

Herders care for their land

In Iran as in many other countries, the settling of nomads has greatly contributed to deterioration of pastures around villages and towns.

Application of the nomads' traditional skills and knowledge has been inhibited by a range of external factors, particularly the unclear status of land tenure.

A. Koocheki points to some practices of pastoralists, which have contributed to resource conservation and sustainable landuse and, if encouraged, could continue to do so.

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Iran has a population of nearly 60 million and occupies an area of more than 165 million ha, of which more than 95% is arid and semiarid with rainfall from less than 100 to 500 mm. The main farming activities used to be dryland cereal growing integrated with nomadic herding. Although modern agriculture with monocropping and separation of animals and crops has been introduced, nomadic animal husbandry is still the main occupation of some 15% of the Iranian population, compared with 40% in the 19th century.

In the past many nomads were forced to settle and, in recent years, spontaneous settlement has also occurred. Most have settled in villages and towns where their flocks graze year round nearby, leading to localised desertification. Some have abandoned livestock-keeping altogether and can find no other productive work. In general, lack of secure land tenure, inadequate regulations and inappropriate land-

Some 15% of the Iranian people move seasonally with their herds, and are able to produce food with little or no inputs of fossil energy.

use planning are the main causes of range deterioration in Iran.

Nomadism in dry regions

The pastoralists belong to various ethnic groups - Lur, Kurds, Turk and Bluch - each with a specific territory in different parts of the country.

The full-fledged nomads have no permanent place of residence. In summer they move with their families and herds to the mountains and in winter to the plains, with some intermediate grazing lands. They may cover hundreds of kilometres each year.

The semi-nomads have a permanent place of residence, near to which they also do some farming. They usually also move to mountainous grazing land during spring and summer and return home for winter, but they do not travel so far as the nomads. Although the semi-nomads exploit a smaller and less diverse range of resources, the landuse strategies are similar, the basic principle being to adapt as much as possible to natural conditions through herd composition, stocking rates and grazing time.

As the livestock are kept mainly in areas with little access to a market, the pastoralists aim at diversified production in order to meet family needs as fully as possible. The products include milk, meat, wool and skins for the family and dung as fuel. Some products are also sold to pay for crop foods and other consumer goods.

Rational landuse

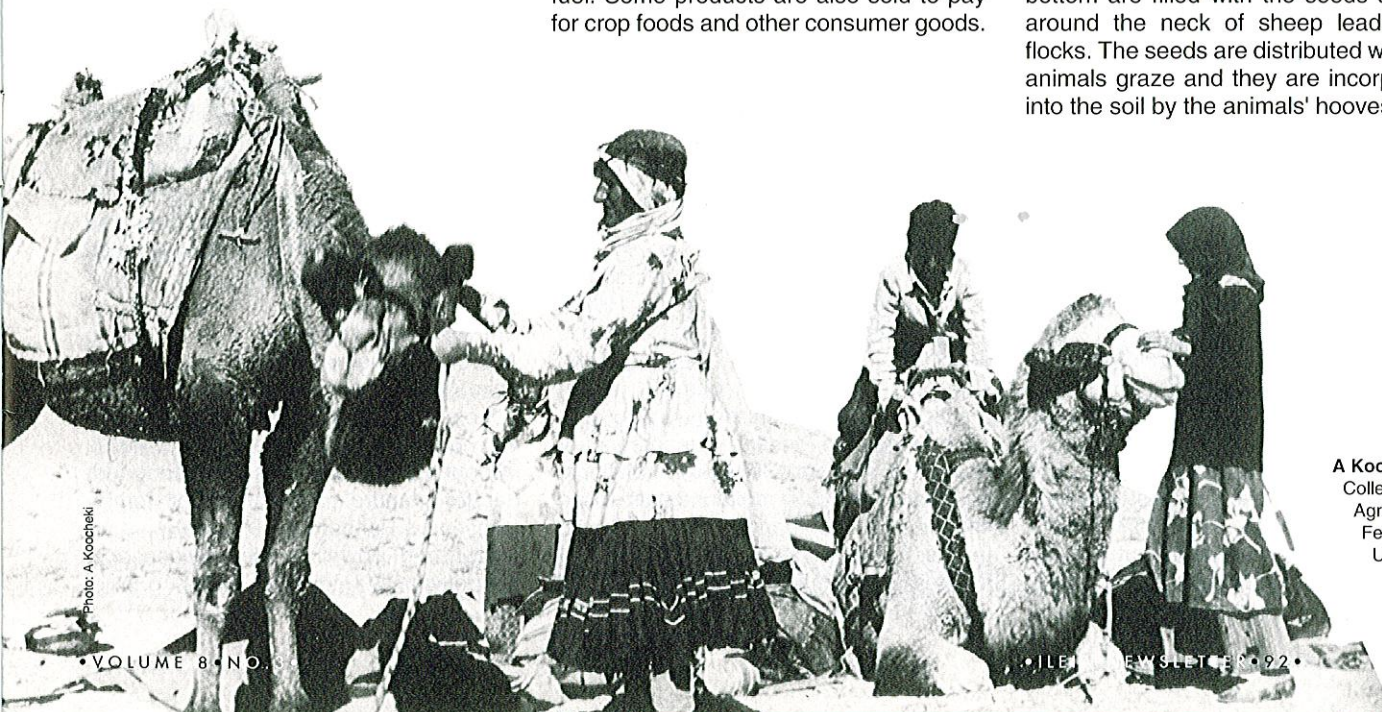
Grazing lands are communal and are not owned by individuals or by government. Certain individuals or groups may habitually use a certain area but they normally do not have exclusive rights. If the main users do not feel that the grazing land is theirs, they have little interest in protecting it. However, where the traditional rights of nomads are recognised, they protect their land.

The nomads are familiar with what are now known as "key species" in modern range management. The beginning of the grazing season depends on the readiness of key range plants, and the end of the season is based on the degree to which these plants have been grazed. The flocks are normally a mixture of sheep and goats and sometimes also camels and cattle, which allows the grazing of different types of herbs and shrubs and thus a more even use of the vegetation.

The semi-nomads cultivate a plot for 1-2 years and then leave it as fallow and pasture for several years. Based on their religious belief, some of them protect certain shrubs and trees such as *Ziziphus spina-christii* and *Juniperus excelsa*.

Sheep as seeders

For centuries, nomads and their flocks have been an integral part of the local ecology. They play an important role in energy flow and nutrient recycling on range and cropland. Where they have used specific routes for centuries, they enjoy a traditional right of "ownership", try to protect their resources and even practise some range improvement measures. They collect the seeds of the most palatable plants and broadcast them in a very labour-efficient manner. Linen bags with holes in the bottom are filled with the seeds and put around the neck of sheep leading the flocks. The seeds are distributed while the animals graze and they are incorporated into the soil by the animals' hooves.



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