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The XXI International Grassland Congress / VIII International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

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Providing winter bases for transhumant herders in Altai , Xinjiang China : some consequences and lessons learned

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Key words : transhumance , fodder , winter bases

Introduction For centuries Kazakh herders in Altai , Xinjiang , N .W . China have followed an ancient transhumant system moving with their livestock from the low desert areas , where they winter , to the higher summer pastures for rich summer grazing , moving back down again as the days become shorter and colder . A major constraint to improving livestock production and family incomes is the lack of feed during winter and early spring which reduces the number of animals that can be carried through the winter . Attempts have been made in a number of countries to settle nomadic people permanently , often with less than desirable social consequences . This project attempted to provide settled bases for herders , where fodder for the winter period is produced and where education and social facilities for the herders' households are provided , but where , for the major part of the year , the traditional transhumant system is followed .

Materials and methods In Altai , a number of rivers and areas of relatively flat land provided the base for an irrigation-based solution to the winter feed problem . From 1988-1997 , a development programme was implemented to produce and conserve fodder for hay . The production of alfalfa (*Medicago sativa*) in rotation with crops on the irrigated land was assisted by the World Food Programme (WFP) and the United Nations Development Programme/Food and Agriculture Organization of the United Nations (UNDP/FAO) . In 1999 and 2000 a study was carried out to look at the transhumance patterns and socio-economic conditions of two groups : one the project herders with irrigated land for hay and crop production and permanent housing and the other traditional nomads still following the " old ways " . Data were collected throughout the year from the households both in the winter and summer areas as well as on transitional spring and autumn pasture transhumant routes . For further details see Wan Lin (2003) .

Results and discussion Work started in 1988 at Burjin , Fuhai and Altai (Li-Menglin *et al.* , 1996) and by 1997 some 6 , 100 Kazakh households had been settled , and 32 , 000 ha of irrigated land had been developed . The average farm size of 3 .7 to 4 .3 ha , produces annually about 18 , 000 kg of hay from 3 ha (with the remaining land utilized for wheat , maize , beet or sunflower) with a house for winter quarters for the family and for those who remain on the plains for haymaking in summer while the livestock are away on the summer pastures . Usually a proportion of the wheat , soybean and sometimes alfalfa are sold . Some farmers grow maize solely for making into silage . The 1999/2000 socio-economic study revealed that families with bases had far higher incomes , increasing herds , lower risks and good access to social services . Although alfalfa yields are still far below their potential , winter weight loss in sheep has been converted to weight gain ; flocks are mated earlier and lambs are ready to slaughter in their first year . Nomadic families had lower incomes , little access to services , own what they carry in their baggage train and their sheep still lose weight in winter and lamb late , so are kept through a second summer . Because more animals are carried through the winter there is additional pressure on spring/autumn pastures as well as summer grazing lands .

Conclusions Although there are some changes in the social structures , the project has successfully demonstrated the complementarity of mobile pastoralism and sedentary agro-pastoral development . However , signs of increasing pressure on the grasslands require careful monitoring for longer term change and additional studies into the evolving system are required . Whether the benefits so far enjoyed by " settled " Kazakh herders (who represent more than 15 percent of the Kazakhs in Altai Prefecture) can be enjoyed by those who still follow the traditional transhumant way of life year-round will depend on Government funding for an expansion of the irrigated areas .

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