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RELATIONSHIPS BETWEEN THE MOTIVATIONS, PERCEIVED CONSERVATION IMPEDIMENTS, AND THE ATTRACTIVENESS OF INCENTIVES FOR NORTHERN TERRITORY GRAZIERS

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ABSTRACT

This paper explores the relationships between graziers' goals, perceived impediments to biodiversity conservation and suitable incentives to facilitate the adoption of conservation practices in the Northern Territory (NT). Results from a survey of 63 graziers suggest that graziers motivated by conservation and lifestyle goals regard profitability and practicality issues as less important impediments to on-farm biodiversity conservation than graziers with other goals; particularly those with economic and social goals. Conservation and lifestyle goals were positively correlated with property-scale planning incentives whilst economic and social motivations were positively correlated with financial incentives for on-farm conservation. Results indicate that provision of a range of incentive schemes by government is necessary to effect the wide-spread adoption of on-farm biodiversity conservation practices by accounting for heterogeneity between regions (ecological), properties (structural, financial) and graziers (personal).

INTRODUCTION

This paper illustrates results from research by Greiner et al (2008) into the suitability of a variety of incentive schemes for removing impediments to on-farm biodiversity conservation in the NT. The research was funded by the Natural Resource Management Board (NT). During April 2008, all 210 grazing properties in the NT were contacted of which 63 agreed to participate in the telephone survey. The survey took approximately 20 minutes to complete. Socio-economic variables were collected along with attitudinal question, which were generally formulated as a set of items with answers structured as Likert-type rating scales.

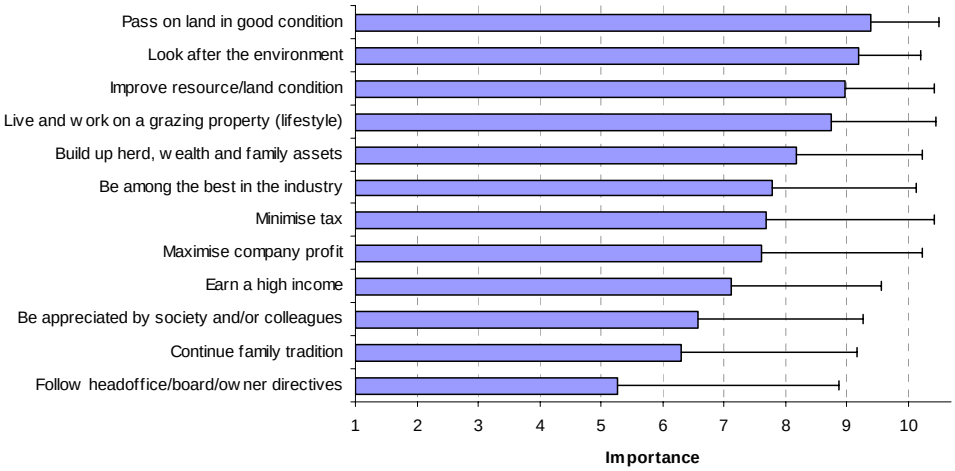
This paper presents key findings of the research as they relate to the way in which grazier goals and motivations relate to what types of incentives graziers prefer and what they perceive to be key impediments to on-farm biodiversity conservation. The paper concludes with a discussion of the findings, describes some limitations of the data and outlines possible future directions.

RESULTS

Respondents were asked to rate the importance they attributed of various goals in relation to being graziers and managing their operations. The items represented a variety of goals that landholders might pursue, based on research by Greiner et al (2007) in the Burdekin Dry Tropics region. The Likert-type rating scale was from 1='not at all important' to 10='extremely important'. Figure 1 presents means and standard deviations of the importance of goals to respondents. Stewardship and lifestyle goals made up the top four goals.

Figure 1[1].

[1] Mean importance of goals to respondents (Items sorted by mean value; error bars showing standard deviation; 5-point rating scale: 1= 'not at all important; 5= 'extremely important')



Principal component analysis produced a four factor model of motivations (Greiner et al 2008), clearly distinguishing (i) conservation and lifestyle motivations, (ii) economic and social motives, (iii) recognition motives and (iv) directives by external decision makers (for manager graziers).

In terms of impediments to undertaking on-farm conservation measures and practices, respondents on average rated resource (staff and labour) constraints to be the most significant. This was followed by a perceived lack of government financial incentives, a lack of information on ecological values of the property and a lack of industry support (Greiner et al, 2008).

Figure 2 shows how respondents rated the effectiveness of various incentive instruments in addressing their constraints to on-farm biodiversity conservation. The Likert-type rating scale was from 1='not at all effective' to 5='highly effective'. Income tax incentives rated highest, followed by other types of financial incentives. Government regulation rated lowest. The list of incentive items was reduced to five items using principal component analysis: (i) conservation covenants (CCs) and management agreements (CMAs)[2] (ii) recognition incentives, (iii) voluntary industry measures, (iv) property scale planning and (v) financial incentives.

Table 1 shows correlations (Pearson's R) between PCA derived grazier motivation factors and (conservation) impediment factors whilst Table 2 shows correlations between grazier motivation factors and incentive factors.

Figure 2[3]

[2] These were the focus of the research project.

[3] Mean effectiveness rating of incentive instruments (Items sorted by mean value; error bars showing standard deviation; 5-point rating scale: 1= 'completely ineffective'; 5= 'completely effective')

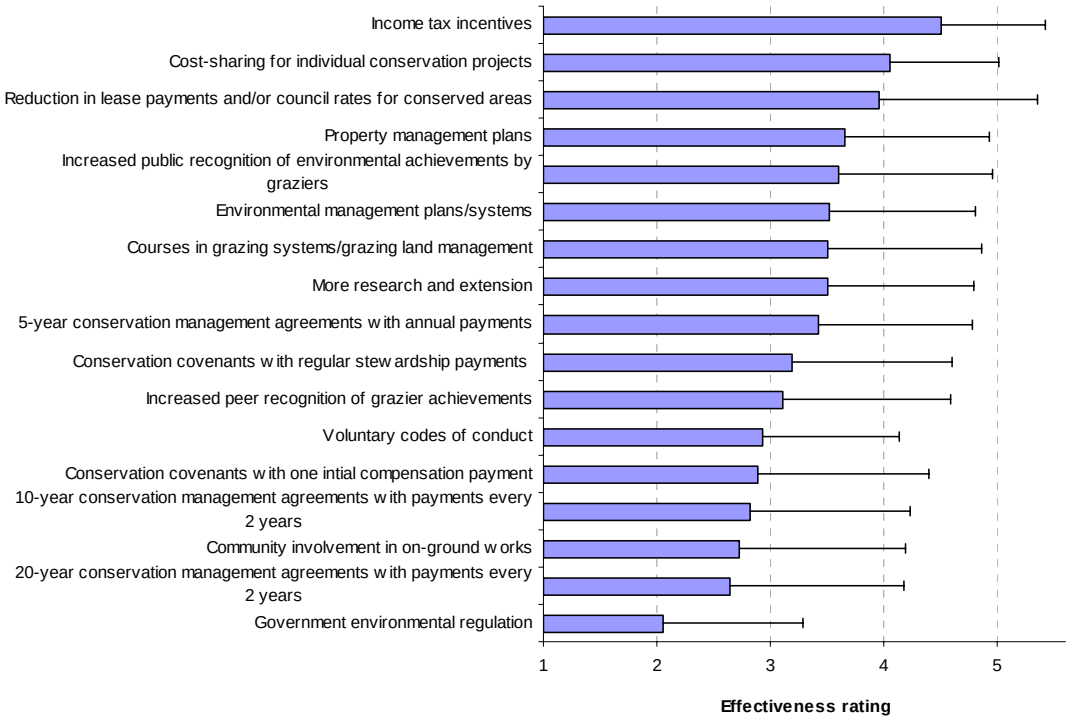


Table 1: Correlation matrix (Pearson's R) between motivation and impediment factors

	Impediment factors				
Motivation factors	Moral hazard	Lack of convincing rationale	Profitability & practicality issues	Institutinal uncertainty	Human resource constraints
Conservation & Lifestyle	-.1330	-.1818	-.2213*	-.2063	-.0229
Economic & Social	.0720	.0246	.2647**	-.0564	.0546
Recognition	-.1069	-.0182	-.1846	-.0554	-.1022
Follow external directives	.2650**	-.1494	-.2110	-.1700	-.2192*

Table 2: Correlation matrix (Pearson's R) between motivation and incentive factors

	Incentive factors				
Motivation factors	CCs & CMAs	Recognition incentives	Industry voluntary measures	Property scale planning	Financial incentives
Conservation & Lifestyle	.1047	.1952	.1889	.2516*	.0671
Economic & Social	.1683	.1935	.2437*	.1214	.2533*
Recognition	.0135	.4312***	.2932**	.2640**	.1180
Follow external directives	.1191	.1087	.1207	.4122***	.0669

Conservation and lifestyle motivations were significantly inversely related to profitability and practicality concerns as impediments to conservation. Economic and social motivations were significantly positively related to profitability and practicality impediments, as would be expected. Conservation and lifestyle motivations were significantly positively related to property scale

planning. Manager operators (who follow external directives) rated property planning as an effective conservation tool. Financial incentives were only significantly correlated to economic and social motivation.

DISCUSSION AND CONCLUSIONS

This paper presents results of a survey of 63 NT graziers. This represents a response rate of 33%. Following testing for spatial and structural coverage, we take the respondents to be reasonably representative of NT graziers.

The research confirms the diversity of goals and motivations that people pursue when they operate as graziers. Many graziers are strongly motivated by stewardship and lifestyle goals — they do not tend to regard profitability and practicality issues as impediments to on-farm biodiversity conservation.

Graziers with strong social and economic motivations are most likely enticed into conservation practices with financial incentives. Recognition (by society and peers) is an important motivator for some graziers as well as an important incentive.

In the NT, unlike for example the Burdekin Region of Queensland, a high rate of manager operated properties means that external directives play an important role in the decision making relating to biodiversity conservation. Managers see property planning incentives as an effective way to enhance on-farm biodiversity conservation.

Empirically proven relationships between motivational, impediment and incentive factors suggests that approaches to conservation by policy makers and other interested parties benefits from an approach incorporating the experience and aspirations of NT and other graziers as well as adoption theory more generally (Pannell et al 2006).

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