollution abatement equipment and use of low quality raw materials generating high pollution emissions and waste. While pollution decreased as industries declined, there is evidence that perunit-of-output pollution has increased in many enterprises. Thus, pollution may rapidly increase as result of industrial recovery if no measures are taken to improve the industries' environmental performance.

The actions proposed to mitigate the industrial damage are based on country's strategic considerations and include the following: in the industrial sector, upgrading emission monitoring equipment and leak detection capabilities; investing in modern technologies, such as, compressor stations and condensation systems; and cleaning-up critical public health hazards; in the energy sector, investment in new equipment and control devices; and introducing new, efficient technologies; in transport, investment in new buses and trucks; restricting passenger car-traffic in central Baku; and increasing taxes on leaded fuel.

Threat of Irreversible loss of Sturgeon Stock.

The seven species of sturgeon in the Caspian Sea are the among the oldest fish species still living on earth. They have very high value as consumption fish, sources of medicinal products, and, above all, as the source of 90 percent of all black caviar produced in the world. The natural habitat for spawning sturgeon in rivers largely disappeared during 1950s with the construction of dams, and sturgeon are currently hatched in some 20 hatcheries in Russia, Kazakhstan, Iran and Azerbaijan. Many of these hatcheries have been seriously damaged by flooding, and unless hatchery production is increased, the sturgeon stock faces extinction. Any strategy to save sturgeon should start with the immediate expansion of hatchery capacities in the Caspian states, as natural reproduction appears to be incapable of maintaining the population under current pressures. In Azerbaijan, the annual production capacity of the existing hatcheries should be increased to 15 million fry by refurbishing and expanding the facilities. The country must also take steps to strengthen regional cooperation on fisheries management. Fishery laws and regulations should be reviewed and revised to reflect the changing economy, and the appropriate International Conventions signed.

Water Quality.

Water resources are critical for the country's economy. Water resources are limited and losses during distribution are high - reaching 50 percent in agriculture, which accounts for the 70 percent of the total water usage. Piped drinking water is available to less than 50 percent of the population, and many areas experience drinking water shortages. Steps to protect water quality and improve water resources management should be incorporated into all sectoral strategies. Special attention needs to be given to the drinking water problems, because of the general increase in the number of water borne diseases. In the medium- and long-term, water

resources should be safeguarded through investment in municipal sewage treatment plants along the Kyur river and in industrial wastewater purification and recycling systems. Instituting maintenance program to reduce the losses in the pipe system in urban areas is also very high priority (it is included in the World Bank's Greater Baku water supply project).

Impacts of the Rising Caspian Water Level.

Since 1978, the water level of the sea has risen almost 2.5 meters, and extensive flooding damage has occurred along Azerbaijan's coast due to the relative flatness of the terrain and dense coastal development. Fortunately, since the onset of the NEAP in 1996, the water level has declined slightly. This has significantly altered the relative order of priority actions in the NEAP as protection measures are less urgent, and there is some time to develop coastal zone protection plan before new areas are flooded.

Damages that have already been incurred are pervasive with substantial social, environmental and economic costs. Damage is on-going in some areas because of wave action and significantly higher groundwater levels. total of 807 km² of land has been flooded. An additional 460 km² will be flooded if the Caspian rises another 1.5 m.- level that is within the forecasts to year 2010.

About 50 actions are recommended to be undertaken in order to address existing damages and prevent new damages. The total cost of all these actions could reach several hundred million US dollars. The NEAP team therefore developed framework to prioritise actions, applying the following criteria: (i) extent of social and human impacts; (ii) irreversible loss of natural resources; and (iii) economic impacts. Immediate priorities include: (i) relocation of infrastructure and households in the affected regions of Neftchala, Lankaran, and Astara; (ii) prevention of secondary pollution of the sea from oil-related activities; (iii) restoration, relocation or protection of infrastructure of national importance, such as critical land-based transportation links.

Degradation of Agricultural Land, Loss of Forestry and Biodiversity.

About half of the country's land resources are being used for agriculture. Some 1.2 million ha is affected by high salinity; many soils are exhausted by years of poor agricultural practices and policies; and many areas are damaged by erosion. Loss of productive land in some locations is resulting increased pressure on fragile lands and resources in other locations. Azerbaijan possesses very diversified flora and fauna, with some species having considerable commercial value. Many of these species are threatened or endangered. The country established network of 14 strict preserves and 20 state reserves, but they do not include many critical sites and species, and their effectiveness has dramatically decreased due to lack of funds. Forest lands, in particular, are declining at an alarming rate.

Many of these land degradation issues have no immediate solution and need to be addressed as part of the long-term restructuring of the various sectors. Some immediate efforts can be made, however, such as establishing appropriate legal directives that define prohibited agrochemicals, banning their importation and storage, and instituting appropriate sanctions. international agreements should be signed, such as the Biodiversity Convention, in order to access the bilateral funding available to co-operating countries. Funds for management and operation of reserves and parks also need to be increased.

Cultural Heritage.

Azerbaijan has long pre-history, dating back to the Paleolithic. Many of Azerbaijan's historical sites are in serious state of disrepair or deterioration, however. Some of the architectural monuments are structurally damaged and unsound. number of monuments are currently under Armenian control and their condition is uncertain. These sites have survived for enormous periods of time, but natural phenomena, such as wind, rain, and earthquakes are eroding the sites, and their effect is being aggravated by acid rain, air pollution, and other human-induced environmental problems.

The condition of the key cultural and historical sites needs to be assessed and protection program developed for them. Taking into account the current shortage of funds in the country, this program must be integrated into the framework of on-going economic development and conservation management plans. Sources of human and economic capital need to be identified for restoration.