

Modelling the Impact of Market Reforms on Central Asian Rangelands

This is a chaotic period for central Asian ecosystems and economies. Nomadic pastoralists in the Soviet Union had previously been collectivised into large state farms engaged in industrialised forms of livestock production. As a result of market reforms, pastoral families now decide how many animals to keep, what to feed them and where to move them.

The ultimate outcome of this restructuring is unclear. However, in the current period of uncertainty and experimentation, a variety of new, spontaneously developed herding strategies are emerging. Some pastoral regions, which were over-utilized under the Soviet system of collective agriculture, may now have a chance to regenerate as stock numbers and grazing pressure decline. On the other hand, localized grazing pressure is increasing as private small-holders no longer have the economic capacity to take animals to distant pastures which were used in the Soviet period. The result appears to be a drop in mobility and lowered grazing pressure on far flung seasonal pastures, but a concentration of many small herds and increased grazing pressure around cities, villages, agricultural zones, water points and in those regions able to support year round grazing.

DARCA - 'Desertification and Regeneration: Modelling the Impact of Market Reforms on Central Asian Rangelands' - is a collaborative research project funded by the European Commission. Working at two sites in Kazakhstan and two in Turkmenistan, the project is documenting recent shifts in the intensity and location of grazing-induced rangeland desertification. The goals of this project are to predict the environmental impact of new, post-Soviet forms of rangeland use, to examine the effects of alternative government policies, and to identify improved husbandry options for newly-privatised livestock owners.

The project, which began in 2000 and will continue for three and a half years, is coordinated by the Macaulay Institute, with partner institutes in Kazakhstan, Turkmenistan, Belgium, Denmark and France.

This project has four objectives:

- To estimate the severity of rangeland degradation during the late Soviet period and assess post-reform shifts in its intensity and/or geographical location. A combination of remote-sensed and ground-based vegetation assessments will be used at different spatial scales in the study sites.
- To undertake inter-disciplinary field studies that provide an integrated picture of why pastoralists change their livestock husbandry and land use systems in ways that either promote or retard desertification. We will collect information on land tenure for selected communities, and on flock economic performance, output characteristics and feed availability for sentinel flocks representing different flock size classes. This material will be used to build a simple model of flock mobility and growth in response to resource availability, flock performance and prices.



Flock owners and local scientists in Turkmenistan.

- To disseminate study results that identify economically profitable and environmentally sustainable policy options and management systems for producers. This will involve discussions with shepherds, senior civil servants, national scientists, and the publication of policy-oriented reports, scientific papers, and popular articles, and use of video films.
- To introduce Central Asian scientists to new research for monitoring rangeland condition. These techniques will strengthen the contribution that scientists make to the formulation of national agricultural and environmental policy. Capacity building will involve scientific interchange and training as well as financial support to Central Asian research institutions.

Field work began in 2000 and preliminary results are expected late in 2001. Available in 2002 will be a book on the impact of market reforms on Central Asian pastoralists and an introduction to the issues examined in the current field study. *From State Farms to Private Flocks: Prospects for Pastoralism in Kazakhstan and Turkmenistan*, edited by Carol Kerven, will be published by Curzon Press, London.

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New web and email address

Please note the new address for the Institute's web site:

www.macaulay.ac.uk

and email addresses now follow the following format:

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All old addresses will continue to work for at least the next twelve months.