

Grazing prohibition programme and sustainable development of grassland in China

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Introduction Prohibition of grazing is now the main grassland management measure in China. From 1999, prohibition of grazing has been implemented on a trial basis in some areas. From 2001, the grazing prohibition programme (GPP) has been carried out in five provinces (Shaanxi, Gansu, Hebei, Jilin and Yunnan) and two autonomous regions (Inner Mongolia and Ningxia), with the objective of protecting and restoring grassland by seasonal or yearly banning of grazing with subsidiary assistances. The area within which grazing was prohibited of 2.93×10^7 ha in 2001 was increased to over 3.33×10^7 ha in 2004. With a view to improving the GPP and ecological reconstruction, we conducted a survey in some counties to review the relationship between GPP and the sustainable development of grassland.

Methods Six sampled counties (Chinba'erhuzuo county, Ewenke county, Kerqin youyizhong county, Hangjin county, Etuoke county, Wulatehou county) were in the Inner Mongolia autonomous region, two sampled counties (Gangcha county and Haiyan county) were in Qinghai province, and one sampled county (Songpan county) was in Sichuan province. One hundred and sixty-three households, 42 officers in the rural and pasture area and 11 officers in counties were interviewed individually with a survey questionnaire used during the interviews.

Results From 1998, the methods of feeding livestock from grassland in China began to change. The ratio of households which herded livestock dropped from 73.8% in 1998 to 65.9% in 2002, and the percentage of households which fed livestock indoors rose from 4.3% in 1998 to 15.2% in 2002. Some 62.4% of surveyed herders agreed with GPP, while only 22.4% disagreed (Table 1). Economic concerns were the main barrier in the course of promoting GPP. The survey showed that just 8.5% of herders had benefited from GPP, while 27.9% saw losses. Meanwhile, 72.5% of interviewed officers believed GPP will decrease the benefit to herders in the long term and 94.0% of interviewed herders believed that they should receive subsidies because of GPP. More than half of the surveyed herders proposed that subsidies of 200 Yuan/ ha per year would be acceptable. The survey of herders showed that several factors presented difficulties in promoting GPP. These included shortage of starting capital (85.7%), lack of forage (66.7%), absence of technical guidance (42.9%) and traditional concepts (42.9%).

Table 1 Some survey data relating to the grazing prohibition programme

Attitude toward GPP	Percent	Critical factors in GPP	Ranking	Subsidies required (Yuan/ ha per yr)	Percent
Agree	62.4%	Overpopulation	1	50	31.0%
Disagree	22.4%	Risk resist intention	2	100	18.0%
Neutral	9.7%	Lack of forage	3	200	51.0%

Conclusions An increase in costs, a decrease of benefits and a shortage of starting capital should affect implementation of GPP. Traditional grazing systems, which lack modern scientific approaches and techniques cannot support sustainable development of grassland in China any more. So it is suggested that: firstly, government should provide practical financial aids for herders to solve the current difficulties in this special transitional period; secondly, technical and scientific assistances should be provided in order to transform the traditional grazing system; for example, construction of basic facilities, subsidised loans, scientific guidance on grazing and suitable livestock species for indoor feeding