

Inner Mongolian herders move toward sustainability and elevate their incomes from Cashmere goat production by reducing grazing pressure on fragile grasslands

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Introduction Overgrazing, mainly caused by Cashmere goats, is contributing to the desertification of West Erdos fragile grasslands resulting in the threat of extinction of several endangered wild plant species. This transition area between desert and grassland includes some 400,000 ha and some 72 unique, relic and endangered plant species. The area is home to 5,000 inhabitants, mainly subsistent goat farming families and coal mining activity. Industrial land use in the reserve adds additional economic pressure to herders operating on a shrinking land base. This phenomenon has elicited the entrenched, traditional response of producing more livestock thus jeopardizing current levels of production and risking inevitable total desertification of this fragile rangeland. The objectives of this study are to return the land to full and sustainable biodiversity levels and to increase the incomes of the traditional West Erdos herders. Lessons learned may be transferable to other areas of Inner Mongolia where desertification is active.

Materials and Methods An integrated approach to planning a range/livestock management programme was planned and initiated with a definition of goals involving the herders. Data collection followed as deemed necessary to achieve the goals. A rangeland inventory and evaluation was completed, which included an inventory of the endangered plant species and a baseline study of the area. A small group of leading herders was approached to become involved in a programme demonstrating an integrated approach to ranch and livestock management. Benchmark levels of production and income levels were established with the group, and feed and wool samples were collected to access possible nutritional deficiencies. A confinement and range feeding programme was designed which complements a planned breed improvement programme aimed at doubling cashmere production. An integrated grass/range management programme operates in conjunction with the livestock production programme and with the main objective being to balance the forage supply and demand. The processes of resource inventory and evaluation are the pillars of the range management plan.

Results The baseline survey suggested that herders are typically environmentally friendly, have an innate desire to achieve sustainability and preserve the grasslands for future generations. It is notable that herders consider the loss of nomadic herding, now being replaced by fixed grazing, along with global warming as being key reasons responsible for grassland desertification. Herders point to many friendly practices of today, like the use of cattle dung for heating/cooking, preventing the use of grasslands as burial sites, stopping the collection of medicinal herbs/plants and not planting trees as examples of being environmentally friendly to the grassland.

The maintaining of simple records is the key to measuring improvement. This is a new concept, and one that is very difficult to entrench and sustain. Feed test results revealed nutrient shortages/imbalances of five minerals, phosphorous, cobalt, zinc, copper and selenium. These deficiencies are being correlated with cashmere quantity and quality, with the aid of a designer mineral formulated to supplement existing feed supplies. A management system was designed by co-operators to promote a healthy grass/livestock balance. This system combines the practical application of herders with quantitative techniques in monitoring, range evaluation and setting stocking rates, as introduced by the Inner Mongolian Agricultural University and CIDA's Sustainable Agriculture Development project.

Conclusions The results suggest that many of the practices of Inner Mongolian herders are very traditional in nature and thus are very resistant to change. The practice of co-operating with selected demonstration herders promotes neighbouring herders to consider new management methods. Participatory research, planning and management are new concepts, but are affecting change; to date progress in increasing production and reducing stocking rates has been made. The overall objective of rejuvenating/ preserving the grassland and raising incomes of herders is taking place and winning ideas here will be transferred throughout Inner Mongolia, helping to halt desertification and the resulting sand storms which are having global impacts.