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# CHANGING MANAGEMENT IN THE EASTERN TROPICAL RANGELANDS: MORE THAN AN ECONOMIC DECISION

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## INTRODUCTION

Intensification of the grazing industry associated with factors such as wider global market forces, changes to domestic policy, rural re-structuring and technology change have changed the social, economic and ecological dynamics of the tropical rangelands of eastern Australia. This changed paradigm, in combination with drought periods, has led to more unpredictable and unstable agricultural environments.

Continual biophysical and socio-economic changes require flexible enterprises that manage for risk and uncertainty (Stokes et al. 2006). Being an adaptable and robust enterprise means undergoing management changes that include the adoption of natural resource management practices. The decision making process for rural landholders' when making decisions to change management is recognised as involving: perception of a problem and/or risk; acquiring knowledge of the change; developing attitudes towards the change; deciding to change; trialling the change; implementing the change; and, reviewing the change (see Rogers 1983, Vanclay & Lawrence 1995, Barr & Cary 2000, Pannell et al. 2006). Pannell et al. (2006) also emphasises that a rural landholder's decision to adopt new practices will be based on how they see the change better achieving their personal goals. Staying viable in the beef industry will require undergoing natural resource management changes and this will involve a process characterised by certain elements such as learning and assessment of the change against personal goals.

Rural landholders' management changes will be influenced by a range of social, economic and environmental factors that will determine the direction and outcomes of such changes. This research investigates the influence of sense of place (i.e. the human-environment relationship for a particular locality important in shaping ones identity (Proshansky et al. 1983, Davenport & Anderson 2005)); occupational identity (i.e. identity associated with being a grazier (2004, Burton & Wilson 2006, Coldwell 2007)); and relations of trust (i.e. social relations embodied with qualities such as reciprocity and confidence in others (Misztal 1996) which construct what knowledge claims are legitimate over others (Carolan 2006)) on beef producers change to more sustainable natural resource management practices. Agricultural practice is much more than just a technical activity it embodies a way of life and is a socio-cultural process (Vanclay 2004). Increased understanding of dimensions such as sense of place, occupational identity and trust relationships provides a background to the economic motivations of rural landholders' natural resource management behaviour.

Few studies have sought to both quantify and qualify the influence of endogenous factors such as sense of place, occupational identity and relations of trust on the decision process to change management in a rural Australian tropical rangeland context. This poster paper, therefore, provides preliminary results on research that is examining the changes landholders are making in their land management and how these factors influence the change process. There are five main objectives to this research:

1. To discover the management changes landholders are making to improve the sustainability of their properties and develop a conceptual framework that characterises the process landholders go through when making these changes
2. To identify how landholders' attachments to their properties, and the meanings the property has for them, influences their decisions to change management

3. To identify how their identities as landholders influences their decision to change management
4. To identify how landholders' trust relationships influence their decisions to change management
5. Develop recommendations to government, non-government and industry groups to help accelerate the rate of change to more sustainable natural resource management practices.

## **METHODS**

This research is focused on family operated enterprises in the Burdekin River catchment and the Northern Gulf regions of the eastern tropical rangelands of North Queensland. A mixed methods research approach is employed: a qualitative scoping study that involves one-on-one semi structured interviews with landholders from 22 properties to discover the range of variables; a quantitative telephone survey of landholders to test the conceptual framework developed from the qualitative results and to identify how sense of place, identity and relations of trust influence landholders management changes; and, focus groups in both regions to gather feedback from participants on the results of the study and seek their input into what policy would be most appropriate to accelerate the rate of change.

## **RESULTS**

This poster reports on the preliminary results of qualitative interviews with respondents from 22 properties in both study regions (11 from each region). Based on these results, the conceptual framework has been modified (see Figure 1.).

The main changes in management that respondents said that they had made to improve the sustainability of their enterprises were improving and increasing infrastructure (more fencing and water points) to allow for rotational grazing and seasonal spelling of pastures; changing the lifecycles, breeds and management of cattle; expanding or diversifying their enterprise; and/or increasing planning and monitoring. Respondents also said that management changes were accompanied by changes in themselves such as becoming less attached to cattle, being more adaptable and having an increased awareness of the land condition. Some said that they now see themselves more as pasture managers rather than livestock managers.

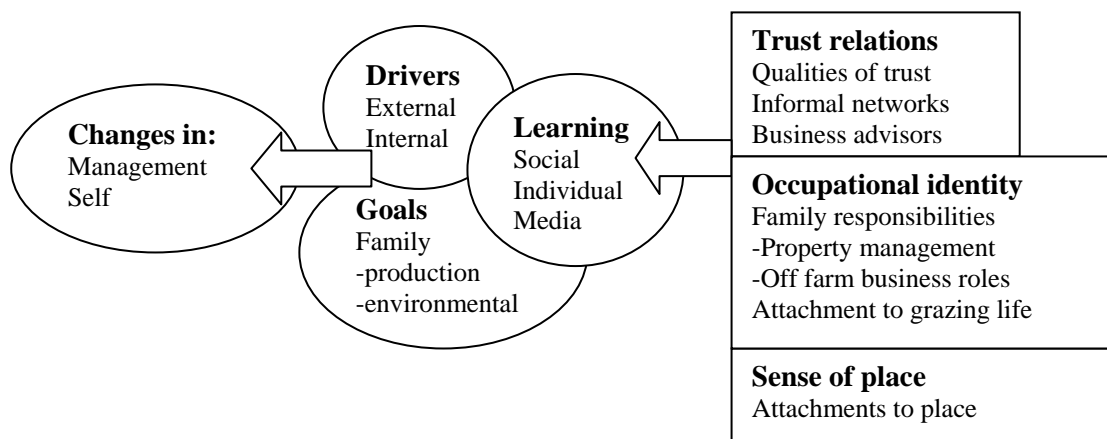
All respondents had drivers, goals and learning in their process of changing management. External drivers of change included changes in markets, policy and industry; drought years; rural social change; land degradation; and participation in courses. Internal drivers of change included being frustrated and dissatisfied with the property operation. For most respondents, improving their property (its production and land condition) for the next generation and providing for the family in the present was a main goal guiding their management changes. Respondents said that they were becoming aware of the need to change and acquiring the knowledge and tools to make the change through interacting with other graziers (especially those successful in making the changes), observing other properties, attending courses, interacting with certain extension individuals, media sources and their own experiences such as trialling practices.

Trust relations seemed to be most important in the learning process of respondents' decision-making to change management. Besides themselves and their family, respondents trusted informal and long term contacts the most, especially neighbours and other graziers. Formal networks such as government departments were the least trusted. Financial advisors and extension networks were also trusted for advice on management decisions such as risk. Many respondents emphasised that qualities such as being reliable, reciprocity, delivering on words and two-way learning and listening were important in building a trusting relationship.

Being a parent and attachment to the grazing life were aspects of respondent's identity that seemed to be most important in influencing their management changes. Other roles (besides being a parent) included cattle and land manager, bookkeeper, house manager and off farm business manager. These roles largely correlate with the goals that respondents said guided their change process. Maintaining a purpose, connections to animals, freedom, autonomy and quality of life such as fresh air and space

were all characteristics of the grazing life which respondents said influenced their decisions to want to change management.

Attachments to properties also influenced respondents' decisions to change management. Respondents' held historical, spiritual and emotional attachments to their places. Attachment was especially strong if the property had been in the family for at least several generations. Sense of place associated with properties was about personal identity for many respondents. The quality of natural resources used for production was another aspect of the property that respondents valued.



**Figure 1:** Modified conceptual framework

## CONCLUSION

Changes in the management of grazing land in the eastern Australian tropical savannas are necessary if landholders are to maintain sustainable livelihoods and healthy ecosystems. The preliminary results of this study suggest that the process of changing management for landholders will include certain catalysts (external and internal to the self), goals and learning. These characteristics have previously been identified as being a part of the adoption or change process in rural agriculture (Leeuwis 2004, Pannell et al. 2006); however, the change or adoption process does not appear to have set stages as has been suggested by some authors (Rogers 1983, Barr & Cary 2000). Change on family owned enterprises appears to be influenced by individuals' sense of responsibility to improve the condition of properties for their families now and in the future. Landholders also hold strong attachments to their properties and the grazing life, which seems to increase their commitment to making positive management changes. Learning through mainly informal networks built on qualities of trust appears to be a further important part of the change process. Designing policy to encourage landholders to reduce biodiversity loss, productivity decline and poor land condition in the tropical rangelands may, therefore, be more successful if it is also able to facilitate landholders' family goals, their connections to the land, maintain qualities of the grazing lifestyle and build relations of trust. Such policy should be more able to reach common ground (Yung et al. 2003). Predicted changes in the pastoralist industry of a whole new set of linkages to post-production economy, information, and social networks, and land users (McAllister et al. 2006) will also bring with it a new set of challenges to landholders' identity. Therefore, increased understanding of what is at the core of landholders identity can help create a landscape of change that allows landholders to more easily adapt. These preliminary results will be used to develop a survey that quantitatively tests the conceptual framework and the significance of relationship between variables thus far identified.

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