

PASTORAL MOBILITY: A REVIEW

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Introduction

Mobility is often regarded an important characteristic of pastoral societies and their ways of production in Africa. However, the interpretation of the rationale and importance of pastoral mobility changes along with the various discourses, and – just as important – the interpretation varies with the professional background of the researcher. While the positive perception of mobility is relatively new among researchers of drylands, this is not a new line of thought among social scientists studying pastoralists (e.g. Dyson-Hudson and Dyson-Hudson 1980, Stenning 1957). Especially anthropologists (e.g. Dyson-Hudson 1966, Evans-Pritchard 1940, Nicolaisen 1963, Stenning 1959) and others studying pastoral societies (e.g. Gallais 1967, Johnson 1969) have pointed to the flexible strategies employed by pastoralists.

In the late 1980s, a new understanding of drylands dynamic gained importance and led to the so-called 'new rangeland paradigm', which has been called the 'state-and-transition' paradigm (Westoby et al. 1989) or 'instability-but-persistence' paradigm (Warren 1995). The first papers concerned dryland functioning, but soon implications for pastoral management and hence pastoral mobility were included (e.g. Ellis and Swift 1988). This meant that concepts such as degradation and desertification have been reinterpreted and it has been shown that 'sustainable resource management' is far from equivocal.

First, this review will show how pastoral mobility is understood in the context of range ecology; then it is discussed how pastoralists' perceptions can add to this understanding.

Pastoral mobility within the new rangeland paradigm

The 'new rangeland paradigm' has been thoroughly analysed in the three seminal books *Range ecology at disequilibrium* (Behnke, Scoones and Kerven 1993), *Living with uncertainty* (Scoones 1995a), and *Managing mobility in African rangelands* (Niamir-Fuller, 1999a). While the first book mainly concerns the ecological aspects of dryland ecosystems, the second one elaborates on management implications for pastoral production systems, and the last one emphasises one aspect of pastoral systems, namely mobility.

According to the new rangeland paradigm, drylands are considered disequilibrium (changing from one state to another) due to strong external controls e.g. droughts, fires, or insect attacks. These external controls strongly affect primary production and thus livestock density. Hence, dryland productivity is controlled mainly by the highly variable precipitation; because livestock seldom reaches densities high enough to influence vegetation productivity, precipitation is the principal factor controlling inter annual vegetation dynamics (Coppock 1993). The perception of pastoral mobility within the new rangeland paradigm can be summarised as follows: Pastoral mobility is highly appropriate in variable and unpredictable environments. An important characteristic of tropical drylands is the heterogeneity of natural resources. Pastoral mobility implies that pastoralists can move to areas with pasture for their livestock. Moreover, pastoral mobility means that the effect of unforeseen events, e.g. outbreak of disease, bush fire, locust attack, can be mitigated. Finally, migration between different agro-ecological zones means that more animals can be kept than in each of the zones (Niamir-Fuller 1998, Scoones 1995b).

In the book on pastoral mobility (*Managing mobility in African rangelands*), the so-called ‘mobility paradigm’ is developed. When analysed in the light of disequilibrium ecology, management practices, institutions, etc. that previously have been characterised as destructive, are now seen as ecologically rational. Hence, the ‘mobility paradigm’ provides a framework for understanding pastoral mobility based on the findings of the new rangeland paradigm and examines the various aspects of mobility.

Here, the main arguments of the ‘mobility paradigm’ will be discussed. In the second chapter of the book, Niamir-Fuller and Turner (1999) develop an analytical framework that should act as a checklist for understanding pastoral mobility. The authors aim to ensure appropriate measures that can ‘allow self-evolution of pastoralism towards an economically, socially and environmentally sustainable livelihood system’ (1999: 31). They find the following four aspects salient for understanding mobility: the **resource base**, the **resource users**, their **adaptive strategies**, and their **common property regimes** (Niamir-Fuller and Turner 1999: 32-45). For each aspect, key words are mentioned. These will be discussed briefly in the following.

The key words for **the resource base** are high variability and uncertainty, non-equilibrium theory, ecological resilience, and socio-ecological pasture units. Hence, these are the elements of the 'new rangeland paradigm', which have been outlined above.

The key words for **the resource users** are heterogeneity, indigenous technical knowledge system, social capital, reciprocity, interdependence, and political alliance. Indigenous knowledge will be discussed in the next section. Here only a few words on social capital. The concept, which was developed in a Western context, became popular in development work in the late 1990s. Niamir-Fuller and Turner use social capital similarly to the term 'culture' to denote 'shared norms...cultural and religious mores and values... knowledge systems...conflict-management mechanisms' (1999: 35). Unfortunately, it is left to the reader to imagine how social capital is 'built' and 'lost', and how it functions in the interaction between people and relates to individual behaviour.

Adaptive strategies of the resource users concern the types of mobility as well as the decision-making and management aspects of mobility. The key words include: opportunistic mobility, tracking, micro-mobility, macro-mobility, negotiation, indigenous communication, and safety nets. Besides the rejection of carrying capacity and sedentary ranching, the authors point to the importance of micro-mobility; an aspect that is often overlooked. In continuation of this, it is important to distinguish between mobility of humans and livestock. This important aspect is pointed at in the first chapter of the book, where the editor mentions that 'livestock movements can be considered separately from movements by humans' (Niamir-Fuller 1999b: 1) and elaborated in the conclusion. It could be argued that commercialisation should have been included as a key word. As pointed out by Swift (2000), commercialisation may well be of utmost importance for future pastoralists. Moreover, commercialisation influences other aspects of pastoral strategies such as safety nets and risk spreading, which have a tendency to disappear under increased commercialisation (see e.g. Batterbury and Warren 2001, Sutter 1987, Swallow 1994).

Finally, **common property regimes** have these key words: common-pool resources, nested property, fluid boundaries, inclusive rights, transboundary resources, informal institutions, co-management, conflict management, and popular enforcement. This is the most extensive section, where each key word is discussed at length. When reading the individual papers in the volume, this makes sense as most of the papers concern tenure regimes and management

in some way. The section relates to the ‘classic’ discussion of ‘the tragedy of the commons’ (Hardin 1968) as well as to the concern for institutional issues seen in environmental research in the mid-1990s (Rhoades 1989).

To sum up, with the ‘new rangeland paradigm’ a comprehensive understanding of drylands has been provided, and it is shown that mobility is an appropriate strategy in dryland environments. However, the arguments are based on the ‘needs of nature’, not on the voices of African pastoralists. This means that pastoralists’ actions and mobility practice are explained using a scientific understanding of drylands and not their own explanations or conceptualisations of ‘nature’. The absence of pastoralist perspectives means that the importance of mobility for the wider social and cultural life is left unsolved. For instance, how does the importance of mobility manifest itself in the cultural construction of identity? Without this knowledge, it is difficult to understand the pastoral practices shaping the future pastoral way of life.

Pastoralists’ perceptions

According to Milton (1997), the focus on people’s own views and understanding began in the 1960s, when researchers, mainly anthropologists, ‘became increasingly interested in understanding people’s own perceptions and interpretations of the world... because they form the appropriate context in which to analyse people’s actions and decision-making process’ (1997: 484). It is fair to say that the focus on local perception is not new nor in the context of pastoralism. However, there are a number of different ways to approach this as the following five examples show. The papers have been published within the past five years, i.e. after the new rangeland paradigm. They have been selected on basis of their titles, which all include words such as ‘perception’, ‘conceptualisation’, ‘knowledge construction’, and ‘narratives’. The collection is meant to be a mere illustration of recent tendencies in pastoral research; it is neither in- nor exclusive. Although perceptions, knowledge constructions, etc. are discussed in several publications on pastoral resource management, the tendency to have an explicit focus on these issues, which can be observed by the explicit use of these words in the title, is something new.

The five papers discussed here are: *No space for participation: Pastoralist narratives and etiology of park-herder conflict in southeastern Niger* by Turner (1999), *Representations of nature on the Mongolian steppe: An investigation of scientific knowledge constructions* by Williams (2000), *Environmental change and pastoral perceptions: Degradation and indigenous knowledge in two African pastoral communities* by Bollig and Schulte (1999), *Herders' perceptions, practice, and problems of night grazing in the Sahel: Case studies from Niger* by Ayantunde et al. (2000), and *Where my cord is buried: WoDaaBe use and conceptualization of land* by Loftsdóttir (2001). The first two concern the scientific construction of knowledge, while the latter three deal with pastoralists' perceptions.

Turner (1999) and Williams (2000) both study with knowledge constructions. While Turner shows how so-called development narratives have influenced on park-herder conflicts in Niger, Williams is interested in the different scales at which knowledge about the Mongolian rangelands are constructed. Turner's paper concerns conflicts over resources that are being solved using participatory methods. He shows that the development narratives depicting Fulani as tradition-bound, nomadic pastoralists narrow the space for negotiation. This has important implications for the way conflicts over rangeland resources are solved. In contrast to Turner's characteristic of subtle and often unconscious processes, Williams argue that rangeland science is used as a tool for social control over pastoralists of the Mongolian steppe. He provides examples of how Chinese scientists (of Han ethnicity) incorporate 'evidence' of rangeland degradation in the political ideology by showing how ethnic minorities abuse the land, while state run property is not degraded. Besides the national and the local scale, Williams also consider the international scale. For instance when Western researchers visit Mongolian rangelands, they 'naively consider their hosts to be the "local experts," even though Han scientists see themselves as outsiders who work in an alien environments among alien people' (2000: 513). In this way the two papers contribute to our understanding of how our own (Western/scientific) knowledge constructions affect the way we perceive others and their way of dealing with e.g. 'nature'.

In regard to pastoralists' perceptions, two poles can be outlined with respect to their approach towards local knowledge and perceptions. At the one pole, there is a tendency to incorporate information on local knowledge in the scientific construction of knowledge, for instance by employing the ecosystem approach (e.g. Berkes et al. 2000, Kimmerer 2000, Ruttan and Borgerhoff Mulder 1999) and to rely on a positivist way of analysing, while the

other pole base the understanding of pastoral knowledge and behaviour on the pastoralists' 'construction of the world'. This distinction is important because the former leads to 'chaotic conception' (Sayer 1998), while the latter rarely is combined with other (e.g. range ecology) knowledge constructions.

Ayantunde et al. (2000) have studied herders' perceptions of night grazing in order 'to learn how herders practise night grazing and the reasons behind it (2000: 111). They emphasise that it is important to include the local knowledge to complement scientific knowledge and in order to develop technological innovations. By the use of statistical tests they show that the local knowledge is 'reliable' and conclude that 'the agreement between herders' perceptions and research results on night grazing reaffirms the professionalism of the pastoralists' (ibid 124). This means that one construction of knowledge (the scientific) is used to validate another (the local). It may be argued that this is a philosophical fallacy and it can lead to a competition between knowledge constructions.

Bollig and Schulte (1999) have compared local knowledge on grazing, vegetation, and environmental change in two pastoral societies. In contrast to Ayantunde et al. (2000), they do not use local (or emic) knowledge to complement scientific knowledge; instead they compare vegetation knowledge of the two societies with findings of range ecologists. They conclude the local knowledge is 'fine-grained and complex but at the same time socially constructed and embedded in ideology' (Bollig and Schulte 1999: 493). This has bearings for the ways that local knowledge can be used and combined with other knowledge constructions. Further, they point out that pastoralists' knowledge and categories concern the interaction between animals and vegetation rather than the environment or nature *per se*. This is important in relation to discussions of the ecological rationality of pastoralists. Can pastoralists be labelled ecologically rational in the 'rangeland ecology' understanding when they have a different conceptualisation of 'nature' and 'environmental consequences'?

Finally, Loftsdottír (2001) provides a very detailed account of WoDaaBe conceptualisation of land in Niger. This is a typical example of pastoralists' construction of reality and perceptions being analysed within their own context. The paper shows how local conceptualisations of 'home' and the wider territorial belonging is interrelated with the land use and mobility patterns of the WoDaaBe. However, there are few attempts to relate this knowledge to Western understandings of rangelands and therefore the paper might be

considered exhaustive yet not of much use for range ecologists. Nevertheless, Loftsdottír shows how detailed knowledge of abstract concepts such as the ‘construction of space into place’ and ‘sense of belonging’ are very useful for understanding pastoral land use and mobility. The work has potential for being used in combination with range ecology in order to understand and plan for the future.

Concluding remarks

When dealing with the contemporary understanding of pastoral mobility, it can be concluded that the ‘mobility paradigm’, which was launched by Niamir-Fuller and Turner (1999), provided the answer to the question: Is mobility necessary or rational for pastoralists or for arid lands? It was shown that mobility is necessary for arid lands and hence that pastoral mobility is a rational management strategy. Nevertheless, a number of researchers have shown that pastoralists are not interested in the land per se, only in the relationship between animals and land and pastoral mobility is important because it is a means to ensure the survival of the herd, not because it is good range management (Spencer 1998, Bollig and Schulte 1999, Adriansen 2002). In order to fully understand pastoral mobility – its rationale and consequences, it is therefore necessary to address both the ‘range ecology’ literature and the ‘pastoralists’ perceptions’ literature.

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