Using Ethnographic Decision Tree Modelling to Explore Farmers’ Decision-making Processes: a Case Study

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Using Ethnographic Decision Tree Modelling to Explore Farmers’ Decision-making Processes: a Case Study

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Summary

Agriculture is the foundation of the Manawatu/Wanganui region’s economy, which consists of 300,000 ha of highly erodible land. Past land management practices caused a major threat to the long-term sustainability of the region. Horizons Regional Council introduced Whole Farm Plans (WFP) as part of a variety of tools to protect and conserve the land. This paper discusses the progressive findings of a study about farmers’ WFP adoption decisions. Following Gladwin’s (1989) ethnographic decision tree modeling (EDTM) approach, qualitative interviews were held with a sample of 15 WFP adopters and 14 non-adopters across the Region to develop the adoption decision tree.

Key findings were that hill country farmers’ decision to develop, or not develop, a WFP was based on six fundamental criteria: (1) their awareness and concern of the issues of soil erosion and water quality and/or siltation of rivers and streams in the region and/or their farm; (2) the degree to which retiring land on their farm by fencing and tree planting would help solve the issue; (3) the degree to which the current status and level of development of the farm still allowed for further fencing and/or tree planting; (4) perceived benefit of the plan; (5) consideration of the enabling/disabling factors, which included the willingness to invest time, effort, and capital in the development and implementation of the plan.

Key words: Erosion, hill country farmers, EDTM, Whole Farm Plan, decision-making model.

Introduction

Approximately 1.6 million ha of the Manawatu/Wanganui Region within New Zealand is classified as hill country. Moderate to severe erosion could occur on 300,000 ha of this land. Storms in 2004 impacted 100,000 ha of hill country with 200 million tonnes of soil eroded and 30 million tonnes of sediment that entered the Region’s rivers. Agriculture, especially pasture-based farming, is the foundation of the Region’s economy. However, past land resource management practices (e.g., vegetation clearance, roading, etc.) resulted in a major threat to the long-term sustainability of the land and its soils. To protect and conserve the Region’s valuable soil resources, Horizons Regional Council introduced the ‘One Plan’ and the Sustainable Land Use Initiative (SLUI). As a law enforcement approach, One Plan’s proposed rules for eroding hill country and its impact on hill country
farmers’ operations proved very contentious, with people having widely divergent views. SLUI, however, is a voluntary approach to encourage farmers to farm responsibly from an environmental perspective. Focusing on farms containing ‘Highly Erodible Land’ (HEL), SLUI aims to inspire and implement a Region-wide move to sustainable land use practices. A key component of SLUI is the development of fully subsidised Whole Farm Plans (WFP) for farms identified as containing HEL. As a voluntary approach the aim is to identify and incentivise opportunities for sustainable land use change on these farms. To date, 159 of the proposed 1,500 WFPs have been developed.

This research is based on a combination of the ethnographic decision tree modelling (EDTM) approach developed by Gladwin (1989) and an adaptation of the Transtheoretical Model (TM) (Prochaska et al., 1992). The aim is to (1) describe hill country farmers’ decision-making process for adopting, or not adopting, the development of a WFP; (2) identify specific information used as decision criteria in the process; (3) identify reasons for the non-adoption of WFPs; and (4) develop a decision tree that accurately reflects the stages of change in the decision-making process, as well as the constraints in the decisions of hill country farmers to adopt, or not to adopt, a WFP. Results would also assist farmers who are still deciding whether to develop, or not develop, a WFP for their farms. Additionally, it would also enable the Regional Council to provide a more suitable and targeted campaign to aid adoption of WFPs across the Region.

**Ethnographic Decision Tree Modelling**

Ethnographic Decision Tree Modelling (EDTM) is a descriptive and predictive model that examines real world decisions and the criteria that influence those decisions (Darnhofer et al., 2005; Gladwin, 1989; Murray-Prior, 1998). EDTM is based on open-ended individual ethnographic interviews that elicit and investigate specific decision criteria from decision makers themselves. The outcome of EDTM is to develop a decision tree, table or set of decision rules (Beck, 2005). Ethnographic interviewing acknowledges participants’ expertise and their beliefs as they relate to the specific decision to be made. As such, it explores participants’ thinking and describes and diagrams in their own terms the reasons for their actions.

EDTM consists of three phases (i.e., Exploration, Model Development, and Model Testing) and enables the researcher to obtain a deep and complex understanding of the criteria that influence participants’ decision-making with regards to a specific subject. Eliciting a series of connecting decision criteria on the decision that is studied, an inclusive decision tree is developed which represents the participant group’s thinking and reasons for their actions. Decision criteria elicited are discrete questions followed by either ‘true’ or ‘false’ answers for any particular subject. The objective is for the decision tree to allow each participant to follow a progressive train of thought through a series of decision criteria to an outcome that is true for that participant. The aim with EDTM is for the decision tree to be predictive of a participant’s decision once decision criteria are known. Thus, if a certain set of criteria is true for a participant, the tree would predict their decision in advance of observing what they will do.
Transtheoretical Model

The ‘Transtheoretical Model’ (TM) developed by Prochaska et al. (1992) is a psychological model for understanding and supporting the process of behaviour change. It postulates that behaviour change is a process rather than an event. It involves a progressive move through a series of stages, each consisting of a different set of issues and tasks that relate to changing behaviour. TM describes behavioural change as an internally driven process whereby an individual progresses through the stages at their own rate according to their readiness to change. Stable, long-term change, therefore, cannot be externally imposed.

Figure 1 shows the seven distinct stages in the process of behavioural change. These include: (1) pre-contemplation, where the issue and the need for behavioural change is not acknowledged yet; (2) contemplation, where the issue is acknowledged, but motivation to change still is low; (3) preparation, moving towards a readiness to change; (4) action, taking steps towards change; (5) maintenance, sustaining behavioural change; and (6) transcendence, whereby the new behaviour has become a natural and integral part of one’s life; or (7) relapse, whereby new behaviours are abandoned, and individuals return to their old behaviours.

Since the aim of this research was to identify key criteria in hill country farmers’ decision-making process on whether to adopt, or not adopt, a WFP, and not the actual implementation, only the first three stages of the TM for behaviour change were used.
Method

The first and second phases of the EDTM process (exploration and model development) involved individual ethnographic interviews that were held with a random sample of 15 adopters and 14 non-adopters of WFPs. Identification of adopters was based on a list of farmers provided by Horizons Regional Council. Identification of non-adopters involved a combination of submissions on the One Plan provided by the Regional Council, a name list of farmers provided by Federated Farmers, Wanganui District, and rural community lists provided by farmers themselves. Participants were randomly selected to geographically represent the Region.

All interviews were conducted on-farm. The first phase of each interview was unstructured with farmers providing an overview of the farm operation. Then they were invited to give their understanding and views of WFPs. Farmers who adopted a WFP were then prompted to give an overview of the decision process they had followed since hearing about WFP, up to the point of its development and final agreement on the contents. Similarly, farmers who decided against having a WFP were prompted to provide an overview of the decision process they had followed that led them deciding not to adopt one. Questions were occasionally asked by the researcher to investigate points made and to better understand the motivations and constraints that appeared critical to decision-making. Farmers were viewed as the experts who have good and valid reasons for their decisions. Each interview was audio taped and analysed afterwards to identify the stage of behavioural change, the key decision criteria and constraints for each participant. The direct method for identifying key criteria in the decision-making process was used, which led to the development of an individual decision tree for each farmer. Next, the logical method was used to build a staged composite decision-making model that succinctly represented the decision-making of the group. In addition to the composite model, a single summarised decision tree, depicting only the most prominent key decision criteria, was also developed. These EDTM methods are not reported here (see Gladwin, 1989).

The second phase involved refining the summarised and composite decision tree models. This was done through a second round of visits to the initial group of adopters and non-adopters, inviting their input on each of the two the decision trees. Drafts of both decision trees are shown in the results section of the paper. The summarized and composite models of our research still have to be tested to ascertain their accuracy on a random, yet similar sample of adopters and non-adopters in the Region.

Results

Understanding of WFPs

The decision-making process associated with having a WFP developed, or not developed, indicates that farmers first acquire an understanding of the Regional Council’s aim with the development of these plans, as well as the process followed and the pros and cons that it might involve. The tree model developed here only involved those farmers who had an understanding of the process. They developed their understanding by attending meetings
held by the Regional Council, discussions with other farmers and through the printed media.
The understanding part of the decision tree represents the first three stages of the Transtheoretical Model of behaviour change. In the sections that follow, these stages, and key criteria in each, are shown in Figures 2 to 6 respectively. A summary of the six fundamental criteria depicting farmers’ decision process to have a WFP developed, or not developed, are illustrated in Figure 7.

**Decision Tree Results**

**Stage 1: Pre-contemplative**

Figure 2 presents seven criteria in the pre-contemplative stage farmers viewed as relevant to their decision process. The three fundamental drivers in this stage included farmers’ concern with soil erosion and conservation in the region and on their own farms, water quality/silting of the rivers and streams within the region, and the perceived long-term positive impact of the implementation of a WFP on the environment. In this stage 15 adopters of WFPs acknowledged that soil conservation and water quality and/or silting of rivers and streams in the region were of concern to them. The majority of non-adopters did not have concerns about soil erosion and conservation and did not believe that the retiring of land and the planting of trees on their farm would make a difference to the water quality and/or silting of nearby streams (count = 10).
Figure 2: Pre-contemplative considerations for developing a WFP

Criterion 1 was the first factor farmers considered in this process. Some farms consisted of easy rolling and less steep country. To these farmers Criterion 1 was less relevant. However, one adopting farmer in this group was concerned about soil erosion on his farm. For the rest of the non-adopting farmers in this group, this was not a concern. They consequently rejected WFP for their farm (count = 4). Criterion 2 was relevant to a total of
21 farmers, who have experienced erosion of productive land in previous storm events. Although this criterion was irrelevant to three non-adopting farmers and one adopting farmer, most felt that criterion 3 was a relevant consideration in their decision-making. One adopting farmer felt it was unfair to single out farmers as being responsible for soil damage in the region, even if they were deemed as only partly responsible. However, he indicated that this would not deter him from getting a WFP developed.

Criterion 4 was mentioned by a total of 23 farmers. Two farmers viewed this criterion to be of less relevance. However, they admitted that heavy rains do have a ‘less desirable’ impact on the region’s rivers and streams. The majority of farmers mentioned criterion 5 and said that it was very relevant in their decision-making process. The five farmers, who felt that waterways should not be fenced, alluded to its impracticality and the fact that it would cause their stock management to become more difficult.

Criterion 6 was relevant to farmers whose farms had steep gullys, creeks and streams, which flowed into bigger rivers that bordered or flowed through the farm, or their farms were close enough to these landscape features to have an impact on them. Of the seven farmers to whom this criterion was irrelevant, six had farms which were relatively easy rolling country and did not have nearby streams. For this reason the six rejected the development of a WFP for their farm and the only adopter of the seven, who indicated that he would still consider the development of a WFP, was somewhat cynical towards the impact of his conservation efforts on the broader environment. “I’ve got very mixed feelings about the whole thing. I feel that what we are going to do, and what we can actually afford to do, is miniscule in terms of what actually needs to be done to the whole environment.”

Criterion 7 was relevant to the remainder of the farmers (count = 19), who felt that a WFP would have a positive long-term impact on the region’s environment.

**Contemplative Stage**

Farmers who completed the pre-contemplative stage in the decision process, and who had some awareness of the environmental concerns in the region, then moved into the contemplative stage. This stage involved a process of moving through a series of criteria, which commenced with (1) consideration of the degree to which the current status of the farm fitted the development of a WFP, moving to (2) consideration of the perceived benefits for having a WFP developed, and culminated in (3) consideration of the Regional Council’s input and the degree to which it could be trusted. The decision process and criteria relating to each sub-stage are discussed below.

**Degree to which the current status of the farm fitted the development of a WFP**

Figure 3 shows four criteria that were relevant to all the farmers who went into the contemplative stage of the adoption process. Although the majority of farmers in both groups felt that each of the identified criteria was relevant, a small minority said that some
criteria were irrelevant to them. This, however, did not deter them from still considering the development of a WFP for their farm.

Figure 3: Degree to which the current status of the farm fitted the development of a WFP

At the time of the interviews, all the farms had already had a significant amount of fencing and tree planting completed, most of which dated back to the time of the Catchment Boards in the 1960s and 1970s. However, most farmers still felt there was still scope for more fencing and planting of trees on their farms, which warranted the development of a WFP on their farm (criterion 8). The three farmers (1A; 2NA) who indicated that the amount of fencing and tree planting already completed on their farms did not warrant the development of a WFP were still in the process of contemplating further fencing and/or planting of more trees on less productive areas. As a result, they were returned into the main decision stream. The one adopting farmer, to whom criterion 9 was less relevant, alluded to the financial impact that complete retiring of less productive land would have on his operation. He nevertheless indicated that he would still consider a WFP.

Criterion 10 was viewed as a significant and critical decision factor for all farmers in the group. Although a total of 17 farmers felt that retiring less productive land would still allow them to continue farming and survive financially, one adopter and one non-adopter felt that
given their financial situation, they would not be able to continue farming and still survive financially.

The one non-adopting farmer mentioned that more than half of his farm would have to be retired if he were to follow the Regional Council’s directions, which would put him out of business. However, both farmers in this group still indicated that they would consider the development of a WFP. Reasons provided for this decision were twofold: (1) the expectancy that the WFP would become compulsory in future, which might negatively impact the availability of subsidies to undertake fencing and tree planting at the time; and (2) current full subsidisation of technical input into their farming operations, which might positively impact the continued economic viability of their operations. For them, financial support was critical to the adoption of WFP.

Criterion 11 was the final factor farmers in this stage considered. Although the majority of the group (count = 16) agreed their farms’ performance could be compared to other farms in the district, this was a contentious issue for three farmers (2A, 1NA) who felt that personal information was outside the parameters of the project scope. However, the Regional Council gave the assurance that all information would be dealt with anonymously and that the objective was to identify areas where their farm management could be improved. As a result, these three farmers decided they would still consider the development of a WFP for their farm. Anonymity (privacy) of their financial position was crucial for both farmers in their adoption decision-making process.

**Perceived benefits for having a WFP developed**

Figure 4 presents seven criteria that were relevant to all the farmers who had passed the Figure 3 criteria. All farmers in this group felt that the benefits for having a WFP developed for their farms outweighed the probable disadvantages.
Figure 4: Perceived benefits of having a WFP developed

The first criterion farmers considered in this sub-category was whether or not they would reap any benefit (economic/social/environmental) from having a WFP developed for their farm (criterion 12). The fifteen adopting farmers to whom this criterion were important, referred to the positive impact a WFP would have on (1) restricting the movement of soils; (2) the water quality of streams on the farm and the downstream affect; and (3) the aesthetic appearance and value of their farms. The four non-adopting farmers, who felt that they would not reap any economic, social or environmental benefit from the WFP, indicated that it would not keep them from still considering the development of a plan.
Criterion 13 was one of the first of a variety of specific criteria farmers identified in their decision-making process. The majority felt that an in-depth inventory of their property in the form of a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) was a major point in their consideration to have a WFP developed. Specific incentives mentioned included (1) knowing the current level of erosion; (2) having an understanding of the farm’s future potential for more erosion based on its soil types; (3) fitting stock classes to the farm’s soil types; and (4) getting an objective analysis of their farm management systems, with indications where to improve. The two non-adopting farmers, who felt this criterion was less relevant to them, already had farm plans that showed soil types and erosion levels on their farm, but did not view this to be a significant criterion that would cause them to decide against the development of a WFP. As a result, they were returned into the main decision stream.

All the farmers indicated that the availability of a subsidy that covered the entire development of the WFP had major relevance in their decision-making (criterion 14). Similarly, criterion 15 was an equally significant factor in their decision process. The fear that the WFP might not be subsidised in future was a major motivator for farmers in deciding to adopt WFP. Due to personal circumstances one non-adopting farmer viewed the availability of a subsidy for fencing and tree planting as less important. He was unsure whether he would still be farming the current property in five years’ time. This however, did not deter him from still considering the development of a WFP sometime in future.

Criterion 16 was a significant criterion for all farmers who said that the recommendations of the WFP must fit their future plans for the farm. Most farmers also indicated criterion 17 was an important factor in their decision-making (count = 15A; 2NA). For them the WFP must positively impact (1) stock safety, (2) stock movement, (3) grazing management, and (4) less re-grassing of river flats and fixing fences after heavy rains. The two non-adopting farmers, who felt that the WFP might cause their farm to be more difficult to manage, said that fencing gullies and streams, would divide paddocks, and consequently negatively impact stock movement and grazing management. However, once they were convinced of the flexibility of the WFP, both farmers continued to consider its development for their farm.

Criterion 18 was important in the adoption of WFP. Most farmers who welcomed the input of the contracted advisor, believed that it would help them to control erosion and enable them to continue to farm profitably. However, the seven farmers, to whom the contracted advisor was less important (count = 4A, 3NA), questioned its value for their specific farm. However, this reservation was not significant enough to keep them from still considering the development of a WFP. As a result, they were returned into the main decision stream.

**Views on the Regional Council**

Upon passing Figure 4 criteria, farmer views on the Regional Council’s input into WFPs and their continued implementation, formed a significant sub-set of criteria relevant to all farmers. Figure 5 identifies six criteria under this heading. These included (1) farmers’ willingness to work with the Regional Council; (2) the perceived level of trust in the
Council; (3) the perceived level of Council staff’s expertise to advise farmers on sustainable land practices on their farms; (4) the perceived degree to which the Council had the interest of hill country farmers in mind; (5) the level of concern about the Regional Council having detrimental information on the farm as a result of the WFP; and (6) the perceived flexibility of the program (i.e., that it was not too prescriptive and allowed for a reasonable degree of freedom of choice to implement, or not implement some of the recommendations in the WFP).

![Figure 5: Views on the Regional Council](image-url)
Criterion 19 was relevant to all farmers in both groups. However, criterion 20, which is about trust, was a significant consideration in the total group’s decision-making. Factors which meant that most farmers could not trust the Regional Council were (1) the perception that there were hidden agendas because the program was not sufficiently explained at first; (2) the fear that the Council might become excessively prescriptive toward the implementation of the WFP recommendations; (3) the perception that retiring less productive land might result in the farm becoming uneconomic; (4) an increase in rates because the implementation of the program would necessitate higher Council staff numbers; (5) confusion over farmers’ right to clear specific pieces of land of scrub and gorse because of disagreements between soil conservationists and the Council’s Policy staff; (6) undesirable tactics used by Council staff for persuading farmers to consider a WFP. The logical next step for farmers in this group was whether they would still consider a WFP while it was still voluntary (criterion 20.1). Two non-adopting farmers decided that they were not willing to consider a WFP any further. However, the seven adopters and remaining two non-adopters decided to continue to pursue the development of the WFP, because it was voluntary.

The next criterion farmers considered was whether the Regional Council had the best interest of hill country farmers in mind (criterion 21). This was an issue for two adopting and two non-adopting farmers, who alluded to (1) the autocratic approach the Council followed to introduce the WFP; (2) Council staff changes, which slow down resource consent applications; and (3) the Council being unsympathetic toward farmers’ concerns. As a result, one non-adopting farmer decided not to continue considering the development of a WFP. The remaining farmers in this group decided to pursue the development of a WFP because of the benefits they could obtain.

Criterion 22 was a relevant point for twelve adopting farmers, who felt that Council staff had the required expertise to advise them on sustainable land use practices on their farm. However, lack of expertise of Council staff was a major concern to two non-adopting and the three adopting farmers.

As a result, the only remaining non-adopting farmer decided not to continue considering the development of a WFP. The rest of the group decided that they would still consider a WFP, which returned them into the main decision stream.

Three adopting farmers were concerned that the Council could potentially obtain information that could be detrimental to their farm, as a result of the WFP (criterion 23). However, this did not deter them from continuing to consider its development for their farms. Criterion 24 was relevant to the decision-making process of all the adopting farmers. Two factors that farmers considered were the degree to which (1) their views on the farm would be accommodated within the plan’s final recommendations, and (2) the implementation of the WFP was dependent on their economic circumstances.
**Preparatory Stage**

After they completed the contemplative stage of the WFP decision-making process, farmers moved into the final stage – preparatory. Farmers in this stage were ready for change. Figure 6 illustrates the enabling factors they identified, including: their willingness to (1) invest extra time and effort to develop the WFP; (2) accompany and assist consultants in the process; and (3) partly fund the implementation of the plan. To all the adopting farmers, the perceived benefits of the plan outweighed the input they had to make.

![Decision Tree Diagram]

**Figure 6: Preparatory considerations for developing a WFP**

**Summarised Decision Tree**

In addition to the composite model, a single summarised decision tree, depicting only the most fundamental decision criteria, was also developed, and is presented in Figure 7.
{Adopt WFP; Don’t Adopt WFP}

1. Is soil conservation/water quality or silting of rivers and streams a concern in the region/your farm?
   No (4NA)
   Yes (15A;10NA)
   1.1 Will you still consider a WFP?
      No (4NA)
      Yes (0 cases)

2. Will retiring land on your farm by fencing/tree planting help solve the issue?
   No (6NA)
   Yes (15A;4NA)
   2.1 Will you still consider a WFP?
      No (6NA)
      Yes (0 cases)

3. Does the current status and level of development of your farm still allow for further fencing/tree planting on it?
   No (0 cases)
   Yes (15A;4NA)

4. Are the perceived benefits of a WFP sufficient enough for you to have it developed for your farm?
   No (0 cases)
   Yes (15A;4NA)

5. Can the Regional Council and their staff be trusted with this program (i.e., do they have the best interest of hill country farmers like yourself in mind)?
   No (4NA)
   Yes (15A)

6. Are you willing to invest extra time, effort, and capital into the development and implementation of a WFP for your farm?
   No (0 cases)
   Yes (15A)

Adopt WFP

Don’t adopt (14 NA)

Figure 7: Summarised decision tree of most fundamental decision criteria to develop a WFP
Discussion

The results of this study show that hill country farmers’ decision whether or not to have a WFP developed for their farm is quite complex, but is based on six fundamental criteria: (1) their awareness and concern of soil erosion and water quality and/or siltation of rivers and streams in the Region and/or their farm; (2) the degree to which retiring land on their farm by fencing and tree planting would help solve the issue; (3) the degree to which the current status and level of development of the farm still allowed for further fencing and/or tree planting; (4) perceived benefit of the plan; (5) the degree to which the Regional Council and its staff could be trusted with this program; and (6) consideration of the enabling/disabling factors, which included the willingness to invest time, effort, and capital in the development and implementation of the plan.

More specifically, these fundamental criteria encompassed a variety of primary and secondary drivers that led to farmers’ final decision whether or not to have a WFP developed for their farm. Primary drivers included farmers’ level of awareness of the issue and their impact within the region and on their farm. Secondary drivers were those criteria farmers considered to justify their decision for developing, or not developing, a WFP.

On a primary level, the first and most significant driver in this decision process was the degree to which farmers had experienced productive land and livestock loss during previous storm events (criterion 2). Not surprisingly, results suggested that farmers, who suffered significant loss, had a higher level of awareness of the issue, and as a result, were more inclined to consider the development of a WFP than those who experienced minimal or no loss. Second, the more a farmer was aware of the deteriorating quality of the region’s rivers and streams (criterion 4), the greater the probability was of that farmer would be considering a WFP. Specific motivators included pollution resulting in the lowered drinkability of the waters and depletion of aquatic life, as well as the deterioration of the aesthetic beauty of the rivers and streams. The topography of the farm (steepness, nature of its soils in terms of erosion proneness, and rivers and streams flowing through or bordering the property), or the farms being close enough to these landscape features to impact them, was the third criterion, which, as expected, played a role in farmers’ decision process. This criterion had a direct link to a farmer’s consideration whether retiring land by fencing and planting trees would make a difference to the environment (criterion 7).

On a secondary level, farmers’ decision-making consisted of a variety of criteria, which justified their final decision whether or not to have a WFP developed for their farm. Surprisingly, the current status and level of development of a farm, which included the amount of fencing and tree planting already completed on the property (criterion 8), did not have a meaningful impact on the decision whether or not to have a WFP. Of more importance, were farmers’ views that more fencing and tree planting would enhance biodiversity on their farm, as well as its aesthetic value. This could be a significant selling point of the WFP to other farmers. Second, results showed that perceived benefit in the form of subsidies (criterion 14 and 15) and technical support (criterion 18) were significant motivators for farmers to have a WFP developed for their farms. Again, this is a significant selling point for approaching other farmers in the region. Third, trust in the Regional
Council (criterion 20) and its staff’s level of expertise (criterion 22) were major concerns for farmers. If the Regional Council initially followed a less autocratic approach, with staff members being more empathic when dealing with farmers’ concerns, and a clear explanation of WFPs being provided (e.g., aims and benefits to farmers and the flexibility of the process), more farmers might have taken up its development. Fourth, results suggest that once farmers were convinced of the benefits implementation of a WFP, they were willing to invest time, effort (criterion 25), and capital (criterion 27) into its development and implementation.

The final phase of the EDTM process (Model Testing) still has to be completed, and will involve the development of a close-ended questionnaire, which is based on the summarised and composite decision models as discussed in the paper. Interviews will be held with a random, yet similar sample of farmers (adopters and non-adopters of the WFP) within the region, with the aim to test the models’ accuracy and predictive value.

References