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## IMPROVING ENTREPRENEURSHIP IN FARMING: THE IMPACT OF A TRAINING PROGRAMME IN DUTCH DAIRY FARMING

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### ABSTRACT

Due to external and internal changes in dairy farming, entrepreneurial competencies are becoming increasingly important for dairy farmers. Investigating the possibility to improve these competencies by means of a training program is the main topic of the reported research. First the relations between the entrepreneurial competencies and farmer and farm characteristics were determined. To improve entrepreneurial competencies a training program was designed and executed. The influence of this training program on farm characteristics and entrepreneurial competencies was investigated by doing a case-control study. Two groups of Dutch dairy farmers were selected to participate in the case-control study. One group (n= 75) participated in the training program, which consisted of eight meetings. In these meetings groups of farmers discussed aspects related to entrepreneurial competencies. The second group (n=180) served as a control. The competencies of participating farmers in both groups were measured by means of a questionnaire at the start and at the end of the study.

This research indicates that using the concept of competencies can give insight into entrepreneurial behaviour of farmers and provides a means to evaluate an intervention program aimed at development of a strategic plan by entrepreneurs. The described research method is a good way to identify a possible effect of an intervention. It also shows that entrepreneurial competencies have a positive relation with the farm size of dairy farmers in the Netherlands. The results of the case control study indicate that it is possible to improve entrepreneurial competencies of dairy farmers by means of developing and discussing the farmers' strategic plans in study groups. On average all participants benefited from the program, irrespective of farmer and farm characteristics or the level of competencies at the start of the program.

**Key words:** dairy farming, entrepreneurship, entrepreneurial competences, training programme, evaluation.

### INTRODUCTION

Several developments in the Netherlands as well as in the other countries within the EU force the dairy farmers to reconsider their involvement in dairy production. First, changes in the European Union's Common Agricultural Policy (CAP) are directly affecting dairy farmers' incomes. As part of the CAP since the 1960s dairy farmers in the EU were benefiting from commodity-specific support programmes. However the CAP is reformed. The reasons are the increased budgetary pressure within the EU, the over-production of commodities, increasing pressure in the World Trade Organisation, and the increasing demand of the EU citizens that farmers should provide more in return for the substantial support they received from citizen

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and customer made. This led to a set of reforms introduced in “Agenda 2000”, the Mid-Term review in 2002, and the CAP reforms of 2003. All these reforms are resulting in an on-going decrease of the price the farmer is receiving for his products and an expected significant decrease of income. This decrease is only partly compensated by direct payments to the farmer for his role as multifunctional provider of non-commodity outputs valued by society (Burrell, 2004). One way to keep the dairy farmers income on an acceptable level is to create added value to his products. However food companies and therefore the farmers, their suppliers, are under an increased competitive pressure.

A second development is that consumers are believed to become less predictable in their behaviour, as consumer demands become more fragmented and less consistent. The result is that the consumer can choose from a whole range of dairy products. Although most of the product diversification is done in the dairy processing industry, it is expected that the farmer’s product will change too (Grunert et al, 1997).

A third development is the increased interest by the general public and consumer in agricultural production. Public concern expressed during the BSE- and the dioxin crisis or the foot-and-mouth disease outbreaks illustrates this. A more transparent way of production is necessary.

A fourth development is the increased interest of the public for aspects related to food safety, animal welfare, and health promoting effects of dairy products. Food safety and animal welfare issues are brought onto the agenda by consumer’s organisations as well as policy makers. This resulted in the EU commission’s approach to food safety which aims to assure a high level of food safety, animal health, animal welfare and plant health within the European Union through coherent farm-to-table measures and adequate monitoring, while ensuring the effective functioning of the internal market (European Commission, 2000).

Although a step-by-step and continuous process, during the last 50 years, dairy farms have the doubled farm size to an average farm production of 468.600 litres of milk per year. This confronts the dairy farmer with new challenges: higher investments and a different type of competencies to adequately run the farm are needed to adequately run the farm.

To summarise, the farmer is faced with new challenges: the changing agricultural policy, the increasing pressure of and demands from the market, and increased demands from within his own farm. Formerly it was possible to manage and control a farm with a mixture of experience and common sense. The question is whether this will be sufficient in the future or new competencies are needed to cope with the new challenges, competencies that are different from the competencies which made Dutch dairy farmers successful in the past. Policy makers as well as farmers’ organisations see entrepreneurship as the panacea that will enable the farmers to cope with the encountered challenges.

The aim of this paper is to investigate the possibilities to develop entrepreneurial competencies of farmers. It especially evaluates a large entrepreneurial training programme to improve the entrepreneurial competencies of dairy farmers.

The structure of the paper is as follows. First entrepreneurship and entrepreneurial competencies in farming are discussed. Then a training programme to improve entrepreneurship for Dutch dairy farming is briefly introduced and how this programme is evaluated. Finally the most important results are discussed and conclusions are given.

### **Entrepreneurship: a brief introduction**

Being the sole labour force on the Dutch dairy farm, an important task of the farmer is to combine the functions of entrepreneur, manager, and craftsman in such a way that this combination enables him to be successful. Since the call for entrepreneurship is a new situation

for dairy farmers, until this far it is unclear whether dairy farmers have the capabilities for the entrepreneurial behaviour needed. In dairy farming the role of the owner/entrepreneur is predominant as it is in small and medium sized businesses (SME) therefore, for this thesis SME literature on entrepreneurship is used as starting point. In this section relevant aspects related to entrepreneurs and entrepreneurship are introduced.

Recent literature on entrepreneurship starts with the Schumpeter's view on entrepreneurship. He described an entrepreneur as "an idea man and a man of action who possesses the ability to inspire others, and who does not accept the boundaries of structured situations. He is a catalyst of change, instrumental in discovering new opportunities, which makes for the uniqueness of the entrepreneurial function" (Schumpeter, 1949). Based on this description several other authors added other entrepreneurial characteristics. From literature it can be concluded that an entrepreneurs' most prevalent characteristics are: risk-taker, provider of capital (from own resources but also by attracting other resources), innovator and, a person who identifies possibilities of profit making (Chell et al., 1991, Elfring, 1999, Wärneryd, 1988). The entrepreneur is the individual responsible for the process of creating new value -an innovation and/or a new organisation- (Bryat and Julien, 2001) and change (Audretsch, 2002).

A broader definition of an entrepreneur and more a description of his status is based on an economical perspective. Hebert and Link (1988) define an entrepreneur as: "The entrepreneur is someone who specialises in taking responsibility for and making judgmental decisions that affect the location, form and the use of goods resources or institutions"(Hebert Link, 1988). In line of this Brandstätter (1997) uses two criteria to define entrepreneurship: ownership of the firm and responsibility for decision-making. However this does not assume that everybody who fit into these two criteria, and by such has the status of entrepreneur, has the high scores on the characteristics on entrepreneurship as identified by literature. Besides having high scores on entrepreneurial characteristics farmers need also to have the ability for effective fulfilment of this task as entrepreneur. These are called competencies (Mulder, 2001b).

### **Entrepreneurial competences**

Competencies are the ability to perform specific tasks; they are the underlying knowledge, skills, abilities, personality traits, and know-how that result in effective task fulfilment (Langbert, 2000) (Mulder, 2001a). They are (a) context-bound, (b) subject to change, (c) connected to activities and tasks, (d) and interrelated (Stoof et al., 2002). Improving competencies can be a way to improve entrepreneurial success. For entrepreneurs working in the primary dairy sector, the entrepreneurial competencies strategic competencies, opportunity competencies and information-seeking competencies, and relationship competencies particularly are related to entrepreneurial success (Bergevoet et al., submitted). A brief description of these competencies now follows.

Strategic competencies relate to setting, evaluating, and implementing the strategies of the enterprise (Man et al., 2002). Such competencies refer to strategic management as described by David (2001) and involve (1) the defining of a farm's mission, (2) transferring this mission into objectives, after conducting an internal and external analysis, (3) formulating a strategy to achieve these objectives, (4) implementing and evaluating the strategy. (Harling, 1992) found that this concept was applicable to agriculture.

Opportunity competencies refer to the ability to scan the environment for business opportunities. They are needed to recognise and develop market opportunities through various means. Underlying competencies are general awareness, international orientation, and market orientation (Man et al., 2002). Information-seeking competencies are an important part of opportunity



competencies. To make timely and adequate decisions, entrepreneurs have to be able to search for and find the relevant information on the important factors related to the decisions (Shanteau, 1992). In the strategy formulation as described by David (2001), these competencies are crucial for making an external assessment.

The third group of competencies, relationship competencies, relate to person-to-person-based interactions or individual-to-group-based interactions, e.g., building a context of co-operation and trust, using contracts and connections, persuasive ability, and communication and interpersonal skills (Man et al., 2002). Social-communicative skills and normative-cultural competencies are vital if persons wish to innovate and change (Woerkum et al., 1999). Relationship competencies are an essential part of—and a prerequisite for—the other entrepreneurial competencies. For example, having a large network of peers, advisers, and other contacts facilitates the discovery of new opportunities. Acquiring additional financial capital to implement a strategy (strategic competencies) is also easier if a good relationship already exists with potential suppliers of financial funds.

### The training programme

A two-year training programme has been developed and implemented to improve entrepreneurial competencies. In this training programme the farmers developed and used their strategic, opportunity and information-seeking competencies by making a strategic management plan. The training programme consisted of eight sessions. In these sessions, groups of farmers discussed aspects related to entrepreneurial competencies. Each meeting lasted some four hours, during which each time a different part of the strategic plan was discussed. Assignments that the participants prepared beforehand served as a guideline for the discussion. The meetings were structured around the subjects as shown in figure 1. The strategic management concept served as a general framework (David, 2001) for the meetings. (Bergevoet and Van Woerkum, submitted). The subjects addressed were:

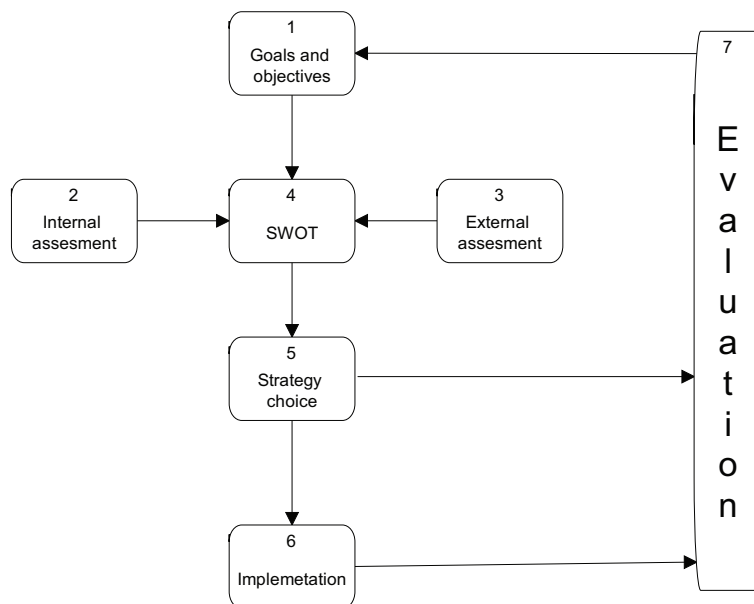


Figure 1. Structure of the training programme based on the strategic management concept (David, 2001)

1. Goals and objectives. Personal goals and objectives support decisions to change the future of an enterprise (Frost, 2000). In this, the unique purpose and reason for the existence of the firm is described, and it is essential for formulating, implementing, and evaluating strategy (David, 2001). Therefore, this was the first subject of the group meetings.

2. Internal assessment. An important component of the entrepreneurial competencies of farmers is critical assessment of the farm's situation. The purpose of the internal audit is to identify critical success factors, consisting of both strengths and weaknesses of the firm. Gaining insight into the relation between the financial and technical results of the farm was part of this assessment.

3. External assessment. The purpose of an external audit is to develop a finite list of opportunities that could benefit the firm, and of threats that should be avoided. It is aimed at identifying key variables that offer actionable responses (David, 2001).

4. SWOT analysis. The SWOT (Strengths-Weaknesses-Opportunities-Threats) analysis combines the previous three stages. It is an important matching tool that can be helpful in generating alternative strategies. These strategies can (a) use strengths to take advantage of opportunities, (b) overcome weaknesses by taking advantage of opportunities, (c) use strengths to avoid threats, or (d) minimise weaknesses and avoid threats (David, 2001).

5. Strategy choice. The SWOT analysis generates a number of possible strategies that a farmer could pursue. From these possible strategies, the most appealing strategies should be chosen.

6. Implementation. After the strategies have been chosen, they have to be implemented. This usually involves changing management and daily farming practices. For this implementation, detailed plans have to be made. Based on the principles of the Balanced Score Card [Kaplan, 2000 #80],[Kaplan, 2001 #291] the strategy is translated into specific topics related to financial perspectives, production perspectives, customer perspectives, and the learning and growth perspectives. For all these four perspectives, the following elements are assessed: objectives that the farmer wants to establish, the measures he wants to use to evaluate progress, the targets he wants to achieve, and the initiatives that have to be undertaken to implement the strategy.

7. Evaluation. Evaluation is something that occurs throughout the whole process. Based on the goals a farmer wants to establish, and the measures defined in stage 6, a constant evaluation of the processes takes place.

Although this may seem a strict curriculum, the purpose of the assignments was to create a framework and to serve as a starting point to guide the discussion.

### **Research design**

Insight into the possibilities to improve entrepreneurial competencies came from a case-control study in which the competencies of participating farmers were measured by means of an identical questionnaire at the start and at the end of the study (two and half years later). Two groups of full-time Dutch dairy farmers were selected to participate in the study. One group (n=75) participated in the training programme, the second group (n=180) served as a control group. Figure 2 gives the research design.

At the end of the study, all the 255 (75 + 180) initial respondents of the questionnaire were asked to fill out an identical questionnaire as the first time. After three weeks a reminder was sent to non-respondents. The total number of respondents was 176, giving a response rate of 70 percent. Of these responses, 12 could not be used. Reasons for this was termination of the busi-



ness, death of the initial respondent, or a different person replying to the first and 2nd questionnaire. The number of usable respondents in the training group was 50. The number of usable respondents in the control group was 114. Table 1 gives the farmer and farm characteristics of the participating farms in both groups.

Table 1. Farmer and farm characteristics (at t = 0) of the participating farms in the training and control group having also completed questionnaires at the end of the project.

	training (n=50)		control (n=114)	
	Mean	Std. Deviation	Mean	Std. Deviation
Age of the farmer	41.84	9.2	38.82	7.63
# FTU <sup>1</sup>	1.67	0.60	1.71	0.74
# cows/farm	93.40	33.03	76.72	37.08
Milk/cow/year (l.)	8441.36	699.68	8426.18	828.68
Area grass and maize	58.52	19.51	46.83	20.43
Milk quota ( l)	742692.12	248413.12	621352.63	304919.64

<sup>1</sup> FTU = fulltime labour units/ farm

Variables were selected from the questionnaires to be included into the analysis to serve as indicators for farm and farmer characteristics and entrepreneurial competencies. As indicators of entrepreneurial competencies summated scales were used. This was done to reduce the number of variables in the analysis. Table 2 gives the variables that were combined into these summated scales.

## RESULTS

Table 3 shows the results of a two-tailed bivariate correlation test between the indicators of entrepreneurial competencies, and farmer and farm characteristics at the start of the training program.

The results from table 3 indicate that most of the entrepreneurial competencies have a positive relation with the farm size in the Netherlands. Farmers who have larger farms have higher scores on the investigated strategic competencies than their colleagues on smaller farms and they also see consumer's behaviour more as opportunities than as threats.

The indicator for relationship competencies has a significant negative relation with age. The older the farmers are at the start of the program the lower their scores on relationship competencies.

Table 4 shows the impact of the training programme on the farm characteristics and entrepreneurial competences.

As shown in table 4, a positive effect of the training programme on the number of cows and on several entrepreneurial competencies was observed. Especially strategic competencies and opportunity competencies increased.

## CONCLUSIONS

- The concept of competencies can provide insights into the entrepreneurial behaviour of

Table 2. Entrepreneurial competencies and variables used to create summated scales.

Description	Variables from the questionnaire	Indicator
Strategic competencies related to:		
setting a strategy	It is clear to me where my farm has to be within 5 years	STR_SET
	The targets to go for on my farm are clear to me	
to implement a strategy	I have sufficient possibilities to monitor the production-process	STR_IMP
	My objectives are in clear plans that are written on paper	
to evaluate a strategy	Monitoring of my production targets I do by analysis of my farm results	STR_EVA
	The success of my business is the result of a good planning	
Opportunity competencies related to:		
to policy	Policy towards nature	OPP_POL
	Policy towards spatial planning	
	Increasing legislation	
consumers' concern	Consumers concern for the environment	OPP_CON
	Consumer's concern for food safety	
	Consumers concern for animal welfare	
threats of markets	Image of the product	OPP_MAR
	Ceasing of internal borders within EU	
Information seeking competencies	I'm thoroughly informed before I make important decisions	STR_INF
	I ask for a lot of advice when I need to make important decisions	
	I use the Internet to find information for my farm	
Relationship competencies	I invite visitors to my farm because contact to the general public is important to me	STR_REL
	The way my colleague farmers think about my farm is very important for me	
	I regularly negotiate with suppliers on the conditions we do business	
Entrepreneurial success	How much do you like being an entrepreneur?	ENT_SUC
	When you look back over the last 5 years, how successful do you consider yourself?	





Table 3. Correlation between farmers' and farm characteristics and entrepreneurial competencies at the beginning of the training programme (t=0)

	Strategic competencies			Opportunity competencies			Relation-ship
	setting	implementing	evaluating	policy	Consumer	market	
<b>Farm characteristics</b>							
Age of the farmer							-
# Full time labor units							
# cows/farm	++	+					
Milk/cow/year (l.)			++				
Area grass and maize	++	++			++	+	
Milk quota ( l )	++	+			++		

+ or - Spearman's rho Correlation is significant at the 0.05 level (2-tailed). ++ Spearman's rho Correlation is significant at the 0.01 level (2-tailed).

Table 4. The impact of the training programme on the farm characteristics and entrepreneurial competencies.

Farm characteristics	Affected by program
# Full time labor units	
# cows/farm	++
# Milk/cow/year (l)	
Area grass and maize	
Milk quota ( l )	
<b>Indicators for entrepreneurial competencies</b>	
Strategic competencies related to:	
- setting a strategy	
- implementing a strategy	+
- evaluating a strategy	
Opportunity competencies related to	
- policy	
- consumers' concern	++
- threats of markets	++
- information-seeking	
Relationship competencies	-

+ + improved by programme P<0.05, + improved by programme p<0.1, negatively affected by programme p<0.1

farmers, and gives a means to evaluate an intervention programme aimed at developing entrepreneurial competencies.

- Strategic competences of dairy farmers have a positive relation with farm size. This supports the general idea that when farms become larger, it becomes more important for farmers to be able to set, implement, and evaluate a strategy i.e. the strategic competencies of the farmer become more important.
- Farmers with a larger farm have a more positive attitude to consumers' concern about agricultural production.
- The research method described is a good way of identifying possible effects of an intervention.
- It is possible to improve entrepreneurial competencies of dairy farmers through developing and discussing the farmers' strategic plans in study groups.
- On average, all participants benefited from the programme, irrespective of farmer or farm characteristics or the level of competencies at the start of the programme.

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