REFEREED ARTICLE

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Defining foresight activities and future strategies in farm management: empirical results from Finnish FADN farms

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ABSTRACT

Increasing farm sizes, stronger market orientation and meeting consumers' expectations call for managerial skills and stronger future orientation in farm businesses. We scrutinise in this paper what kind of future goals and foresight approaches farm management entails. As part of strategic management, we approached planning practices according to their time-scale. Three managerial and foresight dimensions of future orientation were defined based on literature; they were then used when constructing a questionnaire. Data were gathered from two sources: from a farm survey and from the annually gathered Farm Accountancy Data Network (FADN) database in Finland between 2004 and 2008. The farm survey data were analysed through factor analysis and *k*-means cluster analysis. According to our analysis, farms were grouped into three future-oriented farm groups. The FADN data also gave an opportunity to examine economic and structural development in the defined farm groups. According to our results, the three farm groups differ from each other in terms of future orientation and in terms of structural and economic development.

KEYWORDS: farm management; future goals; foresight; economic and structural development

1. Introduction

Management is a continuous process of future thinking, planning, implementation and control. Strategic management has been defined as the process of planning, implementing and controlling decisions for a common goal by different units or functions of an organisation. This enables the organisation to define and achieve its mission to create value (Porth, 2003; David, 2005; Mintzberg, Ahlstrand and Lampel, 1998). Increasing farm sizes and significance of managerial skills entail value-adding management models, strategic tools and building managerial competence within farms. The last of them, i.e. managerial competence, has gained a lot of attention. This is due to farms investing in growth especially in animal production and the Common Agricultural Policy (CAP) continuing to undergo reforms towards greater market orientation in the European Union. Therefore, the need for anticipating future changes and their impacts on farm production is increasing. In farm businesses today, farmers should more and more recognise, in addition to the production itself, the possibilities and threats of market changes, technological development, policy changes, and changes in consumer behaviour, at the least. According to Micheels and Gow (2011) in the case of the beef sector, high market orientation benefits farms in value creation. Therefore, more than before, a farmer is also supposed to take into account the farm business logics (i.e. value creation, cost structure, revenue streams) in parallel with production processes and technologies. Also consumer expectations towards agricultural products and by which principles they are produced require communicative preparedness of farmers.

Strategic planning is the cornerstone of strategic management. It is used in setting priorities, allocating energy and resources, strengthening operations and ensuring that employees work toward common goals (Bryson 2003). A shortcoming of conventional strategic planning is its lack of sensitivity in coping with changing environments and managing weak signals and turbulence (Camillus and Datta, 1991). Strategic planning is often confused with forecasting (Armstrong, 2001). Planning concerns about what the world should look like, while forecasting is about what it will look like. Martino (1983) defined forecasting as calculating or predicting some future event or condition usually as

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a result of rational study and analysis of available pertinent data.

The main idea behind foresight methods is that there is not just one single possible future but many different futures. The main principle is that the one future which will materialise cannot be predicted. The future, as it comes, consists elements from all alternative, imaginable scenarios. From the strategic planning point of view, foresight tools are used in becoming aware of all different possibilities and future developments. Therefore, one can be better prepared for surprising events and set strategic goals and measures (McMaster, 1996; Cuhls, 2003; Rikkonen, 2005). For example, scenario methods as one of the approaches in future studies methodology are claimed to support strategic decision-makers (van der Heijden, 1996). They are especially effective in addressing uncertainties as they explain the alternative, both desirable and undesirable or even probable paths of future development (Postma and Liebl, 2005; Rikkonen 2005). Also, predicting the future just by looking into the past can lead to wrong decisions when conditions are changing rapidly and adaptively.

The concepts of strategic management and visionary leadership have been combined more and more in the discussion of the art of strategic thinking (Westley and Mintzberg, 1989). According to Rampersad (2001), visionary management is a key issue for all organisations. It is a continuous rethinking toward future and competitive advantage. By making visionary thinking a part of daily routine, it will integrate into all aspects of work. Farm management in this respect does not differ from other branches of business. Increasing farm sizes and significance of managerial skills also require future orientation in farm business like in any other branch of business.

In this paper, we scrutinise three important aspects of future orientation in farm management, namely future goals, planning horizon and foresight approach. This is done to define the role and meaning of foresight activities in farm management and to examine differences which farms of different approaches may have in their economic and structural development. We study the management of a farm enterprise from operational, strategic and visionary time perspectives. Therefore, this study proposes new insights and ideas for the long-range planning of a farm. The results benefit farm enterprises in achieving a better and comprehensive management level with operational, strategic and visionary perspectives.

The approaches to future management are presented in Figure 1. Operational management refers to the planning practices of less than one year utilising the competence of a farm to react to the current situation in the best possible way. Strategic management is used when preparing for changes in the operational environment and allocating farm resources efficiently in the perspective of more than one year but less than five years. Visionary management as a part of strategic management refers to a time frame of more than five years in planning practices and it prepares the farm for future uncertainties. Visionary management adds to strategic planning as it also includes different foresight tools and activities to be utilised. For example, Porter (1985) sees that scenarios are another tool in the strategist's arsenal that helps decision making. According to Wilson (1992), vision is a coherent and powerful statement of what the business can and should be for example in ten years' time. It also defines the most important future core competencies. This research examines especially the need for advanced strategic thinking (see e.g. Holstius and Malaska, 2004) defined as visionary management.

The structure of the article is the following. First, we make the attempt to define various dimensions which one has to consider when expanding the management focus into a longer, visionary time frame in farm enterprises. We present important dimensions found in foresight literature which were used as a basis for questionnaire construction. Second, we present the formulation of the conducted survey and the way how we utilised the survey data with the FADN farm data. Third, we present the analysis methods used in classifying the farms in order to describe the characteristics of the farm groups according to their future orientation. Fourth, we present the results and compare farm groups with economic and structural indicators to pinpoint the differences and similarities in farm groups. Finally, the discussion and conclusions follow.

The specific research questions in this paper are:

(1) What kind of future goals do farmers have for their farm enterprises?
(2) Do these different future goals reveal the use of different planning horizons or a different foresight approach in farm management (from operative to visionary horizon and from a passive to a proactive approach)?
(3) What is the link between the future goals used and the success of the farm as measured by economic and structural indicators (e.g. profitability, growth)?

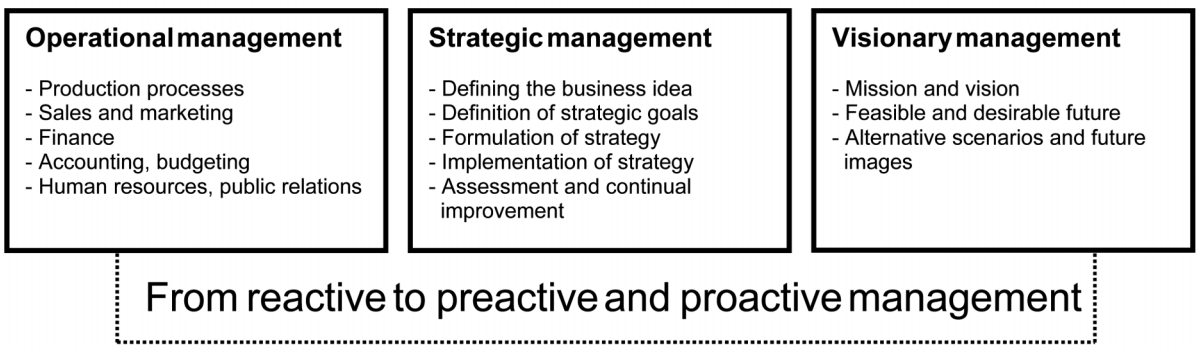

Figure 1: Management of a successful farm enterprise (applied from Malaska and Holstius, 1999; Holstius and Malaska, 2004)

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2. Material and methods

First, we looked into the available, mostly referenced literature of strategic and visionary management and of futures studies. According to the literature review, three important dimensions were defined and then used as a basis for questionnaire construction. These measuring dimensions in defining the level of future orientation on farms were: 1) future goals of farm enterprise 2) time horizon of foresight (operational, strategic, visionary) and 3) a foresight approach (passive, reactive, preactive and proactive). According to Godet and Roubelat (1996), the passive approach means that changes in operational environment do not affect the plans of an organisation or an entrepreneur or cause any actions. The reactive approach is simply reacting to ongoing changes after they have happened. The preactive approach means that changes and alternative future paths or scenarios are anticipated actively and they are influential in strategic plans. The proactive planning involves designing or even provoking desired future and then inventing ways to create that future state. The purposes of conducting a survey of these three dimensions were, first, to define what kinds of alternative future strategies farms have and, second, what kind of foresight approach Finnish farms have overall.

After questionnaire construction and testing, a mail survey was conducted in 2007. The respondent farmers were inquired about the above defined dimensions of foresight approaches and future goals. The questions used in the analysis of this study included the following (they were asked in Finnish and translated into English for this paper):

Q1. How important do you think the following long-term future goals are on your farm? (The respondents used the Likert scale from 1 to 5 [1=not important at all, 5=very important].)

a) Good profitability
b) Continuing growth
c) Rationalisation of production
d) Good liquidity and sufficiency in income financing
e) Reasonable subsistence
f) Mental satisfaction of being a farmer
g) Taking care of the environment
h) Developing professional skills
i) Continuity of family farm
j) Preparation to give up farming

Q2. How do the following statements describe your future planning? (The respondents used the Likert scale from 1 to 5 [1=not at all, 5=very well].)

a) Changes occurred in operational environment do not affect our plans.
b) We react to ongoing changes on a continuing basis.
c) We anticipate changes actively and they act as impulses in our production and business plans.
d) We continuously work for creating our desired future and invent ways to influence future development in our network and our operational environment.
e) We concentrate on planning our farm business on a one-year planning basis.
f) We continuously plan our business operations in a 3 to 5 year time perspective.
g) We have created a shared vision on where we want to be within 10 years (desired future state of operational environment in ten years' time).

Q3. As an entrepreneur, I seek new information which can affect the production and business of my farm from the following sources: (The respondents used the Likert scale from 1 to 5 [1=not at all, 5=very actively].)

a) From local-level media, networks and professional sources etc.
b) From national-level media, networks and professional sources etc.
c) From EU-level media, networks and professional sources etc.
d) From global-level media, networks and professional sources etc.

Alongside the conducted farm survey (valid n=260 farms), Farm Accountancy Data Network (FADN) data from the same farms were obtained to scrutinise economic and structural changes in defined farm groups during the five year period 2004–2008. The data for examining the economic and structural changes between farms are based on the annually gathered FADN database from Finland concerning the years 2004–2008. The FADN system contains a sample of over 1,000 farms, and the database is maintained by MTT Agrifood Research Finland, Economic Research. We started to use the FADN data were after the farm survey analysis was done.

The analysis to classify the farms was based on the questions about the above-mentioned long-term future goals of farms. The purpose of inquiring about these goals was to have an overview of varying future goals and, thus, to analyse if it is possible to construct different farm groups. This analysis was then followed by evaluating how the economic and structural development differs when the future goals are different.

The data analysis was mainly performed by two statistical methods, factor analysis and cluster analysis. The statistical runs were done using IBM SPSS Statistics 19 software. Factor analysis is a statistical procedure used to uncover relationships among variables. It allows numerous intercorrelated variables to be condensed into fewer dimensions called factors. The method has traditionally been used to provide mathematical models for the explanation of psychological theories of human ability and behaviour (Harman, 1976). Applications of factor analysis have then become popular also in other fields of science, such as economics, political sciences, sociology, and medicine. Factor analysis, like all statistics, is a branch of applied mathematics. Thus, it is used as a tool in the empirical sciences (Harman, 1976). In the context of this study, the variables are the subjectively stated future goals on the Likert scale from one to five. The generated factors represent the general future goal dimensions of each farm groups.

The used factor analysis is beneficial, because it allows the studied variables to be condensed into fewer dimensions (i.e. factors). For the purposes of this study the factor analysis was not enough, because the aim was also to further classify farms of different types. Therefore, classification by cluster analysis was a useful way to further analyse the data. In this study, the cluster analysis was used because it allowed categorising similar

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Table 1: Rotated factor matrix

Long-term goals of farm enterprises	Factor		
	1	2	3
Good profitability	.389	**.549**	.039
Continuing growth	**.597**	.073	.035
Rationalisation of production	**.610**	.268	.016
Good liquidity and sufficiency in income financing	.152	**.593**	.173
Reasonable subsistence	.039	**.600**	.153
Mental satisfaction of being a farmer	.026	.262	**.595**
Taking care of the environment	.146	.050	**.647**
Developing professional skills	**.471**	.233	.419
Continuity of family farm	**.489**	.038	.215

Extraction method: Principal axis factoring
Rotation method: Varimax with Kaiser normalisation
a. Rotation converged in 6 iterations

farms in clusters. Cluster analysis is a collection of statistical methods which identifies groups of samples behaving similarly or showing similar characteristics. The simplest mechanism is to partition the samples using measurements which capture similarity or distance between samples (Romesburg, 1984).

3. Results

As a result of the factor analysis, three factors were identified and extracted from the future goals asked in the survey (Table 1). One of the future goal questions ('preparation to give up farming') was discarded due to a low communality (value was 0.1). Other options were also tried during factoring. For example, when constructing the farm groups, it was found that a four-factor solution was also possible, but it was less logical in terms of balanced future goal dimensions of farms. This was because in the four-factor solution there was one factor which carried a large loading by only one variable. This variable measured the goal of developing competence and it suited well for the three-factor solution. To evaluate the alternative analysis paths, the cluster analysis (*k*-means) was done based on this four-factor solution. It resulted in four groups in which one group is relatively small. Also, the eigenvalue was decisive in factoring. Only those factors were included in which the eigenvalue was over 1.0. In the factor analysis, the extraction method applied was principal axis factoring and the rotation method used was Varimax rotation with Kaiser normalisation.

For the purposes of *k*-means cluster analysis, factor scores were first calculated and then treated as new variables in the cluster analysis. In the three-cluster solution, the clusters included 59, 134 and 67 farms (Table 2). In the four-cluster solution, there was one cluster consisting of only 39 farms. Therefore, the three-cluster solution remained.

According to the factor analysis, the farms were then organised into three farm groups: 1) traditional and environmentally oriented farms, 2) economic success oriented farms and 3) growth and development oriented

Table 2: Final cluster centres

	Cluster		
	1	2	3
REGR factor score 1 for analysis 1 'Growth orientation'	−.95576	.28736	.26693
REGR factor score 2 for analysis 1 'Economic orientation'	−.62948	.44976	−.34519
REGR factor score 3 for analysis 1 'Environmental and wellbeing orientation'	.05252	.39899	−.84423

Number of observations in clusters		
Cluster	1	59
	2	134
	3	67
Valid n		260

Test results	REGR factor score 1 for analysis 1	REGR factor score 2 for analysis 1	REGR factor score 3 for analysis 1
Chi-Square	100.796	94.591	113.253
df	2	2	2
Asymp. Sig.	.000	.000	.000

a. Kruskal-Wallis test
b. Grouping variable: Cluster number of case

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Table 3: Differences in farm structure between farm groups

Farm group Characteristics	Group 1: Traditional and environmentally oriented farm group	Group 2: Economically oriented farm group	Group 3: Growth oriented, 'economies of scale' farm group
Future goals within group based on questionnaire definitions	Mental satisfaction of being a farmer, taking care of the environment	Good profitability, good liquidity and sufficiency in income financing, reasonable subsistence	Continuing growth, rationalisation of production, developing professional skills, continuity of family farm
Number of farms in group	59	134	67
Proportional production lines in groups:			
1. Cereal and other crop farms	37%	30%	46%
2. Horticulture (indoor and outdoor combined)	5%	4%	9%
3. Dairy farms	34%	40%	26%
4. Other animal production farms (cattle, pig and poultry)	12%	9%	7%
5. Mixed production	12%	17%	12%
* No statistically significant differences between groups			
Farmer's year of birth			
* No statistically significant differences between groups	Average: 1957	Average: 1960	Average: 1958
Working hours/year (average in 2004–2008)	in 2004: 2,597 hours in 2008: 2,317 hours Average 2004–2008: 2,482.4 hours	in 2004: 3,072 hours in 2008: 2,984 hours Average 2004–2008: 3,005.6 hours	in 2004: 2,527 hours in 2008: 2,280 hours Average 2004–2008: 2,395.4 hours
*x^2=7.148–8.932 *df=2 *p=0.011–0.028			
Arable land	in 2004: 40.5 ha in 2008: 42.0 ha Average 2004–2008: 41.32 ha	in 2004: 61.5 ha in 2008: 67.7 ha Average 2004–2008: 65.06 ha	in 2004: 57.4 ha in 2008: 66.7 ha Average 2004–2008: 62.48 ha
*x^2=17.348–19.745 *df=2 *p=0.000–0.000			

farms. After the clusters were defined, the formed farm clusters were studied in two ways. First, the foresight approach of farms was empirically tested according to each farm group. This was performed on the basis of the questionnaire carried out with the FADN farms and through the defined foresight approaches which were then reflected against the farm groups constructed. Second, the differences between farm groups according to the economic and structural indicators, which are presented in Tables 3 and 4, were analysed to see how the farm groups developed during the study period 2004–2008. The statistical significance between differences in the formed groups was studied by the Kruskall-Wallis test as it is suitable for ordinal variables. In the Kruskall-Wallis test performed, *p*-value was 0.000 (Table 2).

According to the results (Table 3), it seems that the three farm groups constructed differ from each other in terms of their future orientation and in terms of their economic and structural situation. The farms were divided quite equally in different production lines. However, there are relatively more dairy farms in the economically oriented farm group (Group 2). The farm size has increased most in Groups 3 and 2 as Group 1 has remained almost at the same level between the years 2004 and 2008. In general, the farm size was 31.52 hectares in the year 2004 and 34.18 hectares in the year 2008 (Niemi and Ahlstedt, 2009). Therefore, especially Groups 2 and 3 represent significantly larger farms than in general in Finland.

In Groups 2 and 3 (Table 4), debt-equity ratio, farm size development and turnover increase indicate that these are farms which have already invested strongly in the future. Also, mixed-production (mainly combination of livestock farms) is the most common in the economically oriented group. Cereal and other crop farms including horticulture settle themselves in the growth oriented farm group (Group 3). In the traditional and environmentally oriented farm group, the equity ratio was the highest, but also the average age of farmers was slightly the highest of all groups. The profitability coefficient remained modest in each farm group being the highest in Group 2. In general, the profitability varied between 0.52 to 0.64 and the farm family income from 25 000 Euros to 27 700 Euros in the years 2004 and 2008 (Niemi and Ahlstedt, 2009).

Table 5 presents the descriptive results of future orientation, structural development and economic situation of the farm groups. As the farm groups emphasised different future goals, there are also differences in the measured indicators.

4. Discussion

In this study, the used data was from the years 2004–2008. For more in-depth conclusions of economic development and structural changes, a longer time period would have benefitted our examination. The used methods of analysis were suitable for this study. Factor analysis of the future goals of farms was the

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Table 4: Differences in economic indicators between farm groups

Farm group Indicator	Group 1: Traditional and environmentally oriented farm group	Group 2: Economically oriented farm group	Group 3: Growth oriented, 'economies of scale' farm group
Future goals within group based on questionnaire definitions	Mental satisfaction of being a farmer, taking care of the environment	Good profitability, good liquidity and sufficiency in income financing, reasonable subsistence	Continuing growth, rationalisation of production, developing professional skills, continuity of family farm
Turnover *x^2=16.067–21.842 *df=2 *p=0.000–0.000	in 2004: €91,630 in 2008: €105,027 Average 2004–2008: €96,449	in 2004: €145,581 in 2008: €200,078 Average 2004–2008: €167,265	in 2004: €116,750 in 2008: €152,241 Average 2004–2008: €132,399
Family farm income *Statistical significance only in 2004 and 2006 *x^2=17.348–19.745 *df=2 *p=0.013(2004), 0.012 (2006)	Minimum €20,393 Maximum €29,608 Average 2004–2008: €23,962	Minimum €30,125 Maximum €42,680 Average 2004–2008: €34,408	Minimum €21,390 Maximum €37,237 Average 2004–2008: €26,497
Profitability coefficient *No statistically significant differences between groups *x^2=0.772–4.192 *df=2 *p=0.123–0.812	Minimum 0.3 Maximum 0.63 Average 2004–2008: 0.46	Minimum 0.49 Maximum 0.73 Average 2004–2008: 0.56	Minimum 0.29 Maximum 0.72 Average 2004–2008: 0.51
Equity ratio *x^2=8.072–16.643 *df=2 *p=0.000–0.018	Minimum 85.3 Maximum 90.5 Average 2004–2008: 88.14	Minimum 74.6 Maximum 76.7 Average 2004–2008: 75.38	Minimum 75.1 Maximum 78.0 Average 2004–2008: 77.6
Debt-equity ratio* *x^2=8.006–16.331 *df=2 *p=0.000–0.018	Minimum 26.2 Max:40.84 Average 2004–2008: 34.03	Minimum 62.31 Maximum 71.07 Average 2004–2008: 67.45	Minimum 65.73 Maximum 83.13 Average 2004–2008: 74.27

*The statistical significance of the differences between the formed groups was measured by the Kruskall-Wallis test. In Tables 3 and 4, the minimum and maximum of x^2- and p-values are presented for 2004–2008.

starting point. It pinpointed the varying goals of farms and gave an opportunity to sum up the goals from the questionnaire as three future goal factors. After that, clustering by factor scores resulted in three farm groups which gave the possibility to evaluate the economic development and structural changes of farm groups. In the cluster analysis, also other solutions were tried but, in the end, the three-group solution was considered the best in this case. The reliability of the analysis was tested by examining the statistical significance between the differences in farm groups.

Our findings indicate that the three farm groups constructed differ from each other in terms of future orientation and in terms of structural and economic development. Table 6 presents the strengths and weaknesses of each farm group. Farms which are more traditionally oriented and emphasise environmental goals are very self-sufficient and their indebtedness ratio is relatively low. The weaknesses are their poor profitability and their passiveness in information retrieval. Their efforts on anticipating the future are also minor. The reason for this is that the farmers of these farms are most often retiring ones. Surprisingly many of them do not have any plans for transferring the farm to a descendant. These are mainly farmers which will lease or even sell the farm and the arable land to active farmers when retiring. There was 33% of the arable land under lease in Finland in the year 2011. Leasing has increased considerably during the European Union membership as a result of the structural change in farm structure (Niemi and Ahlstedt, 2009). An increase in farm size has been gained mostly through leasing. Also as a result of uncertain profitability, there are difficulties in finding competent and motivated continuators for smaller farms. Also part of this group may become part-time farmers.

Those farms focusing on economic success emphasise more all of the three time-perspective, i.e. operational, strategic and visionary, approaches on planning. Also, their foresight approach is preactive by nature. Furthermore, they have steady growth and relatively steady profitability. The weaknesses are still their poor profitability and only satisfactory indebtedness ratio. The growth oriented farms suffer from negative changes in market prices and their profitability varies most of the groups. The strength is their willingness to invest in agricultural production and increasing the farm size and, therefore, their ability to anticipate and adapt to the future requirements concerning farm structure and size.

Farm management today is extended from production management to managing the operational environment as a whole. Therefore, there is a need to include a longer time perspective in the planning practices of farms. This means that the approaches of strategic management as well as the anticipation of alternative future paths should be adopted to farm management. In addition to the operational management procedures, there should also be a shared vision and strategic goals for a farm enterprise and its workers in the long run. This is due to the increasing farm sizes and the size of business overall. A shared strategy means that anyone

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Table 5: Descriptive result matrix of farm groups

	Group 1: Traditional and environmentally oriented farms	Group 2: Economic success oriented farms	Group 3: Growth and development oriented farms
Future goals within group (based on questionnaire definitions)	Mental satisfaction of being a farmer, taking care of the environment	Good profitability, good liquidity and sufficiency in income financing, reasonable subsistence	Continuing growth, rationalisation of production, developing professional skills, continuity of family farm
Planning perspective and foresight approach	Operational and strategic planning practice, reactive approach to changes, passive in information retrieval	Operational, strategic and visionary planning practise, from reactive to preactive approach to changes, most active in information retrieval	Strategic and operational planning practise, from reactive to preactive approach to changes, rather active in information retrieval
Structure of farm enterprise (years 2004–2008)	Clearly smallest farms as for economic size (turnover), farm size (area under cultivation), no growth in cultivated area or turnover	Clearly highest number of working hours, biggest in economic and farm size (turnover and area under cultivation), steady growth in cultivated area, quite rapid growth in turnover	Least working hours, by turnover bigger than Group 1, by farm size almost as big as Group 2, rather big in economic size, steady growth in cultivated area and in turnover
Phase of life cycle on farm (years 2004–2008)	Most farms cannot define the point in time for transferring the farm to a descendant, precious little recently or in near-future transfers, the statement ''farming is coming to an end'' describes well the better part of farms	Significantly many of transfers are planned to happen in 5–15 years' and more than 15 years' time, just 9% of farms in group recently conducted the transfer of the farm to a descendant	Significantly many of transfers are planned to happen between 5 to 15 years
Economic situation of farm (years 2004–2008)	By far poorest profitability, but most self-sufficient and lowest indebtedness ratio	Highest farm family income, good self-sufficiency, satisfactory indebtedness ratio	Best in return on total assets, biggest changes in profitability between years, good self-sufficiency, good/satisfactory indebtedness ratio

who will be involved in the same value creation process must end up at the same goals and objectives, the shared destination. And to do so, all involved require the same road map. Our findings indicate that if the planning is well-balanced between operational, strategic and visionary time frame and the foresight approach is preactive or proactive by nature, the farm categorises as growth-oriented and gains better profitability. But, there is also a downside to this. At this phase, farms usually have invested money to gain this growth and, therefore, are in debt. Heavy investments also mean an increased risk of business failure. From the planning point of view, there is a need to develop such strategic management tools for value creation which meet the demand of small-size enterprises which farms still usually are. According to Shadbolt (2008), using strategic tools would provide farm managers an on-going learning opportunity as it facilitates in-depth discussion about the vision, strategy and critical success factors of the farm business and translates them into specific measures and objectives in action.

5. Conclusions

The goal of this paper was to analyse what kind of future goals and foresight approaches farms have. Also, the link between the stated future goals and the success of the farms as measured by economic and structural indicators (e.g. profitability, growth) was studied through available FADN data. Surprisingly, there has been little research examining the relationship between

Table 6: Strengths and weaknesses of three farm groups

	Strengths	Weaknesses
Traditional and environmentally oriented farms	Very self-sufficient, relatively low indebtedness ratio, possibilities to capitalise achieved wealth	Poor profitability, passive in information retrieval, foresight activities minor, poor productivity
Economic success oriented farms	Planning focuses on operational, strategic and visionary time frame, steady growth, good self-sufficiency, active in information retrieval, pre-active approach in business helps in uncertain market environment, relatively steady and also best profitability of farm groups	Satisfactory indebtedness ratio, poor profitability
Growth and development oriented farms	Willingness to invest in increasing farm size, benefits most of changes in market environment, good self-sufficiency	Suffers most from negative changes in market prices, considerable indebtedness ratio

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the future orientation of the farm (i.e. stated future goals, a foresight approach) and farm performance in farm management. Using survey data, we settled on three different farm groups through factor and cluster analysis. They represented differences in future orientation and in foresight approaches asked. According to this study farms have different emphasis on future orientation. Some of them lean on traditional values as being a farmer, some of them are eager to grow their business and are more entrepreneur oriented. Our findings indicate that the stated future goals are also visible in farm performance. As the future goals and the foresight approach were a farmer's subjective statement, it also tells the farmer's motivation to improve and develop farm management behind the goals. Before using specified strategic tools, it is crucial to build managerial competence. Especially in farm management, in which the business is based on the laws of nature, the competence of biological processes in relation to business logics (revenues versus cost) is important.

Overall, our study proposes new insights into varying future strategies of farms and also possible benefits of long-range planning in farm businesses. It also brings into the discussion the need for applicable strategic and foresight tools for farm enterprises. Such tools are available e.g. The Balanced Scorecard (Kaplan and Norton 1992), but these have to be designed to fit farms' purposes. These kinds of tools also contribute to a disconnection between monitoring and strategy, as they force entrepreneurs to measure their activities in a balanced manner (Shadbolt 2008). Furthermore, if such tools are applied, their results benefit farm enterprises in achieving a better and comprehensive management level with operational, strategic and visionary perspectives. One example of a strategic tool is to compare the situation of a farm with other farms alike. For these purposes, it is crucial to develop and utilise farm performance databases. For example, the European level FADN system and its database give farms opportunities to diversely benchmark their structural and economic performance between farms and production lines.

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