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Causes of Land Degradation in PRC

Land degradation is caused by a combination of climatic variation and human factors such as inappropriate land use policies, inadequate grassland management, and overharvesting of grassland products. The main human-induced factors are:

- lack of awareness or sensitivity of government officials to the medium and long-term environmental impact of interventions and government policies;
- poor understanding of the functioning and resilience of ecosystems;
- contradicting policies among various lines agencies which affect the sustainable utilization of the natural resource base; and
- deep-rooted resource exploitation patterns by local communities and increasing population pressure, including high levels of poverty, which will place increasing pressure on marginal areas.

Much of the current land degradation is due to poor land use decisions over a long period of time, rather than climate changes or other natural factors. In PRC, the arable land per capita is 0.11 hectares (ha). The shrinking arable land area and increasing demand for agricultural products pressures farmers to extract higher yields from their land, at the expense of stable soil structure and adequate organic matter content, leading to increased soil erosion. There is a clear connection between land degradation and poverty. Almost 90 percent of rural people living in poverty are located in areas suffering from land degradation.

As an example of poorly implemented policy decisions, a government decision in 1994 to require that all cropland used for construction be offset by land reclaimed elsewhere (incorporated into the recently revised Land Administration Law assisted by ADB) has helped create the ecological disaster that is now unfolding.

The fast-growing coastal provinces, such as Guangdong, Shandong, Zhejiang, and Jiangsu, which are losing cropland to urban expansion and industrial construction, are paying other provinces to plough new land to offset their losses. This provides an initial economic windfall for provinces in the northwest, such as Inner Mongolia (which led the way with a 22-percent cropland expansion), Gansu, Qinghai, Ningxia, and Xinjiang, but is clearly unsustainable.

In the arid areas, rapidly increasing livestock numbers exacerbate the spread of deserts. Over 90 percent of the 1.3 million square kilometers (km²) of grasslands suffer from moderate to severe degradation, while demand for meat and other livestock products is rising as urbanization and standards of living increase throughout PRC.

Following economic reforms in 1978 and the removal of controls on the size of herds and flocks that collectives could maintain, livestock populations grew rapidly. Today, PRC has 127 million cattle compared with 98 million in the USA. Its flock of 279 million sheep and goats compares with only 9 million in the USA.

Many degraded areas are treated as a common resource, with tragic consequences. For example, in south Ningxia Province, in order to make a better living, many people move into the grassland to seek *facai* (a lichen used in cooking, which binds the sand) and herbal medicines, which not only destroys the grassland ecology but also affects the herdsmen's lives. Due to competition for these resources, they end up fighting with each other, which affects social stability and national unity.

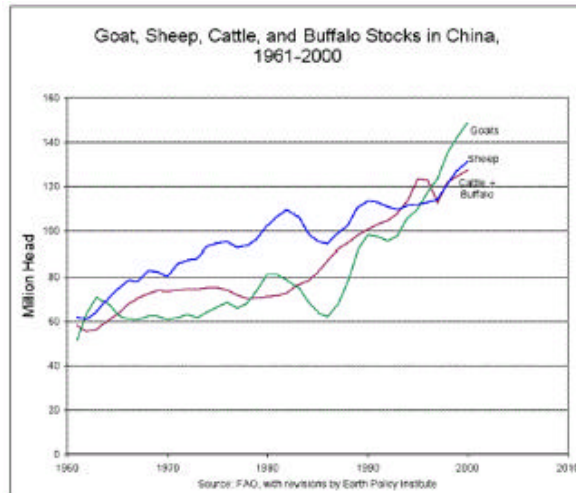


Figure 1. Rapid Increase in Livestock Numbers (1961-2000)

As part of the preparation for the PRC/GEF Operational Program 12 on Land Degradation, the Government identified the following underlying causes of land degradation.

1. **Inadequate concepts and methodologies for ecological and environmental development** - Lacking adequate scientific knowledge about environment, social and economic development, people have been only concerned about exploiting natural resources in pursuit of rapid economic development in the short term, but neglecting to conserve the ecological environment management for the long term. Furthermore, high population density has resulted in unsustainable human activities, such as excessive grazing, illegal felling of trees, hunting and mining, which have intensified land degradation.

2. **Lack of a comprehensive mechanism for micro-policy making** - The policy formulation problems include:

- No comprehensive assessment and consultation system for ecological conservation before taking policy decisions;
- No participants concerned with ecological conservation in the process of economic policy making;
- No supervision for ecological conservation in the implementation of policy;
- No audit and assessment system for ecological management;
- Neglecting the participation of land managers, farmers and herdsmen who are the main land users;
- Top down policy making by the administration, which makes national and local policies, strategies, laws, regulations difficult to carry out at the village and community management levels; and
- No efficient coordination systems to prevent local and departmental protectionism, thus resulting in repetition, waste of resources, and environmental damage.

3. **Extensive economic development models** - Extensive economic development is one of the direct causes of ecological damage. On one hand, low output with high inputs has expanded the consumption of resources thus placing pressure on the ecological carrying capacity; on the other hand, techniques and management at lower levels also have intensified the destruction of the environment. Irrigation and grazing using large amounts of water without sustainable management have resulted in waste of water resources, land degradation, unbalanced ecosystem development, and the loss of biodiversity.

4. **Inadequate supervision system for ecological protection** - At present, PRC has no strong and efficient supervision system for ecological protection and macro-policy management. Responsibilities for relevant departments have not been made sufficiently clear. Responsibilities of departments related to administration and management have not been separated. Regional protectionism for local natural resources utilization and river management has been powerful. Based on the present administrative systems in PRC, natural resources have been managed by too many different departments, according to specific environmental elements, which results in policy making, implementation, and coordination related to natural resources management, conservation, and desertification control becoming the mandate of different departments. So policies related to the respective departments are not able to complement each other and there are gaps and even contradictions. Generally, uncoordinated environmental management by departmental divisions has destroyed the environment to a certain degree.

5. **Lack of complete regulatory system** - The laws and regulations related to environmental management have not been built up systematically, especially regulations for managing the different kinds of natural resources in a holistic manner. At present, those regulations have only been related to special natural elements without consideration of the organic integrity of ecosystems, thus resulting in conserving one kind of resource but destroying others at the same time. Regulations for wetland conservation, desertification control, and biological safety are not able to get appropriate support. The laws and regulations are not enforced and there is insufficient authority assigned to enforcement agencies. The phenomenon of not (or at least not seriously) executing laws and regulations is common. Inadequate fines are levied in place of sentencing. Implementation measures at lower levels by unskilled executive personnel have impacted on the efficiency of law enforcement to an extent that many illegal activities are not penalized at all.

6. **Present policies for ecosystem conservation are not able to meet real management needs** - During the periodic formulation of strategies for economic development in PRC, mature and stable policies for sustainable development have not been built up. Local policies and the land tenure system are unstable. Financial support for investment and scientific techniques on long term ecosystem conservation has not been formed. A policy on the compensation system for ecological conservation has not been set up. Unreasonable pricing of natural resources has resulted in destruction and waste. Coordination between regions along the main rivers or departments in different administrative areas is inefficient. The scientific techniques for national ecological programs are difficult to be carried out without appropriate policy support, thus resulting in programs with low level scientific techniques and poor quality.