Scientific Papers. Series D. Animal Science. Vol. LIX, 2016
ISSN 2285-5750; ISSN CD-ROM 2285-5769; ISSN Online 2393-2260; ISSN-L 2285-5750

CREATING RESILIENCE FOR TRANSHUMANT AND SMALL FARM SYSTEMS - TURKISH AND ROMANIAN PARADIGMS

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Abstract

Transhumance is a resource efficient means of livestock production by seasonally moving grazing animals to utilize pastures between varying ecological zones. This article investigated two separate transhumant societies in Romania and Turkey, countries that resemble cultural and environmental likeness. The data for the Turkish component of this study was collected in 2015 by interviewing Turkish transhumant populations during their migration route through the Taurus mountains. Romanian data for the Carpathian Transhumant came from personal communications with Romanian authors and also from Romanian and English written sources. Both nations possess rare natural environments with high nature conservation value open grassland habitats that benefit from traditional, low-impact agriculture of the transhumance. After a millennia of practicing conservation and natural resource management skills it is a lifestyle that is all but lost. Ecosystem services provided by the Romanian and Turkish transhumant family farming systems include preservation of biodiversity, providing substantial carbon sinks and reduction of CO2 emissions assisting to mitigate climate change. The system also maintains erosion control, improves soil quality and deters the likelihood of forest fires, whilst weaving a resilient social web. The survey also indicated a clear link between social and ecological resilience emphasizing that sustainable development relies on the interconnectedness between biological and cultural diversity and as such they merit strong policy recognition and support. The economic, social and environmental costs of losing them would far outweigh the costs of support. To loose this animal production system with its rich cultural heritage would be a tragic deficit for both biological and cultural conservation.

Key words*: Transhumance Social and Ecological resilience, resource management, pastoralism*.

INTRODUCTION

Origins of Transhumance in Romania and Turkey

Transhumance, also referred to as mobile pastoralism has been practiced since the Neolithic, the late stone age period (Nandris 1985; Arnold and Greenfield 2006). With the onset of cultural evolution or the technological development among prehistoric humans, dependence on domesticated animals and settlement in permanent villages saw pastoralism take on a new light. Herders began appreciating the benefits of natural resource management and started moving animals between seasonal pastures. Earliest evidence of herding in the Carpathians comes with the finding of a pair of sheep shears dating back to the Dacian period (c. 500 BC to 106 AD), and there are records of ancient Romans renting land to shepherds in the same area during the same period. Totoianu (2010) considers that long-distance transhumance in what is now Romania could not have begun before the fourteenth century. During 5th century BC, Herodotus also wrote about those who spent their winters in Bodrum (a town in Western Turkey): "Here, I am witnessing another lifestyle of humankind, and the most intelligent of all that we know. There are neither cities nor walls; they carry their homes with them. They do not have farms, but live with their animals''. Cicero in 50 BC also describes nomadic herders moving through the Taurus Mountains in Southern Turkey during winter and summer. The present day transhumant arrived into Anatolia as nomadic Turkic tribes with Oguz and Turkoman lineage, from the Mesopotamian

basin around 5000 years ago (De Blois and Van der Spek, 2008).

MATERIALS AND METHODS

All of the data for the Turkish component of this study was collected in 2015 by interviewing ethnographers, anthropologists, govt. employees, museum curators, historians and most importantly by paying routine visits to the summer locations of various Oghuz lineages of the Turkish Mediterranean and Central Anatolian transhumant populations during their migration route. The Romanian data came from personal communications with Romanian authors but also from Romanian and English written sources. Some of the interviews were walk and talk or carried out during community festive events. The interview topics and the subsequent discussions (Figure 1) were related to the geography of the region, determining factors for the migration routes, constraints and opportunities, animal husbandry skills they practiced; including mating programs and grazing strategy and finally their income sources. All demographic, ethnic, and sociological data presented in the study has been IP approved by the owners of the knowledge.

Study Area

Carpathians are a range of mountains forming an arc roughly 1.500 km long across Central Europe, second-longest mountain range in Europe. The Taurus Mountains also roughly 1.500 km long are a mountain complex in southern Turkey, dividing the Mediterranean coastal region of southern Turkey from the central Anatolian Plateau.

Pasture resources

Romania's current land surface area, unchanged since 1962, is 239.000 km^2. One third of this is mountainous. According to Huband et al. (2010), 'nationally there are an estimated 2.4 million hectares of semi-natural grasslands... and one source estimates 1.2 million hectares of semi-natural pastures and hay meadow habitats in the mountains.' As defined by Huband et al. (2010) semi-natural grasslands are those 'dominated by unsown native plant species that rely on human activities to maintain the condition of the swards and prevent the establishment of shrubs or woodland.' During the communist period 1947-1989, 90% of agricultural areas came under the authority of state farms and collective farms. The remaining 10% of agricultural land, not under state control, was in mountain areas, where the steep terrain and relatively thin and nutrient-poor soils hindered attempts at collectivization. There are 3.9 million farm holdings in Romania, the majority of which are Family Farms of extensive semi-natural grassland pastoral systems and mixed farming systems. These semi-natural small- sale farmed landscapes are of significant economic importance. For example, the 1 million holdings between 1-10 ha (3.1 m ha, 20% of Romania's agricultural area), are classes as semi-subsistence farms producing for home consumption, local sales and for their extended families. Yet these farms are estimated to produce 25-30% of national food consumption. They also provide rural vitality, as compared to the largest farms which are associated with rural poverty (Juler, 2014). Romanian Centre for European Policies, states that agriculture is one of the most important economic sectors in Romania. This sector generates 12% of the country's GDP and around 30% of Romania's active population works in agriculture.

Figure 1. A transhumant goat herd in Turkey

Turkey's current land surface area is roughly 3 times that of Romania at 770.760 km^2 with currently around 14 million hectares as permanent pastureland (TUIK, 2014). During the twentieth century, population pressure resulted in the expansion of farmland. The cultivated area increased from about 8 million hectares in the 1920s to nearly 19 million hectares in 1952 and to almost 28 million hectares by 1991. Using Marshall Plan credits that first became available in 1948, Turkey

began to import large numbers of tractors, which made it feasible to expand cultivation of marginal lands, especially on the Anatolian Plateau. Although total production grew rapidly, average yields did not. By about 1970, nearly all arable land was under cultivation. Cultivation increased primarily at the expense of meadows and grasslands, which diminished from about 46 million hectares in the mid-1920s to the current 14 m. ha (Grant, 2012). There are just over 3 million farm holdings in Turkey with two thirds under 5 ha. in size. Of the total workforce 25% is employed in the agricultural sector producing enough products to make up 9% of the GDP.

Both Turkish and Romanian farmers are extremely hindered by a fragmented ownership system. Semi-subsistence farmers own small pieces of land (average size of 1-5 ha.) trying to maintain productivity with very limited support from government agencies. Governments have opted to give most of the support to the establishment of larger farming units that have a poor natural resource management record. While small farms, as well as micro-sized agro-food businesses, have an important role to play in supporting the local economy and food security in rural areas, they are often placed in contrast with the perceived benefits of large farm structures. The perceived benefits of large farming systems due to economies of scale tends to downplay the efficiency of smallholdings, neglecting the environmental and social aspects of sustainability such as the ability of small farms to better resource manage (both human and natural) their production systems.

Figure 2. Summer migration in the Taurus Mountains

Importance of Pastoralism and SME's vs Industrial Animal Production

Sheep and goat production are very important sources of income for Romania, Turkey and for the world in general. With an estimated 42 million sheep and goat population in Turkey and 11 Million in Romania they are the 1st and 3rd largest flocks in Europe (FAO, 2014). While wool and goat hair in the present day has very little economic significance, sheep and goat's milk dairy products as well as lamb meat hold very high significance for both Romania and Turkey. Post WW2 industrial agriculture was hailed as a technological triumph that would enable the exponentially growing world population to feed itself. However time has shown us otherwise, a growing chorus of agricultural experts, including farmers, scientists and policymakers regard this type of production as a major threat to the healthy survival of our living systems. The impacts of industrial agriculture on the environment, public health, and rural communities deem it as an unsustainable way to grow our crops and raise our animal products (Union of Concerned Scientists).Transhumant societies and the small to medium size enterprise (SME) farms have shown that livestock production does not have to come at the expense of the environment. Transhumance is one of the many customary practices developed by ancient Mediterranean societies to cope with an unpredictable and highly fluctuating climate. It creates a cultural landscape that includes a complex mosaic of habitats, each varying in extent and productivity during the year (Oteros-Rozas et al., 2012). The practice has helped shape a characteristic landscape which has maintained one of Mediterranean's most complex and interesting ecosystems (Ruiz and Ruiz, 1986).

In Romania, small-scale farmers own 70% of the national sheep flock and play a vital role in maintaining large tracts of valuable semi-natural habitats. (PASTORAL 2, 2001). Romania possesses one of Europe's rarest natural environments, one that is to a large extent dependent on traditional, low-impact agriculture, including transhumance, and one that is a 'blueprint' for many more industrialized nations (Akeroyd, 2007). Akeroyd (2007) also notes that: This is a landscape that Europe has mostly lost, where a

wealth of plants and animals thrives alongside traditional agriculture. And there is no reason why its people should not have a happy and secure future, forging new prosperity in this ancient and productive landscape. Nearly a third of this area consists of high nature conservation value open grassland habitats created and maintained by low-intensity livestock farming practices (Webster, 2001). In general, these practices have evolved to exploit natural resources without depleting them, working within the constraints of the carrying capacity of the land. Throughout central and eastern Europe, from the alpine pastures and hay meadows of the Carpathians to the steppes of Hungary traditional (low-input, low-output) livestock farming practices still maintain large tracts of valuable semi-natural habitats.

RESULTS AND DISCUSSIONS

The study showed that the wandering grazing pattern of the mobile transhumant herd has helped spread the seeds of the local endemic varieties and shape the unique ecosystems of the Mediterranean region and maintain the interesting floristic composition of the Anatolian steppes. Resilient social–ecological systems are able to absorb large impacts without change in fundamental ways and, therefore, they can cope, adapt or reorganize without loss on their capacity to generate ecosystem services (Folke et al., 2002). Hence, it is expected that there is a strong link between social–ecological resilience and the ecosystem services associated with transhumant practices. The adaptation of transhumant livestock practice is a means to make optimal use of the resource availability and may possibly be a practice to minimize the impacts on livestock production derived from Climate change (Olea and Mateo-Tomás, 2009). Farming systems more closely connected to nature and small-scale farmed landscapes are more flexible in their farming activities, adapting more quickly to climate change and environmental challenges. They are strongly associated with efficient, low-carbon short food supply chains, through local and direct sales. It can be argued that transhumant and small-scale family farms are in many ways more productive than larger industrial farms, when all products are taken into account, for a variety of reasons including food security; where family farms perform a very significant and underestimated role in providing food to localities and wider families. Empowering families to grow their own food on small plots has been shown to offer solutions to food shortages in many problem regions of the world. The transhumant has created an enduring social fabric which has resulted in sound cultural resilience. Ecosystem services provided by Romanian and Turkish transhumant family farming systems include preservation of biodiversity by maintain the complex mosaic of plant varieties, by protecting natural woodland and permanent semi-natural grassland both act as substantial carbon sinks. Coupled with the low energy use of traditional agriculture, and short food supply chains, these landscapes and systems reduce CO2 emissions and mitigate climate change. Soil erosion is prevented by avoiding disturbance to ground cover. Extensive forest and vegetation cover delays run-off of rainwater, replenishes groundwater supplies and moderating extreme flooding events. Such landscapes also provide water purification services. These farming systems promote healthy populations of insect pollinators, and natural predators of agricultural pests and diseases.

CONCLUSIONS

The transhumant has created an enduring social fabric which has resulted in sound cultural resilience. The honest and sincere interviews held with the transhumant families has clearly shown that they continue to practice this lifestyle because they believe that it is beneficial to their environment, healthy to theirs own and their livestock's' lives. The study found that an important factor which often goes unnoticed in nature conservation and rural development strategies is that of the 'missing' value for low-intensity livestock systems and their products. A scenic landscape produced by High Nature Value farming systems is highly esteemed by visitors as well as by the tourist industry, yet little is invested in their protection. Pastoralism is being increasingly appreciated worldwide as an environmentally friendly practice, which, in the

European Union (EU) is valued as particularly important for the protection and the safeguarding of mountainous areas, defined as "Europe's ecological backbone"'. In 2013, the EU announced important changes to its Common Agricultural Policy (CAP). Among them were the aims of supporting the producers rather than the product, distributing funds more fairly and helping environmental initiatives. The very high estimated value of the ecosystem services provided by Romania and Turkey's transhumant and small-scale family farming systems suggests that they merit strong policy recognition and support. The economic, social and environmental costs of losing them far outweigh the costs of support.

To loose this animal production system with its rich cultural heritage would be a tragic deficit for both biological and cultural conservation.

ACKNOWLEDGEMENTS

Many thanks are due to the transhumant families, farmers and local experts who gave up their time to answer our interview questions and provided their warm hospitality.

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