

# **AGRI-FOOD XIV**

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### **Influences on farming family's strategic decisions**

Dr Quentin Farmar-Bowers

Centre for Sustainable Rural Communities, Faculty of Law and Management,  
La Trobe University, Bendigo, Victoria, 3550,

Web: [www.latrobe.edu.au/csrc](http://www.latrobe.edu.au/csrc)

Email: [q.farmar-bowers@latrobe.edu.au](mailto:q.farmar-bowers@latrobe.edu.au)

Phone: (03) 5444 7464

### **Abstract:**

Farming families create opportunities for themselves to take action in a wide range of areas such as, recreation, socialisation, education, farm-enterprises, businesses, off-farm investments and hobbies. Some of these actions are strategic and lead to major changes in the family's future. Over the last few years we have developed a 'decision-systems theory' (DST) about strategic decisions taken by farming families. The theory was developed from in-depth interviews with farming families. The theory provides an understanding of why farming families create these opportunities. This understanding is important for businesses and governments wanting to influence farmers' actions. However, and perhaps rather surprisingly, it is also useful for farming families to know about the 'decision-systems theory' because it provides a framework to help them make better strategic decisions and also assists family members participate in these decisions.

The decision-systems theory has six parts; five relate to the farming family and the sixth concerns how third parties (such as businesses and governments) can interpret the theory for policy development. The paper outlines the six parts of the theory and discusses its use as a tool to build strategic-decision capacity in farming families. The paper ends with an outline of proposed work program to refine and apply the theory in the coming two years.

### **Key words**

Decision-system theory, grounded theory, farming-families, motivation, policy, systems-thinking

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## **Introduction**

A dairy farmer in New Zealand told us that he decided to become a dairy farmer at the age of 13 after visiting a neighbour's dairy one evening. He started that very year by leasing 20 acres and buying some dairy heifers. By the time he was 18 he had enough money saved to start share farming full-time and by his mid forties, when we interviewed him, he was a happy family man and the proud owner of a substantial dairy farm and had just build a beautiful family home with breathtaking views.

One of the most interesting finding of our work in strategic decision-making is the importance of personal (or intrinsic) interests and the ability of the main decision-makers in families to maintain, develop and pursue these interests over decades and make them the bases of family welfare. The pursuit of these personal interests, once transposed to a family setting, tends to be the guiding force that leads decision-makers into creating the 'means' to convert the family's aspirations into reality. These 'means' include the development of farming, business and interpersonal skills, the accumulation of assets, the development of contacts, the creation of long-term approaches to deal with risk, as well as developing expertise in their field of interest; dairying in the above example.

We think the real success story of farming families lies in the skill of the decision-makers to incorporate, or perhaps we could say transform, that initial spark of personal / intrinsic interest into a set of life-long family motivations that keeps them moving, learning, modernising and delivering satisfaction for themselves and their family.

The Decision Systems-Theory (DST) provides a tentative interpretation of this skill as the organising processes that decision-makers use to deal with the relationship among the family members and to be effective on how the family supports itself through work, notably but not exclusively via farm businesses. In other words, decision-makers 'convert' influences from within the family and from outside into strategic decisions and we refer to this as 'organising processes', and DST is our interpretation of these organising processes.

## **Origins of Decision Systems-Theory (DST)**

The basic assumptions in this work are (1) that decision-makers in farming families use logical processes for making strategic decisions about all aspects of their family, farms and businesses, (2) these process can be interpreted from information gathered by talking with them about what they have done and currently doing, and (3) a farming family is a complex entity or system that is influenced by internal family forces and by external systems and environmental factors.

Initially (in 2002), we wanted to find out what influenced farmers' decisions on land-use so that we could suggest new directions in government policy that would stimulate the conservation of native biodiversity of farms.

The first step, we thought, would be to find out how farmers actually make long-term (i.e. strategic) decisions, as these are the kinds of decisions that have to be made to conserve native biodiversity permanently<sup>1</sup>.

We needed to understand strategic decisions-making from the farmers' perspective so we could not rely on existing approaches for influencing farmer behaviour such as the market segmentation approach such as farming styles (e.g. Vanclay et al. 2006) and social types (e.g. Dufour et al. 2007) descriptors.

Grounded theory seemed to be a useful approach for developing an explanation of how farming families make strategic decisions. It is a particularly good methodology for studying complex dynamic systems (Linden 2006). The approach provides a framework for guiding data collection and analysis using a constant comparative method and the inclusion of theoretical insights from outside the substantive study topic. Also, it appears that grounded theory is a methodology with great potential for sensitising policymakers (Rodriguez 1998) and this is an important long-term aim.

Grounded theory is a complex methodology and seems to be still developing as a research tradition (Woods 2003, McCann & Clark 2003b). Although grounded theory was devised by Glaser and Strauss (1967) there are now two distinct approaches; in Glaser's model (Glaser 1998) the theory arises directly from the data whereas in Strauss's approach (Strauss and Corbin 1998 a, b) directive questioning is encouraged and an interpretive stance is supported (Duchscher and Morgan 2004, Cutcliffe 2000). We chose the procedure set out by Strauss and Corbin because farmer decision-making is a broad topic and it seemed that an interpretive stance using the researchers' tacit knowledge and including ideas from the literature would be helpful in theory development.

No specific literature was reviewed before the work commenced but Farnar-Bowers was familiar with many of the issues involved in farming and land-use as he had experience of farm work and qualification in science, economics and business related to agriculture as well as thirty years experience with conservation issues and policy in rural areas.

The method chosen was in-depth interviews with decision-makers in farming families. The interviewees were selected on a geographic basis related to a wider study of which this research formed a part<sup>2</sup>; so the interviewees were selected on the basis that their farm was located in a specific region and they were willing to be interviewed. Three sets of interviews were undertaken with farmers in north-central Victoria from Wangaratta to Birchip (330 Km approximately). The interviewees were all running dry-land sheep and cropping enterprises and some had other business interests related to farming.

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<sup>1</sup> They might make the decision quickly but a strategic decision means that they have to maintain that decision for a long-time and this usually means making many follow up decisions that support and perpetuate the original decision.

<sup>2</sup> The Drivers of Land Use Change (DLUC) project is funded under the Ecologically Sustainable Agriculture Initiative (a joint initiative of the Department of Sustainability and Environment and the Department of Primary Industries). Project 05116; [www.dsc.vic.gov.au](http://www.dsc.vic.gov.au) home>conservation and environment> biodiversity and agriculture>drivers of land use change

The interviews were confidential, undertaken in the farmers' homes and followed a question guide but were almost unstructured. The question guide was discussed with the interviewees at the beginning of the interview. We wanted the interviewees to talk about their lives and how the farm and farming contributed to their lives. The actual questions in the guide were not asked but rather the interviewees were encouraged to talk around these topics, especially about the ones that were most important to them over the long-term. The question guide helped us focus the interviewees on talking about their long-term or strategic decisions and on specific things the family had done and was currently doing. Most of the interviews took two to three hours to complete.

**Figure 1 Question guide**

<p><b>Making a living</b> How does your family make its living?</p>	<p><b>Protection</b> How do you protect family members in terms of maintaining a living, security and health?</p>	<p><b>Understanding</b> (1) How do you get farming, conservation and business information? (2) How do family members get an education, training, skill development and experience?</p>
<p><b>Creation</b> What outlets do you and family members have for their creative energy?</p>	<p><b>Participation</b> What is your family's experience in participating with various opportunities in life?</p>	<p><b>Identity</b> How do you and family members relate to the farm? How do they express their personal values (individuality)?</p>
<p><b>Affection</b> What decisions have you made that are influenced by the special needs of family members?</p>	<p><b>Recreation and Leisure</b> What leisure time and activities do you and your family have?</p>	<p><b>Freedom</b> Do members of your family set and follow their own objectives / agenda to create a life that is satisfying for them?</p>

The first set of interviews (28 interviews) provided introductory material (McHugh and Macdonald, 2003). The second and third sets of interviews (33 interviews) were transcribed verbatim and analysed to develop the decision-systems theory (DST).

The analysis of the transcripts, which was done manually, started with open coding in which texts were 'broken down, or fragmented' and a very large number of concepts were identified. Axial coding (or theoretical coding) brought these concepts together into categories and helped to fill out the description of the concepts. Selective coding identified the important concepts and categories of concepts that seemed to give a good explanation of what is going on. The coding process involved considerable reorganising, review and iteration. During the process we wrote notes or memos about the insights or questions that the data was throwing up. We also drew diagrams to attempt to work out how concepts and categories of concepts related to each other. For the third set of interviews, we based these diagrams on mind-mapping ideas (Buzan and Buzan 1993) which greatly helped with dealing with the large number of concepts from open coding<sup>3</sup>. Other researchers have commented on the demands of dealing with the multitude of unconnected details at this stage (Maijala et al. 2003)

<sup>3</sup> This may not help others as Farmar-Bowers is visually orientated and can 'see' relationship between ideas more easily when they are drawn than when these are listed.

and one of us (Farrar-Bowers) found mind-mapping very useful in expediting the analysis and reducing the tedium. Towards the end of the analysis we wrote stories that we thought could explain the data and these stories also helped show where more information was needed. For example, a major question from the second set of interviews was the role of the individual in family decision-making. As part of theoretical sampling we placed more emphasis on listening for individual stories in the third set of interviews. Although we interviewed each farmer only once we fed back some of the concepts and ideas from earlier interviews to later interviewees to obtain their reaction to the concepts and emerging theory (a form of theoretical sampling). Specifically, in the second set of interviews the interviewees were encouraged to talk about the motivations / aspirations of their family while the interviewees in the third set of interviews were encouraged to talk about their individual motivations.

Towards the end of this coding process, when we were starting to get a clearer picture of the processes farmers were using, we expanded the theoretical sampling by investigating the relevance of particular literature. Including information from literature is part of this qualitative approach as it can illuminate and support the emerging theory. Essentially the literature provided a further source of information (McCann & Clarke 2003). However, there are differing views about when ideas from the literature should be included (Cutcliffe 2000).

Two items in the emerging theory were identified for particular attention. We could see from the interviews that farming families were operating what could be described as a 'thinking system' (Waldman 2007). The interviewees were making strategic decisions aimed at achieving their family's aspiration and these lead to a cascade of other decisions. In doing so, they were aware that decisions in one area of their lives impacted other areas and that the outputs were not always intended; as a result the farmers were constantly learning from their experiences. We found that the literature on system-thinking (such as, Bates 1997, Flood 1991, 1999, and Midgley 2000) and hierarchy theory (Wilber 2000a, b) was useful in illuminating the emerging theory. The second topic concerned how decision-makers justified their decisions. The literature on the ethical justification of decisions (such as, Boatright 1999, Callicott 1999, Gilligan 1982, and Velasquez 1998) was helpful in supporting the emerging theory. Theoretical sampling of literature has become an almost never ending task.

Although it would have been possible to develop a theory about decision making without reference to the literature, we felt that linking what we discovered from the interviews with literature on systems-thinking and ethics would help to illuminate and to a degree generalising the theory we have developed. What we are generalising is the application of the concepts in strategic decision making. Grounded theory methodology engages in 'conceptual generalising' not 'descriptive generalisation' (Glaser 2004). Sampling the literature opens new questions about the possible relevance of DST to the strategic decision making processes of farmers in other countries and within family businesses outside agriculture. There is scope for more research using theoretical sampling to generalise the concepts developed in the DST.

The DST developed incrementally as we undertook the interviews and as we reflected on the very rich and complex picture that these interviews were revealing. Three documents mark the important steps towards developing the DST. They are Farrar-

Bowers (2004<sup>4</sup>), and Farmar-Bowers and Lane (2006<sup>5</sup>, Draft journal article<sup>6</sup>). The term ‘DST’ only appeared in the draft journal article. More recently in 2007, Farmar-Bowers has undertaken a set of 12 interviews with farmers in New Zealand. These have not yet been reported but preliminary work indicates that the material fits well with the DST and is likely to help develop DST further.

## **What is the Decision Systems-Theory (DST)?**

DST addresses a very large and complex area as it interprets the organising processes farming families use for strategic decisions over their farming careers and the DST also includes a framework on how policy people can use this information. This holistic approach might seem too ambitious. However, we want to deal with the whole as one big system because we think we can only really understand the function of its individual parts in terms of the operation of the whole. For example, ‘creating opportunities’ does not make sense without ‘family motivations’ and ‘family motivations’ do not make sense without ‘personal career paths’.

### ***The DST has six parts.***

The first five parts of the DST provide an interpretation of the organising processes decision-makers use in making strategic decisions about their lives, their family, the farm and farming. Strategic decisions are about implementing a strategy rather than making a one-off decision. “Last year we decided to start a bull beef enterprise” is a strategic decision.

The sixth part of DST is a set of ideas about how government agencies and private organisations can use the information from the first five part of the DST to devise new polices or programs to influence farmers’ strategic decisions.

### **Part1 Decision systems**

People have a range of roles and responsibilities in society. A person who farms may also be a daughter, a sister, a parent, a landlord, a scout master, a politician, a pilot, a conservationist and so on. They also may be responsible for family education, health, recreation and security. Our analysis of the interviews suggested that the individual person has a way of organising these different roles and responsibilities. It is as if they have a ‘control centre’ that decides the relationships between these different roles and what priority each has at different times. We found that this ‘control centre’ may involve joint decisions between family members but it certainly included decisions that concerned family members. For example, the decision to include the son in the farm business would be one taken in this ‘control centre’ as it has a considerable impact on the lives and responsibilities of family members. Having taken this decision in the control-centre the next step is to start developing ideas and information about the ‘means’ of implementing this decision. The control-centre decision sets the

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<sup>4</sup> Available at:

[http://www.dse.vic.gov.au/CA256F310024B628/0/858D502AEFB0566DCA256FFD0021AA70/\\$File/DLUC+5++Interviews.pdf](http://www.dse.vic.gov.au/CA256F310024B628/0/858D502AEFB0566DCA256FFD0021AA70/$File/DLUC+5++Interviews.pdf)

<sup>5</sup> Available at: <http://eprints.infodiv.unimelb.edu.au/archive/00001842/>

<sup>6</sup> Available from [q.farmar-bowers@latrobe.edu.au](mailto:q.farmar-bowers@latrobe.edu.au)

goal (e.g. bring their son into the farm businesses) and now the action moves down the hierarchy of decision making to the next level where decisions on what to do to make this happen are made.

It seemed clear from the interviews that decision-makers appreciated that their strategic decisions were linked hierarchically to create systems of decisions; decisions in the various areas of their lives are separated from each other, yet each contributed to the whole life of the family.

We called these separate decision areas ‘decision-systems’. Although we could see that every farming family probably has dozens of decision-systems (related to the various roles and responsibilities they have) we were actually only interested in three; the control centre decision system we called the *family decision-system* and two others that related to land use; *the land-ownership decision system* and the *farm-trading decision-system*.

The farmers based the boundaries between these decision-systems on division of labour but also on the justifications they used for decisions. For the family decision-system it seemed that their justification closely resembled ‘care-ethics’ while the justification in the other two decision-system resembled ‘business-ethics’. Both connections to care and business ethics are tentative finding of this work but also hypotheses for further investigation. There may be other ethical justifications that provide a better fit for some decisions in the family decision-system, such as right based ethics (Bowie 1999) and land ethics (Callicott 1999) and certainly some decisions seemed to be a long way from being expression of affection and caring for family members. Similarly, even though many interviewees were successfully running multi-million dollar businesses, they might not always be using the tools of business analysis within the framework of business-ethics. In particular, the decisions concerning land sales / purchases may be based on more than business consideration and this would be worth investigating.

## **Part 2 Motivations / Aspirations / personal interests (or intrinsic interests)**

We found that decision-makers’ reasons for farming and what they did tended to be related to some personal (intrinsic) interests or aspirations, much like the story at the beginning of this paper about the young man wanting to be a dairy farmer. However, in a family situation these personal interests (such as wanting to be a dairy farmer) tended to become ‘means’ for delivering a family motivation. We could surmise that a farmer may think; ‘I run a dairy farm because it satisfies my family’s aspirations and also satisfies my personal interest in dairy farming’.

We developed the concept of motivation as a set of hierarchal stories. The principal story we called *succession of family responsibility* meaning that farmers want to be responsible people and they want to bring up their children so they too will become responsible adults and, when the time came, take care of their own children. Being a dairy farmer thus becomes a means for delivering this motivation story and it also satisfies a personal interest<sup>7</sup>.

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<sup>7</sup> Personal interests are important in the concepts of ‘creating opportunities’ and in personal career paths – parts 3 & 4 in this article.

### **Part 3      Creating opportunities**

Decision-makers seek options that they can use in conjunction with other components they have in order to create opportunities. The opportunities they create are those that they believe will result in achieving their family's life long motivations and be personally interesting. We refer to this as the *suitability* of an opportunity.

Unfortunately not all opportunities are *available* to the individual even if they are *suitable*. For example, the farmer may lack some of the necessary personal components such as interest, knowledge, time, land and money, or some of the external components such as marketing infrastructure or there may be random components going against them such as drought or market fluctuations. These problems make it impossible for the farmer to convert an option into a practical opportunity that the farming family can take up. However, over time the farming family can build skills, develop resources and make contacts to improve the *availability* of opportunities.

### **Part 4      Personal career paths**

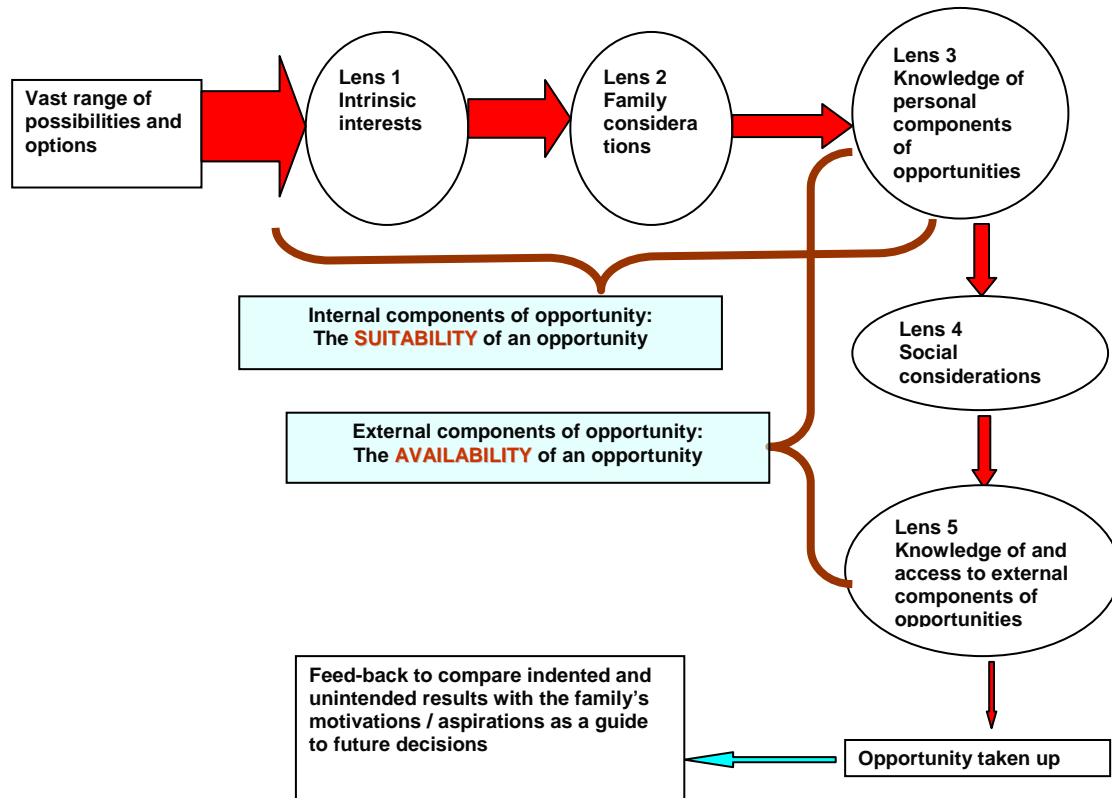
People's strategic decisions are influenced by where they are in life, so a person starting a career will not take the same decisions as they would when they are about to retire. Also, individuals have intrinsic interests and personal aspirations that they might shelve temporarily when they take decisions for the family. The concept of personal career paths provide a framework for understanding the impact of 'stage in life' and 'personal interests and aspirations' on strategic decision making in farming families.

### **Part 5      Concept of lenses**

The concept of lenses illustrates the process of creating opportunities from the farmer's perspective. Figure 2 shows the concept of lenses. The decision makers are more likely to notice options that coincide with their intrinsic interests than ones that don't. For example, if they are not interested in dairy farming then they will ignore an option to buying a dairy farm. The second lens concerns family considerations. For example, if the family requires an income from the farm, the decision makers will not be interested in options that look unprofitable. The third lens concerns what the decision makers considers they can contribute to turn specific options into practical opportunities. These personal components may be knowledge and physical things like money and land. The fourth lens is the social considerations. These might range from knowing that the opportunity will be legal to pressure from neighbours. The fifth lens concerns the decision-makers access to external, infrastructures and resources such as markets and credit.



**Figure 2 Concept of Lenses: how decision makers view options in creating opportunities. This is an iterative process and the lenses may not be use in exactly the order shown**

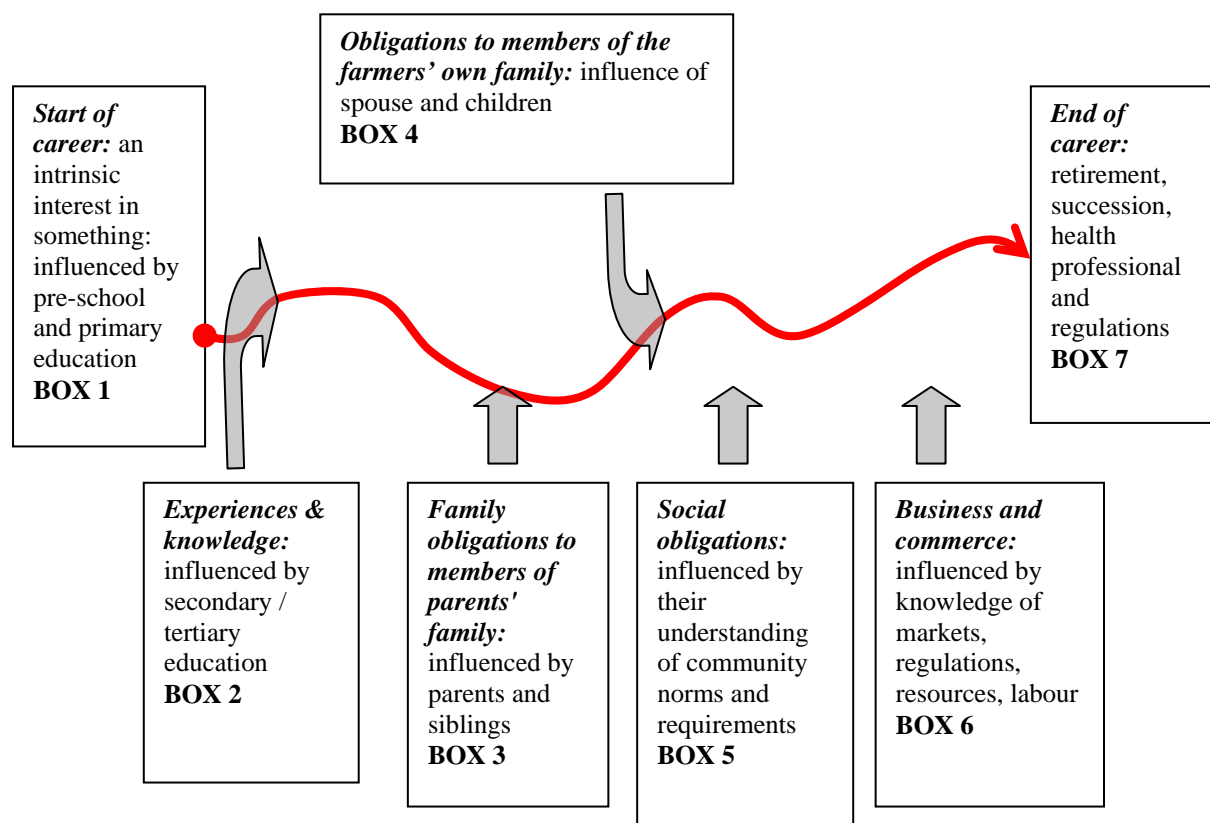


## **Part 6 Boxes of influence**

This sixth part is about how policy people in government agencies and private firms could use the information from the first 5 parts.

By matching current policies and programs to the decision makers organising processes, policy makers can see possible points for influence. To help, we have developed a template to classify policies and programs according to the concept of Lenses and Personal career path. This is shown in figure 3.

**Figure 3 Boxes of Influence (note the middle part of this diagram, BOXES 2 to 6 involve a considerable degree of iteration: education for example is not a one-off event but continues throughout life)**



Perhaps the first task for a policy person in using 'Boxes of Influence' is to work out exactly what results or outcomes they want in the long term. This is vital as we are dealing with complex thinking systems and it is easy to select policies that deliver positive results in the short term but negative results in the long-term. The second task would be to put information into each box about existing policies and programs that seem relevant to the results that are required. If nothing else, this will show how many policies and programs from all government agencies / private enterprise are related to the desired results. The next task may be to work out which Box or Boxes would be most relevant to the desired results; relevancy could be positive as well as negative. The next step could be to decide where in the hierarchy of decision systems an intervention would be most effective. To create a change in a system, the policy developer should find efficient leverage points and establish how they operate within the system. Leverage points are rarely obvious and sometimes counter intuitive (Meadows 1998, Flood 1999).

In using the boxes of influence, it is important to remember that it is outlining how programs and policies might be influencing adaptive systems controlled by people who think and who learn. What farmers are trying to learn is how to use the whole system to satisfy their family's aspirations / motivations. Policy interventions are not

going to change what farmers are trying and get from the system<sup>8</sup>, but interventions may allow new results to emerge from the use of the whole system that meet the policy developer's long-term objectives.

For example it appeared from our interviews that decisions to conserve and expand native habitat on farms are strategic and tend to be taken in the family decision-system. The ethical justification seems to be care ethics and land ethics (they do it because it is the morally correct thing to do) but also because they have some degree of intrinsic interest often expressed in terms of 'I enjoy that bit of bush', 'enjoy seeing the birds and wildflowers', or 'I like the smell of the bush – reminds me of being a kid'. Policy interventions that support and encourage decisions taken in this decision-system include programs such as early education programs, information, establishing networks of like-minded farmers etc. Financial support, unless it is part of these programs would tend to be counter productive as it creates an extrinsic motivation that can 'crowd out' the intrinsic motivation (Reeson and Tisdell 2006, Deci and Ryan 2000).

By contrast, providing financial support for a decision taken in the farm business trading decision system would be appropriate because the justification used for these decisions is profitability (business ethics). Of course, the farmers would only continue with the work if the activity remains profitable.

## Conclusions

DST is an interpretation of how farming families make strategic decisions. It has two potential uses.

It can help policy developers devise policies and programs that intervene in the entire system in such a way that results emerge which are in harmony with the long-term objectives of the policy developers.

It can help farming families increase their skill in making strategic decisions. By working through the concepts in the DST they can develop concrete ideas that are relevant to their own family and its current situation. For example, by reviewing the concept of a 'hierarchy of motivations', they can identify the aspirations of individual members of their family and use these to negotiate 'family aspirations' that take account of the intrinsic interests and aspiration of individual family members. By reviewing the concept of 'personal career path', the family can develop the dynamic aspect of both the family and personal aspirations.

Further research on decision-systems in other agricultural industries (such as dairy, sugar, cotton, horticulture etc) and in other locations and countries would help to generalise the DST. Research into decision-systems in non-agricultural family businesses (such as retail, engineering, medical, consulting etc) would help to develop DST into a formal theory of decision making.

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<sup>8</sup> The system of course includes the 'intervention'; government agencies are not outside the system

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**Author/s:**

Farmar-Bowers, Quentin

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