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Suggestions for grassland ecosystem protection and development in Heilongjiang province

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Introduction The grassland areas of Heilongjiang Province occupy 433.2×10^4 ha , and are mainly distributed in the northwestern Songnen Plain , eastern Sanjiang Plain and mountainous area of Daxinanlin , Heihe in the east-north . Types of grassland are dry steppe , steppe subpratensia , meadow , swamp meadow and slough (Soil Compilation Committee of Heilongjiang Province , 1994) . Grassland utilization and stockbreeding in Heilongjiang Province lagged behind other provinces . But , rapid development and an increase in grassland stockbreeding in recent years caused grassland to degrade and eco-functions to decrease . So it is important to protect and develop grassland ecosystems .

Current status Influenced by integrated effect of human activities and natural disasters , the area of grasslands decreased from 1348×10^4 ha in 1951 to 753.2×10^4 ha in 1998 ; 15.8×10^4 ha of grasslands were lost every year during the past 50 years . Productivity of the grassland ecosystem was 3000kg/ha in the 1950s , while it is 750kg/ha currently . Vegetation conversion succeeded , soil organic matter decreased , weeds and noxious grasses increased , and biodiversity was threatened . All of which decreased the functions of the grassland .

Achievements The local governments and departments have realized the importance of grassland ecosystem degradation , and taken some measures to solve the problem . " Heilongjiang grassland byelaw " which was executed on 1 .1 .2006 offered legal guarantee for the protection and development of the grassland ecosystem . At present , 133.33×10^4 ha on Songnen Plain , 78 .6 percent of the total grassland in Heilongjiang Province have been fenced and closed to grazing . Obviously the grassland status changed , and the productivity returned to the state before degradation . The area of improved grassland reached 42.3×10^4 ha in 1995 , and the dry biomass yield of those grassland was 2000 to 3000 kg ha^{-1} , and farmers gained 500~800 ¥ ha^{-1} . Currently artificial grassland areas occupy nearly 11.3×10^4 ha .

Suggestions Some suggestions to effectively protect grassland resources and realize social , economic and ecological value of the grassland ecosystem , are as follows : 1) Strengthen management and maintenance on fenced grasslands , establish methods for determining state of grassland health and pay attention to natural disasters ; 2) Enhance practical and applied research conducted cooperatively with farmers and ranchers , research and establish simple evaluation methods for grassland health and technology for developing family pastures , determine reasonable livestock facilities and study technologies for making grass products . Technological information should be transferred to farmers and ranchers ; and 3) Study methods to establish artificial grasslands to gain the largest benefits , maintain destruction of Proterozoic vegetation to a minimum . Refrain from all kinds of illegal actions while reclaiming grasslands .

Reference

Soil Compilation committee of Heilongjiang Province(1994) Law of Soil in Hlongjiang Province .Haerbin(China)68-72 .