

## Highlights of Theme C: Grasslands / Rangelands People and Policies

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It is indeed an honour to be invited to bring the highlights of the third major theme of this congress: People and Policies. Listening to the presentation and discussions in this section, I find it exciting that so many natural scientists recognise why people and policy issues are important and are integrating them into their work. Grasslands and especially rangelands are resource-*management* systems, and – as Thomas Thurow said Tuesday morning – “management is about people” (Thurow 2008<sup>4</sup>).

### People and policy in grassland and rangeland congresses

To put the theme of People and Policies in perspective, we first look at how these issues were treated in past International Rangeland and Grassland Congresses (IRC/IGC). Conventional grassland science deals with biophysical constraints to growing enough good-quality grass for animals – constraints related to soil fertility, water supply, plant species etc – and research has focused on how to overcome these constraints using external inputs and technologies. The rangelands are natural pastures in more marginal areas that are too dry, too high or too cold for cultivation. These conditions are not constraints; they are given. One Theme C poster had a quote from a rancher in Colorado: “Basically you have to listen to Mother Nature and take what she has given” (Knapp & Fernandez-Gimenez). Rangeland users try to manage as well as they can with the available resources, to make optimal use of them, to recognise and use opportunities in an efficient and flexible way.

To address better these distinct issues of rangelands, people working in these areas started holding separate Rangeland Congresses in the 1970s. Initially, the dominant themes were plant-animal interactions, ecology, controlling animal movement and the like. Over time, however, the realisation grew that rangeland use is largely determined by social relations, institutions and policies. At the V Rangeland Congress in 1995 in the USA, Barry Walker (1995) pointed out that – if rangeland science is to influence practice – there needs to be more work on such issues.

That was the first Rangeland Congress I attended, and – as a sociologist – I was pleasantly surprised to see that 30% of invited papers and 12% of the contributed ones had a socio-economic or policy dimension (West 1995). So I kept coming to the IRC. However, with my experience of working in Africa, I was surprised at the IRC focus on American ranchers and Australian graziers. The session on “indigenous peoples” was in an evening, on the margins, so to say.

This changed in 1999 in Australia, where the overall theme of the IRC was “People and Rangelands” (Eldridge & Freudenberger 1999). This meeting was innovative in the way it blended in the sharing of knowledge and culture of the rangelands, including also the paintings and poetry of rangeland users in the lobbies and even in the formal sessions. By the time of the IRC 2003 in South Africa on “Rangelands in the New Millennium” (IRC 2003), already 42% of invited papers and 20% of contributed papers dealt with socio-economic and policy issues.

Meanwhile, back on the grasslands, Ross Humphreys (2005) found that, from 1950 to 2001, about 3–4% of the papers dealt with socio-economic matters and another 2–3% could be classified as having a systems perspective. Our own counting of papers from the XX Grassland Congress in Ireland in 2005 (O’Mara *et al* 2005) indicates that about 7% of all papers dealt with such issues.

Now at this joint congress in China, the organisers made People and Policies one of the three major themes. This means that 1/3 of the invited papers at least nominally deal with this theme.

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However, only about 10% of contributed papers are in Theme C. This is an even lower level than in the first Rangeland Congress I attended in 1995 – but it does mean a big leap forward for the Grassland Congress!

### Highlights of this congress

And now to Theme C in this Congress. It had eight sessions, covering social, cultural and policy issues, landuse change and tenure, institutional innovations to conserve biodiversity, non-livestock amenities, marketing, innovation systems in practice and education, and the Chinese forum. We won't go through them now session by session. Instead, we bring highlights, expressed according to key words or phrases and selected according to our own perceptions.

1. **Science and society.** Rangeland science's response to public demand for more attention to the environment reflects a growing consciousness of links between science and society, a point raised also in Alain Peeters' plenary presentation. The researchers at this congress are becoming increasingly aware that science will be translated into policy and action only if there is a change in thinking and behaviour not only of landusers but also of policymakers and of scientists themselves, in response to demands from society.
2. **Negotiation of multi-purpose rangeland use.** Several papers presented examples of multi-stakeholder interaction in managing resources to fulfil different functions for the local users and for wider society. A key word that kept coming up was "negotiation" between the stakeholders to reach compromises or sometimes even "win-win" situations, trying to reduce conflict between different objectives primarily related to livelihood and the environment but also to purposes of other users, including the military, with examples of this from Canada (Brant Kirychuk *et al*) and USA (Kreuter & Fox).

The negotiation was often facilitated in the framework of action research to achieve good land management. Different stakeholder groups defined their own values and perspectives related to the resources. Then they tried to understand each other's perspectives and to reach consensus on goals and indicators of landuse change. This was the start of a process of adaptive co-management. Key is the functioning of the multistakeholder platforms to continue joint assessment, dialogue and re-negotiation as new pressures arise and conditions change (e.g. Dodd *et al*, Dube *et al*, Girard *et al*, Myers *et al*, Sommerhalter, Yan Zhaoli *et al*).

It is obvious, however, that facilitation of such negotiation processes requires skills, time and therefore money that is seldom readily available. What value does and should society give to such facilitation? How are people capacitated to carry out this role on a large scale instead of only in pilot areas? These are questions still to be addressed.

3. **Valuation of rangeland services.** An important basis for such negotiations is laid by efforts to quantify the value of rangeland services. These include also non-tangible benefits such as the aesthetic and cultural value of nature or of life styles. Examples of this were brought from a very broad array of settings ranging from the steppe of Inner Mongolia (Liu Zhongling *et al*) to manicured gardens in rural areas being invaded by the urban middle class in the UK (Phillips).

Maryam Niamir-Fuller stated that standard economic assessments miss out 3/4 of the direct and indirect values of pastoral systems. She found that not enough is documented about these values to provide guidance for policymakers and rangeland users. However, work in this direction is being done: for example, Kirychuk and his colleagues calculated the costs and benefits of using public land as community pasture on the Canadian prairies. Part of the costs are covered by the livestock owners who graze their animals on the pasture, and part by the public sector for benefits to society, such as soil conservation, carbon sequestration, biodiversity conservation and community development.

A particularly interesting paper in this connection was the one by Jocelyn Davies *et al* from Australia that showed how engagement of Aborigine people in caring for the land led to lower health and social costs for the Australian society as a whole. The value of some benefits of the

rangelands in both local and global terms are not well researched; indeed, some benefits, such as what Davies describes, have not yet been recognised in many places.

Valuation of ecosystem services such as biodiversity and carbon sequestration can help calculate what society should pay to landusers for delivering these services. Several papers and posters dealt with incentive payments for managing biodiversity or for habitat recovery (e.g. Kreuter & Fox, Lunt *et al*, Peel & Chaplin). This included market mechanisms to encourage environmentally sustainable resource management, such as the tradable permits for nitrogen discharge around Lake Taupo in New Zealand (Kaine *et al*). There was a tendency in the discussions to favour results-based management, which allowed landusers some discretion in how they achieved the results with the payments made, rather than having to follow prescriptions for managing the land.

It was striking that the discussion around payment for ecosystems services focused on industrialised countries, whereas the valuation of rangeland resources was needed in the South more for defending pastoral systems.

4. **Land rights** was a topic that came up frequently in the discussions, not only in the session on land tenure. Several participants stressed the importance of securing land rights for rangeland users, but pointed out that this does not necessarily mean privatisation of land. Also group or communal rights can be legally secured (e.g. Fernandez-Gimenez & Batjav), or traditional rights to make specific use of resources in a mobile system, such as the rights secured by pastoralists in Spain to use transhumance corridors (Niamir-Fuller).

Esther Mwangi used the metaphor of “wickedness” to explore property rights and governance in Africa’s rangelands, involving multiple actors, multiple definitions of problems, and complex issues of power and equity. She explained that such “wicked problems” can be handled only through interactive and iterative learning.

In this connection, the issue of scale was raised: the need to identify the spatial scale at which different types of rangeland resources are used and communities or societies can govern them (Sommerhalter). How to match the scale of ecosystems and the scale of institutions needed to govern them? Who can provide mediation regarding land rights for groupings of stakeholders at different scales? Here, we found no ready answers.

5. **Convergence of knowledge systems.** In Theme C, the value of local knowledge and indigenous institutions was often mentioned (e.g. Genin, Undeland), and there were a few encouraging examples of research that linked local and modern knowledge (e.g. Gebru *et al*, O’Kane *et al*, Reid *et al*) – including cases in which producers play a major role in defining, implementing and even funding the research, such as the whole property comparisons by graziers in Queensland (Hall & Hall). There seemed to be more examples of such partnership in research from Australia and North America, perhaps because there is not such a large social and educational distance between scientists and landusers as there is in the South. However, there was a nice example of participatory development of forage technologies from southern China (Yi Kexian *et al*).

Some papers gave attention also to the dynamics of local knowledge: how landusers – faced with new constraints or opportunities – are developing their own innovations (e.g. Dreyfus *et al*, Huilan Wei *et al*, Kumar *et al*, Waters-Bayer & Yan Zhaoli), including institutional innovations by Inner Mongolian herders who are developing new ways to manage jointly land that has been officially subdivided (Qiao Guanghua *et al*). These innovations provide entry points for scientists and herders to explore the implications of different management options and to derive guiding principles for land management.

6. **Linking to market.** The contributions on markets covered situations ranging from traditionally more subsistence-oriented livestock-keepers trying to link with markets (e.g. Desta *et al*, Kaitho *et al*), to commercial livestock producers in some industrialised countries who had become far removed from consumers (McDermott). Alan McDermott pointed out that affluent and

discerning consumers are increasingly demanding quality, traceability and “identity” of food. They want food that meets high environmental standards. Producers are trying to remain in business by linking directly with consumers, e.g. through farmers’ markets, or with processors and retailers.

At least in the industrialised countries and increasingly in developing countries, pressure by high-income consumers will require more producers to take environmental considerations into account, pushing production systems closer to organic ones (Longhi & Pardini).

7. **Complexity and change.** At the Chinese forum yesterday afternoon, Zheng Yisheng focused on complexity. Taking the example of the oversimplified overgrazing hypothesis, he showed clearly how complex the situation really is. He argued that short-sightedness of herders is only one and probably not the main cause of overgrazing, and focusing on this one aspect could make the situation worse. He spoke of new efforts by Chinese scientists to consider complexity of grasslands. The challenge will be to make this complexity clear to policymakers.

Complexity was also a key word in the presentation by Mark Paine (Paine & Cerf) about educating students in Europe and Australia. Both he and (in the discussion) Monique Salomon from South Africa stressed the need to train students in a systems perspective, to be open to different types of knowledge, to learn how to learn together with others, and thus to prepare students for dealing with complexity and change in rangeland systems.

The complexity of interactions between production practices, value commitments and ecosystem links was illustrated by Bernard Hubert in his presentation on functional integrity of rangeland systems, in which he highlighted the need for scientists and policymakers to appreciate the constant change in interrelationships within these systems.

8. **Policy influence.** In the discussions about policy, we heard that extensive livestock systems characterised by mobility are uniquely adapted to the rangelands (Niamir-Fuller). The viability of pastoralism is often constrained by inappropriate policies that seek to transform it into an intensified sedentary system rather than enhancing mobility. While many “developing” countries are trying to intensify their livestock systems, many industrialised countries are introducing policy instruments to extensify, to promote livestock systems with a high nature value. Jonathan Davies proposed that policy should promote not intensification or extensification but rather optimisation in terms of providing complementary goods and services from the rangelands.

From several countries and continents came examples of how poor policies had led to environmental, economic, social and cultural degradation (e.g. Davies, Han Nianyong, Loquang, Niamir-Fuller, Undeland, Wenjun Li *et al* and in the discussions). There seemed to be general agreement with Maryam Niamir-Fuller’s statement that the future of the rangelands will be determined much more by policy than by technology. Therefore, the impact of policy must be well understood (Dube), and the rangeland users themselves need to have the opportunity to give feedback about policy impact (Han Nianyong). It was encouraging to see that some Inner Mongolian herders attended the Theme C sessions of this international congress and, during the discussions, could express their concerns about herders’ rights – a topic also raised in one of the papers from the Karamoja pastoralists of Uganda (Loquang).

9. **Integration.** Numerous speakers – also in the plenary (Thurow, Seré *et al*) – stressed the importance of integration: integrating the different disciplines; integrating research, extension and education; integrating different knowledge systems; integrating production, environment and society. There were a few examples of how research is trying to this, not only through working in transdisciplinary teams but also by engaging in real-life experiments which involved integrated management by landusers (e.g. Davies *et al*, Dodd *et al*, Gebru *et al*, Girard *et al*, Hall & Hall, Kreuter & Fox, Myers *et al*, O’Kane *et al*, Reid *et al*).

In this congress, however, the three themes of Resources and Ecology, Production Systems and People and Policies were segregated. We would have liked to have seen these issues

integrated in a more interdisciplinary approach. In a few cases of papers under Themes A and B, this did indeed occur, as we heard from the previous two speakers.

It was striking in Theme C that one of the livelier discussions took place when a scientist talking about biofuel technology (Moore *et al*) was confronted with questions about social and ethical issues. The congress sessions should bring natural and social scientists together to stimulate such debate.

What struck us most about the participants in the Theme C sessions is that many of them had originally been trained as natural scientists but had, in the course of their work, become more aware of the importance of social sciences. These people now serve as bridge-builders between the natural and social sciences, possibly better than “pure” social scientists could do. Through years of experience, they have internalised the integration of disciplines. It is encouraging that the number of such people – such “integrating scientists” – is growing. They are often women. These women and men have an important role to play as mentors of younger scientists working in the rangelands and grasslands. Many such people were in the Continuing Committees that prepared this joint congress. We thank them for allocating such importance to People and Policies, and hope we can all find ways in future congresses to integrate these issues very deliberately with the other themes.

Finally, we would like to thank the Chinese organisers of this Congress and the many volunteers for making this unique event possible. A great accomplishment!

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