Agricultural Landscapes in the Wet Tropics

Future visions balancing environmental, social and economic needs

Iris Bohnet, March 2004

Acknowledgements

I would like to thank all of you – farmers, landholders, farm managers and farming families for your patience and insights you provided. Thank you for accepting my questions, some of them personal and provocative. I hope to have not betrayed your trust and look forward to further cooperation.

COVER IMAGES

Front-page – Mossman coastal landscape.
Back-page – Cane train near Mossman, mixed farming system on the Mossman coast, orchard in Julatten.

Context

Presently there are new opportunities for sustainability where production is possible but landscapes are protected. Changes in the sugar industry, the need for greater protection of the Great Barrier Reef as well as increasing development pressures in both the Mossman coastal and the Julatten upland study area open up these new opportunities. In addition to the economic basis for farming communities, the agricultural landscapes in the Wet Tropics provide places for people to live and many personal, social and cultural ties to land (Figure 1).

To achieve this ambitious goal of planning for sustainable future landscapes in the Wet Tropics requires the participation of all including local farmers and landholders, interest and community groups, industries, lobbyists as well as policy and decision makers.

Figure 1: Grazing animals are a common feature in the Julatten landscape.

Theory and method

In the first part of this research project, I invited you (Mossman and Julatten farmers and landholders) to take part in this project and you willingly agreed to participate in an interview. We discussed your current land use and management practices as well as the changes introduced over time. To help understand your future goals and aspirations you kindly provided helpful information to me on your personal background and the history of

your farm holding. The guided tour of your farm/s offered me a visual impression and added a further dimension to what was said in the interview. According to Aldo Leopold, the landscape of any farm presents a portrait of the owner.

In the analysis of the interviews I developed the following ideas (Figure 2) based on information obtained. The diagram shows internal and external factors, which influence the relationship between 'farmer' and 'farm landscape' (the land used and managed by the individual farmer/landholder).

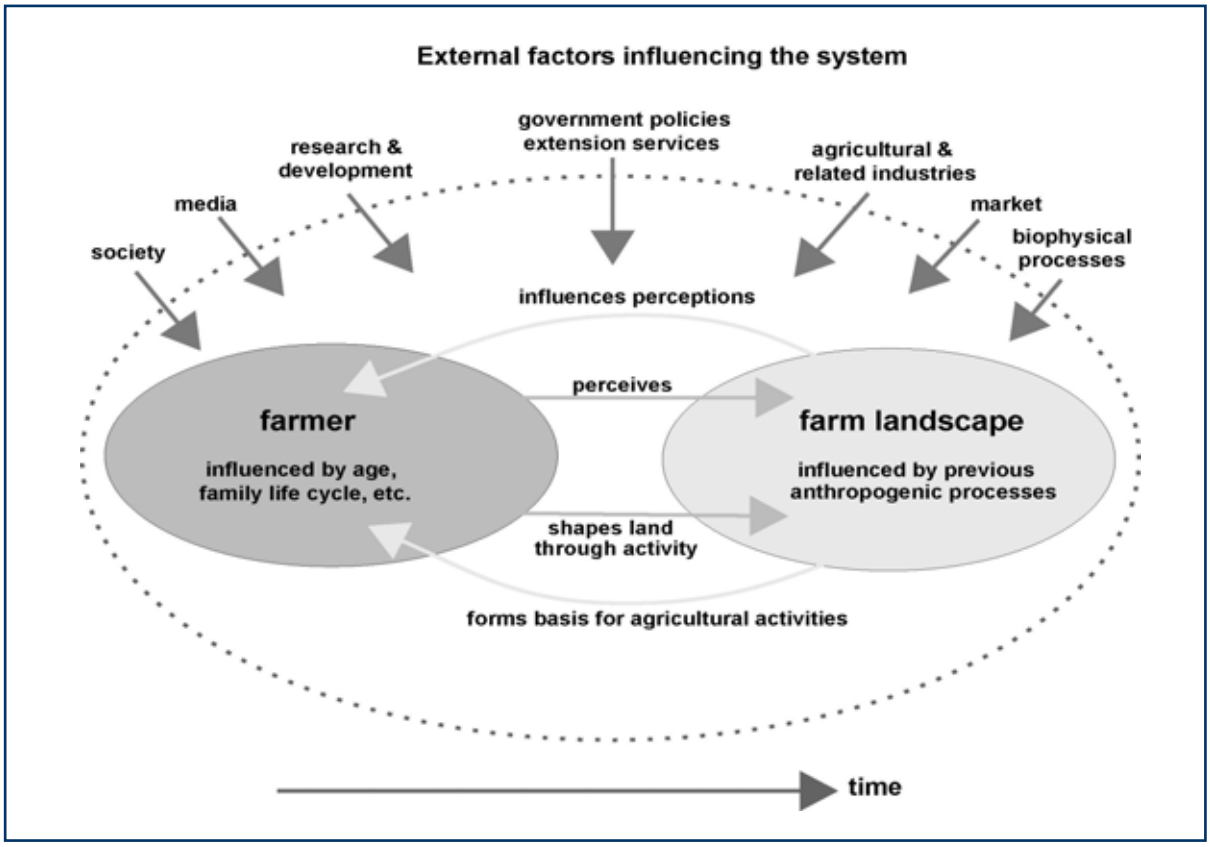

Figure 2: Concept of the relationship between farmer and farm landscape.

The diagram shows that neither the landscape of a farm (including the different land uses and management practices) nor the landscape of a whole area can be studied in isolation or without background information. Internal factors (see inner circles of Figure 2) as well as external factors (see outer circle of Figure 2) impact upon decision-making processes on farms, which are in turn reflected in the landscape. According to this diagram, landscape can be seen as the interactions between farmers/landholders, the biophysical environment (the farm) and external forces.

Mossman coastal and Julatten upland landscape

The Mossman coastal and the Julatten upland landscape are located in the Wet Tropics of North Queensland. The Wet Tropics is one of the most biologically diverse and productive regions in Australia and has some of the most spectacular scenery. Most of the studies carried out in this region have either concentrated on protected areas such as the World Heritage Area and National Parks or have dealt with the production of tropical crops. In contrast to these studies, this project incorporates the whole landscape of the study areas. This means that all parts of the landscape are included: production areas, wildlife habitats, recreational areas and features that may serve multiple functions within the landscape matrix. Each landscape embraces key features that contribute to its distinctive character (see fact sheets).

In total 30 interviews have been carried out with 42 respondents in the Mossman and Julatten area between April and August 2003. Table 1 provides the broad characteristics of all interviewees. In 11 cases couples, fathers and son/s, or farming brothers were interviewed.

Table 1. Broad characteristics of the interviewees.

	TOTAL	MOSSMAN	JULATTEN
Gender			
Male	29	20	9
Female	13	6	7
Age			
<30	2	2	0
30-40	4	2	2
41-50	6	5	1
51-60	15	9	6
>60	15	8	7
Broad occupational status			
Agricultural qualification	6	5	1
Qualification related to agriculture	6	2	4
Other qualification	30	19	11
Length of farm occupation (in years)			
<5	2	0	2
5-10	2	1	1
11-15	6	4	2
>16	16	7	9
whole life/family farm	16	14	2
Farming tenure			
Owner-occupied (farming couple)	27	13	14
Owned by the family	14	13	1
Farm manager (employee)	1	0	1

Table 2 provides a breakdown of the location and the number of interviews carried out in each area. However, it should be noted, that some of the interviews have been carried out, for example, at the home farm and the land owned and/or managed by the interviewee is spread over various locations in the landscape.

Table 2. Number of interviews carried out in the different parts of the Mossman and Julatten landscape.

Mossman coastal landscape	Number of interviews
Daintree	3
Whynbeel	2
North Mossman	3
Mossman	4
South Mossman	2
South Mossman valley	3
Port Douglas	1
Mowbray valley	1
Mossman (total number of interviews)	19

Julatten upland landscape	Number of interviews
Mt Molloy	2
Julatten	4
Euluma	1
Weatherby	1
Nine Mile	3
Julatten (total number of interviews)	11

The different locations already provide some clues to land use and management practices. However, the results presented in the following section not only look at the differences between locations but also try to unravel these differences.

Results from the interview analysis

People and landscapes

The data set from the research to date is extensive. A summary of the Mossman and Julatten landscape based on its biophysical, historical, agricultural and aesthetic characteristics is provided in two fact sheets. Key pressures identified by the interviewees are included in the fact sheets as well as landscape scenarios developed from the analysis of the interview data. The landscape scenarios are pictured and are intended to provide a stimulus for the development of your own scenarios rather than reflecting

all the responses received by the interviewees. The following section outlines some findings from the interview analysis and the assessments of the land managed by the interviewees (Figure 3).

Figure 3: Local farmers and landholders manage the Mossman landscape.

Significant differences were found between the two case study areas and also between farms within each area. A wide variation was found regarding farm size, land use, management practices, agricultural commodities produced and on and off farm activities. The general view about the two areas – Mossman the coastal sugarcane landscape and Julatten the pastoral upland landscape – may still be correct. However, a closer look reveals that land is used and managed far more diversely (see fact sheets). Farm size differs significantly within each area. In Mossman farms studied vary between 7.2 ha and 750 ha and in Julatten they vary between 3.5 ha and 250 ha. The size of a farm also influences land use and management practices and the range of agricultural commodities produced. On and off farm activities reflect the economic situation and the personal interests and goals of the landholder.

To plan for sustainable future landscapes it is not only important to capture the current situation of the study areas in terms of farm size, farm type, on and off farm income, etc. but also to understand the history of the farms, its owners and their 'survival' strategies. The following classification provides some insights to the different strategies farmers have followed over time to successfully manage their farm. These strategies were found to be closely related to distinct groups of farmers/landholders. The Mossman coast and the Julatten upland area have been studied separately as the development of these areas as well as the strategies farmers have followed over time differ significantly.

Mossman coastal landscape

Traditional cane farmers

Mossman has a long tradition of sugarcane farming; often it is the 3rd or 4th generation who are now farming cane on the original home farm as well as on additional farms. Land or farms have often been acquired to increase the production area and subsequently the farm income. For many traditional cane farming families this has been a popular farm 'survival' strategy until a few years ago. Diversification efforts up until now largely remained outside the agricultural sphere. Investment in properties, businesses, the stock market is common amongst some cane growers; while others work elsewhere to supplement their farm income. Farm based diversification hasn't appealed much to traditional cane farmers in the past; they are only slowly looking at farm based diversification options. However, many cane farmers have planted rainforest timber trees in steep terrain, in gullies and along rivers and creeks without losing any production land, others have decided to create wetlands on unproductive ground and now enjoy the natural benefits provided by those areas.

Traditional mixed farmers

Besides the traditional cane farmers, there are also farmers now in the 3rd and 4th generation who have been farming cane and cattle (Figure 4). Acquisition of land also appears to have been common amongst traditional mixed farmers. In the recent past, however, these farmers have frequently leased additional farms whereas before, when the price of sugarcane was 'still good', further land or small farms were purchased to increase the production area. Traditional mixed farmers have been looking for farm based diversification options for some time; some have already set up farm forestry blocks, others are going to establish small orchards. Some farmers have planted trees and/or created wetlands and enjoy the natural benefits provided by those areas. Mixed farmers are now looking for alternative land use options that will help create new income streams for the future and enable them to keep on farming. It appears that this group of farmers has fewer assets outside agriculture when compared with the traditional cane farmers.

Figure 4: Traditional mixed farming system on the Mossman coast.

Early diversifiers

Contrasting to the traditional cane growers some cane growers diversified into other crops or farm-based enterprises in the early 1980s. Reasons for diversification vary greatly between individual farmers. Obviously these farmers could have acquired additional land to expand their existing enterprise or find work outside the farm to supplement the farm income. Indeed, the options are diverse, and every personal farming situation is unique. A common view early diversifiers share, is their perception that agricultural land is quite limited along the Mossman coast and therefore rather expensive. It appears that to them, purchasing extra land to increase the production area was not an appealing option for the future. Interestingly, these farmers have been able to provide at least one successor the opportunity to stay on the farm and to continue the farm business including other farm-based enterprises. In addition they also provide some local employment opportunities.

Lifestyle farmers

In addition to the cane growing community there are two further groups of farmers. One of these groups identified themselves as ‘lifestyle farmers’. They have chosen to become farmers either because they had been attracted to the area and searched for opportunities to make a living that fitted their personal aspirations and long term goals or they had gained specific knowledge of tropical crops they wanted to grow and chose the Mossman coast because of its environmental conditions. Lifestyle farmers

grow tropical fruit crops, exotic flowers, and may also have other farm-based enterprises such as farm stays or similar. Some have given up their professional jobs and have chosen to take a different approach to working and living. They are environmentally minded and either farm organically or avoid using chemicals on their farm. In addition some are trying to become more self-sufficient by growing their own vegetables. Farm succession is less of an issue for these farmers compared to cane growing farmers as they decided to farm as their personal lifestyle choice. Lifestyle farmers also provide some local employment.

Hobby farmers

'Hobby farmers' have moved to the area mainly because of its unique location, appreciating the exceptional environmental values similar to lifestyle farmers. However, they earn their main income outside their farm, but enjoy the rural lifestyle, including working on their properties in their free time. Rainforest timber and tropical fruit are grown on some of these properties to provide some farm based income in the future, or horses are kept to manage the pastures and to pay for ongoing land management. At present some hobby farmers work rather hard on their properties and spend money on the land, which they earn elsewhere. For some, the hobby farm is intended to provide some retirement income whereas for others the development of the hobby farm into a lifestyle farm is highly desirable.

Table 3 provides a general summary of people, farming systems and income situations shaping the Mossman coastal landscape.

Table 3. Broad characteristics of the people and farming systems shaping the Mossman landscape.

	GROUPS OF FARMERS				
	Traditional cane farmers	Traditional mixed farmers	Early diversifiers	Lifestyle farmers	Hobby farmers
Farm size	big	big	medium	small	small
Number of crops	one	two	three	three	two
Income earned	on-farm	on-farm	on-farm	on-farm	off-farm

Julatten upland landscape

Traditional cattle farmers

Grazing pastures have been a common characteristic in the Julatten landscape since the area was opened up. In the 1960s cattle fattening replaced the dying dairy industry and many farmers developed their cattle properties by clearing additional remnant vegetation, mainly on steep slopes. According to a local cattle farmer,

"... that were the conditions [of the government], so we cleared ... We had to put in a paper every year to say what we had cleared, what we developed and what we fenced and all the rest of it. And then we freeholded (sic) it, ... I think 20 year ago."

Cattle farmers have improved the quality of their pastures, to almost double stocking rates. Cattle prices are fluctuating, however, good quality cattle can always be sold on the cattle market according to the interviewees. Farming cane has not appealed to many cattle farmers; however, on a number of cattle properties some land is leased to cane farmers.

Cane farmers

The interviewed cane farmers in the Julatten area have been farming sugarcane or had been working in the cane industry in Mossman or elsewhere before cane assignments were offered to farmers in the Julatten area. To them it seemed to be an attractive option to establish sugarcane on land that was previously used for fattening cattle. Land was developed (drained and levelled) for sugarcane production at great expense. Due to the low sugar price cane farmers are openly discussing alternative land use options that will help create a new pathway into the future which will enable them to keep on farming.

Lifestyle farmers

Similar to the lifestyle farmers on the coast there are also farmers in the Julatten area who decided to become farmers. Some of the attractions to come to this area were the favourable upland climate, lower property prices compared to the Mossman area and the opportunity to work with cattle in an area that covers various natural habitats. Lifestyle farmers in this area grow tropical fruit crops; some also try to be as self-sufficient as possible by growing their own vegetables (Figure 5). Others enjoy the freedom of working cattle and horses in an outdoor environment. Lifestyle farmers are environmentally minded and try to avoid using chemicals on their farms.

Succession isn't a difficult issue as there hasn't been a tradition of lifestyle farming.

Figure 5: Soursop; tropical fruit orchard near Julatten with bordering rainforest.

Hobby farmers

Hobby farmers have also moved to Julatten because of its unique location, appreciating the exceptional environmental values. They earn their main income outside their farm and enjoy working on their rural properties in their free time. Plantation timber and tropical fruit are grown on some of these properties to provide some farm-based income. Cattle graze some of these properties and provide multiple benefits for their owners in terms of managing the land and providing some farm income. At present some hobby farmers work hard on their properties, establish wetlands and plant trees for conservation purposes and spend more money on the land than they earn from the farm. They are conservation minded and for many biodiversity conservation is their main goal.

Table 4 provides a general summary of people, farming systems and income situations shaping the Julatten landscape.

Table 4: Broad characteristics of people and farming systems shaping the Julatten landscape.

	GROUPS OF FARMERS			
	Traditional cattle farmers	Cane farmers	Lifestyle farmers	Hobby farmers
Farm size	big	medium	small	small
Number of crops	one	two	two	two
Income earned	on-farm	off-farm	on-farm	off-farm

Shifting values – from production to multifunctional landscapes

Evidence suggests that the past 20 years or so have seen a shift in the pattern of farming and farming values. Innovation in farming and its subsequent changes in land management practices have led to widespread changes in land use. In areas such as Whynbeel, the south Mossman valley, and in parts of the Julatten upland, agricultural land was subdivided due to its reduced agricultural production value. This has opened up opportunities for new ways of developing and occupying land and small-scale farming. An increased recognition of environmental values has led people to buy these farms for other than conventional commercial farming purposes.

Programs under the Natural Heritage Trust (NHT) enable farmers to integrate trees and wetlands on their commercial farm businesses without losing any production land (Figure 6). These trees and wetlands often serve multiple functions which are appreciated by the farmers themselves but also by the wider community. One of the farmers pointed out:

"... it's really quite a pretty area down there and there is lots of fishing, the young fellow caught a fish in there ... and all the family spends quite a bit of time down there, going there to have a look and see what's happening."

Some commentators have criticised the Natural Heritage Trust for not having implemented their conservation efforts strategically up till now.

Despite the criticism evidence from this research suggests that programs like these provide a starting point for discussions on how agricultural production and biodiversity/landscape conservation can be integrated to achieve multiple benefits. There are many excellent examples of these projects that were shown to me by proud farmers during my visits.

Figure 6: Wetland and riparian vegetation established with support from NHT.

Notes

Summary produced for the participants of the qualitative interviews carried out for this research project.

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