

# **Closing Mountain to Prohibit Livestock Grazing and Recovering Vegetation Are Effective Measures in the Harnessing of Soil Erosion in the Loess Plateau**

—an example taken from the Wuqi country in Shanxi Province

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**Abstract:** The local government of the Wuqi county devotes to implementation of “Closing mountain to prohibit livestock grazing and feeding by stable” since 1998 aiming at the harnessing of soil erosion and improvement of ecological environment as well as the development of rural economy. They reserve cultivated farmland of 20,000 ha to develop high efficiency agriculture. The rest 104,000 ha cultivated farmland on slopes will be treated for grass plantation in 1999-2000. Thus, in an effective control of local soil loss, the rural economies were much promoted.

## **Introduction**

The Wuqi county is located on the Loess Plateau. There is scarce vegetation, while the soil erosion is rather serious. There is cultivated farmland of 124,000 ha in 1999 with 1.06 ha per capita. Goat is the main animal in husbandry with total amount of 28,000 goats.

### **1 The policy and measures for soil and water conservation**

(1) The farmland cultivated on steep slopes has been changed to grass plantation such that grass and shrub have been planted on the top of hills since a long time.

Regions in the Loess Plateau suffer from serious soil losses due to the dense population; agricultural production is low and unstable, particularly, farmers cultivate recklessly on steep slopes. Starting from 1998, the Chinese Government decided to carry out the strategy of changing the farmland to grassland and forest areas in the Loess Plateau to harness the soil erosion. For this purpose it is decided that farmers agree to change 1/15 ha cultivated farmland to grass plantation on slopes, the central government will provide him 100 kg grain and 50 yuan RMB fro subsidy.

(2) The pasturage will be diminished in large scale with improved species. The “Xiaowei hanyang” sheep will be imported to replace the traditional goat. The feeding system will be changed. Feeding by stable will be popularized to protect the afforested areas from damages caused by cattle.

(3) Implementation of the small watershed comprehensive management construction of terrace fields, aiming at 0.16 ha per capita fundamental farmland with high standard. To protect that farmer can live by self-reliance. Meanwhile to develop fuel supply and engineering project for drinking water.

### **2 Concrete methodology and experience**

(1) A unified general plan and layout for local hills, stream, fields, forest and road was worked out, so the engineering projects, afforestation and grass plantation may be comprehensively managed. In combination with soil and water conservation measures, the agricultural product on dammed field is developed. The harnessed soil erosion areas totaled 1956 sq.km. The harnessing degree reached 52.6%. The fundamental farmland was constructed 11,600 ha and 0.1 ha per capita. More than 180 sediment barriers were constructed with total storage volume of  $2 \times 10^8$  cu.m, these barriers have trapped  $118 \times 10^6$  cu.m sediment and created dammed field 1,100 ha.

(2) At the same of improving the agricultural structure and reforming the farmland on slopes, plantation of feeding grasses is developed to extent feeding stable, as well as to popularize non-irrigated farmland. The purpose is to raise up grain crop and to realize the self-reliance food supply.

(3) The preferential policy for the local ecological economy should be worked out to promote the changes relating to rights of product on land resources. The principle of those who signs the contracts are responsible to the harness measures and get the benefits derived to encourage farmers to devote in soil and water conservation works.

(4) To exercise an active aid-the poor policy, to organize training courses in practical agricultural techniques, to provide species of cattle with good quality and to grant micro-credit bank loans for farmers.

(5) The relevant departments from the local government should unify the coordination and propaganda. Cadres and technical persons should act as examples in the demonstration, so step by step farmers can get acquaintance with the new job and participate into it.

### **3 Some inspirations from the experiences obtained in Wuqi county**

(1) The soil and water conservation works should amply consider the conditions of local residents concerning the capability of self-reliance and also the associated capability in natural resource and environment protection. The policy applied in Wuqi county “Land conversion for forest” , ‘ closing mountainous areas to prohibit livestock grazing and popularizing feeding livestock by stables’ not only increase the vegetation coverage, beneficial for the soil and water conservation but also guarantee the self-satisfied grain crops and increase the economic income.

(2) To realize the harmonic coexistence between human being and nature to realize the ecological sustainable development depends mainly on the ecological self-recovering capability.

(3) “Land conversion to afforested land, closing mountainous area to prohibit livestock grazing and feeding by stables ” are significant reform on the Loess Plateau where the traditional agricultural and animal husbandry are based on reliance upon the natural conditions, hence the consequent influences will also be great and profound.

(4) Convert cultivated farmland by grass plantation and to utilize food cereal for relief fund are the key points and guarantee in the implementation of closing mountainous areas to prohibit livestock grazing and feeding by stables. On the one hand through plantation of grass fro cattle to provide ample and stable feedings, and on the other hand the central government subsidizes food cereal to make up the shortage in food supply at the beginning period, so farmers can feel relieved to convert cultivated farmland into grass plantation.