21st International Farm Management Congress
Edinburgh, Scotland 2nd - 7th July 2017

'Future Farming Systems'

Seminar Proceedings

ENTREPRENEURSHIP and STRATEGIC MANAGEMENT

Edinburgh, 5th of July, 2017

Content of publication based on IFMA INTERNATIONAL SEMINAR ENTREPRENEURSHIP and STRATEGIC MANAGEMENT

5th July 2017, Edinburgh, Scotland, UK,
in cooperation with EU-ERASMUS+ ISM+ Project

Co-funded by the Erasmus+ programme of the European Union "Entrepreneurship with vision - methods and tools for managerial capacity building of agricultural producers in Central and Eastern Europe" no. 2015-1-PL01-KA2-016871

Developing Individuals

J. Alliston

Emeritus Professor at the Royal Agricultural University

Abstract

The agricultural industry has huge responsibilities to society to deliver food, energy, water, waste and environmental management, a diverse countryside, and conservation of plants and animals. These responsibilities fall on a few individuals who often live in isolation. To give a network is important and also to understand that other people are wrestling with these issues. Developing individuals is the key to this presentation.

***Keywords**: professional training, agricultural management, performance, participation*

Reflections

My interest in professional training came as a result of the Nuffield Jubilee Scholarship that I undertook in 1998. As a result of looking at Agricultural Leadership around the world, I became aware that many countries were giving training to their senior influencers.

Under the umbrella of the Institute of Agricultural Management we set up the Leadership course. The first lesson was always: start initiatives in conjunction with strong and relevant organisations. Progressively, we have taken on other courses always as a partnership with someone. The aims are always similar:

- Bring together a group of people (12 minimum and 18 maximum) with various experiences and firstly and more importantly let them learn from each other.
- Expose them to a range of influential speakers and try to keep it relevant to their circumstances.

Picture 1. Leadership course helps to develop individuals

The best results are obtained over a 3-week residential period. This can be ideally consecutive weeks, but will work with breaks between weeks. At the end of the time together, the individuals will have a network with the industry, a network of other participants, understand their own strengths and weaknesses, understand their own career pathways and above all have self-confidence.

Picture 2. Networking is crucial for personal development

So what about the dos and don'ts?

- Make sure they all participate. This involves listening and watching the dynamics of the group.
- Do not allow over domination by any individual.
- Be sensitive to personal circumstances, particularly in the 1st week. Some people have problems that are independent of the course and will therefore have difficulty concentrating.
- Continually mix the group up so that they become comfortable with everyone in the group. Easier to do with 12 than 18.
- Accept that with some very effective people will never share every confidence but will totally participate.

Just a word then to introduce the offerings in the UK:

- Institute of Agricultural Management Leadership Development Programme (Leadership)
- Worshipful Company of Farmers Advanced Course in Agricultural Business Management (Advanced Management)
- The John Edgar Trust Management Development Scheme (Early Management)
- Nuffield Farming Scholarship (International Experience)
- Welsh Government Training (Business Management)
- The Henry Plumb Foundation (Financial and mentor support, young people)

Why is all this important?
The agricultural industry has huge responsibilities to society to deliver food, water management, energy, waste management, environmental management, a diverse countryside, and conservation of plants and animals. These responsibilities fall on a few individuals who often live in isolation. To give a network is important and to understand that other people are also wrestling with these issues.

We need worldwide a vibrant agricultural sector with the best brains working within it. We must attract young people in to the huge range of jobs that now exist.

Do these courses improve performance?
Yes, they do. Our past alumni demonstrate this in many different ways. Just having the confidence to promote themselves is essential.

VISION, COLLABORATION, COMMUNICATION

H. Wildman

Managing Director Saviour Associates Ltd, Agent of change, industry motivator, Rural Leader, Nuffield Scholar and living in Dumfriesshire with husband John who is a farm manager for a 5,000 acre beef and sheep estate
Contact: info@saviourassoc.co.uk

Abstract

This story is about: What started me on my Leadership Journey? Turning 40 and wondering who I was and what on earth I was doing, and wondering is this it, can I do more? It resulted in a Mid Life Crisis survivor.

Keywords: *Leadership, Programs, Learning experiences*

Reflections

In 2010 I applied for The Scottish Enterprise Rural Leadership programme. This encompasses 18 days of personal discovery, networking, team building, leadership, effective communication, media training, and trips to Brussels, London and Edinburgh. Looking at and engaging in wider rural issues, developing rural networks and understanding and engaging with UK policy and politics.

This course was fantastic, I met people from all over Scotland with many varied back grounds, an owner of a castle that Queen Mary of Scots had stayed, vets, accountants, bankers, land agents, auctioneers, farmers, consultants, estate managers, estate owners, tourism businesses, foresters, the list was endless.

The Rural Leadership programme is funded through Scottish Government and has now had over 450 people complete its course. This course is open to anyone over the age of 18 and is really about encouraging people and businesses to grow and add wealth to the Scottish rural community through leading, team work, networking and influencing. Nurturing confidence and ambition and encouraging collaboration.

This kept me going until 2012 when I again felt that hunger and thirst to learn more and to challenge myself again. Nuffield was recommended to me through a number of my farming friends who had found this organisation and experience to be life changing. I did not really want to change my life, but I knew I had more to offer than I was currently utilising.

UK Nuffield Farming Scholarships have been in existence since 1947 with International Scholarships soon following behind in 1950. In the UK we have approx. 20 scholarships awarded each year through private and commercial sponsorship. Nuffield is an opportunity to travel the world to research topics of interest in farming, food, horticulture or other rural sectors.

Nuffield is an opportunity to broaden your horizons, unlock hidden potential, it takes people out of their comfort zone, having to step away from day to day routine, work and family to meet and interview entrepreneurs, farmers, leaders, business people, and scientists from all around the world involved in food and farming policy, growing, security and innovation.

My topic was Communication: Influencing and motivating change. I travelled to Australia, New Zealand, Canada, America, Chile, Peru, Brazil, Ireland and Wales on my search for the answer. I met and interviewed university lecturers, entrepreneurs, politicians, farmers, researchers, computer programmers, ranchers, consultants, and scientists. It was incredible, I travelled for over 11 weeks but now a days scholars are expected to participate in a global focus tour prior to doing their own travel which is an

additional 6 weeks of organised International travel, meeting a variety of leaders, politicians and businesses all over the world to really broaden their understanding of Global food and farming before then going on to do a minimum of 8 weeks of individual travel. It is a huge commitment but it is also a huge opportunity. Once your travels are complete you are expected to write and deliver a 10,000 word paper on your findings and to then actively go out and spread your word and promote your findings and recommendations. Giving my presentation in 2014 to an audience of 400 in Cardiff was one of the scariest and most daunting things that I had ever done, but it was also a great personal achievement.

One part that people do not really tell you about is the huge impact the people on the same courses will have on you for the rest of your life. Through both the Rural Leadership and Nuffield I now have new lifelong friends, who have shared the same learning journey as myself, I never expected to get to know complete strangers so well in such a short time, to have the privilege of learning their life stories, their highs and lows, listening to and shedding a tear at the tales of such hardship and trauma that people have experienced but also getting to smile and celebrate their achievements and successes. A truly humbling experience.

So, what have I achieved since? Leadership in my mind is all about giving back and empowering others. In 2015 I put forward a proposal to the Scottish Federation of Young Farmers. This proposal was basically me offering the advice and support to young farmers that I wish that I had received earlier in my career rather than having to wait until I was 40 before someone helped to show me that I had something special and that I could be someone special.

This resulted in the Cultivating Leaders course. The Cultivating Leaders is aimed at Young Farmers members aged between 18 – 27 and delivered in collaboration with Scottish Government, Scottish Enterprise, Royal Bank of Scotland, Solicitors Ledingham Chalmers, Accountants Campbell Dallas and Land Agents CKD Galbraith, all of whom I met through and from my Rural Leadership network.

Course format:

Day 1 – Leadership, personal development. Who are you, where are you know, where do you want to be, what is stopping you and how are we going to get you there?

Day 2 – Succession: understanding business ownerships, partnerships and agreements. How to have the difficult conversation, when to have it and what to do if it all goes wrong!

Day 3 – Understanding accounts, markets and volatility

Day 4 – Business planning and business plans

Day 5 – Visiting businesses who have developed and grown

Day 6 – Present your learnings to Industry, sponsors, family, press and Scottish Association of Young Farmers Clubs (SAYFC)

Once completing this course, it is hoped to be seen as a springboard to continue the path of further learning and developing hopefully encouraging others to apply and join Rural Leadership, Nuffield, Worshipful and many other amazing development and growth opportunities.

The Cultivating Leaders workshop runs with a maximum number of 15 participants and a minimum of 10, this number allows plenty of time for everyone to open up, share their issues / experiences, ask questions, talk and listen within the tight time frame that we have to deliver all of the content.

Applicants have to complete an application form to apply, this course is free to fully paid up SAYFC members and funded through a mix of Scottish Government support and independent charitable organisation sponsorship. The incredible support, results and impact that this workshop has had on those who have attended reassures me that funding will be secure to continue delivering this programme for many years to come, we are now into our 3rd year but you can never guarantee anything so we must always ensure that we are delivering the highest quality and meeting climate and market changes, being prepared to evolve, tweak and introduce new topics and materials as and when required.

For me the best practices that we see embraced by our participants who have completed these workshops are an increased self-awareness, a growth in confidence and self-belief, a development of professional networks, the trust and respect of planning and budgeting, the importance of being able to communicate effectively to take people with you and the reality that you can be yourself and that being yourself can be pretty amazing

EU ERASMUS+ Entrepreneurship project: concept of the Interactive Strategic Management (ISM+) training program in 5 European countries

Agata Malak-Rawlikowska[1], Abele Kuipers[2], and Marija Klopčič [3]

[1]Warsaw University of Life Sciences - SGGW, Faculty of Economic Sciences, Warsaw, Poland,[2]Expertise Centre for Farm Management and Knowledge Transfer, Wageningen, The Netherlands.[3]Biotechnical Faculty, Dept. of Animal Science, Domžale, Slovenia.
webpage: http://ism.sggw.pl/ e-mail: agata_malak_rawlikowska@sggw.pl

Abstract

The paper presents the Interactive Strategic Management Method (ISM) and its developments in Europe. The method was designed to support the development of entrepreneurship and strategic management in agricultural sector. The method is being used in farmer trainings in The Netherlands, Poland, Lithuania, Slovenia, Austria and Sweden. The trainings were highly evaluated by farmers and trainers. Within the new ISM+ project, the ISM method was adopted to various agricultural sectors, extended by new languages and new training modules - business planning tool, networking methodology and marketing training module. The method in a current form supports in a complex way entrepreneurship with vision in the farming sector.

Key words: *entrepreneurship, strategic management, farm, Interactive Strategic Management method, ERASMUS+, Business-plan, Marketing module, Networking*.

1. Implementation of strategic management trainings in European agriculture[1]

European agriculture experienced huge changes in last decades. Adaptations to institutional, production and marketing changes, influenced by EU common agricultural policy, but also societal wishes like food safety, animal welfare and the environment, require ability to apply entrepreneurial skills as a key factor for survival. Many authors studied on entrepreneurship in agriculture, agricultural entrepreneur's competences and their ability to adapt to changing economic realities (Bergevoet et al. 2005, De Lauwere 2005, Lans 2009, De Lauwere et al. 2010). **It was observed that strategic thinking is rarely present in the case of farms**. Agricultural producers, focused on operational decisions taken "by the day" often do not see the need for the vision for their company in a strategic perspective, that is in the long-term. This is even more the case with farmers in less favorable rural areas, in general with small scaled farms. To build a future in these areas asks for entrepreneurial competencies. Entrepreneurial skills are particularly essential in Central and Eastern Europe countries characterized by large areas of less

[1] Malak-Rawlikowska, A. et al 2015, IFMA 2015

favorable agricultural land and/or small farms, asking for different systems of farming. (Malak-Rawlikowska, A. et al 2015)
In practice, there are known examples of methods, tools and programs to support the decision of producers, farm development in the strategic perspective and strategy formulation. For example, preparation of business plans, use of the SWOT analysis (Strengths, Weaknesses-Opportunities-and Threats), STEP (Social, Technological and, Political, Economic) and Porter's Five Forces etc. Complex methods containing, in addition to the recommended strategies, also elements of business analysis and the long-term decision making process are not very common (especially in agribusiness).

One of innovative methods, which are available to support the development of entrepreneurship in a complex way is **Interactive Strategic Management Method (ISM),** developed by LEI Wageningen University and Research Centre in the Netherlands (Beldman, A. *et al* 2013). This innovative method and tool is based on the theory of strategic management and deals in practice with strategy making. It was tailored to suit farmers.

Some organizations are applying the tool in the Netherlands where it is used by the largest agricultural bank, Rabobank. Some experience with the interactive strategic management method outside the Netherlands was also obtained in Slovenia. This experience formed part of two Twinning projects with Slovenia.

The transfer of the ISM method and the web-based ISM tool to three Central and Eastern European countries, i.e. Poland, Lithuania and Slovenia was done in 2011-2013 with support of the EU Leonardo da Vinci Transfer of Innovation project, named **ISM Project** "*Interactive Strategic Management (ISM) methodology for improvement of agricultural entrepreneurship in Central-Eastern Europe*". The goal of the ISM Project was to introduce this innovative tool to support farm advisors and farmers in the entrepreneurship and strategic management process. The ISM method was perceived as very innovative and was very successfully applied. In order to continue the development of the ISM Method and use some experiences from the past projects, the new **ISM + Project** was prepared and approved under the ERAMSUS+ Program, KA2. Strategic Partnerships.

The role of the **ISM+ Project** is to further develop and improve ISM tool, adapt it to the local circumstances and various agricultural sectors, and to help increase the entrepreneurial skills of farmers, future farmers (present students) and agricultural advisors. In the new project a web-based Interactive Strategic Management tool has been developed by number of additions to the learning process (new strategies, more languages, more detailed questions, new modules - business planning, networking and marketing). And last but not least the exchange of experiences and know how between the participants in the various countries and regions is very valuable for the method development.

In this paper we would like to describe the method of Interactive Strategic Management and present some concepts of its development and application in 5 EU Member Countries within the new ERASMUS+ Project titled: *Entrepreneurship with vision - methods and tools for managerial capacity building of agricultural producers in Central and Eastern Europe* .

2. Interactive Strategic Management trainings in brief[2]

The method of ISM has three main principles: (1) the emphasis is on the entrepreneur; (2) interaction with the environment; and (3) a focus on actual progress or actions of the entrepreneur. Placing the entrepreneur at the centre means that, instead of an advisor, the farmer himself is responsible for the content of the strategic plan. The strategy developed by an advisor or expert could not truly fit with the individual situation of the farm and the farmer, his personal thinking, goals and abilities. The entrepreneur must therefore write the strategic plan himself; an advisor is only there to guide and stimulate the process.
The focus in the ISM training is on strategic choices (3–10 years ahead). This means that tactical choices (choices for the next 1–2 years) and operational issues do not receive much attention. In general, a good strategy is based on a good fit between means and opportunities [Porter, 1980; 1998]. Within the ISM method this is specified in the following way. A good strategy is based on a good match between:

- **the entrepreneur**: the ambitions and skills of the farmer, his family and/or employees
- **the enterprise**: the structure and performance of the farm
- **the environment**: market and society.

In the first part of the training (1.5 days), the farmer analyses three aspects (enterprise, environment and entrepreneur, see figure 1), while in the second part of the training the farmer translates this analysis into a suitable strategy and an action plan (1.5 days). After about a year, there is a fourth meeting – the so-called return meeting – to see what has happened with implementation of the strategy.

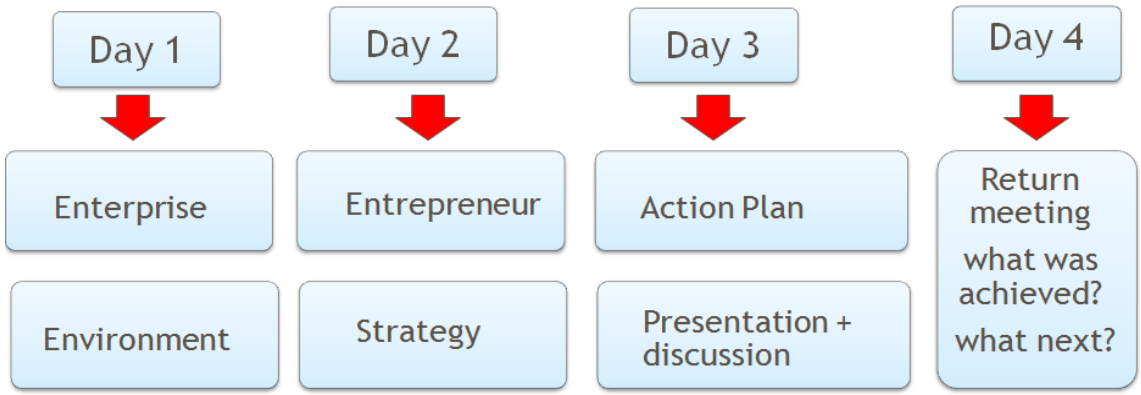


Figure 1. The structure of ISM Training

[2] Malak-Rawlikowska, A. et al 2015, IFMA 2015.

About 8–10 farmers participate in each group. The group is facilitated by a qualified trainer. The role of the trainer is crucial in the training, a factor that will be elaborated on below. Interaction is an important aspect. The farmers are asked to discuss with and challenge each other. The trainer also has this role. Homework assignments are used to create interaction with the outside world and to organize reflection on the process of developing a strategy.

A **web-based tool** is used to structure and support the process. The tool consists of a list of questions a farmer has to answer to ensure that all aspects are taken into account. As part of the tool the farmer must also give a score to the three E-elements: Entrepreneur, Enterprise and Environment. After this analysis, a switch is made to the future strategy. The starting point for this is the farmer's personal ambition and vision. The farmer himself has to combine all of the gathered information to transform it into a few possible strategies; he then has to evaluate these alternatives and finally comes up with his own personal strategy. The tool also calculates a 'fitting score' for 11 categories based on the score the farmers have given to different aspects of the three Es. The farmer can use this calculation as inspiration or to reflect on his own choice. In the last step, the farmer prepares an action plan along with a presentation of the background and content of his strategic plan.

The crucial part of the training is to make the step **from analyzing to strategy development**. This starts with the farmer's personal ambitions, what drives him and what his dreams are. A farmer has to come up with at least two options for his future strategy that fit with the analysis he has made. The farmer is challenged to come up with more than one strategy to stimulate him to think 'outside of the box'. They also use the tool to assign scores to 11 possible strategies. While these are generic strategies and not farm-specific strategies, they can help inspire new ideas. The tool also calculates scores for these 11 strategies based on the score the farmer gave earlier in the training on the three Es. This results in a graph of strategies with the score the farmer has assigned and the score calculated by the tool (figure 2).

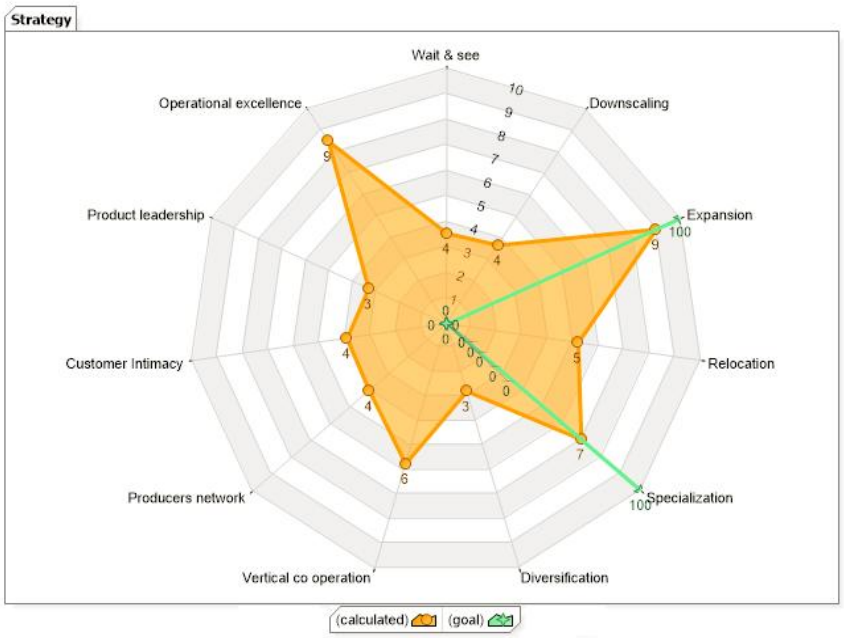


Figure 2. An example of the ISM outcome strategies chosen by the farmer (input) and recommended by the tool (calculated).

When the strategy has been developed, a **good action plan** is needed for implementation of the strategy. The action plan should be smart: Specific – Measurable – Attainable – Realistic and Timely. Each action should have the following elements at a minimum: what will I do, who is involved, and when will it be finished. The goal is to already make a start with the action plan during the training. After the training, the farmer has both a strategy and an action plan. It is important to monitor the progress of the action plan. If it becomes clear that certain goals cannot be achieved, for example due to changes in rules or lack of investment budget, then it may be necessary to go back and repeat earlier steps in the process and adjust the strategy.

3. European experiences in strategic management trainings 2011-2014

During the two-year project, 130 dairy farmers, 50 agricultural students and 15 teachers /facilitators were trained in all three countries together (Poland, Slovenia and Lithuania) in the first year, and, in total, 106 farmers joined the ISM return meetings after one year.

The **evaluation of the trainings** is a very important element of the ISM method and learning process. It helped to check whether the method and training were carried out in a proper way and were considered useful. For the purpose of the evaluation of the ISM trainings, two methods were used: evaluation forms and a telephone evaluation two months after the training. The evaluation results showed that the farmers' expectation about the training were mostly fulfilled in all three countries. It can be observed, however, that after the first training day a part of the participating farmers were surprised by the form of the training. The reason might be that in the three countries in which the trainings were carried out, farmers are rather used to the "lecture type" of trainings, where

interaction with the lecturer is minor. But during the ISM trainings farmers had to work themselves with computers and they had to analyze and discuss the findings about themselves and their farm with the group. This might have caused some concerns of the participants. In all three countries about 85% of farmers conclude that they learned a lot during the ISM training. The most valuable and new knowledge was obtained during the second and third training day, during which the participants analyzed, discussed and presented the future strategies for their farms and their action plan.

Two months after the last training a **telephone evaluation** was organized in each country. The effects of the evaluation show that about 78% of the farmers expressed that the training helped them to get insight into their future plans and that on average 81% of them has a different view on their business after the training. They are more self-confident and more aware about their own and their farms' strengths and weaknesses and the environment. Besides this, about 63% of them see more opportunities for their farm since following the ISM training. In general, the farmers were appreciating the common discussions with other people and emphasized the good atmosphere and well prepared trainers. It was important to note that 87% of participants would recommend the training to other farmers and 77% would join the ISM training again if they had a chance.

4. The new ISM+ Project 2015-2018

The role of the ISM+ project is to further develop and improve ISM tools, adapt those to the local circumstances and various sectors, to help increase the entrepreneurial skills of farmers, future farmers (present students) and farm advisors. Therefore, the new developments of the ISM method within the ISM+ project are to:

- extend the ISM method to farmers and students in a variety of agricultural sectors (dairy, beef, pig, crop production);
- make the training applicable to a larger language area in Europe (English, Dutch, German, Polish, Lithuanian and Slovenian languages);
- make the ISM method more applicable to market oriented development paths by adding the **marketing training module**;
- add a **business planning module** for economic assessment of farmer choices;
- introduce the concept of **networking** to stimulate social entrepreneurship;

Additional ISM Modules developed within the ISM+ Project are described below.

Business-planning Module

The simple Business-planning tool is based on Ms Excel and allows calculating the economic result of the farm in the current state (farm net profit/cash flows and cash balance) and simulates the possible changes (in profit/cash/investment NPV) depending on the strategy choice of the farmer. It is simple to use, with possibility of quick change of parameters (allows to test different variants of the strategy and to check sensitivity of results of changes of some key parameters – like prices, variable costs, fixed costs,

financing source, subsidies etc). The business planning training was incorporated into the ISM+ trainings, during the 3rd training day (short version - 3 h) or as a separate training taking 4-6 training hours.

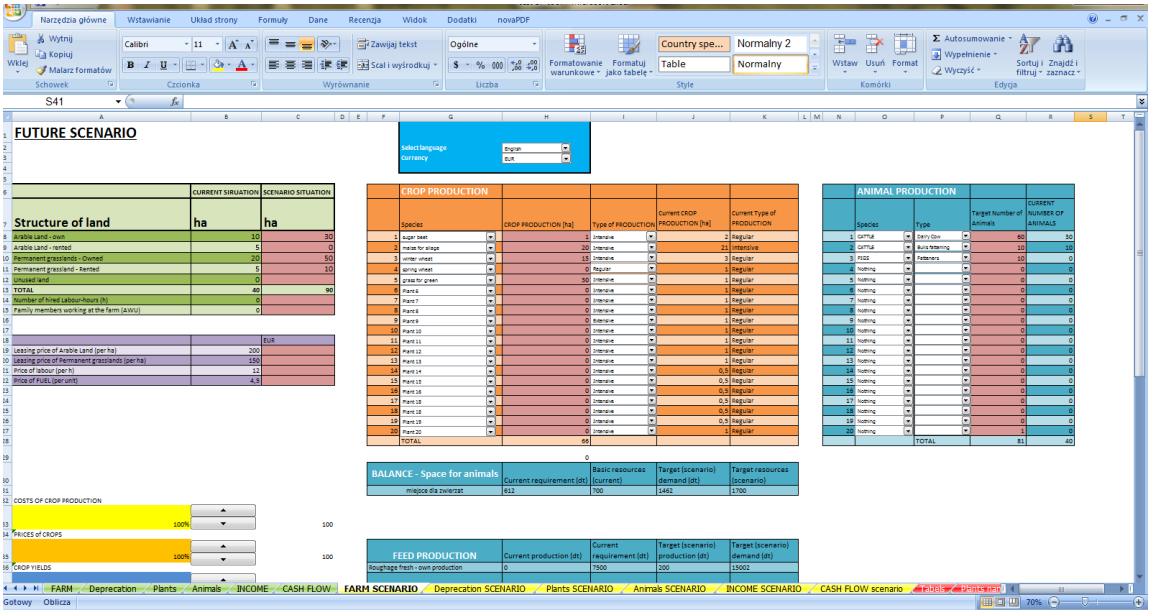


Figure 3. Business-planning tool for farmers (source: Training material of ISM+ Project, Malak-Rawlikowska A., Wąs A. SGGW, 2017)

Marketing Module

This training module details marketing options available for individual farms to market their products. The training is devoted mostly to those farmers who plan to sell their products in a direct way from a farm. It shows different ways to fix and implement marketing concepts and leads to a choice of the most viable option for a particular farm to work out. The training, similarly to the main ISM method, has very interactive form. farmers, after a portion of theoretical background, work on real cases.

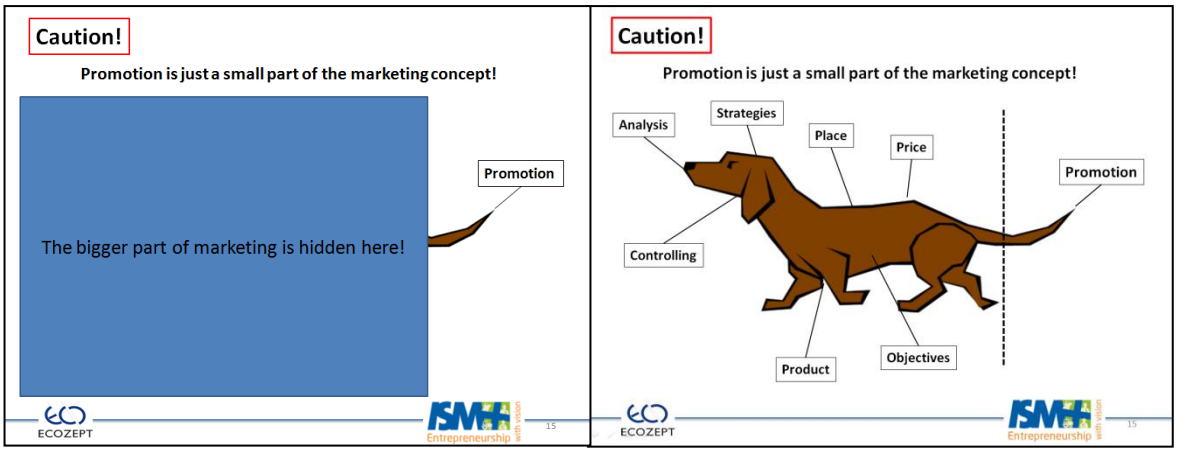


Figure 4. Marketing training module for farmers (source: Training material of ISM+ Project, Schaer B. ECOZEPT, 2017).

Networking Methodology and Module

The networking methodology (networking, agro growth accelerator; entrepreneurship academy) has been applied to the Interactive Strategic Management trainings. Guidelines were prepared to support this innovative communication and intervention methodology. Some of the networking exercises are already used within the main ISM training (interventions - interview with an entrepreneur from outside the agriculture, speed networking, elevator pitch, network analysis), the other can be used as the separate 4h training with farmers.

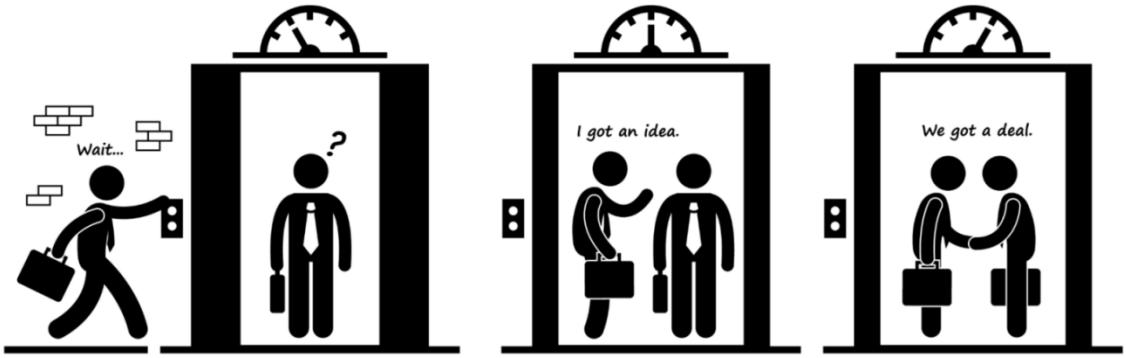


Figure 5. Networking methods - "Elevator Pitch" (source: Training material of ISM+ Project, Kuipers A., Zaalmink W., Smit B., AMT and LEI Wageningen, 2017)

Extending the Languages and Implementation in 5 countries

Within the ISM+ Project the ISM methodology has been implemented in 5 countries - Slovenia, Lithuania, Poland, Austria and additionally in Sweden. The main goal of all planned trainings is to test developed and adjusted methodology, especially the new modules implemented in to the method. The new language, German, and sector-related questions were also added to the method and the translated ISM Tool was tested in Austria with trainers and dairy farmers. It is expected that 7 farmer groups from different sectors and 3 groups of agricultural students will be trained within the project.

4. Summary

The Interactive Strategic Management Method (ISM) is designed to support the development of entrepreneurship and strategy in a complex way. The method was used in trainings in three Central and Eastern European countries: Poland, Lithuania and Slovenia. Since ISM method was highly evaluated by farmers and trainers as a useful tool for farm strategy development, the new **ISM+ Project** was prepared and approved to further develop the ISM methodology. Within the new project, the ISM method was adopted to various agricultural sectors, extended by new languages (German) and new training modules - business planning tool, networking methodology and marketing training module. The method in a current form supports in a complex way entrepreneurship with vision in the farming sector.

Literature

Beldman, A., Malak-Rawlikowska, A.,Stalgiené, A,. Kuipers, A., Tomson, N., De Lauwere, C., Lakner, D., Zekalo, M. and Klopcic, M. (Eds.), 2013. Supporting farmers in making strategic choices. The method and implementation of Interactive Strategic Management in Lithuania, Poland and Slovenia. Lifelong Learning Programme. TiskarnaLitteraPictad.o.o., Ljubljana, Slovenia.

Bergevoet, R.H.M., 2005. Entrepreneurship of Dutch dairy farmers. PhD thesis, Wageningen University, Wageningen.

De Lauwere, C. C. (2005). The role of agricultural entrepreneurship in Dutch agriculture of today. Agricultural Economics 33(2), 229-238.

De Lauwere, C.C.; Pierick, E. ten; Beekman, V.; Asseldonk, M.A.P.M. van, 2010. Behavioural change as a key to sustainable agriculture, In: Global food security: ethical and legal challenges, EurSafe 2010, 16-18 September 2010. - Bilbao : Wageningen Academic Publishers, Global food security: ethical and legal challenges, EurSafe 2010, 16-18 September 2010,

Lans, T., 2009. Entrepreneurial competence in agriculture. Characterization, identification, development and the role of the work environment.PhD thesis, Wageningen University, Wageningen.

Malak-Rawlikowska, A., A. Kuipers, A. Beldman, A. Stalgiene, and M. Klopčič, 2015. Strategic management training for farmers – the case of implementation of the interactive strategic management methodology in Europe. In: Proceedings 20th International Farm Management Congress, Laval University, Québec City, Québec, Canada, p. 169 – 176

Field experiences with Strategic Management and Future thinking sessions of farmers and students

M. Klopčič[1], A. Malak-Rawlikowska[2] and A. Kuipers[3]

[1]Biotechnical Faculty, Ljubljana University, Slovenia
[2]Faculty of Economic Sciences, Warsaw University of Life Sciences, Warsaw, Poland
[3]Expertise Centre for Farm Management and Knowledge Transfer, WageningenUR, the Netherlands

Abstract

Interactive strategic management (ISM) trainings are provided during an EU ERASMUS project in period 2010 to 2013 and a follow-up project in 2015 to 2018. Experiences from the farmer and student trainings in these periods will be presented, especially their view on the use of the tool and on the training process. Perceived availability of resources, opportunities and threats, farming goals and strategies are on the heart of these exercises. Interaction in group discussions and some homework assignments complete the picture.

Keywords: *Farmers, Students, ISM trainings, Experiences*

Introduction

Interactive strategic management (ISM) trainings are provided during an EU ERASMUS project in period 2011 to 2014. Five dairy farmer trainings in Poland, Lithuania and Poland, each, were held. The training group size varied from 6 to 12 dairy farmers. In the same period, student trainings were held. It concerned one till three students groups per country (Klopčič et al., 2009; Beldman et al., 2013). Afterwards, the decision was made to extend the scope of the tool to more agricultural sectors than the dairy sector.

The updated and extended ISM tool is more widely described by Agata Malak-Rawlikowska in this proceedings booklet. The farmers' and students' trainings continue during a 3-year follow-up project, which is executed from 2016 onwards and still going on. Recently a group of beekeepers and two groups of students were trained in Slovenia with the extended ISM tool.

We will address training experiences from farmers and student groups. These impressions are collected from the facilitators of the trainings in the three countries and from a questionnaire distributed at the end of each training day. Most observations are from the first ERASMUS project period. Some recent impressions from the 2017 trainings with the extended tool are added to this.

Observations from the student training sessions in period 2010-2013

Based on the experiences with training of students, who planned to become future farm successors, the following conclusions can be made:

- It was observed that students have higher computer skills and are more efficient in work with the Internet ISM tool. They were also working with the tool at home, improving the content of their reports after each training day.
- Similarly to the farmers' training, the facilitator has a key role in the process. He/she must be able to stimulate student-farmers to think realistically rather than idealistically about their future plans and to show them how to prepare a valuable farm analysis.
- Students were less certain about their future strategy, usually the farmers already had some development path in mind which they expressed at the training, whereas the students tended to create the strategy at the training. Students also found many more critical success factors for their business.
- During the training days, one student from Slovenia, who does not come from a farm, even developed a "dream" farm in New Zealand, a country he would like to go to realise his dream. But, on the opposite, the other students were very much attached to their roots, as we expected from these Slovenian young people. We must realise that, in Slovenia, farmers and also other land owners are extremely attached to their land and region. This is part of the culture.
- Students more often chose labour-extensive production for the future in order to have more time for themselves.

Some observations from the student training sessions in 2017

- Students were indeed much easier in handling the tool than the farmers.
- Students had difficulties with questions about networking related to farming (feed suppliers, cooperatives, dairy plants, etc.), because students are in this stage of their life as a student involved in other networks, like school environment, friends, hobbies, sports, etc.
- Regarding farming goals, such as size of farm, investments, new techniques, the students tended to be over courageous, i.e. too ambitious and not realistic. Their future dream farm is often far outside reality.
- Regarding availability of knowledge and credit, the students were more optimistic than the farmers.
- Regarding opportunities and threats, the students saw more opportunities than their parent farmers. They are very much in favour of new techniques, ICT and the market place. For instance, students look for new marketing lines. They have sometimes very innovative ideas.

Students needed to be asked all the time about the reality of their plans and assumptions.

The ISM methodology could be an instrument for use in business-oriented classes or as part of curriculums related to farm management. In Slovenia, some students used the ISM tool together with their parents and both (current owner and future successor) formulated

the internal and external factors of the farm, their competencies, and the strategies to reach the future goals of the farm. The outcome was presented in meetings in which the farmers and their student sons / daughters participated. One example is presented below (Figure 1; Picture 1).

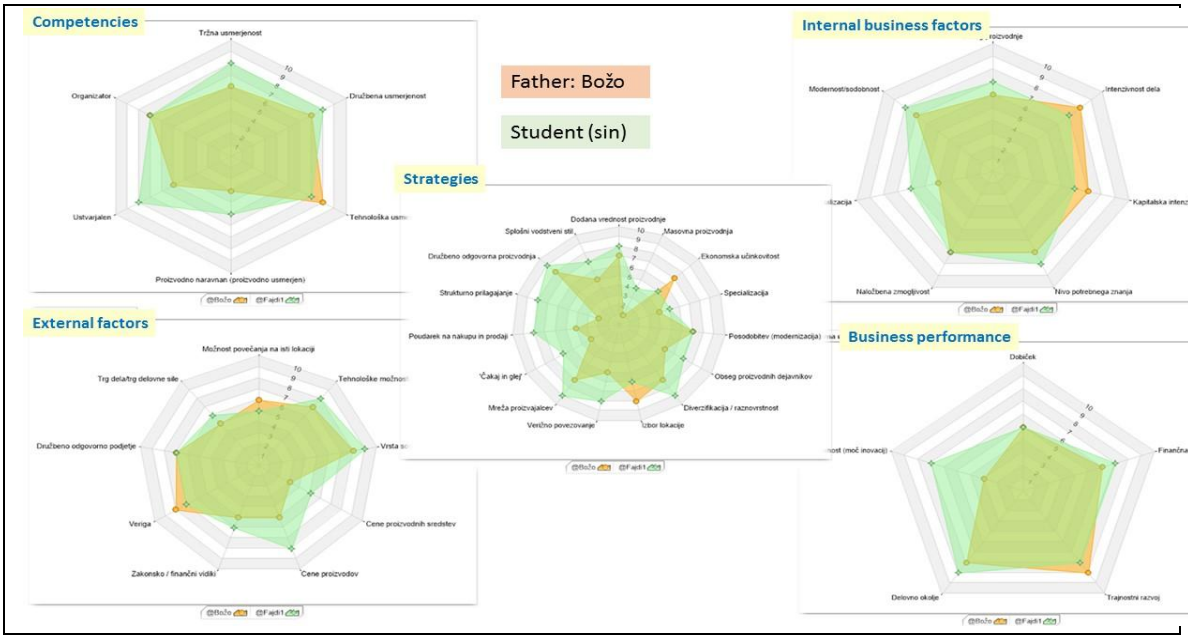


Figure 1. Example of use of ISM tool by father and son

Picture 1. Group of Slovenian students after presenting their future strategies (together with trainers/facilitators)

Observations from the farmer training sessions in period 2010-2013

The project has been stimulating and inspiring for all persons involved. Exchanging experiences, translating and adapting processes and an educational tool not only to different languages and sectors, but also to different cultures have been quite challenging and rewarding in the way of learning and new friendships.

The main conclusions from the farmer trainings concerning the key success factors for the training and opportunities for implementation of the training and advise for the future, were:

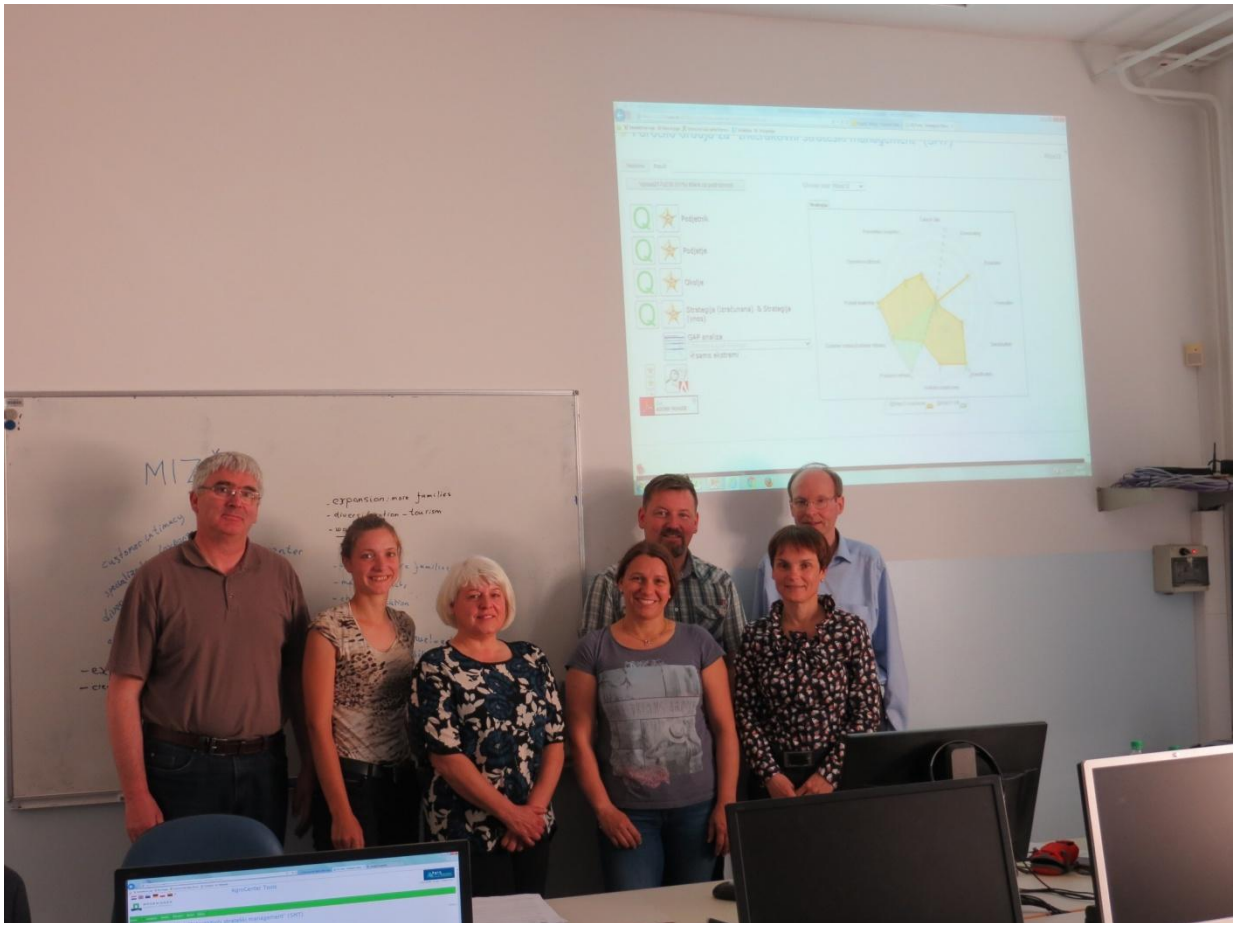
- This type of interactive training is very different from the usual kind of trainings and lectures that is being offered these days to the farmers. It is important to be aware of this difference in the way of communication, when selecting participants and when choosing and training the facilitators.
- The expectations about the training should be clear. Farmers have different views on strategic plans. Some farmers think strategic planning is about financial calculations, which is not a major topic of this training. This training is more about creating awareness of farmers concerning their own situation and future expectations and goals. It is essential that the content and results of the training are well understood by the farmer to avoid misunderstandings.
- The timing and the season are important. Training should be planned during the winter, because during spring and summer time farmers are too busy with fieldwork. It is not just the time needed for the training itself, but the farmers also need time for the homework assignments and time to reflect and think about new ideas and possibilities.
- Good trainers/facilitators are needed. The facilitator has a key role in the process. He or she must be able to stimulate farmers to think outside the box and to stimulate them to interact with colleagues and others. The facilitator must understand the process oriented approach of the training and should have the skills to perform this approach with a group of farmers. The facilitation is a lot easier if he or she has knowledge of the sector and is aware of the current issues in the sector. Knowledge of the sector also helps to ask the right questions and to give good and inspiring examples.
- The farmers attending the training should be self-motivated to work and to discuss strategic choices. Therefore, an appropriate recruitment of the farmers is essential. If farmers are not motivated, the process is difficult to manage. Because the training is with a group, the farmers must be willing to share data and views with their colleagues and the trainer. During the training the farmers work with a computer, therefore, some experience with working with the computer is helpful for a successful training.
- Involvement of the participant is a key factor to success. It is important that the farmers are fully involved in the training. This means participating in the interaction during the training days and doing the homework assignments after

each training session. Farmers should also be present during all three training days. If you miss out one day it is very difficult to pick up the process again.

- A mixture of farmers from different regions may work better than a group of farmers from, for instance, the same village, to be more open towards the discussions and interaction in the group.
- During the training, the farmers have to work with a web based tool. An important condition is that the ISM tool should work properly. This implies that the location for the training should have good internet access. A back up office is needed in case of soft-ware or other difficulties that may arise. It is important to test the tool on location before the training. In problem situations, it is helpful to have a paper version on hand, which can be used to complete the training in an alternative way. But especially during day 2 the use of the web-based ISM tool is quite essential for the training.

Some observations from the beekeepers training sessions in 2017 *(Picture 2; Figure 2)*

- The beekeepers were very much focussing on the questions about marketing;
- The ISM tool stimulated the participants to think about future strategies and a self-evaluation of competences, internal and external factors and to share innovative ideas related to added value and marketing. The process stimulates the participants to be open minded and communicative;
- The beekeepers did mostly not know each other; in such case the training creates a new network among the participants;
- Questions in the tool are now very generally formulated, such that you can apply it for all agrarians; the role of the facilitator has become to raise questions about the sector; moreover, a set of questions can be added for specific sectors or countries to the ISM tool as a kind of personal account of the facilitator;
- The GAP (comparison of own strategy with tool calculated strategy) analysis has improved by presenting the factors which cause the difference between the own and the calculated strategies in the output;
- The group acted very much like beekeepers: they complained about other sectors. For that reason, it would be perhaps difficult to have a mixed group of beekeepers together with dairy farmers or pig farmers.



Picture 2. ISM training with Slovenian beekeepers

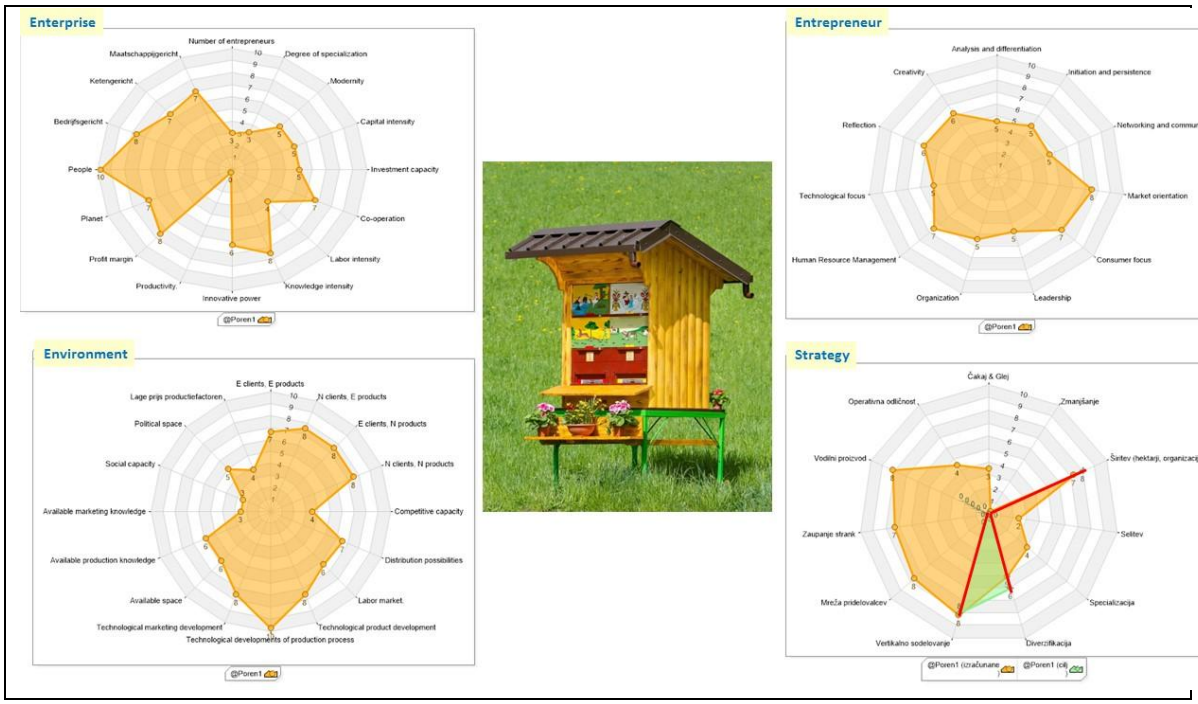


Figure 2. Output produced by one of the Slovenian beekeepers using the new ISM tool

Homework assignment: Interview with an entrepreneur outside the agricultural sector

To look beyond the boundaries of their company, even outside the agricultural sector, the farmers had to do homework assignments. One of the assignments was to interview an entrepreneur from a different sector. The goal of the assignment is to have a conversation with another entrepreneur on the strategic level. At first sight, it seems hard to compare a farm with a company outside of agriculture. But, if you look at it from a strategic level, then there are many similarities: uncertainty about market developments, dealing with stakeholders and neighbours, changing legislation, etc. And because the two entrepreneurs do not understand the operational details of each other's company, it is easier to discuss on the strategic and tactical levels. With this conversation the farmer sees similarities with other businesses and becomes more confident because he learns that other entrepreneurs are also interested in the business of a farmer. Another effect is that the farmer obtains feedback on how somebody from the outside looks at his business. Moreover, the farmer learns how to network, how to get in touch with somebody outside his usual network.

Example from Poland

At the beginning, we started our business as a state store specialised in hydraulics. After a long time we became the private owners – we bought the store from the state. Taking over the store and starting self-employment was then the best choice. After that, we began to the take the first steps in the Polish market as a private business. Initially, we had a dozen customers, a small shop (40 m^2) and a storeroom. The main aim of the business was to expand and to gain new customers and to offer new products of high quality and durability. The personal purpose was (and still is) a steady income as financial support to our family. To describe the current situation, our shop area is about 600 m^2 and a few hundred customers are interested in our shop. We are also a wholesaler and we supply other brand shops as well as we are representatives of a large number of major manufacturers of hydraulics and sanitary items. The main business goal is considerable progress by constantly expanding the range of products. As we are talking about the disadvantages of our business, the fixed working hours and the stress of running a private business are still the main difficulties. The biggest advantage is the possibility to continuously learn about new technologies and technical innovations. Certainly, the important person in creating our business is my dad, who was the founder of the company. He gave me the necessary experience in running the business. He showed me how to manage the company and to set the direction of the company.

The farmer interviewer recognized that they had several business aspects in common. For instance, the family business and downer relationship are similar for both parties.

Evaluation of trainings

Evaluation is a very important element of the ISM method and learning process. It helps to check whether the method and training were carried out in a proper way. The evaluation also allows detecting potential problems of the training and preventing their occurrence in the future. For the purpose of the evaluation of the ISM trainings in the period 2010 to 2013, two methods were used: evaluation forms and a telephone evaluation two months after the training.

Evaluation forms

Evaluation forms were prepared and collected about the training to be filled in by the farmers (after each training day); about the training and the group to be filled in by the facilitator (2 times per training day); and about the use of the ISM tool, the farmers' group and the facilitator to be filled in by an independent observer. The evaluation helped to assess the training itself and to make improvements and adjustments for the future. The evaluation results showed, in all three countries, that the farmers' expectation about the training were mostly fulfilled. It can be observed, however, that after the first training day a part of the participating farmers were surprised by the form of the training (see Figure 3). The reason might be that in the three countries in which the evaluation was carried out, farmers are rather used to the "lecture type" of trainings, where interaction with the lecturer is minor. However, during the ISM trainings farmers had to work themselves with computers and they had to analyse and discuss the findings about themselves and their farm with the group. This might have caused some concerns of the participants.

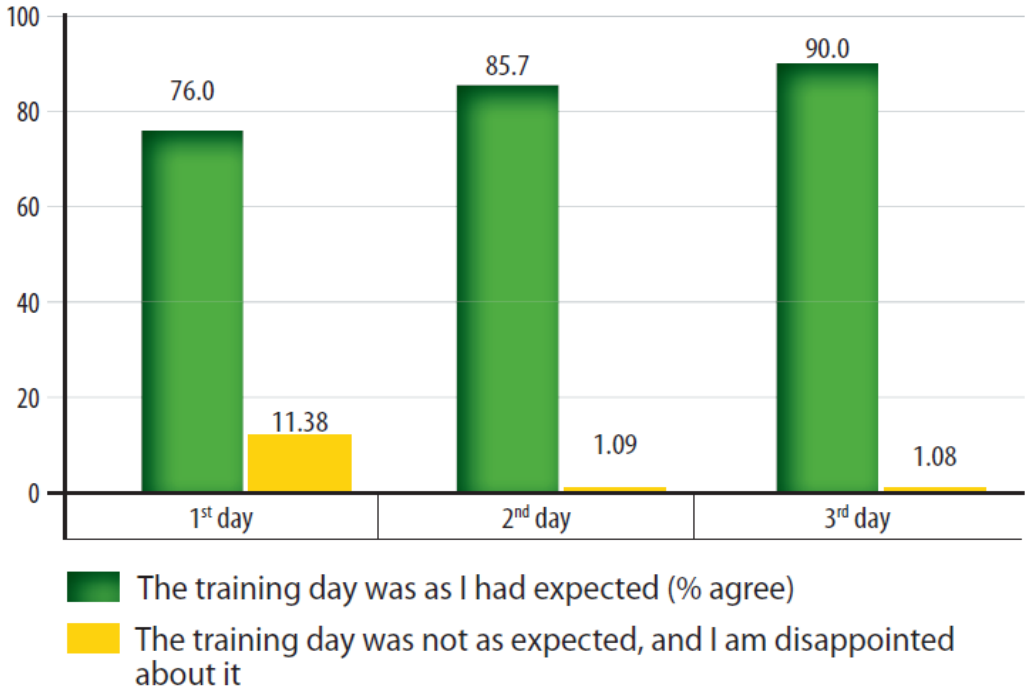


Figure 3. Expectations about trainings by day

Source: Malak-Rawlikowska (2013). Evaluation of trainings, in Beldman et al. (2013), pages 76-78

In the Netherlands' RABO bank ISM training, 847 young farmers in 89 groups have been trained in ISM since 2016. The total number of training days was 5. Figure 4 provides an impression of the average evaluation outcomes over the last three years, showing that the 1st day training usually scored the lowest. This is in agreement with the evaluation results in the three Central and Eastern European countries. Obviously, more factors than being unknown with this kind of group meetings seems to influence the appreciation of the training day by the farmers. For instance, to get to know each other may also play a factor in the process of appreciation of the training content.

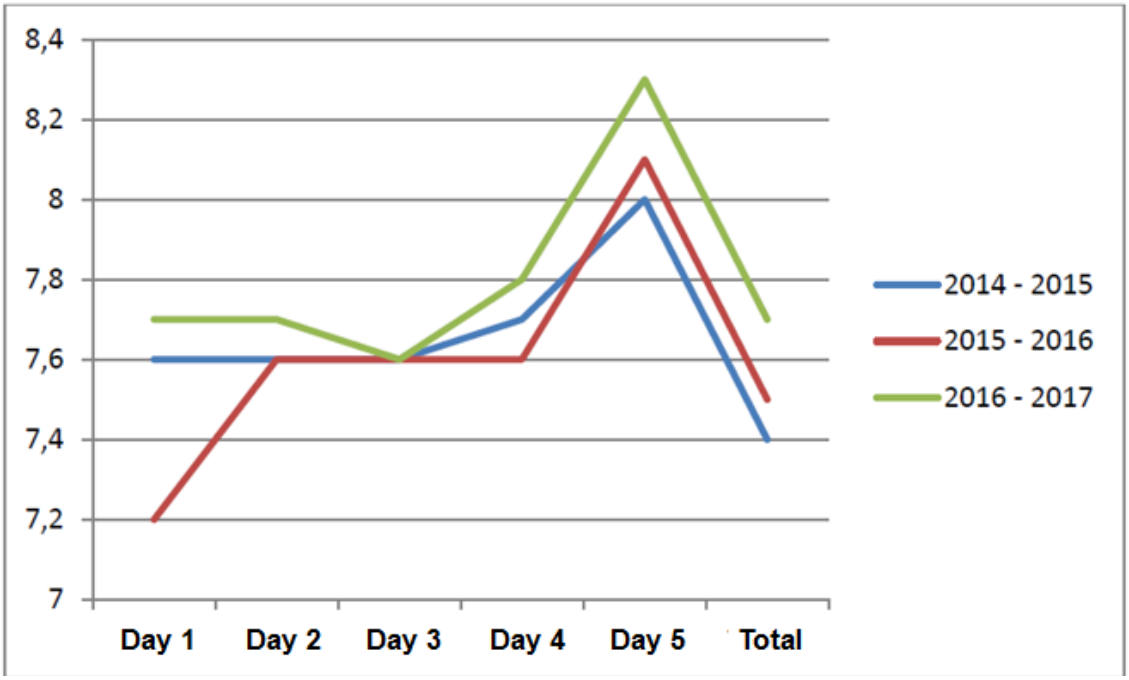


Figure 4. Average scores of the Rabo Successors Training in the Netherlands in the training seasons 2015-2015, 2015-2016 and 2016-2017. The scores are calculated as the average of all scores of all participants per training day (five in total) in that particular year (*Source: Tomson and Smit (2017); this proceedings booklet)*

References

Klopčič, M., Postma, D. and Kuipers, A., 2009. Method of Interactive Strategic Management. University of Ljubljana

Beldman, A., Malak-Rawlikowska, A.,Stalgiené, A,. Kuipers, A., Tomson, N., De Lauwere, C., Lakner, D., Zekalo, M. and Klopčič, M. (Eds.), 2013. Supporting farmers in making strategic choices. The method and implementation of Interactive Strategic Management in Lithuania, Poland and Slovenia. Lifelong Learning Programme. LEI Wageningen UR, the Netherlands

COMPETENCIES OF DAIRY FARMERS IN LITHUANIA, POLAND AND SLOVENIA AND THE EFFECTS OF AN INTERACTIVE TRAINING PROGRAMME

C. de Lauwere[1], A. Malak-Rawlikowska[2], A. Stalgiene[3], M. Klopčič[4], A. Kuipers[5]

[1]Wageningen Economic Research, Wageningen, The Netherlands
[2]Warsaw University of Life Sciences, Faculty of Economic Sciences, Warsaw, Poland
[3]Lithuanian Institute of Agrarian Economics , Vilnius , Lithuania
[4]Biotechnical Faculty, Dept. of Animal Science, Domžale, Slovenia
[5]Expertise Centre for Farm Management and Knowledge Transfer, Wageningen, The Netherlands
Contact: carolien.delauwere@wur.nl

Abstract

Two surveys containing questions about entrepreneurial features, perceived availability of resources and perceived opportunities and threats were carried out in the second half of 2011 and in January 2012 (t0) and in the spring of 2013 (t1). The survey at t0, was completed by respectively 334, 334 and 362 dairy farmers in Lithuania, Poland and Slovenia. Of these farmers, respectively 46, 42 and 49 were asked to participate in interactive strategic management (ISM) trainings. These so-called 'ISM farmers' were asked to complete the survey again at t1. Respectively 39, 22 and 41 dairy farmers in Lithuania, Poland and Slovenia complied with that request. By that time they had participated in three ISM training days shortly after t0 and one ISM return meeting after approximately a year. In addition, respectively 63, 49 and 134 Lithuanian, Polish and Slovenian dairy farmers who completed the survey the first time (at t0) but who did not participate in the ISM trainings were asked to complete the second survey (at t1). They are referred to as the not-trained control group.

Analyses of the complete dataset at t0 with respectively 334, 334 and 362 Lithuanian, Polish and Slovenian dairy farmers indicated that farmers with higher self-reported competence levels had significantly higher scores on the entrepreneurial features locus of control, knowledge on development direction, strategic reflection, ambition and customer orientation, and lower scores on passivity. In addition, they seemed to perceive regulations, EU subsidies and accession to the EU, internet and ICT applications and the milk market situation in their country more as an opportunity than farmers with lower competence levels, and they seemed to be more optimistic about the availability of milk quota and knowledge.

Analyses of the data collected for all 348 farmers who also participated in the survey at t1 revealed that ISM trainings seem to have a positive effect on the farmers' competencies and entrepreneurial features. In addition, farmers with low and intermediate self-reported competence levels seem to take more advantage of the ISM trainings than farmers with high self-reported competence levels. This indicates that ISM trainings can

contribute to the development of competencies and thus to growth, innovation and diversification of enterprises and for continuously recognising new business opportunities

Keywords: *agricultural entrepreneurship, competencies, interactive training, strategic management*

Introduction

Since the fall of the communist regime in the 1990s and the accession to the EU in 2004, agriculture in Central and Eastern Europe (CEE countries) has faced radical changes in the agrifood supply chains in terms of output, productivity, employment, investments, product standards, the organization of supply channels and the role of foreign investment (Buchenrieder and Möllers, 2009; Dries et al. 2009; Zemeckis and Drozdz, 2009). CEE countries and other countries characterized by similar farming areas, can keep up with these developments in agriculture only if farmers are willing and able to deal with the radical changes that are facing them. This demands entrepreneurial competencies (Pyysiäinen et al., 2006; Vesala and Pyysiäinen, 2008).These are defined as the ability to perform specific tasks and refer to the underlying knowledge, skills, ability, personality traits and know-how that result in effective task fulfilment within a specific context (Man et al., 2002; Bergevoet and Van Woerkum, 2006; Lans, 2009). In agriculture, entrepreneurial competence refers to the exploration of new pathways to growth, innovation and diversification and the ability of owner-managers to identify and pursue such opportunities (Lans, 2009). The development of entrepreneurship is thus important to enable social responsible farming, but also with regard to other strategic choices such as those related to the succession of the farm, diversification of the business as well as investment decisions that have an impact on the overall competitiveness of the farm (Lans et al., 2004; De Lauwere, 2005; Nuthall, 2006; McElwee, 2008; Alsos and Carter, 2006; Lans, 2009). This stresses the importance of improving entrepreneurial competencies in order to help farmers to deal with the challenges they are facing in order to keep up with business demands and keep the farm viable.

Kraus and Kauranen (2009) state that integration of entrepreneurial (opportunity-seeking) and strategic (advantage-seeking) perspectives seems to be a promising approach for contemporary management, and is probably even a necessary approach for coping with the effects of the new competitive landscape. This supports the idea for (interactive) training of farmers to become more entrepreneurial and to improve entrepreneurial competencies (including opportunity, relationship, organizing, strategic and commitment competencies (Man et al., 2002; Beldman et al., 2013). However not much empirical work has been done to 'prove' the effects of such training. In this paper, the results of a study are presented in which an attempt has been made to demonstrate the effects of an interactive strategic management training (ISM) on entrepreneurship and competencies of dairy farmers in Lithuania, Poland and Slovenia in an empirical way. The hypothesis was that scores on (self-reported) entrepreneurial features (competencies) would change in a positive way after ISM trainings in a group of farmers who participated in the trainings

(the ISM group), and would not change or change to a smaller extent or in another direction in another not trained control group. This will be elaborated further in the material and methods section.

Material and Methods

Data collection

Two surveys using structured questionnaires with pre-programmed answers were carried out in Lithuania, Poland and Slovenia. Both surveys contained the same questions about farm strategies, competencies, entrepreneurial features, future expectations, perceived opportunities and threats and the perceived availability of resources. The first survey, the baseline measurement at t0, was carried out in the second half of 2011 and in January 2012. Respectively, 334, 334 and 362 dairy farmers participated in this survey in Lithuania, Poland and Slovenia. Of these farmers, 46, 42 and 49 were asked to participate in the ISM trainings in Lithuania, Poland and Slovenia, respectively. They are referred to as ISM farmers. The ISM training consisted of three consecutive meetings in which the farmers were asked to reflect upon their strategic choices in relation to their farm, their environment and their own weaknesses and strengths. In each country the farmers who participated in the training were divided in five groups of 6 to 10 farmers to stimulate discussions between farmers. On the third (last) training day, the farmers were asked to present their future farm plans to their group. The trainings were carried out in the spring of 2012. About a year later, in the spring of 2013, the farmers were invited for a return meeting. In this meeting, the farmers met again in their own group and it was discussed whether and how farmers had changed their farm strategy and future farm plans after the ISM training in 2012.

The second survey, the repetition at t1, was carried out in the spring and summer of 2013 after the return meetings of the ISM trainings. The ISM farmers who participated in these meetings were asked to complete the survey again. This concerned 39 dairy farmers in Lithuania, 22 dairy farmers in Poland and 41 dairy farmers in Slovenia. Besides this, respectively 63, 49 and 134 Lithuanian, Polish and Slovenian dairy farmers who completed the survey the first time (at t0) but who did not participate in the ISM trainings were asked to complete the second survey (at t1). They are referred to as the not-trained control group (Table 1).

Table 1. Overview of the number of farmers who participated in the surveys at *t0* and *t1* in Lithuania, Poland and Slovenia

	t0 (2012)	t1 (2013)		
Country	All farmers*	ISM farmers	Control group	Total
Lithuania	334	39	63	102
Poland	334	22	49	71
Slovenia	362	41	134	175
Total	1030	102	246	348

*the survey at t0 was carried out before the start of the ISM trainings

The questions with pre-programmed answers could be answered on a 7-point scale, in which 1 was the most negative score (eg. totally disagree, very unlikely), 4 was the neutral score and 7 was the most positive score (eg. totally agree, very likely). The questions also could be answered with 'don't know'/'not applicable'. These answers were interpreted as missing values in the analyses.

Data analysis

The effects of the ISM trainings were measured by means of an univariate ANOVA in which ISM participation was the independent variable and the differences between scores on questions regarding entrepreneurial features, strategies, perceived availability of resources and perceived opportunities and threats before and after the ISM trainings were the dependent variables. The hypothesis was that the scores would change in a positive way after the ISM trainings in the ISM group and would not change or change to a smaller extent or in another direction in the not trained control group. Results are mentioned only if the difference between t0 and t1 (Δt) is significant ($p<0.05$) or if there is a tendency ($p<0.10$) between the ISM group and the not trained control group.

In the underlying paper, firstly the effects of competence levels on scores on entrepreneurial features, perceived opportunities and threats and perceived availability of resources are presented. These results are based on the analysis of the complete dataset collected at t0 (with 334, 334 and 362 Lithuanian, Polish and Slovenian farmers respectively). The results of those analyses are described in detail in De Lauwere et al., (2018; accepted for publication in Transformations in Business and Economics). However, in the underlying paper, emphasis is on the effects of the ISM trainings on farmers' competencies. The analyses for this part of the study have been performed for all 348 farmers who participated in the survey at t1 together, for farmers with different competence levels[3] and for farmers from different countries.

Results

Effects of competence level

The analyses of the complete dataset at t0 indicated that differences in entrepreneurship exist between farmers with different competence levels. Farmers with higher self-reported competence levels had significantly higher scores on the entrepreneurial features locus of control, knowledge on development direction, strategic reflection, ambition and customer orientation, and lower scores on passivity (Table 2).

[3] Competence levels are determined on the basis of a cluster analysis performed with the survey data gathered at t0; for more detail: see De Lauwere et al., 2018 (accepted for publication in Transformations in Business and Economics)

Table 2. Entrepreneurial features of dairy farmers with low (LC), intermediate (IC) and high levels (HC) of competence (mean and standard deviation between brackets).

Entrepreneurial features (measures on a 7-point scale: 1 = fully disagree, 7 = fully agree)							
	LC_farmers		IC_farmers		HC_farmers		
	Mean (std)	n	Mean (std)	n	Mean (std)	n	F
Locus of control	3.6 (0.8)[a]	170	4.2 (0.8)[b]	468	4.8 (0.9)[c]	363	137.4***
Knowledge on development direction	3.8 (0.9)[a]	169	4.4 (1.0)[b]	467	5.1 (0.9)[c]	363	123.7***
Strategic reflection	3.7 (0.8)[a]	168	4.5 (0.8)[b]	468	5.2 (0.8)[c]	362	222.3***
Ambition	3.5 (1.2)[a]	169	4.2 (1.0)[b]	467	5.1 (1.1)[c]	363	135.6***
Customer orientation	4.4 (1.2)[a]	169	5.1 (1.0)[b]	464	5.7 (1.0)[c]	361	96.9***
Passivity	4.4 (1.2)[b]	169	4.2 (1.1)[ab]	469	4.1 (1.5)[a]	363	4.9**

[abc]Different characters in a row mean a significant difference; *p<0.05, **p<0.01, ***p<0.001
Source: De Lauwere et al., (2018; accepted for publication in Transformations in Business and Economics)

Farmers with higher self-reported competence levels also seemed to perceive regulations, EU subsidies and accession to the EU, internet and ICT applications and the milk market situation in their country more as an opportunity than farmers with lower competence levels. In addition, they seemed to be more optimistic about the availability of milk quota and knowledge (Table 3).

Table 3. Perceived opportunities and threats and availability of resources of dairy farmers with low (LC), intermediate (IC) and high levels (HC) of competence (mean and standard deviation between brackets);.

Opportunities and threats (measures on a 7-point scale: 1 = big threat, 2 = threat, 3 = modest threat, 4 = neutral, 5 = modest opportunity, 6 = opportunity, 7 = big opportunity)							
	LC_farmers		IC_farmers		HC_farmers		
	Mean (std)	n	Mean (std)	n	Mean (std)	n	F
Regulations	3.7 (1.2)[a]	169	4.1 (1.2)[b]	464	4.4 (1.4)[c]	362	18.7***
EU subsidies/accession to EU	4.9 (1.3)[a]	169	5.2 (1.4)[b]	462	5.4 (1.4)[b]	360	7.4**
Internet and ICT applications	5.3 (1.2)[a]	167	5.7 (1.1)[b]	460	6.0 (1.0)[c]	361	23.7***
Milk market situation	3.7 (1.3)[a]	167	4.0 (1.3)[b]	454	4.2 (1.6)[c]	356	6.5**
Availability of resources (measures on a 7-point scale: 1 = very difficult to obtain, 2 = difficult to obtain, 3 = somewhat difficult to obtain, 4 = neutral, 5 = somewhat easy to obtain, 6 = easy to obtain, 7 = very easy to obtain)							
	LC_farmers		IC_farmers		HC_farmers		
	Mean (std)	n	Mean (std)	n	Mean (std)	n	F
Milk quota	4.4 (1.5)[a]	139	4.6 (1.6)[a]	400	4.8 (1.7)[b]	297	3.9*
Knowledge	5.1 (1.2)[a]	165	5.2 (1.2)[a]	464	5.5 (1.2)[b]	356	6.9**

[abc]Different characters in a row mean a significant difference; *p<0.05, **p<0.01, ***p<0.001
Source: De Lauwere et al., 2018 (accepted for publication in Transformations in Business and Economics)

Effects of ISM trainings

All farmers and farmers with different self-reported competence levels

Table 4 shows the effect of ISM trainings on changes in scores on entrepreneurial features, perceived availability of resources and perceived opportunities and threats for all farmers of the ISM group and not trained control group and for farmers with low, intermediate and high competence levels (LC-farmers, IC-farmers and HC-farmers respectively). Looking at the results of all farmers together showed that ISM farmers had slightly higher average scores on the entrepreneurial features pursuing, analysing, strategic reflection and customer orientation at t1 than at t0, while the opposite was found for the farmers of the control group. In addition, ISM farmers seemed to perceive EU subsidies and accession to the EU slightly more as an opportunity at t1 than at t0, while the opposite was found for the farmers of the control group.

Looking at the effects of the ISM trainings for farmers of different competence levels reveals comparable differences between ISM farmers and farmers of the control group. However, more effects were found for farmers with lower and intermediate competence levels and the differences between t1 and t0 seemed to be bigger for ISM farmers than for farmers of the not trained control group, especially for farmers with lower self-reported competence levels (Table 4).

The results of the farmers with low self-reported competence levels are:

- Both ISM farmers and farmers of the control group had higher scores on pursuing, analysing, locus of control and the perceived availability of milk quota at t1 than at t0. However, the differences were bigger for ISM farmers.

The results of the farmers with intermediate self-reported competence levels are:

- Both ISM farmers and farmers of the control group had slightly higher scores on pursuing and networking at t1 than at t0 and they perceived EU subsidies and accession to the EU more as an opportunity at t1 than at t0. However, the differences were bigger for ISM farmers.
- ISM farmers had slightly higher average scores on analysing at t1 than at t0, while the opposite was found for the farmers of the control group.

The results of the farmers with high self-reported competence levels are:

- Both ISM farmers and farmers of the control group had slightly lower scores on strategic reflection at t1 than at t0. However, the difference was smaller for ISM farmers.
- ISM farmers had slightly higher average scores on customer orientation at t1 than at t0, while the opposite was found for the farmers of the control group.

Table 4. Effect of ISM trainings on changes in scores on entrepreneurial features (entrepren), perceived availability of resources (resource) and perceived opportunities and

threats (oppthreat) for all farmers of the ISM group and not trained control group and for farmers with low, intermediate and high competence levels (LC-farmers, IC-farmers and HC-farmers respectively); scores are on a 7 point scale with 1 being the most negative and 7 being the most positive score.

		ISM group			Control group			
Type of construct	Construct	Mean (sd) at t0	Δt	n	Mean (sd) at t0	Δt	n	F
All farmers								
Entrepren	Pursuing	5.2 (0.9)	0.2	101	5.1 (1.1)	-0.1	243	4.6*
Entrepren	Analysing	5.4 (0.9)	0.1	101	5.5 (0.9)	-0.1	243	3.9(*)
Entrepren	Strategic reflection	4.8 (1.0)	0.1	101	4.8 (1.0)	-0.2	241	3.8(*)
Entrepren	Customer orientation	5.4 (1.1)	0.2	101	5.4 (1.1)	-0.1	241	5.7*
Oppthreat	EU	5.3 (1.4)	0.2	101	5.2 (1.4)	-0.2	238	3.6(*)
LC_farmers								
Entrepren	Pursuing	3.8 (0.5)	1.6	10	3.6 (0.8)	0.6	32	4.9*
Entrepren	Analysing	4.0 (0.6)	1.3	10	4.3 (0.7)	0.6	32	4.8*
Entrepren	Locus of control	3.5 (1.1)	1.0	10	3.7 (0.8)	0.4	32	4.8*
Resource	Milk quota	3.7 (1.8)	1.3	10	4.1 (1.5)	0.04	32	4.5*
IC_farmers								
Entrepren	Pursuing	5.0 (0.7)	0.3	48	4.9 (0.8)	0.1	112	3.0(*)
Entrepren	Analysing	5.1 (0.6)	0.3	48	5.2 (0.6)	-0.1	112	5.7*
Entrepren	Networking	4.1 (0.8)	0.7	48	4.4 (0.8)	0.3	112	6.3*
Oppthreat	EU	5.3 (1.2)	0.3	47	5.1 (1.4)	0.1	112	3.0(*)
HC_farmers								
Entrepren	Strategic reflection	5.3 (0.8)	-0.1	43	5.2 (0.9)	-0.4	94	3.8(*)
Entrepren	Customer orientation	5.8 (0.8)	0.1	43	5.8 (1.0)	-0.4	94	3.5(*)

*$p<0.05$; (*)$p<0.10$; a significant difference ($p<0.05$) or tendency ($p<0.10$) means that Δt of the ISM group differs from that of the control group.

Farmers from different countries

Table 5 shows the effect of ISM trainings on changes in scores on entrepreneurial features, perceived availability of resources and perceived opportunities and threats for Lithuanian, Polish and Slovenian farmers of the ISM group and not trained control group. It is strikingly that not many differences are found in Slovenia. The only effect found in this country is that Slovenian ISM farmers seemed to perceive regulations slightly less as a threat at t1 than at t0, while the opposite was found for the Slovenian farmers of the control group (Table 5).

Table 5. Effect of ISM trainings on changes in scores on entrepreneurial features (Entrepren), perceived availability of resources (resource) and perceived opportunities and threats (oppthreat) for Lithuanian, Polish and Slovenian farmers of the ISM group and not trained control group; scores are on a 7 point scale with 1 being the most negative and 7 being the most positive score.

		ISM group			Control group			
Type of construct	Construct	Mean (sd) at t0	Δt	n	Mean (sd) at t0	Δt	n	F
Lithuania								
Entrepren	Ambition	4.3 (1.4)	0.1	39	4.2 (1.4)	-0.4	63	$3.5^{(*)}$
Entrepren	Networking	4.3 (1.2)	0.3	39	4.6 (1.3)	-0.3	62	4.9^{*}
Entrepren	Locus of control	4.5 (1.0)	0.2	39	4.5 (1.2)	-0.3	63	4.1^{*}
Entrepren	Customer orientation	5.5 (1.2)	0.2	39	5.6 (1.2)	-0.3	62	$3.7^{(*)}$
Entrepren	Perceived performance	4.6 (0.9)	0.2	39	4.8 (1.2)	-0.3	60	6.6^{*}
Entrepren	Financial prudence	6.0 (1.0)	0.3	39	6.2 (0.9)	-0.1	63	$3.4^{(*)}$
Entrepren	Strategic reflection	4.8 (1.1)	-0.04	39	4.7 (1.1)	-0.5	63	4.9^{*}
Resource	Milk quota	4.7 (1.7)	-0.1	34	5.1 (1.4)	-1.0	44	4.9^{*}
Oppthreat	EU	5.7 (1.4)	0.4	39	5.9 (1.0)	-0.5	63	9.6^{**}
Poland								
Entrepren	Pursuing	4.8 (0.7)	0.5	22	5.0 (0.8)	0.1	49	4.5^{*}
Entrepren	Analysing	5.1 (0.7)	0.5	22	5.2 (0.7)	-0.01	49	7.5^{**}
Entrepren	Customer orientation	5.1 (0.9)	0.7	22	5.0 (0.8)	0.1	48	4.4^{*}
Entrepren	Perceived performance	4.8 (0.5)	-0.7	22	4.8 (0.8)	0.1	49	6.4^{*}
Slovenia								
Oppthreat	Regulations	3.9 (1.4)	0.3	40	3.9 (1.1)	-0.1	128	$3.5^{(*)}$

*p<0.05; $^{(*)}$p<0.10; a significant difference (p<0.05) or tendency (p<0.10) means that Δt of the ISM group differs from that of the control group.

The following results were found in Lithuania (Table 5):

- ISM farmers had slightly higher average scores on the entrepreneurial features ambition, networking, locus of control, customer orientation, perceived performance and financial prudence at t1 than at t0, while the opposite was found for the farmers of the control group.
- Both ISM farmers and farmers of the control group had slightly lower scores on strategic reflection at t1 than at t0. However, the difference was smaller for ISM farmers.
- Both ISM farmers and farmers of the control group perceived the availability of resources lower at t1 than at t0. However, the difference was smaller for ISM farmers.
- ISM farmers perceived EU subsidies and accession to the EU more as an opportunity at t1 than at t0, while the opposite was found for the farmers of the control group.

In Poland, the following results were found (Table 5):

- Both ISM farmers and farmers of the control group had slightly higher scores on pursuing and customer orientation at t1 than at t0. However, the differences were bigger for ISM farmers.
- ISM farmers had slightly higher average scores on analysing at t1 than at t0, while the opposite was found for the farmers of the control group.
- ISM farmers had slightly lower average scores on perceived performance at t1 than at t0, while the opposite was found for the farmers of the control group.

Discussion

Farmers with different competence levels

The analysis of the survey performed at t0 revealed that differences in entrepreneurship exist between farmers with different competence levels. Farmers with higher self-reported competence levels had significantly higher scores on the entrepreneurial features locus of control, knowledge on development direction, strategic reflection, ambition and customer orientation, and lower scores on passivity. They also seemed to perceive regulations, EU subsidies and accession to the EU, internet and ICT applications and the milk market situation in their country more as an opportunity than farmers with lower competence levels and they seemed to be more optimistic about the availability of milk quota and knowledge.

According to Man et al., (2002), entrepreneurial competencies can be seen as the total ability of the entrepreneur to perform a job successfully. Knowledge on development direction is related to opportunity seeking competencies (Bergevoet, 2005), strategic reflection is part of the strategic competencies which are important to set, evaluate and implement the strategies of the enterprise (Man et al., 2002) and locus of control, ambition, customer orientation and passivity are personal characteristics which also affect entrepreneurial competencies in a positive (locus of control, ambition and customer orientation) or negative way (passivity) (Shrapnel and Davie, 2001; De Lauwere, 2005; Kraus and Kauranen, 2009; McElwee, 2008).

Effects of ISM

Comparing the scores on entrepreneurial features of ISM farmers and not trained farmers of the control group at t1 and t0 showed that the ISM training indeed can be helpful to improve entrepreneurial competencies. Apart from a few exceptions, ISM farmers had higher scores on a number of entrepreneurial features at t1 than at t0 (after the ISM trainings), while the opposite or a smaller difference was found for the not trained control group. The same tendency was found for the perceived availability of resources and the perceived opportunities and threats. Comparable results have been found by other authors as well. Bergevoet and Van Woerkum (2006) found that interactive training of dairy farmers in study groups can help farmers think in a structured way about reality and generate knowledge (learning to learn), can help them to develop professional networks,

can create a shared understanding and can give their morale a boost. Verstegen and De Lauwere (2009) found that either group or individual intervention programs improved scores on entrepreneurial competencies of farmers and changed their perception on developments in the external environment. Comparable findings have been reported by Hampel-Milagrosa et al., (2015) for micro and small enterprises: a higher quality of education increased the ability of entrepreneurs to upgrade their enterprises.

Although the differences between t1 and t0 found for scores on entrepreneurial features, perceived availability of resources and perceived opportunities and threats all pointed in the same direction, some different results were found between farmers of different self-reported competence levels and countries. More effects of ISM were found for farmers with lower and intermediate competence levels and the differences between t1 and t0 seemed to be bigger for ISM farmers than for farmers of the not trained control group, especially for farmers with lower self-reported competence levels. Moreover it appeared that in Slovenia less differences were found between t1 and t0 than in Poland and Lithuania. This may be related to the different contexts in which the farmers in the different countries have to operate. However, due to organisational circumstances, data were collected differently in Slovenia than in Lithuania and Poland[4]. This resulted in a relatively small number of farmers with a low self-reported competence level in Slovenia and a relatively large number of farmers with a high self-reported competence levels[5]. This may also have affected the results found in Slovenia.

Conclusions

Lithuanian, Polish and Slovenian dairy farmers with higher self-reported competence levels had higher scores on locus of control, knowledge on development direction, strategic reflection, ambition and customer orientation, and lower scores on passivity than farmers with lower self-reported competence levels. In addition, they seemed to perceive regulations, EU subsidies and accession to the EU, internet and ICT applications and the milk market situation in their country more as an opportunity, and they seemed to be more optimistic about the availability of milk quota and knowledge. These pleas for the development of entrepreneurial competencies.

ISM trainings may be useful for this because it can be concluded on the basis of the study of the effects of the ISM trainings, that the ISM trainings seem to have had a positive

[4] In Lithuania and Poland, the surveys were collected by employees of extension services who visited the farmers and completed the questionnaires together with them (without influencing the farmers although they did help to clarify any questions if necessary). In Slovenia the questionnaires were distributed during farmers' meetings. A researcher explained the questionnaire during the meetings and asked the farmers to take the questionnaires home, complete them and return them. If a farmer did not return the questionnaire, the researcher reminded him by telephone. If this still did not result in the questionnaire being returned, the researcher collected the questionnaire personally. See De Lauwere et al. (2018; accepted for publication in Transformations in Business and Economics)

[5] (χ^2=23.2; p<0.001) (see De Lauwere et al. (2018; accepted for publication in Transformations in Business and Economics)

effect on the farmers' competencies and entrepreneurial features – at least in Poland and Lithuania. In addition, farmers with low and intermediate self-reported competence levels seem to take more advantage of the ISM trainings than farmers with high self-reported competence levels. This is important because the development of competencies is important for the growth, innovation and diversification of enterprises and for continuously recognising new business opportunities (Batterink et al., 2006; Nuthall, 2006; Lans, 2009).

References

Alsos, G.A., Carter, S., 2008. Multiple business ownership in the Norwegian farm sector: resource transfer and performance consequences. Journal of Rural Studies 22, 13-22

Batterink, M. Wubben, E., Omta, S., 2006. Factors related to innovative output in the Dutch agrifood industry. Journal on Chain and Network Science 6 (1): 31-44

Beldman, A., Malak-Rawlikowska, A.,Stalgiené, A,. Kuipers, A., Tomson, N., De Lauwere, C., Lakner, D., Zekalo, M., Klopcic, M., 2013, Supporting farmers in making strategic choices. The method and implementation of Interactive Strategic Management in Lithuania, Poland and Slovenia. Lifelong Learning Programme. University of Ljubljana.

Bergevoet, R.H.M., 2005. Entrepreneurship of Dutch dairy farmers. PhD thesis, Wageningen University, Wageningen.

Bergevoet, R.H.M., Van Woerkum, C., 2006. Improving the entrepreneurial competencies of Dutch dairy farmers through the use of study groups, Journal of Agricultural Education and Extension 12 (1): 25-39

Buchenrieder, G., Möllers, J., 2009. Structural change in Europe's rural regions: Farm livelihoods between subsistence orientation, modernisation and non-farm diversification (No. 49). Studies on the agricultural and food sector in Central and Eastern Europe: Leibniz Institute of Agricultural Development in Transition Economies (IAMO)

Dries, L., Germenji, E., Nivelin, N. Swinnen, J.F.M., 2009. Farmers, Vertical Coordination, and the Restructuring of Dairy Supply Chains in Central and Eastern Europe, World Development 37(11): 1742-1758

Hampel-Milagrosa, A., Loewe, M., Reeg, C., 2015. The entrepreneur makes a difference: evidence on MSE upgrading factors from Egypt, India and the Philippines, World Development 66: 118-130

Kraus, S. Kauranen, I., 2009. Strategic management and entrepreneurship: Friends or foes? Int. Journal of Business Science and Applied Management 4 (1): 37-50

Lans, T., Wesselink, R., Biemans, H.J.A., Mulder, M., 2004. Work-related lieflong learning for entrepreneurs in the agri-food sector. Int. Journal of training and Development 8 (1): 73-89

Lans, T., 2009. Entrepreneurial competence in agriculture. Characterization, identification, development and the role of the work environment. PhD thesis, Wageningen University, Wageningen

Lauwere, C.C. de, 2005. The role of agricultural entrepreneurship in Dutch agriculture of today. Agricultural Economics 33: 229-238

Lauwere, C. de, Malak-Rawlikowska, A., Stalgiene, A., Klopcic, M., Kuipers, A., 2018. Entrepreneurship and competencies of dairy farmers in Central and Eastern Europe. Accepted for publication in Transformations in Business and Economics

Man, T.W.Y., T. Lau, K.F. Chan, 2002. The competitiveness of small and medium enterprises – a conceptualization with focus on entrepreneurial competencies. Journal of Business Venturing 17, 123-142

McElwee, G., 2008. A taxonomy of entrepreneurial farmers. International Journal of Entrepreneurship and Small Business 6 (3), 465-478

Nuthall, P.L., 2006. Determining the important management skill competencies: the case of family farm business in New Zealand, Agricultural Systems 88, 429-450

Pyysïaïnen, J., Anderson, A., McElwee, G. and Vesala, K., 2006. Developing the entrepreneurial skills of farmers: some myths explored. International journal of entrepreneurial behaviour and research 12(1), 21-39

Shrapnel, M., Davie, J., 2001. The influence of personality in determining farmer responsiveness to risk. Journal of Agricultural Education and Extension 7(3): 167-178

Verstegen, J.A.A.M., De Lauwere, C.C., 2009. The searching entrepreneur - a program evaluation of group interventions and individual interventions to develop network competence of entrepreneurs in agriculture. In: RENT XXIII, Research in entrepreneurship and small business, (Budapest, Hungary, 19-20 November), pp.1-11

Vesala K.M. and Pyysiäinen, J., 2008. Understanding entrepreneurial skills in the farm context. Final report on the main study of the EU-funded project Developing Entrepreneurial Skills of Farmers. Verlag die Werkstatt, Göttingen

Zemeckis, R., Drozdz, J., 2009. Evaluation of the EU Accession Impact for the Agriculture and Agrifood Sector on the Baltic States. Management Theory and Studies for Rural Business and Infrastructure Development 17(2): 1-9

Analysis of dairy farmers' and stakeholders' strategies in Europe

A. Kuipers[1], A. Malak-Rawlikowska[2], A. Stalgiene[3], P. Krištof[4] and M. Klopčič[5]

[1] Expertise Centre for Farm Management and Knowledge Transfer, WageningenUR, the Netherlands
[2] Faculty of Economic Sciences, Warsaw University of Life Sciences, Warsaw, Poland
[3] Lithuanian Institute of Agrarian Economics, Vilnius, Lithuania
[4] Agricultural Chamber of Carinthia, Klagenfurt, Austria
[5] Biotechnical Faculty, University of Ljubljana, Domžale, Slovenia
Contact: abele.kuipers@wur.nl

Abstract

Strategic choices are part of entrepreneurship. To evaluate strategic choices by dairy farmers and stakeholders in Europe, farm and sector development paths in Poland, Slovenia, Lithuania, Austria and the Netherlands were analysed. Opinions about availability of resources, external opportunities and threats, and future performance were explored. Principal component and hierarchical cluster analyses were performed to find strategic groups of farmers and stakeholders. Next, the opinions of farmers and stakeholders were compared to see if both parties had a similar outlook on the future. Seven strategic farmer groups emerged with specific development paths, i.e. "Wait and see", "Movers", "Chain integrators", "Specializers" and "Diversifiers". The latter two split into cooperative and independent groups. Eight strategic stakeholder groups were identified, varying from "Focus on Expansion/Intensification in dairy and the market" to a "Wait and see attitude". External opportunities and threats varied greatly between countries but to a lesser degree between the strategic groups. The attitudes of farmers and stakeholders from Eastern Europe towards the market and future Common Agricultural Policy (CAP) were more pessimistic than those of Western European farmers. The stakeholders and farmers did have deviating opinions about some of the issues examined.

***Keywords**: Dairy farmers, Stakeholders, Europe, Strategy, Performance, Common vision, SWOT*

Introduction

Support for farmers via the Common Agricultural Policy (CAP) is gradually being reduced. Price mechanisms are expected to reflect supply and demand so market oriented business strategies will be increasingly important for the performance of farms in the EU. Farmers' market orientation, however, is not yet well understood because strategic decision making on farms is different from that in large firms. Thus generalizations from large firms should first be tested before being considered to apply to farms. The situation

in the “new” EU member states of Eastern Europe also still differs from the “old” EU countries due to historical reasons (Kuipers et al., 2006; Klopčič et al., 2010; Kuipers et al., 2014).

According to SWOT (Strengths, Weaknesses, Opportunities and Threats) analyses, businesses choose strategies that match their internal strengths and weaknesses with external opportunities and threats, because this improves their performance. In a farming context this means that strategic choices should exploit the farm’s strengths taking advantage of opportunities and circumventing threats (O&T) posed by the business environment to achieving the farmer’s goals. This theoretical framework was tested by Verhees et al. (2017) on a large sample of farmers in Poland, Lithuania and Slovenia. It appeared that perceived strategies were not an intermediate variable between on the one side perceived farming goals, resources and O&T and on the other side future performance. All these factors appeared to have a direct influence on future performance.

Farms, especially in Europe are small businesses with usually only family labour or with one or a few employed labourers. Compared to large firms, strategic planning is informal and more intuitive (or subjective), and characterized by fewer procedures, less rational, and less support from market research, but more rapid and well coordinated (Darnhofer, 2010).

The aim of this study was to better understand strategic choices in developing the farms. To facilitate comparison of results across countries, we confined our analyses to one sector only - the dairy sector. The following research questions were addressed:

1. Which strategic farmer and stakeholder groups can be identified in a number of selected European countries?
2. Do these two groups have a similar outlook on the future of dairy sector?
3. Are there differences between countries?

Materials and methods

Sample

The study was originally based on 1,028 questionnaires on strategic goals completed by dairy farmers from Lithuania, Poland and Slovenia (Verhees et al., 2017). In Poland, the farmers were from the central region of Mazovia, while in Slovenia and Lithuania they were widely distributed geographically. The questionnaires were gathered in the years 2011/2012 by extension workers during farm visits or in group meetings for extension activities. In each country, respondents were selected on the basis that more than half of the family income came from dairy farming and farmers sold their milk or dairy products. The questionnaire was repeated for part of the farmers in 2013 and 2016. In those years, a random sample of farmers from the Netherlands was added to the study.

Stakeholders in these four countries, and also in Austria, were questioned in 2015/16. The stakeholders were to come about equally from eight categories of dairy chain partners: input suppliers; breeding and veterinary organisations; financial organisations; farmers unions; milk processing companies; experts from universities, research and extension; ministries, and finally NGOs.The same questions were asked as to the dairy farmers. A few questions were skipped because these questions were not applicable to the stakeholders. An overview of the number of questioned stakeholders and farmers in the period 2011 to 2016 is presented in Table 1.

Table 1. Overview of number of farmers and stakeholders in analysis

Country	Target group	2011/2012 base questionnaire	2013 base questionnaire	2015 selected questions	2016 selected questions
Poland	Farmers	334	60		60
Lithuania	Farmers	339	64		64
Slovenia	Farmers	355	94		94
Netherlands	Farmers	-	73		73
Poland	Stakeholders			32	
Lithuania	Stakeholders			40	
Slovenia	Stakeholders			45	
Netherlands	Stakeholders			46	
Austria	Stakeholders			41	

The characteristics of the farms and farmers in year 2010/11, 2013 and 2016 are presented in Table 2. It concerns the same farmers in all 3 years (Table 1, last column). The sample expresses relatively small scale farms in all countries, with the Netherlands having on average the biggest herds. In Lithuania, a small group of former state farms with more than 150 cows were included in the sample. The majority of land in the Lithuanian and Slovenian farms was rented. Farms were very fragmented, especially in Slovenia.

Table 2. Characteristics (mean ± standard deviation) of the samples of dairy farms in Lithuania, Poland, Slovenia and the Netherlands in period 2010 to 2016[1]

Country	**Year**	**No of dairy cows**	**Land owned (ha)**	**Land rented (ha)**
Lithuania	2010	57,02 ± 45,42	70,73 ± 68,96	80,96 ± 82,35
	2012	61,59 ± 48,47	89,78 ± 87,64	88,41 ± 83,24
	2015	64,39 ± 52,14	102,56 ± 91,53	78,61 ± 72,80
Poland	2010	25,35 ± 21,08	28,65 ± 7,75	7,75 ± 11,81
	2012	28,76 ± 21,92	31,49 ± 18,42	16,73 ± 16,66
	2015	29,11 ± 17,20	29,62 ± 16,06	16,86 ± 19,56
Slovenia	2010	32,14 ± 21,86	13,31 ± 7,63	15,59 ± 15,01
	2012	31,73 ± 19,34	14,39 ± 8,07	17,29 ± 14,93
	2015	34,14 ± 32,57	15,95 ± 10,05	16,71 ± 13,30
Netherlands	2012	90,97 ± 49,11	36,67 ± 24,99	19,05 ± 19,53
	2015	99,46 ± 57,40	40,18 ± 25,24	16,02 ± 16,15

[1] *The characteristics of the farms are listed for the year before the questionnaire was held*

Analyses

To measure *strategies*, farmers were asked to indicate in a list of 10 development paths what their first, second and third choices were for the development of their farms over the next five years. A Principal Component Analysis (PCA) was conducted to summarize the data. A hierarchical cluster analysis (i.e. Ward's method) was applied to identify farmer segments, called farm development groups. The same procedure was followed for the 204 stakeholders. However, the stakeholders' questions were on a Likert scale from 1 to 7. Moreover, the stakeholder segments were based on development paths, resources, O&T and expectations. Thus a wider concept was used as for the farmers, and therefore mentioned strategic groups.

To measure *resources*, a list of 13 resources available on a farm was compiled. Respondents were asked to indicate the degree of difficulty in obtaining them. A 7-point Likert scale anchored by 1 "very difficult to obtain" to 7 "very easy to obtain" was used.

To measure *opportunities and threats*, a list of 26 economic and social issues in a farm's external environment was composed. Respondents were asked to indicate whether they considered it a threat or an opportunity. A 7-point Likert scale anchored by -3 "big threat" and +3 "a big opportunity" was used. For presentation purposes, this scale was transformed to 1 to 7, equal to the scale used for the other elements in the model.

To measure *performance,* 5 indicators for performance were listed as statements. Respondents were asked to indicate whether they agreed with the statements. A 7-point Likert scale anchored by 1 "fully disagree" to 7 "fully agree" was used.

PCAs with the rotation method were conducted to see if the questions could be summarized within resources, O&T and performance expectations. Average scores across the variables in each main factor were used in the subsequent analyses.

For farmers, farmer segments based on their development paths, using the complete set of 1,028 respondents, will be presented. Seven farmer segments, i.e. farm development groups were found (Verhees et al., 2017). The trend of the most interesting main factors will be presented over the period 2011 to 2016.

For stakeholders, the segments were more widely defined. There were eight so called strategic groups of stakeholders found. Finally, the scores for farmers and stakeholders will be compared for a series of selected questions. The most revealing questions will be discussed.

Above studies were done as a context analysis for the farmers participating in the interactive strategic management trainings (ISM) in those years (Beldman et al., 2013). The ISM farmers were included in the farmer samples.

Results and discussion

Farm development groups

Table 3 shows the farm development groups per country identified based on their different strategies. The percentage of farmers in each group is listed in the bottom row of Table 3. The largest percentage of farmers (42%) choose the Independent specialisers development path. These farmers had the most negative score for diversifying as a route of choice, which indicates they intended to focus on dairy farming. Moreover, they also had the most negative score for Wait and see, indicating that they are more pro-active than the others in seeking to expand their farm operations. Related to this group were Cooperating specialisers (13%) who also focus on dairy farming. However, they emphasize cooperation with other farmers. The Chain integrators, who focus on activities associated with dairy farming, and the Wait & See groups each represented about 13% of all farmers. The latter group was more likely to scale down than to increase their operations. Diversification was an important strategy for 15% of the farmers; 10% pursue this strategy independently while 5% cooperate with other farmers or partners connected to dairy farming. Relocating the farm and thus starting a new farm was the strategy of choice for 5% of the farmers.

The strategic groups were not equally distributed across countries, although all strategic groups were represented in each country. In all three countries, most farmers are Independent specializers, but this group is more prominent in Poland and Lithuania than in Slovenia. Likewise, Cooperating specialisers are more prominent in Slovenia and Poland than in Lithuania. Farmers who Wait & See are more common in Lithuania. Chain integration is well developed in Poland and, to a lesser extent, in Slovenia, but hardly at all in Lithuania. Diversifying is an important strategy in Slovenia and Lithuania (about one-fifth of farmers), but not in Poland. In Lithuania, farmers mainly diversify independently, whereas in Slovenia cooperative diversification is preferred.

Table 3. Distribution of farmers (N=1,028) by strategic group per country (%)

Country	1 Wait & See	2 Movers	3a Coopera-tive speciali-zers	3b Indepen-dent speciali-zers	4 Chain integrators	5a Coopera-tive diversi-fiers	5b Indepen-dent diversi-fiers
Lithuania	19	6	8	45	4	3	15
Poland	10	2	15	49	20	1	3
Slovenia	10	6	16	31	14	13	10
Total	**13.2**	**4.7**	**12.8**	**41.5**	**12.7**	**5.6**	**9.5**

Stakeholder strategic groups

The results of the clustering procedure resulted in eight strategic stakeholder groups as shown in Table 4. The largest strategic group (21% of stakeholders) focuses on ‘Expansion and Intensification’ in dairy farming, while perceiving a free market as an

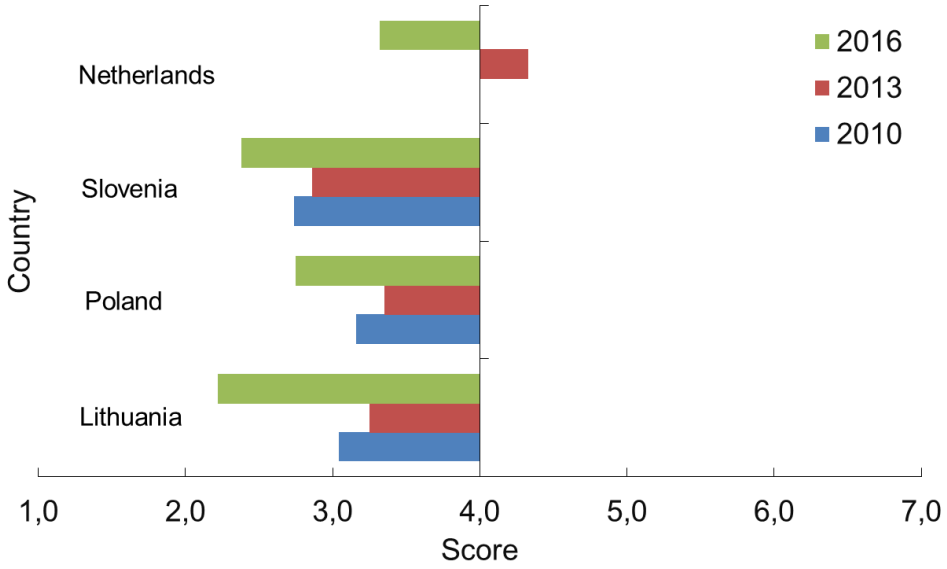
opportunity and expressing high future expectations (Group 1, Table 4). This strategic group is dominant in the Netherlands. The second largest group (19%) concentrates on 'Green agriculture'. This strategic stakeholders group represents the largest groups of stakeholders in Austria, Slovenia and Lithuania. The third largest stakeholder strategic group (16%) is oriented towards 'Know-how and Subsidies with a negative outlook on the market and cooperation' (Group 7 in Table 6). This group is mainly situated in Austria and Poland. Around 14% of the stakeholders, mostly in Slovenia and Lithuania, belong to the Expansion, ICT/Technique and Consumer oriented strategic group, which expresses a lack of trust in skills (Group 4, table 6). Almost 40% of the Polish stakeholders choose for specialisation in dairy as main stream, while they appreciate the location and the availability of subsidies.

Table 4. Strategic stakeholder groups per country and in total (%)

Country	1. Focus on Expan-sion / Intensi-fication and Free market with high Expecta-tions	2. Speciali-zation in dairy with positive opinion about Location and Subsi-dies	3. Focus on Environ ment and Gree-ning Gra-zing	4. Focus on Expansion / Intensifica-tion and Technique / ICT; Subsidy and Consumer oriented with lack of trust in Skills	5. Focus on Diversi-fication / Organic and positive towards Consu-mer, Know-how and Skills	6. Expansio n minded, critical towards Services, Know-how, Subsi-dies and Location	7. Positive towards Know-how and Subsi-dies; negative towards Market and Coope-ration	8. Wait &See with low Expec-tations	Total (%)
Netherlands	67	9	13	7	2	2	0	0	100
Slovenia	5	0	24	22	9	11	9	20	100
Lithuania	2	2	28	20	8	0	18	22	100
Poland	13	38	3	6	3	3	34	0	100
Austria	12	2	27	12	7	5	25	10	100
Total	21	9	19	14	6	4	16	11	100

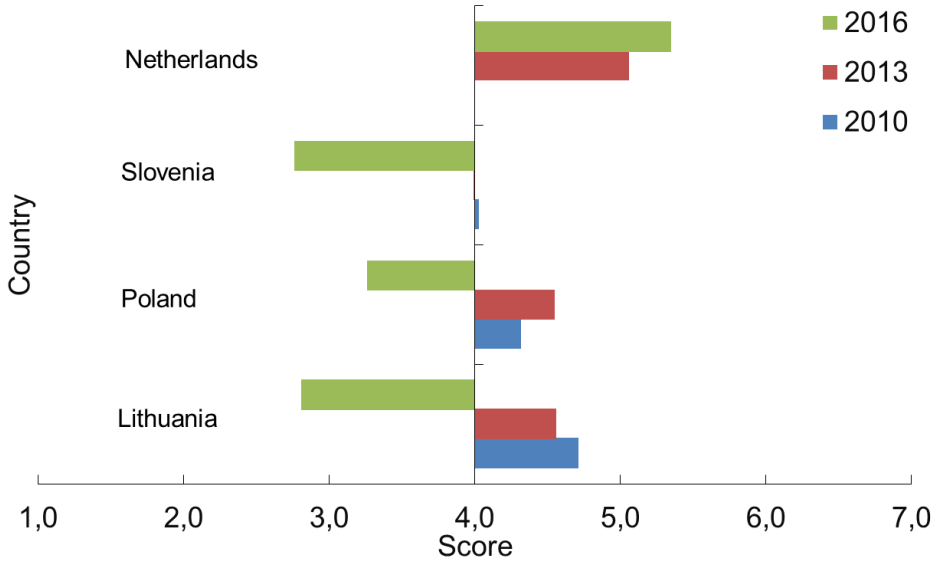
Changes in farmer opinions over time

Farmers did react rather similar to the questions (combined in main factors) about resources over the period 2011 to 2016 than the stakeholders, meaning that the differences in answers were rather limited. However, the farmers responded quite differently at most of the O&T issues (as examples see Figures 1 and 2) and perceived future expectations, i.e. performance (see Figure 3) over the study period. These farmer opinions seem to reflect very much the trend in the milk price, being at an average level during 2011, a top level during 2013, and a very low level in 2016. This tendency in farmers' perceptions and feelings is of great political importance to know.



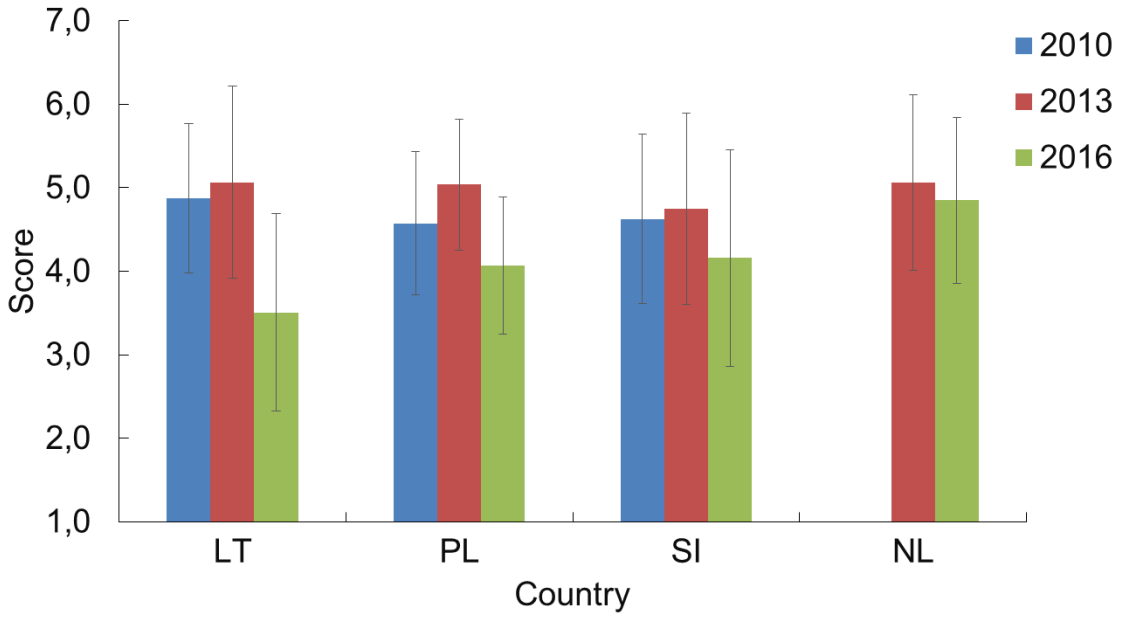
1=big threat; 7=big opportunity

Figure 1. Opinions of farmers about EU-agricultural policy over time



1=big threat; 7=big opportunity

Figure 2. Opinions of farmers about the milk market over time



LT-Lithuania; PL=Poland; SI=Slovenia; NL-Netherlands;
1=pessimistic outlook; 7=optimistic outlook

Figure 3. Opinions of farmers about their future performance over time

Farmer and stakeholder opinions compared

The farmers in the sample appear to be more positive about availability of credit and know-how than the stakeholders, while they are less positive about possibilities of land for rent, level of direct payments and availability of seasonal workers (Table 5). The opinions about the quality of consulting services do not differ between the farmers and the stakeholders.

Farmer and stakeholders appear to have a similar attitude towards regulations. However, the stakeholders are more positive about certifying schemes than then farmers. The dismantling of the quota system, the milk market situation and possible erosion in direct payments are considered by the farmers as bigger threats in 2016 than in 2013, when compared to the stakeholders. As a consequence, the performance expectations of farmers are also lower in 2016 than in 2013 compared to the stakeholders. These farmer opinions seem to be quite sensitive to the milk price situation (high price in 2013 and very low price in 2016).

Technical developments and the orientation towards the consumer are seen as bigger challenges for the stakeholders than for farmers. However, consumer concerns, greening the CAB, and adaptation to climate change are more favoured by the farmers in 2016 than by the stakeholders. This is a remarkable outcome. The topic of grazing shows an opposite tendency. Farmers worry about the applicability of grazing, while stakeholders look probably more at it from a society viewpoint.

Table 5. Farmer and stakeholder opinions compared

(+ indicates that farmers have a significantly higher mean than stakeholders with t-test;
− indicates a significantly lower mean; ns = no significance)

Questions	Farmers 2013 minus stakeholders 2016	Farmers 2016 minus stakeholders 2016
Concerning Resources	difference between means	
Land to buy	ns	+
Land to rent	−	−
Commercial credit	+	+
EU subsidies	ns	−
Direct payments	−	−
Machinery	ns	−
Qualified labour	ns	ns
Seasonal workers	−	−
Advise of extension services	ns	ns
Advise of private consultants	ns	ns
Access to new and useful knowledge	+	+
Concerning O&T		
Regulations for animal welfare	ns	ns
Regulations for veterinary and sanitary standards	ns	ns
Regulations on manure and fertilizer	ns	ns
Certifying organizations	−	−
Future milk quota abolition	ns	−
Accession to the EU	−	−
Future reduction of direct payments (CAP)	ns	−
Land property legislation	ns	ns
The location of my farm/of farms	+	+
Technical developments	−	−
Internet/ICT applications	−	−
Orientation on consumers/ the market	−	−
International milk markets	ns	−
Advisory services	ns	ns
Veterinarians	+	+
Inputs suppliers (fertilizer, feed)	ns	ns
Consumer concerns	+	+
Greening CAP		+
Reduction of climate change[1]		+
Reduction of antibiotic use[1]		ns
Stimulating grazing of cattle[1]		−
Performance expectations (main factor)	+	−

[1] Questions only asked in 2016

Conclusions

A large dataset on opinions of dairy farmers and stakeholders was compiled and analysed to study perceived strategies in the dairy sector in five European countries, of which stakeholders were only present in Austria. The short conclusions address the following three questions which were posed in the introduction of this study:

1) ***Which strategic farmer and stakeholder groups can be identified in a number of selected European countries?***

The analysis for three Central and Eastern European countries revealed 7 farmer groups each indicating a certain strategic development path: Wait and see, Movers, Specialisers (cooperating and independent), Chain integrators and Diversifiers (cooperating and independent). All these strategic groups were represented in each country, but in different proportions. The main strategy was Specialising in dairy production. Polish farmers had the highest interest in specialising, Slovenian farmers had the greatest interest in Diversifying and Lithuanian farmers had the least interest in Cooperation and Chain integration.

For stakeholders, the clustering procedure for five European countries resulted in eight strategic stakeholder groups. The largest strategic group focuses on expansion and intensification in dairy farming, while perceiving a free market as an opportunity and expressing high future expectations. This strategic group is dominant in the Netherlands. The second largest strategic group concentrates on green agriculture. This group dominates in Austria, Slovenia and Lithuania. The third largest stakeholder strategic group is oriented towards know-how and subsidies with a negative outlook on the market and cooperation. This group is mainly situated in Austria and Poland. Moreover, almost 40% of the Polish stakeholders choose for specialisation in dairy as main stream, while they appreciate the location and the availability of subsidies.

2) Do these the farmer and stakeholders have a similar outlook on the future?

The opinions of farmers and stakeholders did differ for some questions related to resources, i.e. availability of land to rent, credit, seasonal workers and access to useful know-how. Differences in opinions related to O&T were more significant. Issues like the abolishment of the milk quota, the market situation and a possible future reduction of direct payments were more seen as a threat by the farmers in 2016 compared to the opinions of stakeholders than in 2013. Consequently, farmers showed a downward trend in future performance expectations during the period 2013 to 2016. Certifying organisations, orientation on consumers, EU membership and technical developments were lower scored by farmers than by stakeholders in both years. However, somewhat unexpectedly, consumer concerns, greening the CAP and reducing the impact of climate change were seen as a greater challenge by the farmers than by the stakeholders.

3) Are there differences between countries?

Countries in Europe show their own history, culture and landscape. The opinions of both farmers and stakeholders in the various regions are strongly affected by this. However, the overall reaction to a low or high milk price seems to be quite generic.

References

Beldman, A., Malak-Rawlikowska, A., Stalgiene, A., Kuipers, A., Tomson, N., De Lauwere, C., Lakner, D., Zekalo, M., and Klopčič, M. 2013. Supporting farmers in making strategic choices. LEI-WageningenUR, The Haque, The Netherlands, 99 pages.

Darnhofer, I. 2010. Strategies of family farms to strengthen their resilience. Environmental Policy and Governance, 20(4), 212.

Klopčič, M., Kuipers, A., Koops, W.J., Osterc, J., 2010. Information exchange and decision making of Slovenian dairy farmers under EU policies. In: Producers and consumers' choices regarding cattle farming systems and products. Kuipers, A., Verbič, M., Glavač, J., Kos-Scubic, M., Klopčič, M. (eds). Slovenian Ministry of Agriculture, Forestry and Food.

Kuipers, A., Klopčič, M., and Svitojus, A. (eds). 2006. Farm management and extension needs in Central and Eastern European countries under the EU milk quota. Wageningen Academic Publishers, NL, 277 pages.

Kuipers, A., Rozstalnyy, A., Keane, G. (eds.), 2014. Cattle Husbandry in Eastern Europe and China: Structures, Development paths and Optimization. Wageningen Academic Publishers, NL, 280 pages.

Verhees, F., Malak-Rawlikowska, A., Stalgiene, A., Kuipers, A., and Klopčič, M. 2017. Dairy farmers' business strategies in three Central and Eastern European Countries. Submitted to Italian Journal of Animal Science.

STRATEGIC MANAGEMENT, CREATIVITY AND ENTREPRENEURSHIP – WORK WITH FARMERS IN SOUTH-AFRICA

W. Nell[1], R. Napier[2] and C. Bisschoff[3]

[1] Agricultural Management Consultant, South Africa
[2] Napier Agrifutures, Australia
[3] North-West University, South Africa
Contact: wimnell@farmingsuccess.com

Abstract

The purpose of this article is to report on the use of Strategic planning/management by farmers in Southern Africa and where creativity and entrepreneurship fit into the whole strategic farm planning process. Creativity occurs in stages 1-5 of the strategic management model (mission through goals) and entrepreneurship takes place in stage 6 (strategies) of the model described. Most of the larger progressive commercial farmers in Southern Africa have stages 1-5 as part of their planning process. Stage 6 is where strategy formulation takes place, which is an entrepreneurial action, where some of the farmers need assistance because all of them are not entrepreneurs. Farmers tend to use the stages/sections of the process where they identify weaknesses in their make-up. This is why this model is a continuous learning model.

Keywords: *Strategic planning, Strategic management, Farming success, Strategic management model, Vision, strategies*

Introduction

Farmers globally need a tool that they can use to direct their businesses towards sustainable success. The term Strategic Management is used by many business managers all over the world. Managers and staff often go on retreats to construct a strategic plan for the business, which often lands in file 19 and is forgotten there. The success in strategic planning lies in the practical functionality of the achievement of goals, strategies and objectives formulated in a business plan.

Creativity and entrepreneurial skills of the management team involved in the strategic planning process are of utmost importance to construct a practical strategic plan. Creative skills are important to identify valuable opportunities that can steer the business to sustainable success as well as observing threats that can hamper the success of the business in the future. Entrepreneurial skills are very important in formulating strategies where it is formulated HOW the business will go about achieving the vision and long-term goal of the farming business.

Material studied/area description/methods

Nell and Napier (2009) developed the following strategic planning/management model to assist farmers globally to take well thought - through decisions regarding the future development path of their farming businesses.

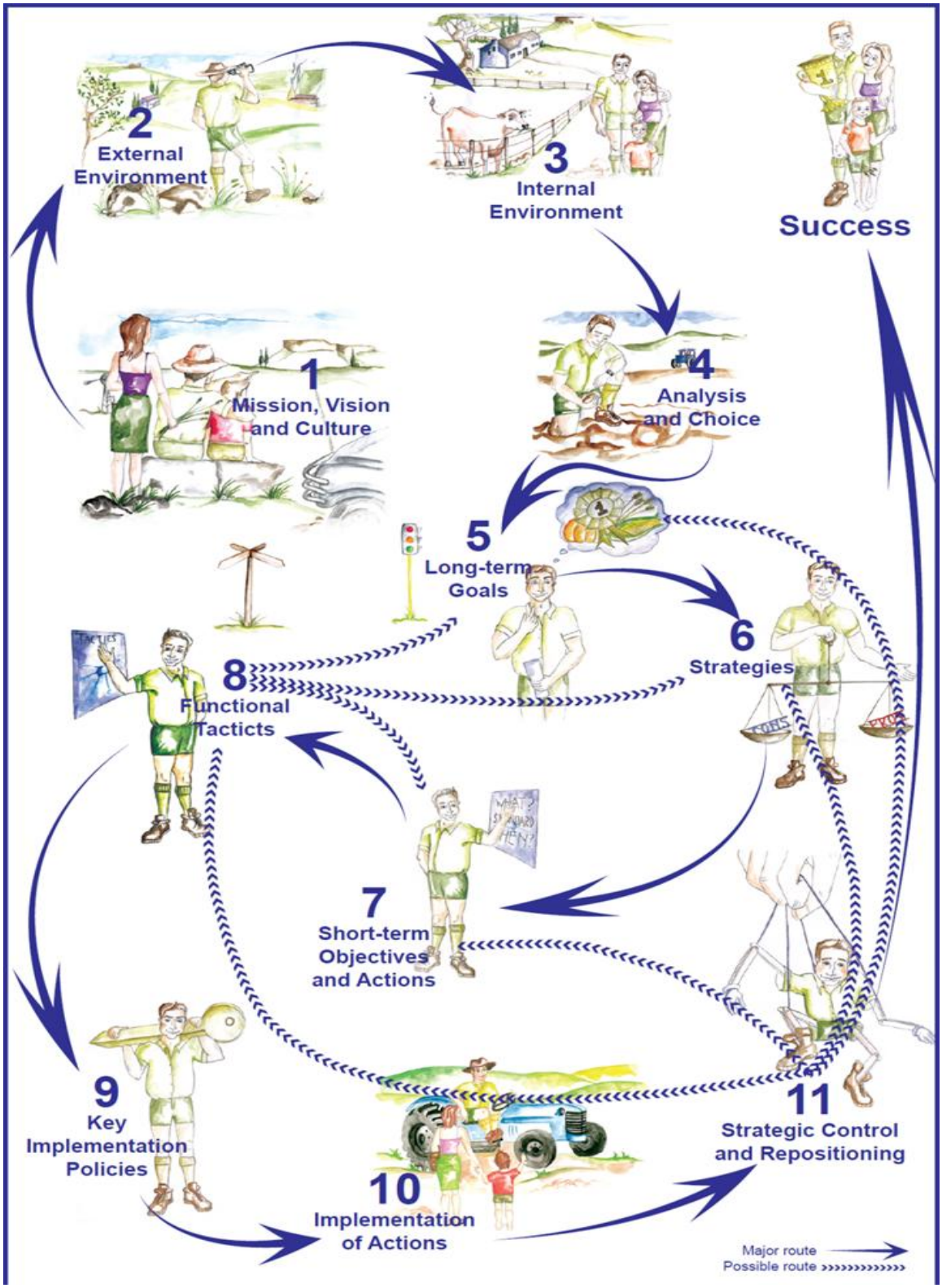


Figure 1. Nell & Napier's model of "Strategic Approach to Farming Success"

Nell & Napier Model

The major difference in this model in comparison with the traditional strategic management models is that the stage where the management team must determine whether the needed tactics (production resources, marketing, financial, research & human resources) are in place to execute the stated objectives is moved to an earlier stage in the model. This stage is traditionally later in the strategic planning process. A farmer cannot afford to start implementing objectives and realise then that the necessary tactics (resources) are not in place. It is a waste of both time and money. Remember! The strategic management process is an ongoing, dynamic process, which can be changed or adapted any time during the planning process when conditions in the internal or external environment change.

The farmers are making an investigation into what their farms are doing currently, what distinguishes them from similar farms and what are they really good at (Stage 1 – Mission or where is the farm now). The Strategic Vision is the envisaged destination (success), which can be compared with a picture of the future of the farming business. The culture, which is also part of Stage 1, is the "oil" that helps people to work together.

Farmer comment: "I realise for the first time what my business is really good at that distinguishes me from the rest of my fellow farmers".

The external environment (Stage 2) consists of the immediate and remote (local & global) Macro- and Business (operational) environment. The management team will need creative skills to identify opportunities and threats that their fellow farmers do not identify, and build their competitive advantage.

Farmer comment: "This stage forced me to use my creative skills to identify opportunities where other farmers see it as a threat".

The management team is forced to scrutinise the internal environment (Stage 3 – resources) and thoroughly assess strengths, successes, weaknesses and failures within the boundaries of the farming businesses.

Farmer comment: "I thought I knew my farm with all its resources well, but after the thorough investigation during the 3-day course, I realise that there are strengths in my farming business that I was not aware of before".

All the applicable/available information is analysed and applied in the rest of the model (journey).

Stage 4 – analysis and choice - is the stage where the internal and external information is evaluated to identify the competitive advantage which will form the backbone of the direction of development of the farming business.

Farmer comment: "After analysing Stages 3 and 4 thoroughly, I discovered a new area in my farming business where I can develop a competitive advantage to produce lamb at a lower cost per kilogram, using increasing the productivity of the ewes through synchronisation, which will increase the weaning percentage".
The long-term goals in Stage 5 (financial, strategic, family & personal) are built on the biggest opportunities and the strongest strengths. It is important to revisit the vision in Stage 1 to make sure that they correspond.

Farmer comment: "I always had only financial goals in mind when doing my strategic planning. The course taught me that it is as important to set personal goals, as it is to have financial goals".

Stage 6 – strategy formulation - is where the entrepreneurial skills of the management team start to become very important. It is here where the team must determine HOW the long-term goals will be achieved.

Farmer comment: "Stage 6 tested the team's ability to figure out HOW we are going to go about achieving our long-term goal".

In Stage 7 – actions and objectives - the following question must be answered for each objective that must be achieved in less than 12 months: WHAT must be done, at which STANDARD and WHEN. The "SMART" approach must be followed when constructing objectives. The objectives must be *Specific*, *Measurable*, *Agreed* upon by all stakeholders, *Realistic* and attached to a *Time Schedule*.

Farmer comment: "This Stage taught us everything about organising the roles and discipline of every person in the farming business".

Stage 8 – functional tactics - is where the major difference comes in from conventional strategic planning models. The information gathered in Stage 3 is used at this stage where it is determined whether adequate resources (production, marketing, financial, human resources & research) are available to carry out the objectives (actions) stated in stage 7. The management team will also determine whether the stated objectives will generate the desired results.

Farmer comment: "We discovered at this stage that we would need additional funding to implement the envisaged strategies. We will have to apply for additional funding at our commercial bank before we can carry on with the implementation of our strategic plan".

In Stage 9 the key implementation policies are tested. This stage stands on two legs namely, *policy to empower the workforce* for the implementation stage (10) and *financial and operational policies.*

Farmer comment: "We realised that our workforce needs further training to be able to implement the stated objectives. The "gofer" delegation process will be used, learnt during the 3-day course".

The table is set to start with the implementation – Stage 10 - and the only thing that must be determined in this stage is **WHO** is responsible for what.
Farmer comment: "The process followed in the model of Nell and Napier, saved us a lot of time and therefore also money – as they say, "time is money", especially in agriculture where farming operations are linked to seasons".

The last Stage 11 - strategic control and repositioning - is perhaps the most critical. It is in this stage where farmers are losing the most money. Poor control causes most financial losses that can lead to bankruptcies. There are seven different types of control (Nell & Napier, 2009, p265) that can be followed. Remember! Losses of income are subtracted from profit.

Farmer comment: "After the 3-day course I realised that my control systems were not in place. I discovered so many areas where money was lost due to poor control that the profit of my farm doubled in one year.

Creativity

Creativity is the generation of an idea to solve an experienced problem or challenge. More specifically creativity is embedded within four concepts (Field and Bisschoff, 2013):

Creative products and tools

One only has to visit agricultural expos, be attentive on farm visits or speak to farmers to realise that they possess high levels of creativity. Farmers typically devise home-made products, product mixtures and find new uses for standard products on the market. Some of these products have been patented and commercialised. However, these products are the exception to the rule. Most creative products are innovative and are restricted to a specific region or district where neighbouring farmers come into contact with the innovator. Farmers seldom capitalise on their inventions or product adaptations. Typical examples of farm originated tools are the home-made anvil, a wire splicer and a home-made wedge to keep the handle on tools such as a pick or axe. Both the wire splicer and wedge were successfully commercialised. These innovations are shown below.

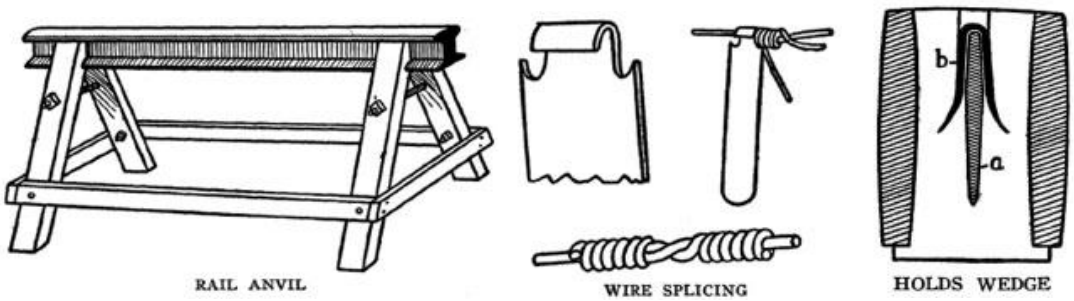


Figure 2. Farm originated tools (Source: Colbeigh (2017))

Creative processes

Farmers, partly due to working hands-on, creatively observe and alter processes to either ease the tasks at hand, or improve productivity and farming income. Several examples exist where improved farmer-initiated processes resulted in higher income for farmers. One such example is the farmers in Turkmenistan who increased the height of their greenhouses by three to four meters to overcome their small area of land restriction (albeit with assistance from USAID (Rollins, 2011)). It is now possible for them to grow the "long" variety of tomatoes, lemons and cucumbers which doubled their yields (The Guardian, 2017)

Figure 3. Increased height of greenhouse

Cost reductions are also possible with better processes. Based on farmers' processes, feed companies developed a new way of feeding farm animals. The weighing and blending of all animal feed ingredients into one complete ration that meets the specific animals' nutrient requirements are used. This method, labelled as the "Total Mixed Ration" could reduce the cost of labour by 60% (The Guardian, 2017).

Figure 4. Total mix ration feeding

Creative new business ventures

Interestingly, creative farmers explore new business ventures in- and outside agriculture. Exploring new business opportunities within the agricultural environment usually refers to complementary business and/or farming opportunities. Typically concepts like adding forestry on marginal soils, expanding into irrigation to complement fat lamb production or starting a feedlot on the farm are creative extensions to the normal farming activities that could better the ultimate objective of shareholder/owner wealth. It could also be the difference between economic success or failure of the farming enterprise.

However, some farmers are also extremely creative to expand outside agriculture into new business ventures. They do so to limit risks associated with agriculture. The success story of the soft drink company Twizza in South Africa serves as an example of farmer Ken Clark, who in 2003, diversified his business ventures into the soft drink industry (Twizza, 2017).

Entrepreneurship

Entrepreneurship refers to the ability to convert the creative idea into something of value that someone will buy (pay money for). Examples are presented in two cases below, i.e. stock losses and farm income.

Results – Examples of Outcomes of Strategic Planning/Management

Comments from farmers who attended the three-day course on the book "Strategic Approach to Farming Success"

- ✓ "I have realised for the first time that my farm is part of a global agri-business system"; an emerging farmer in Namibia.
- ✓ "After attending the course I realised that my strategic plan is in place except for stage 11 – strategic control and repositioning. I saved a few million rand after implementing more and better control systems in the various enterprises on my farm"; a big commercial cash crop farmer.

- ✓ “The course assisted me in formulating winning strategies for my farming business”; big livestock farmer.
- ✓ “I never realised that a vision must correspond with the long-term goals – that they are actually the same”; mixed large scale farmer.
- ✓ “The strategic management methods in the model made me think again – I now see my farming business in a broader perspective”; irrigation farmer.
- ✓ “I learnt to look past the things I am used to, and I am now able to identify the challenges and shortfalls in my own farming business”; deciduous fruit farmer.
- ✓ “An approach that must be followed by all agriculturalists who are broadminded and think beyond the borders of their own farm”; mixed farmer.

Case 1: Stock losses

Problem: Vermin like jackal, lynx, etc. may cause a mortality rate of 10% amongst the sheep flock.

Creative Skills: The lynx and jackal first go for the main artery for the kill. A lynx can kill between 10 and 15 lambs per night. The person with creative skills knows that something is needed that can cover their neck where the main artery is situated. Farmers globally are very creative to think of ways to solve problems, but there are not many that can convert an idea to solve a problem into a product/item that can be sold (entrepreneurial skills).

Entrepreneurial Skills: The person with the entrepreneurial skills will design a necklace, which covers the main artery, but does not distract the sheep from eating and drinking. The material is however so hard that the vermin cannot bite through the plastic. This person advertises it in agricultural magazines and the internet and sells it for $US1. A lamb fetches $US75. Farmers can buy a re-useable necklace for $US1 that can protect an investment of $US75.

Figure 4: Sheep's necklace and use

Case 2: Farm Income

Discussion comments from North-West farmers during an organised farmer day

These farmers indicated that they are "trapped" in a system where they are price takers on their products. They are limited in negotiating prices for their produce as their "system" does not allow for alternative marketing channels.

Problem: Low farm income because of standardised produce.

Creative Skills: Farmers need to find a way to earn higher income from their products. That requires some creativity to differentiate the product from competitors' products and create extra value in the minds of customers.

Entrepreneurial Skills: Although the concept of free-range is highly commercialised (and debatable in practice), the market is willing to pay a premium for the free-range chicken or beef. This principle is sound. Farmers should look for a distinguishable difference on which they can differentiate their products and earn premium prices. Unfortunately, genetic manipulation (despite its wide array of benefits) encounters resistance in the market and premium pricing on this basis is unlikely (Thereby discarding our idea of removing the need for peeling the orange in Figure 5 below!)

Figure 5: Differentiated (hypothetical) orange

However, creative farmers in South Africa decided to use marketing and started to brand the Angus as superior meat to consumers. Presently Angus beef fetches a 10% price premium on the carcass while stud Angus farmers are getting higher prices for their bulls. This is also true for Ayrshire milk producers who struck a deal with Woolworths (an upper-market retailer) to sell the milk as "Ayrshire" milk at a premium. Branding does supply opportunities to elevate or differentiate farm products to a premium product.

The entrepreneurial skill required here is to identify how a seemingly "ordinary" farm product could be worthy of premium pricing. This could also be done on farm level, creating an own brand for farm produce. One example of how this could be done is a Karoo farmer who set up distribution channels in some cities for mutton from the farm-based abattoir. It is branded as "Topchop-lamb" and enjoys a loyal stable market earning a premium price.

Conclusions

The following conclusions were made:

- Comments from farmers that attended the three-day course on "Strategic Approach to Farming Success" indicate that some farmers use those stages (Nell & Napier, 2009) that are not well developed to improve their management systems and their management information systems.

- The strategic management model developed by Nell & Napier (2009), forces farmers to think afresh of their farming businesses and develop in the process a sustainable development path.
- Creativity (Stages 1-5) and entrepreneurship (Stages 6-11) play an integral part of the strategic planning process. It is therefore basically impossible to do a functional strategic plan without using creative AND entrepreneurial skills.
- It is clear from the "farmer comments" cited in this article that farmers are learning something at each stage even though they may not always follow the complete strategic planning process.
- As we look towards the requirements for future farm management success, strategic management, creativity and entrepreneurial skills will be even more important. It is likely that agriculture will be disrupted in a similar way to Uber's impact on the taxi industry and Airbnb's challenge to the accommodation industry. New technologies alone such as biotechnology, engineering developments (drones, robots, autonomous vehicles, nanotechnology) plus the ability to use data will impact agriculture and require rapid responses to change and improved creativity. Changes will not only impact agricultural production but will also revolutionise supply chains.

References

Colbeigh, 2017. Handy Farm Devices and How to Make Them. http://journeytoforever.org/farm_library/device/devices1.html (Date of access: 26 April 2017)

Fields, A. and Bisschoff, C.A. 2013. A Model to Measure Creativity in Young Adults. Journal of Social Sciences, 37(1):55-67

Nell, W. T. and Napier, R. J. 2009. Strategic Approach to Farming Success. 2nd Revised edition. Wim Nell Agricultural Management Consultant, Bloemfontein, pp 8, 161.

Rollins, D. 2011. In Turkmenistan, USAID Brings New Opportunities to Farmers and Students. https://blog.usaid.gov/2011/11/in-turkmenistan-usaid-brings-new-opportunities-to-farmers-and-students/ (Date of access: 26 April 2017)

The Guardian. 2017. Six innovations revolutionising farming. https://www.theguardian.com/global-development-professionals-network/2014/jul/08/top-six-innovations-smallholder-farmers-technology (Date of access: 26 April 2017)

Twizza. 2017. Twizza home page. http://www.twizza.co.za/home (Date of access: 26 April 2017)

LEAN AGRICULTURE – LEAN IMPLEMENTATION PROGRAM including effects on profit work environment Part of Strategic farm management program in Sweden

Ove Karlsson, Christine Andersson, Hanna Andersson, Hans Andersson, Susanne Bååth Jacobsson, Carl Johnsson, Martin Melin, Fredrik Rehnholm, Malin Samuelsson and. Claes Åkerberg

Swedish Centre for Agricultural Business Management, Department of Economics, Swedish University of Agricultural Sciences
Agricultural Society of Halland, Växa Sverige,

Contact: ove.karlsson@slu.se , +46 708 438210

"Lean is making the impossible possible! It helps us reach a level in our business that we never thought of! -Reflection of a farmer participating in the Lean program in Sweden"

This paper contains:

- Description about what Lean is and how it works
- How the Lean is implemented om farms in Sweden
- Results (partly preliminary) from research about the effects on implementing lean in agriculture

Background

In recent years, Swedish agriculture has been characterized by weak profitability and competitiveness (SOU 2014:38). Several of the farm types display a negative profit margin 2002-2012 (earnings after deduction of owner pay in relation to total revenues). Table 1 illustrates the average profit margin for meat (kött), milk (mjölk), pig (gris) and plant cultivation (växtodling).

Table 1. Average profit margin 2002-2012 (Regeringskansliet, 2014).

Växtodlingsföretag		Mjölkföretag			Kött	Gris
Stora	Små	Stora	Mellan	Små		
0%	-20%	0%	-15%	-52%	-39%	-15%

Increased exposure to the outside world with increasing competition from foreign actors in combination with price fluctuations in the world market implies that Swedish food producers face increasing demands upon their managerial ability (Ekman & Gullstrand, 2006). The ongoing structural change in the sector enhances the needs for the farmer's ability to manage and coordinate resources in an effective manner, which requires new approaches to long-term managerial systems.

The Lean Agriculture implementation program is a new approach to strengthening farm competitiveness. In other sectors, both internationally and nationally, Lean has shown significant improvements in organization and operational activities (Losonci & Demeter, 2013; Achanga et al, 2005; Olsson & Hellsmark, 2012). A study by Vinnova reveals that Lean implemented on small and medium-sized manufacturing companies in Sweden had a positive impact on profitability and efficiency (Olsson & Hellsmark, 2012). The study shows that over a four-year period, Lean companies compared with the reference companies achieved a significant improvement in most key ratios measuring companies' capacity utilization and financial results. In view of previous studies, it is therefore interesting to evaluate whether an introduction of Lean on Swedish farms may yield similar effects as studies of Swedish and international industrial companies indicate.

What is Lean?

Lean is a corporate philosophy originating from Toyota. Lean is a way of thinking, of working and relating to problems, but in the following steps create possibilities. Today, Lean is successfully used to enhance efficiency within industry, healthcare and agriculture. Lean was developed to create more value for the customer, the business, employees and the community. A big part of the workday is filled with wastefulness which ads no value to anyone. Lean involves learning to recognize and removing these by working in a smarter way. Lean is really a mind-set along with principles, underlying the whole business philosophy. It creates more value for everyone. Basic effects of Lean work are as follows:

Create more value with smarter work!
Flow efficiency provides resource efficiency and stability
Lean is not a tool, it is a strategy (philosophy- mindset)
Those who focus on tools instead of philosophy, often fail.

Lean is not a quick solution that is easy to copy. Implementing Lean is a process that every person and organization has to go through to create effects. It is like a training program for athletes that focus all parts in the training that are needed to be really competitive. Openness to sharing experiences is common amongst those who have passed the process. It is extremely important that the leaders in the organization believe in the Lean work and consistently support it. Without that support the Lean work often fails.

Figure 1: People is in centre in the Lean work.

Why it works

White boards, post-it notes, 5S, value-stream-mapping, standardized working routines and orderly ways are usually associated with companies engaging in Lean. However, it is not the tidiness or the white boards that create Lean, it is the result that stem from implementing it. To reach a lasting change it is necessary to continuously practice, this is why The Swedish Lean project operates for at least one and a half year.

Lean is not about working faster or making big investments. Instead the investment is associated with improvements and solutions to problems from its very core so that they are unlikely to return. For example, the solution could be an improved method of working that everyone in the company has brought to light, it could be routines that prevent anyone from doing it wrong to begin with. Actively removing waste results in greater stability and this in turn contributes to less waste.

”We can’t solve problems by using the same kind of thinking we used when we created them. Albert Einstein

Lean 14 management principles

To understand the mindset of Lean we examine the 14 principles of Lean presented by Jeffrey. K. Liker in his book “The Toyota way”. The principles are the heart and soul of Lean and guide enterprises in both the long and short term work.

Philosophy provides guidance for the development of the processes, as well as the people who develop the processes. If problems arise, it is important to solve the problems quickly and in the way that is planned. The goal is to seek "zero error".

In the text below I present Likers 14 principles with my own comments to them.

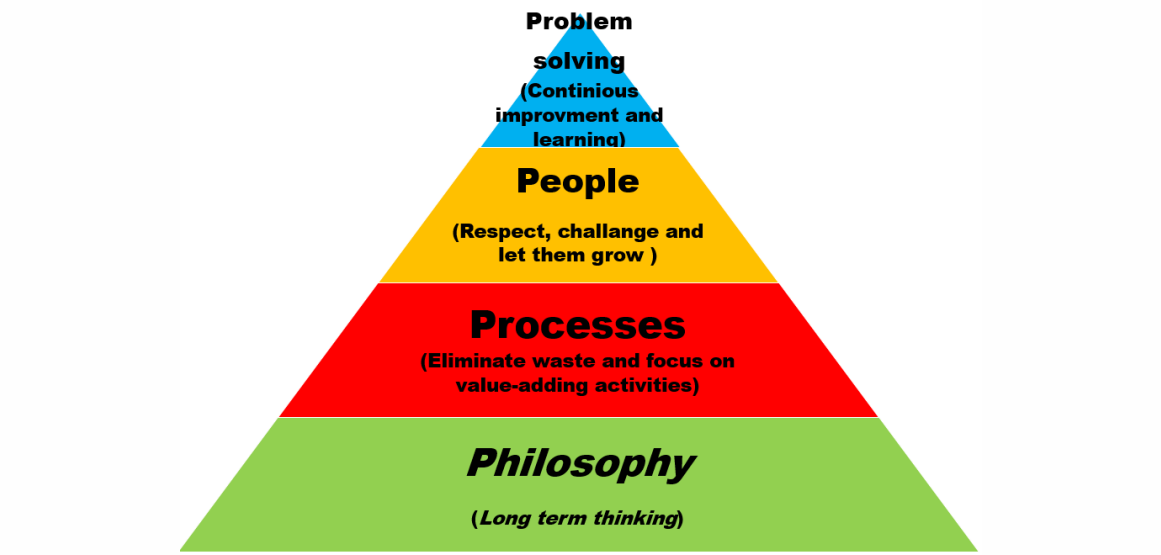


Figure 2: Lean 14 principles formatted in the 4P model according to Toyota (own modification, based on Jeffrey. K. Likers book "The Toyota way" 2004)

Philosophy

1. Base your management decisions on a long-term philosophy, even at the expense of short-term financial goals.

Avoid thinking only of earnings today. Think about how to create more value in the long term of your products. For example, cutbacks in cost (example labour) may improve earnings in the short run, but can lead to that the core value-adding activities in the production process might suffer. They may cause major damage on the long term production potential and severely affect production and profitability.

Processes

2. Create a continuous process flow to bring problems to the surface.

Effective processes that create the right value to customers are the key to profitability. But to be able to do it right, you need to start by wondering: what processes in our business create value for the customer? Which processes generate revenue and create long-term earnings? Normally on a farm (agricultural and horticultural) the value-creating process is the biological process. How well we handle that process is essential for the outcome of the business. (Note: if a farm has tourism activities the process of activities for the customer represents the value-creating process).

In a biological process, a normal process flow occurs, which is easily calculated. If the flow does not generate the expected result, based on best practice, there are disturbances and errors in the process. By defining measurement points in different parts of the process, deviations can be identified. Problem solving can then start. The errors may be located upstream or downstream. Continuous process flows create an attractive mode-stability. Many farms do not have stable production. Uneven production results are common. Value-flow analysis is an effective tool in this work.

3. Use "pull" systems to avoid overproduction.
This is tricky for agricultural organisations. The “pull” originates from the demand in the market, but biological processes with long production cycles are not very flexible and adaptive. By having a good customer relation and market knowledge there are some possibilities to create a “pull” situation.

4. Level out the workload.
There is always a specific time in the day, a week, a month or a period in the year when there are more activities than the rest of the time. During that period there is a substantial risk that important activities are not handled in the most proper way. By evening out the workload and move away some types of work to less busy periods, there are opportunities to improve work quality. Given a focus on quality, there are good chances to reduce cost and waste.

5. Build a culture of stopping to fix problems, to get quality right the first time.
We do not have time to solve the problem now, we'll do it later! This is a common comment when problems arise. But there is a great chance that "later" never happens, and we continue to introduce errors in the process. The errors result in waste and probably damages the subsequent stage in the process, which reduces quality or performance. With a culture that stops and adjust the process right away or forever, improved opportunities are created for an outstanding process.

Figure 3: How to handle our time

6. Standardized tasks and processes are the foundation for continuous improvement and employee empowerment.

“If you don´t measure you can´t improve! And if you don´t have a standard there is no way you can analyse the result of the improvements”.

One of the fundamentals in Lean work is employee empowerment. By defining a working standard based on an agreement between workers how to execute in the best possible

manner, they influence their work and that creates effects. Development is evolution and it happens in many small steps. A culture of continuous improvement that involves everyone in an organization for business emerging every day.
Everyone wants to improve if there is no threat to themselves. So if the improvement leads to better results, improved working conditions and a more secure workplace (both regarding financial performance of the firm and secure workplace according to accidents) it triggers motivation. All together those factors are important for promoting social sustainability.

Standards, based on best practice, for an outstanding production process matching the costumers need lead to:

- flow efficiency (which lead to)
- resource efficiency (which lead to)
- ecological sustainability
- customer satisfaction (which lead to)
- more business with existing customer
- business with new customer
- increase the value of the product or service
- increase the marginal in the sales (which leads to)
- economical sustainability

Farmers who work in the Lean project sometimes set a goal for the organization. That goal is that the organization should running perfectly even if the farmer is not on the farm.

7. Use visual control so no problems are hidden.

Visualizing is one of the strongest signal systems. Properly done it is of great help to identify differences from the planned route fast, without hiding problems. If a difference occur, management and staff need to take action so the process is back on track as fast as possible. Using visual control can be very useful to display the use of production resources, avoiding errors in the routine and standards.

Figure 4: Daily routines- green if fixed! (The sheet has one red and one green side).

8. Use only reliable, thoroughly tested technology that serves your people and processes.

The technology should be adapted to the needs in the production process. Often farms have a technology that widely exceeds the needs. That in itself is a waste with money and often time, when trying to use the technology takes time. Many farmers tend to believe that technology is the solution to most problems. But often the root cause of the problems is something completely different. By using the why-question five times, the problem is often located.

People

9. Grow leaders who thoroughly understand the work, live the philosophy, and teach it to others.

Building the right business culture is one of the best investments. Leaders who coach new leaders in the right strategic, tactical and operational thinking and management create an outstanding organisation with sound core values and reliable principles. Leaders that focus too much on power and view other possible leaders like competitors will not promote a sustainable organisation.

Improvement work is often the result of learning. Developing new leaders through learning that teach the organization implies that the firm has great potential for becoming a sustainable organization.

10. Develop exceptional people and teams who follow your company's philosophy.

By developing leaders, staff and teams by empowerment to a learning organisation, working with continuous improvements, who also share the company´s philosophy provides a strong competitive advantage. The company´s philosophy needs to be understood by all members of the organization. They need to explain current procedures.

But that is also beneficial for all stakeholder; the owners, the employees, the customers and the society.
To develop exceptional people and teams is not easy. That is something that needs to be built up through commitment and trustworthy work.

11. Respect your extended network of partners and suppliers by challenging them and helping them to improve.
Choosing the right network, partners and suppliers is an important strategic decision. They all contribute to achieving the goal of the entrepreneur. They are also an important part of business process and will help to improve them according to the company's needs. The farmer is their customer. Hence, it is vital to challenge them by helping them to improve the process.

Problem solving

12. Go and see for yourself to thoroughly understand the situation
By having a close relation to the process and those who work there, you have a greater chance to understand the needs of the workers and the process, and to make the right decisions. "Walk the process –both upstream and downstream"! That gives you a holistic perspective and extended information about the situation. In addition, you earn respect from the staff when you listen to the situation from their perspective.

13. Make decisions slowly by consensus, thoroughly considering all options; implement decisions rapidly

"You cannot compensate wrong direction with high speed!"
(Quote: Ulf Af Trolle, legendary trouble-shooter in business in Sweden).

The speed of a change process is not how long it takes to make a decision. It is the time it takes from the decision-making process is initiated until the new decision is fully implemented. During a change process, resistance arises in many parts of an organization, and perhaps even in the surrounding network. Investigating all decision options, and with great respect for consensus, you create conditions for rapid implementation.
Once a decision is made, it should be implemented quickly. Often an organization that has been involved in the decision-process is also impatient that implementation is fast!

14. Become a learning organisation through relentless reflection and continuous improvement."
As mentioned early, to become more competitive is a result from the learning process of the organization. There is no phase where you are satisfied with the current situation. Competitiveness is totally dynamic. Therefore an organization always needs to reflect and say, how can we improve every day? There is no upper limit for what can be achieved. The only limitation is in the minds of the people.

The Swedish Lean Agriculture Program

The Swedish Lean Agriculture Program was initiated in 2010. The project is designed as a cooperation between several advisory and industry organizations. In 2012 the first implementation of the program at farm level was conducted. The program was inspired by Lean-programs in the manufacturing industry.

Until today around 130 farmers has passed the program. About 50 leancoaches has passed an education program. Not all the coaches will work with farmer, the rest will work with implementing Lean in their organisation's (mainly advisor organizations).

Coaching in modules

The Lean Agriculture Program is divided into modules where the first part involves everyone describing the current situation of their organisation, what they want to aim for and what values and principles that will guide the work towards reaching their goals. Once this is done, a number of available "Lean-tools" are introduced to understand principles and ways of thinking..

The Lean Agriculture Program lasts for 18 month. A farm/company that takes part in Lean Agriculture is assigned a coach who every third week makes a visit to support ongoing changes while educating employees in the Lean philosophy. These visits are adjusted to the company´s workload during the year, but it is important to maintain continuity in the Lean work. The coaches maintain a coaching sense of action rather than that of an advisor. Hence, the intention is that farmers and their workers, while being guided by the coach, develop and bring improvements and solutions to the table on their own.

Leadership plays a significant role in how to succeed through working with Lean. Therefore business owners and leaders are provided a two day introductory course in Lean leadership at the beginning of the program. The course content includes supportive leadership that is inspiring and challenging. It is not until this training course is completed that the work with the coach and co-workers begins at the farm. The major task of the coach is to train owners and workers to implement the Lean principles in their daily routines. The coaches also show them how to apply the different Lean-tools as well as providing examples of solutions to problems.

The first visit by the coach pertains to the introduction of Lean to everyone at the farm/ company, explaining what it is and inspiring them towards the upcoming work. In the beginning it involves learning to recognize wastes and not to ignore it, to develop a system designed to collect suggestions of improvements by the staff. Lean Agriculture Program offers agricultural companies a combination of education and continuous support for 18 months by certified coaches, a method intending to offer both lasting and positive effects.

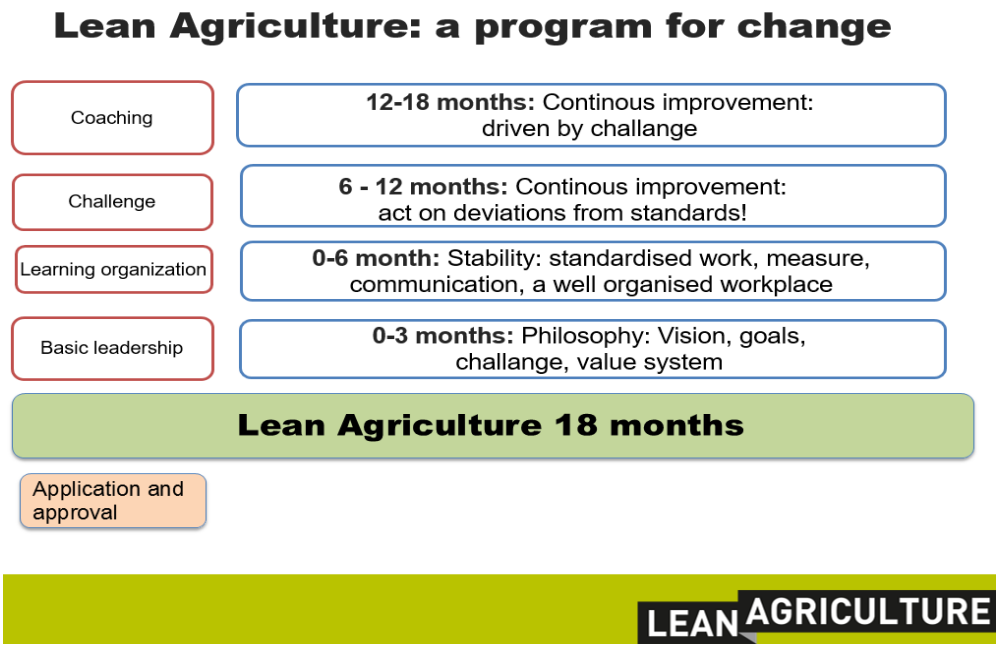


Figure 5: Lean Agriculture (Lean Lantbruk in Swedish) farm implementing program.

Preliminary results from study – effects of Lean on farms

The Swedish University of Agricultural Sciences together Lean Agriculture program is running a research project to follow up the results and effects from implementing Lean on farms. The project is financed by a grant from the Swedish farmers´ foundation for agricultural research. The results originate from first interim report in the project "What does Lean mean to the farm companies"?. The interim report aims at analysing differences in economic performance and/or operational results that can be demonstrated for Swedish farms as a result of an introduction of Lean. The project started in 2014 and will last until 2017. 61 farmers and business leaders have participated by providing complete economic information concerning their enterprises over a period of 5-6 years.

Method

The following section presents the method of study. It contains information about choice of method, selection and data collection, description of reference farms, comparability between reference companies and Lean companies as well as ethical aspects. In addition, a description of the methodology for accounting analysis and key ratios is given. The process is as follows:

1. Discussion with project manager and project employee for the appropriate method.
2. Data Collection (Completed throughout and before Lean involvement)
3. Discussion and proposals for appropriate key ratios
4. Analysis of data
5. Suggestions for compiling data and discussing them with project managers
6. Summary analysis and conclusions

An important part of the study has been extensive discussions through e-mail, telephone and physical meetings between project employees at Växa Sweden, SLU project manager and project staff at Agricultural Society of Halland. Discussions have been important to validate that key ratios and data are reasonable, comparable and accurately evaluated.

Results

The project applies a quantitative method for analysing the profitability of agricultural holdings where 61 farms participate. An adjusted accounting analysis of the business accounts constitutes the bulk of empirical analysis. The results are compared to the economic performance of farms in the Agricultural Economics Survey (JEU).
The project results are preliminary and intend to reflect the period before the companies joined Lean and after the Lean project started. Farming companies have begun the Lean project at different years and therefore the analysis period varies depending on when Lean was implemented. In general, Lean companies constitute larger agricultural companies that have continuously invested. Figure 6 below displays general information about the economic performance of the Lean companies etc.
A comparison between reference companies that are not part of Lean and Lean companies is conducted. The average profit margin, ie profit after deduction for labour cost for own work, is slightly higher for Lean companies. Nevertheless, the average profit margin for milk, pig and meat is negative. Nurseries, plant breeding and poultry show a positive profit margin on average, with plant nursery companies representing the most profitable companies. The trend for a number of key ratios is shown in Figure 6. It should be noted that the trend for most key ratios is relatively similar to the developments that can be observed in the "Production Lift". Olsson & Hellsmark (2012) conducted a comprehensive study of Swedish industrial companies with a similar interpretation of companies that introduced Lean compared to a reference group.

Lean farms	Trend
Turn over	↑
Results	↗
Profit margin	↑
Equity	↗
Cost structur	→

Referens farms	Trend
Turn over	→
Results	↘
Profit margin	↘
Equity	→
Cost structur	→

Figure 6: Changes in key ratios for Lean farms and reference farms (Source: Andersson et.al. 2015)

For the companies that participated in Lean 2011, the average profit margin 2008-2010 amounted to about -6% and after Lean was introduced in 2011-2013 -2%, which represents an improvement of 4 percentage points. The average maximum payable salary per hour has also increased. The average payable salary 2008-2010 for these companies amounted to 133 SEK per hour and after Lean was introduced 2011-2013, the same key ratio was SEK 176 per hour

The Lean companies that opted to participate in the study therefore show a more positive development of several key ratios compared to the reference companies in JEU. In a comparison between the Lean companies, it is precisely those companies that joined Lean 2011 that show the highest profitability in 2012 and 2013. This indicates that companies have become more competitive than the companies that worked with Lean for a shorter period or who have not begun their work. Lean therefore appears to be able to provide the prerequisites for developing long-term strategies that may have the potential to improve profitability.

Karin Andersson is a researcher in work environment in RISE (Research Institute of Sweden). She is working with a project called "A lean road to improved work environment and increased safety at farms"- Lean's impact on the agricultural work environment" The research is not completed yet, but some preliminary findings are available:

The physical working environment:

- Less physical movement

The mental working environment:

- Improved understanding and knowledge of production
- Improved understanding and awareness of colleagues
- A higher level of commitment to production by employees
- A better structure and planning of production
- Unchanged stress level (hm, why?)

Hanna Åström is a Head coach for the Leancoaches in the Lean Agriculture Project working at the Agricultural Society of Halland. She has made some own reflections concerning the Lean program:

- Prepared that they will have to allocate time to the Lean work
- Know what Lean is
- Know what they want to achieve with their Lean work
- If there are several owners they mutually agree on the goals of their company
- Are prepared that improvements will require them to do something different – i.e. behavioural change

The farmers state to the Lean coaches:

- The coach often drives them too little rather than too much
- It's important to keep schedules, provide feedback quickly, keep what you promise
- Provide a clear structure around the meetings - agenda, reconciliation afterwards

- Talk about the right things that are heading towards the goal
- It is important that the coach can inspire, engage and provide energy
- Coach needs to know his subject - Lean
- The coach does not necessarily have to be able to be operationally competent

Conclusions

Lean farming has been an interesting journey for both farmers and Lean-coaches. It has been inspiring for everyone to introduce something new that originates from the manufacturing industry and to examine if it can be applied to the agriculture sector. Probably, it is one of the biggest developments in the advisory service in Sweden recently. It has also been a great challenge for all cooperating organizations to adhere to a full concept and believe in the implementation of the strategy. It is often tempting to work with quick solutions and to pick the low-hanging fruits from Lean. However, the industry Lean experts strongly advise not to do that. It would not create sustainability in the Lean work.

The results from follow-up research reveal indications of profitability improvements and increased motivation and structure of the farm. It will be interesting to follow the final research results.

Acknowledgements

This paper has been possible through a grant from Swedish farmers ´foundation for agricultural research. We express our deep gratitude for the financial support provided to this form of exploratory "action research"

References

Andersson, C. Andersson, H, Andersson, H., Bååth Jacobsson, S., Johnsson, C., Karlsson, O., Rehnholm, F., Samuelsson, M. och Åkerberg, C. 2015. Vad betyder Lean för lantbruksföretagen?- En ekonomisk utvärdering av Lean lantbruk. Rapport , 53 s. + bilagor, HS Halland, Halmstad. http://www.leanlantbruk.se/?p=22290&m=6962

Achanga, P., Shehab, E., Roy, R., Nelder, G. 2005. Critical success factors for Lean implementation within SMEs. Cranfield: Department of Enterprise Integration, Cranfield University.

Andersson, Karin; 2017-01-17. Powerpointpresentation, A lean road to improved work environment and increased safety at farms" Preliminary results from research.

Ekman, S., Gullstrand, J. 2006. Lantbruket & konkurrenskraften, Rapport 2006:4. Lund: Livsmedelsekonomiska institutet (SLI).

Losonci, D., Demeter, K. 2013. Lean production and business performance: International empirical results. Competitiveness Review: An International Business Journal. 23, 218-233.

Olsson, M., Hellsmark, H. 2012. Effektutvärderingen av produktionslyftet Fas 1:2007-2010. Borås: Vinnova.

Karlsson, Ove; 2017-01-19 Powerpointpresentation "Short introduction to Lean in Agriculture"

Lean Lantbruk (Lean Agriculture) 2017-06-28, www.leanlantbruk.se

Liker, J. K. 2004. The Toyota Way - 14 Management Principles from the World's greatest Manufacturer, McGraw-Hill: New York.

Regeringskansliet. 2014. Tillväxt och värdeskapande- konkurrenskraft i svenskt lantbruk och trädgårdsnäring, SOU 2014:38. Stockholm: Regeringskansliet.

Melin, Martin, 2016; Powerpointpresentation Lean presentation

Åström, Hanna; 2017-01-17 Powerpointpresentation "How to work as a leancoach" (Swedish)

The Canadian Total Excellence in Agricultural Management (CTEAM) Program

L. Martin and H. Broughton

Principals, Agrifood Management Excellence, Inc., Canada (AME)
Contact: Larry Martin, dlm@xplornet.com

Abstract

The CTEAM program is Canada's only national farm management program. It was initiated in 1998 and has now has nearly 300 graduates. It is presented in four five-day sessions that build on each other. Instructional approaches include a variety of learning opportunities. All are centered around the need to encourage and allow participants to apply concepts to their own farms. It is continuously improved and updated. It has an annual program for Alumni and has benefitted from new programs and projects on associated issues. It currently is collaborating with colleagues from Sweden to strengthen programs in both countries.

Program Origins

In the mid-1990's a farmer and an extension worker approached the author and said "we need a Canadian Top Farmers Program, and we think your organization should lead it". That conversation marked the beginning of CTEAM (Canadian Total Excellence in Agricultural Management).

With an initial grant from Farm Management Canada, CTEAM was launched in 1998. The grant was used to develop the initial curriculum as well as teaching materials. CTEAM is presented and priced for full cost recovery (AME is a for-profit company) though farmers in various provinces are eligible for grants that cover various portions of the course fee. To our knowledge, none receive support for travel and hotel costs.

The fundamental objective of the course is to provide farm managers the opportunity to improve their management skills, thereby improving their opportunities for profits and growth. Recognizing that different people learn differently, CTEAM is structured to offer a range of ways to learn: lectures, workshops, tours, individual and group assignments, opportunities to learn from each other, application of concepts to their own farms through assignments and a course project to develop a strategic and operating plan for their farm.

Program Eligibility and Acceptance Process

AME's explicit target market is farmers who want to excel. Therefore, their education is not particularly relevant. Past participants' academic backgrounds range from not finishing high school to graduate degrees. When they are motivated to excel, there is no discernible differences in performance. Therefore, there are no "academic" criteria for acceptance.

A written application is required on which the applicant is asked to describe their experience, managerial responsibilities, their farming operation and what they want to obtain from the course. The two major factors that will result in an applicant not being accepted in a given year are that they are too inexperienced, their farm business is too close in proximity to a competitor who is already registered, or that the class is full. Being in close proximity to a competitor refers to the fact that we try not to admit farmers from the same community who may be competing with each other or land or other factors: experience shows that they are reluctant to be open with the group in these circumstances.

Many of the participants in the course come as a family team: spouses; father-sons; father-daughters; brothers. We find that this is optimum because it encourages the partners to work and think strategically together on what they want to achieve in the farm business.

Program Format & Duration

CTEAM is presented in four five-day modules. Each module builds on the previous one. They are presented in various locations so the tours give a good idea of agriculture in the various regions. Currently, Module 1 is in British Columbia, Module 2 is in Alberta, Module 3 is in Ontario and Module 4 is in a combination of Quebec and Ontario.

Because we are dealing with farmers, the four modules are scheduled in the winters of two consecutive years. Typically this means December and March of each of the two years of the program.

Each Module has a day of tours, usually three businesses. The tours are not just about the operations of each business, but also are designed to focus on the subject(s) of the Module.

Each module contains a combination of lecture and hands on application for the participants. While AME personnel lead the program, presenters are acknowledged leaders in their fields: AME staff present approximately 30% of the content material. Others are respected academics or practitioners in their fields.

As CTEAM has evolved, there is a growing tendency to increase the amount of practical work and it is applied to the farms of the participants. Financial management is taught using the financial ratios of participants' farms. Human resource management is taught using situations and issues of the participants' farms.
The curriculum includes strategy, planning, financial management, human resource management, marketing, operations management, governance, aspects of leadership and "managing in the policy environment'[6].

Most fundamentally, the graduation requirement is to develop a strategic and operating plan for participants' farms. This is done sequentially as the course proceeds with participants making presentations to the class and instructors at each module. This has several positive impacts:

- It integrates the material of the course into a useful applied document that is used in actual management
- Because they get oral feedback from other participants and both oral and written feedback from AME staff, It gives them coaching in developing and implementing a plan
- Making presentations to each other provides confidence that many didn't have
- Making presentations to others provides opportunity for accountability and challenges them to do well
- The presentations promote a great deal of learning from each other, in part because participants find that, no matter what products they produce, others experience the same kinds of business problems.

Program Accomplishments

Probably the most basic accomplishment is that an expensive program has survived for 19 years. It has produced almost 300 graduates. Registrations, which at one time were sparse, are now large enough to produce a waiting list.

A post-program evaluation of CTEAM provided the feedback that graduates easily see more than a 25% return on their investment in the course.

CTEAM has given rise to a set of spin offs, some of which have been facilitated by financing from Farm Management Canada. In 2015/16 we introduced a short but very intensive "Advanced CTEAM" for alumni who wanted to come back for a refresher and further management training. This year saw a 1.5 day course on managing investment in machinery and equipment added, open to anyone.

[6] In response to a reviewer's question, we do see strategy and planning as slightly different. Strategy is the set of actions that makes a firm unique in attempting to earn returns higher than those of the industry average. Planning includes the development of strategy as well as determining how it will be implemented.

For two years AME has had regular columns in Country Guide Magazine that are read by farmers across the country. These columns draw on our experience with the CTEAM program.
A result of the financial management component of CTEAM is that we've recognized the power of some financial ratios in improving management, and the value of having clear benchmarks. As a result, we have developed a relationship with BDO, one of the larger national farm accounting firms. They are developing a standardized set of farm accounts from which a data base can be built up to confirm and expand benchmark financial statements which, in turn, will help BDO coach their clients. A paper on this collaboration will be presented by Larry Martin, Jim Snyder and Joerg Zimmermann at IFMA 21.

Opportunities for Improvement
Continuous improvement is an article of faith. While the course outline is very similar to the original nearly 20 years ago, the actual course is quite different. We've upgraded content and added depth, replaced instructors, developed a number of templates, and moved to less lecture and more practical application.

Currently, two initiatives are being undertaken. CTEAM participants increasingly are considering going beyond producing commodities and are moving more into downstream marketing, some so far as to export directly. To respond to this need, a component on consumer marketing is being introduced into the fourth module of the course.

The second initiative stems from too much emphasis on agricultural policy and too little on implementation of plans and other types of initiatives participants may want to take. Therefore, the emphasis in Module 4, in addition to the marketing component, is to develop a capstone component that integrates leadership, planning and implementation.

Post-Program Opportunities
After a few years the need for an Alumni program became apparent: animated mainly by alumni asking for more. A CTEAM Alumni Program was initiated in 2010. Its structure varies each year. Some years it is three days in Canada of learning on issues that are important to the alumni. On two occasions it was in the US with both tours and class room presentations. One year was an in-depth two-week study tour of agriculture in the states of Parana and Motto Grosso, Brazil. And, as indicated above, the current year saw the first offering of Advanced CTEAM. Going forward, the plan is offer at least one of the four format programs each year to the Alumni.

Potential to Connect with International Counterparts
We are quite open to connecting with other programs. Ove Karlson, Swedish Centre for Agricultural Business Management, Swedish University of Agricultural Sciences, is sitting in on CTEAM this year to understand it and to consider developing a version for

Sweden. He will be making a presentation in Module 3 on Lean Manufacturing processes applied to agriculture as part of our operations management component.
To date this collaboration is working well. AME is quite open to considering further collaboration with other programs.

Reference Martin, L., Snyder, J., and Zimmermann, J. 2017. Standardizing Canadian farm financial statements: collaboration between educators and practitioners**,** to be presented at IFMA 21, Edinburgh, July 2017.

EXPERIENCE AS A PARTICIPANT IN THE EXECUTIVE PROGRAM FOR AGRICULTURAL PRODUCERS (TEPAP) TEXAS A&M UNIVERSITY

J. Zimmermann

GlobalAgAdvisors Ltd., Canada;
Contact: joz@globalagadvisors.com

Abstract

Since 1991, The Executive Program for Agricultural Producers (TEPAP) has been providing intense training sessions for agribusiness leaders to develop professional management skills and provide a path forward for sustainable business growth and continuity. The following is a report about my personal experiences and findings about the TEPAP program, which I completed in January 2017.

Key words: *Farm business, Training, Strategic management*

Introduction

Now in its 28th year, The Executive Program for Agricultural Producers (TEPAP) program is designed to equip agribusiness professionals across the United States and around the world with the skills to confront change with confidence and lead the industry through management excellence. The program welcomes participants from across the agri-business sector including primary producers, processors, investors, manufacturers, and service providers.

TEPAP was inaugurated by Danny Klinefelter, Professor and Extension Economist with Texas A&M AgriLife Extension, specializing in agricultural finance and management development. The program has taught over 2,100 agribusiness professionals.

TEPAP is built on 7 principles:

1. The only truly sustainable competitive advantage is the ability to learn and adapt faster than your competition.
2. Strategic management is the ability to anticipate, adapt to, drive and capitalize on change.
3. The best organizations spend as much time analyzing what they need to stop doing as they do evaluating new opportunities.
4. The most successful businesses are learning organizations. This means that everyone in the business needs to recognize that someone, somewhere, has a better idea or way of doing things, and they need to be compelled to find it, learn it, adapt it, and continually improve it.

5. When the rate of change inside an organization becomes slower than the rate of change outside, its end is in sight. The only question is…when?
6. The main difference between the top 10 percent and the rest of the top 25 percent is their timing, in terms of when to enter, expand, cut back or exit; whether it's an investment, a marketing decision or a business activity.
7. The future will always belong to those who see the possibilities before they become obvious to the typical producer.

The following is a report on my personal experience regarding the TEPAP program, which I completed in January 2017.

Program Overview

Agribusiness professionals devote two weeks to their professional development, which is split into two sessions – Unit I and Unit II. Each session usually takes place in early January. Qualified applicants are accepted in Unit I until an upper limit of participants has been reached. Class size is limited to enhance the learning environment. Participants, who complete Unit I are automatically accepted for Unit II. Unit II can be taken during any subsequent year. Quite a few participants choose to take a break and attend Unit II a few years after Unit I.

For each Unit, participants spend an intensive week in classroom sessions taught by twenty of North America's most prominent faculty and strategic management professionals. The program is built on dialogue and discussion, instruction and interaction. Following each daily session, participants take part in individual study and roundtable discussions.

The program is held at the world-class, state-of-the-art facilities of the Omni Barton Creek Resort in Austin, Texas, USA. All meals are included in the program as well as accommodation.

The cost to participate in Unit 1 is 4,700 USD. The program fee for Unit II is 4,500 USD. The fees are payable upon notification of acceptance into the program and include all meals, accommodation, and program materials. Travel to and from the program venue is not included. There are some scholarships available, mainly from the US ag industry and from Nuffield International (more info can be found on the TEPAP website). There are also government funded education grants for farmers available, which were used by some of the participants from Manitoba and Alberta, Canada.

Learning Topics

Learning topics include strategic management, leadership, salesmanship, family business management, negotiation strategies, human relations, financial management, macroeconomics, and workplace accountability divided into the following sessions:

Table 1. TEPAP Learning Topics and Sessions

UNIT I	**UNIT II**
Family Business Management	Business Transfer & Estate Planning
Financial Management I	Financial Management II
Understanding & Working with Different Personalities I	How Your World Works
Process Improvement	Salesmanship
Megatrends	Accountability
Human Resources Management I	Leadership & Managing Change
Strategic Management	Human Resources Management II
Managing Key Challenges and Decision Making	Family Business Governance and Financial Management
Macroeconomics: Impacts on Farm Level Decision Making	Profitable Negotiation
Public Relations Plans: What, Why and How	Strategic Positioning

As our IFMA seminar is focused on strategic management and planning I will provide some more detail on the courses Strategic Management and Strategic Positioning. The Strategic Management course in Unit 1 teaches the concepts of strategy, focussing on unique value propositions considering the following questions:

- What customers?
- Which needs?
- What relative price?

Some popular case studies are presented (i.e. Southwest Airlines Strategy), discussed and put into an agricultural context (commodity producer = operational excellence VS. direct marketer = differentiator).

Following the above concepts, the lesson Strategic Positioning in Unit 2 focusses more on the implementation on farms and how to identify key variables including their effects in an uncertain future. Scenario planning is introduced to evaluate possible future outcomes. The participants are split into smaller groups, who work on the impact of the various scenarios (i.e. strong demand & strong competition, weak demand & strong competition, etc). Group members present and discuss the scenarios, while lecturers provide valuable comments on the various scenarios. This session mimics the strategic planning process and helps the participants to perform similar activities on their own farms.

Program Format

Each session takes place over a week and is held in the same way for Unit 1 and Unit 2. A typical day in the program has four major activities: classes, informal roundtable discussions, individual study and small group discussions held from early morning until late evening.

The format for the week is as follows:

- Saturday:
  - Participant arrival
  - Networking activities
- Sunday:
  - Morning: Registration & Sessions
  - Afternoon: Sessions
- Monday – Friday
  - Session from 7:45 am - 5:30 pm
  - Dinner from 5:45 pm - 7:00 pm
  - Roundtable discussions from 7:00 pm - open end
  - Networking in the Hospitality Suite
- Saturday:
  - Morning Sessions
  - Wrap Up after Lunch

Program Review: A Personal Perspective

The TEPAP program provides immense value. I am interested in learning new things and I had the opportunity to do this twice, for seven days in a row each time. It was exhausting, but very good. I would say that Unit I is more intense than Unit II, but this might be because there is so much new content in Unit I to which you are already accustomed in Unit II.

Speakers are world class, renowned experts in their discipline and entertaining in their delivery, making learning easy and very enjoyable. Probably one third of the speakers are from academia, the rest is from private businesses and organizations. Most of the speakers have a close relation to existing farm operations, which helps them to put their content into the farming context and listeners can relate to the topics easily.

I got the most value from the courses about strategic and financial management because these areas are where I specialize in my consulting business and I feel that they are very important for successful farm businesses. I very much enjoyed the macroeconomic and geopolitical classes and while I got introduced to some great concepts in human resources.

Besides learning theoretical and practical concepts, for me, a good part of the value of the course comes from the informal networking opportunities with other participants during meals, breaks and in the hospitality suite. There is a wealth of knowledge and experience within this network of leading edge agribusiness professionals from around the world and I deeply enjoyed finding out about things I had never thought of before (as Donald Rumsfeld would say, "The Unknown Unknowns"). I made a point to switch my place in the classroom on a daily basis so I could sit beside somebody new. In Unit 1 I had 90 and in Unit 2 I had 55 "classmates" mainly from the US, but also quite a few from Western Canada and Australia. I would say, that the nature of my classmates' businesses was cash cropping and livestock. However, you get exposed to exotic things like date farms and huge (by area) livestock operations in Australia, which widens your horizon immensely. As the Unit 1 and Unit 2 are held during the same time and at the same place, there is also the opportunity to network with the participants of the other Unit, which in my case was used quite extensively and I still have conversations with member from the other Units.

The program definitely provides an insightful "30,000 ft" view of the agricultural sector with some limited exposure to partial case studies. As participants, do not work on developing their own strategy during the program, the implementation of these findings is up to the participants after the sessions (note: the current format would not allow for own work as the timetable is already very full with lectures). If there is no rigour in implementing new practices, things won't get done. Although, the participants are encouraged to follow up on implementing the learnt concepts and practices in their own businesses, one way of improving an already good program would be to implement measures and procedures that help and "force" the participants with the implementation of their own strategy after the program. For this reason, the networking is useful as you can approach some of your new contacts to help keep you accountable. For example, after completing TEPAP, we formed a peer advisory group of 4 farmers from Manitoba, Canada and 6 farmers from North Dakota, USA (note, that this initiative is outside of the TEPAP program, however, there is a peer group program affiliated with TEPAP called TPEN: www.tpexecutivenetwork.com). We continue to meet 3-4 times per year and share business management insights, struggles and best practices. The first few meetings mainly were about forming the team and building trust that the topics discussed stayed within the group. We had intense discussions about production issues and practices and developed ideas to improve. Third party speakers were invited, such as bankers and food processors to give the members are broader view and ideas for further improvements of their operation. In our second year, we are currently focussing on benchmarking financial results to pinpoint weaknesses within each operation.

All of the meals were outstanding and the venue was world-class, making it a great place to let go of daily operations and to focus on learning and networking.

Alumni Program

After the completion of TEPAP Unit II, participants are eligible to participate in the Association of Agricultural Production Executives (AAPEX) program. AAPEX is in its 22nd year and continues the tradition of hosting an annual 4-day educational meeting as well as other educational programs to address member needs. The annual meeting includes five topical seminars, a site visit to an agricultural operation, and the annual business meeting. Annual membership fees are $1,400 USD.

Concluding Remarks

The TEPAP program provides a broad perspective on the agricultural sector and key components of running a successful agribusiness. As there are no exams evaluating the learnt concepts, the key success factor for the program and its participants is the implementation of the teachings. The interactive nature of the program format along with opportunities for networking provide participants with the opportunity to reflect on teachings, share insights and plan how the learnings can impact making positive changes to their operation and management system. Producers and agricultural stakeholders world-over will benefit from continuing to invest in professional development opportunities related to business management excellence, however a common challenge is the implementation and application of the theoretical knowledge. There should be a process with the combination of formal lessons, own work, review, adaptation and implementation. To borrow from the inspirational words of Danny Klinefelter, program founder,

> *The most successful businesses are learning organizations. This means that everyone in the business needs to recognize that someone, somewhere, has a better idea or way of doing things, and they need to be compelled to find it, learn it, adapt it, and continually improve it.*

Funding and Support

The program is supported by the US Farm Credit System, John Deere, DTN, BASF, Texas A&M AgriLife Extension and Texas A&M University and administered by Jack Welch and Connie Moore of Texas A&M University.

References

Association of Agricultural Production Executives (AAPEX), Purdue University, Agriculture. Illinois, USA. https://ag.purdue.edu/commercialag/Pages/Programs/AAPEX.aspx

The Executive Program for Agricultural Producers (TEPAP), Texas A&M University, Department of Agricultural Economics. Texas, USA. http://tepap.tamu.edu/

Application of the Business Model Canvas in Farm Management Education

B. Brown[1], P. Mugge[2] and M. Grainger[2]

[1]Agricultural and Resource Economics, NC State University, Raleigh NC, U.S.A.;
[2]Center for Innovation Management Studies, NC State University, Raleigh NC, U.S.A.;
Contact: abbrown@ncsu.edu

Abstract

Traditional business planning most often implicitly assumes a static world and near perfect knowledge of the planning horizon. In today's fast changing business world with seemingly continuous disruptive innovations, a dynamic, flexible and lean business model is needed. This includes agriculture. The business model canvas provides such a modeling tool. We present an application of the business model canvas to farm management education for large diverse farms. The dynamic, visual and tactile learning process with the business model canvas proves an excellent teaching medium for these large farms.

Key words: *Business Model Canvas, Value proposition*

Introduction

Change is a constant in agriculture; whether the change is due to rapidly changing technology or changing consumer tastes and preferences. While innovations occur throughout agriculture, diverse farming operations must navigate change across a number of enterprises. In the case of large scale commodities, such as corn and soybeans, innovation is very often propelled and even controlled by farm suppliers; e.g. the biotechnology revolution in the seed industry.

For specialty crops, innovations are more likely to originate and be propagated at the farm level. For example, in U.S. sweet potato production, producers still partner with land grant universities to develop new varieties (this used to be the model for many crops) or come up with innovations in harvesting equipment. On the consumer products side, many of the innovations in sweet potato products originate and are developed by farmers. For example Hams Farms along with a handful of other large producers developed and market an innovative vegetable and fruit puree using a patented industrial microwave process (http://www.hamfarms.com/pages/yamco-vegetable-and-fruit-puree). Regardless of the source of change or the innovations associated with the change, farmers must be increasingly astute and nimble in order to profitably navigate change.

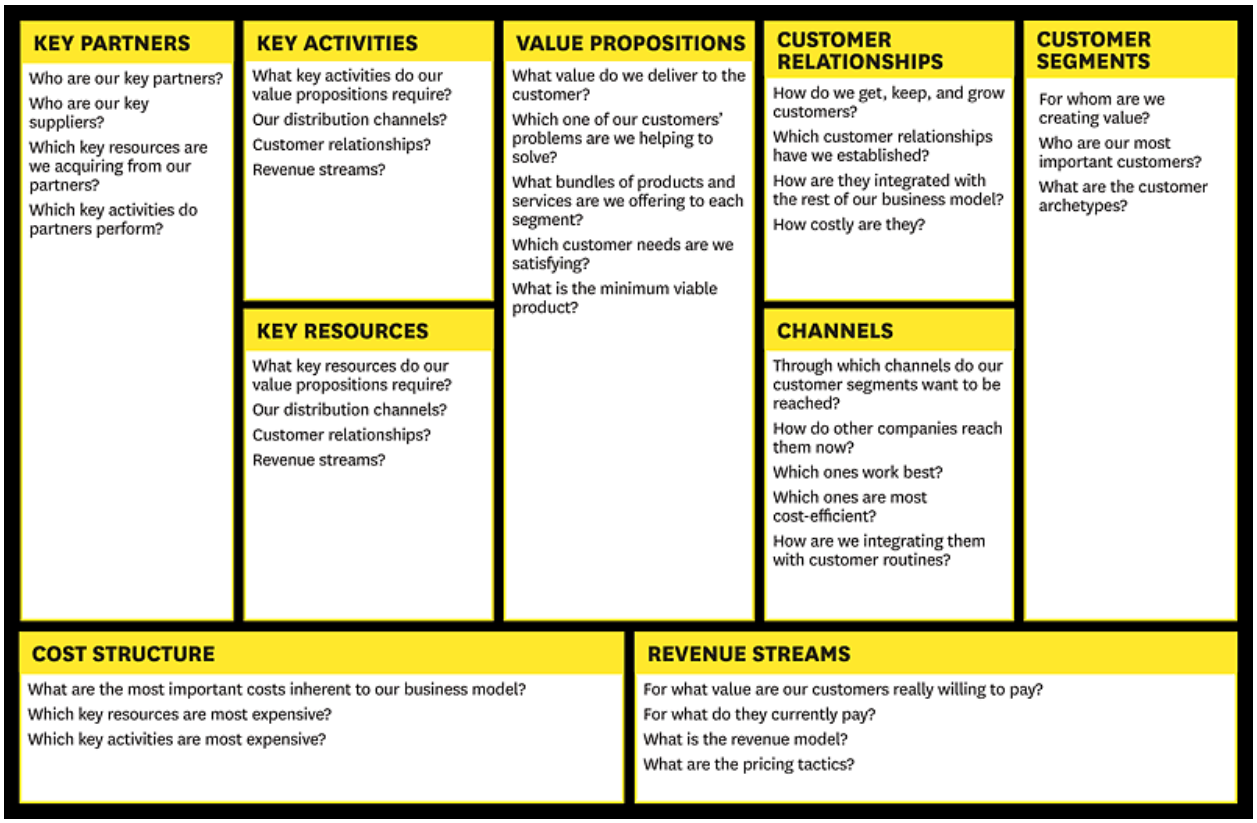
Given this environment of innovation and change is traditional business planning the best or even a realistic way to strategically navigate change? In the traditional business

planning process the planner drafts a vision statement based on his vision of the future for his business, then an environmental scan is completed and a mission statement drafted. Then goals and objectives are formed followed by an action plan that includes detailed financial projections years into the future. Most experts in business planning suggest that the plan must be revisited and revised during implementation to reflect the inevitable realities of business discovered only via implementation and the changing environment in which the business operates. In reality, business plans are rarely done in farming operations and even more rarely revisited and revised. If business plans are done they are often developed as static plans that act like the dynamic world in which businesses operate is also static. Is there a better way? In their book Business Model Generation Osterwalder and Pigneur (2010) present the *business model canvas* as a better approach to modeling businesses in a business world where change and innovation occur at an increasingly rapid pace. We present an application of this approach in teaching farm management to large diverse, specialty crop farms.

Background and Method

A problem in conventional business planning is that it implicitly assumes that the business planner can figure out most of the unknowns as well as the future path of the business before the business even starts. Blank (2013) in his article "Why the Lean Start-Up Changes Everything" notes that "1. Business plans rarely survive first contact with customers." and "2. No one besides venture capitalists and the late Soviet Union requires five year plans to forecast complete unknowns." Blank's article speaks to start-ups and the value of the lean method. One of the principles of the "lean method" according to Blank is to use the framework of the *business model canvas*. The *business model canvas* was conceived by Alexander Osterwalder. The canvas allows the business owner to test hypotheses ("basically, good guesses") about their business idea. Farms are not usually start-ups, but they often start new enterprises and even in "old" enterprises disruptive technologies mean that acting like a start-up is a meaningful way to model the business.

The *business model canvas* (Figure 1) models the business in nine building blocks; four focused on the customer side of the business, Customer Segments, Customer Relationships, Channels, and Revenue Streams; four focused on the supply side of the business, Key Activities, Key Resources, Key Partners and Cost Structure, joined by a key block, the Value Proposition for the business. Completion of the customer blocks and the supply side blocks lead to the formation of a Value Proposition for the business i.e. the "bundle of benefits the company offers its customers" (Osterwalder and Pigneur, 2010; P. 22).



Source: www.businessmodelgeneration.com/canvas. Osterwalder and Pigneur (2010)

Figure 1. The Business Model Canvas

Formation of a Value Proposition may lead to changes in the other building blocks. For example Key Activities may have to be changed to accommodate a newly discovered Value Proposition. The process of using the Canvas ultimately leading to the Value Proposition, is dynamic, interactive, and visual and allows, even encourages, changes in the various building blocks during the process. From a teaching standpoint the visual, interactive, tactile process is an excellent environment for learning, especially for farmers.

Osterwalder and Pigneur (2010) in Business Model Generation show how to use the canvas with other business tools. For example, a section of the book is devoted to how to map an environmental scan into the canvas. The increasingly widespread use of the *business model canvas* has led to a proliferation of tools from many sources to use with or enhance the canvas. Emphasizing the importance of the Value Proposition, a Value Proposition Canvas is promoted as helping with Value Proposition Design for which there is also a book Value Proposition Design. Many resources for using the *business model canvas* can be found at *www.strategyzer.com.*

Farms gain management skills from a number of sources. Experience is certainly important. Many very large farmers hold college degrees; some have advanced degrees such as an MBA. Land grant universities have provided varying levels of farm management education. Most have focused on more traditional management skills; not

necessarily the advanced skills needed by modern large farms. There are programs that address the growing segment of large farms, most notably TEPAP (The Executive Program for Agricultural Producers) at Texas A&M.

Application: The Executive Farm Management Program

The Executive Farm Management Program is a newly created program initiated by the Department of Agriculture and Resource Economics (ARE) in the College of Agriculture and Life Sciences at North Carolina State University (NCSU) in collaboration with the Center for Innovation Management Studies (CIMS) in the NCSU Poole College of Management and the College of Business at East Carolina University (ECU). The goal of the program is to strengthen core business competencies in large diverse farms, particularly those with specialty enterprises. (Our program could also be applied to small to mid-sized farms.) The idea for this program was conceived by a few large farmers in North Carolina who participated in TEPAP. While very complimentary of TEPAP, they communicated the need for a program focused on the specialized needs of farms in the southeast. Given the diversity of southeastern agriculture, designing one program to fit all types of southeastern farms would not accomplish the goal of meeting the needs of specialized farms. This led to the decision to design each program around the needs of a particular segment of farming. Offering executive education focused on a particular industry sector is not a new concept. For example, Duke University Fuqua School of Business offers executive education focused on the health care sector. Kellogg School of Management offers executive education for family businesses. Harvard Business School has its long standing Agribusiness Seminar. Of course most business schools also offer custom design of executive education for particular companies. In agriculture, Purdue's Center for Food and Agricultural Business is very successful in designing and delivering custom programs to Agribusiness.

To compliment the goal of customization, the Executive Farm Management program is delivered via one intense week early in the year and one intense week near the end of the year. This allows customization not only to the segment of farming targeted by the particular program, but also to the class of farmers enrolled and their particular needs. The two one week long sessions are connected by a series of virtual sessions on topics of special interest to the class. Executive education programs like Columbia Business School's Advanced Management Program 2X2 have successfully employed a similar approach of offering a two week face-to-face session followed by virtual sessions and then culminating in another two week session.

Given the rapidly changing and innovative business environment experienced by large farms, particularly the specialized farms of the southeast, the *business model canvas* is an appropriate tool for teaching strategic planning. The Center for Innovation Management Studies (CIMS) teaches strategic planning and management to numerous business clients combining their own unique approach to innovation management, described in their book,

Traversing the Valley of Death (Markam & Mugge, 2015) along with the *business model canvas.* CIMS implements this approach in the Executive Farm Management Program.

The target audience for the pilot program of the Executive Farm Management Program is sweet potato and tobacco farms in North Carolina. North Carolina is the largest tobacco and sweet potato producing state in the U.S. growing over 50% of the nation's tobacco and almost 60% of the nation's sweet potatoes. The markets for the two crops could not be more different. Sweet potatoes are heralded for their great nutritional value. Demand is growing rapidly in the U.S. and abroad for sweet potatoes and a multitude of innovative sweet potato products. Tobacco product consumption has been declining for years. At the consumer level it is maligned and heavily regulated. While there are innovations in tobacco products, most of these will lower the amount of tobacco needed per product unit. Interestingly, tobacco still yields some of the greatest profits per acre of any crop grown in the southeast. Sweet potatoes are usually profitable and usually more profitable than field crops, but not as profitable as tobacco.

What the two crops do share in common is that both are very management and labor intensive. In addition, the labor requirements of the two crops are complementary. Most of the farms in this group are large. According to the 2012 Census of Agriculture, of the 1682 operations with tobacco acreage harvested, 471 were family farms with gross cash farm income of $1 million or greater.

The inaugural Executive Farm Management Program was promoted for implementation in 2017 and 21 farms were selected for the pilot program. The 21 farms grew 30,515 acres of sweet potatoes; 32% of the 95,000 acres grown in NC in 2016 and 19% of the 163,300 acres grown in the U.S. The 21 farms grew 10,760 acres of tobacco. They also produce large acreages of field crops such as soybeans and corn. Many grow other fresh vegetables and fruit and some have substantial contract production of poultry and hogs. One of the farms not only has all the mentioned crops and livestock but also has over 1200 beef cows. Gross cash farm income was reported by 17 farms. The four largest farms did not disclose their gross income. Of the 17 reporting, gross cash farm income averaged $5.8 million per farm. The 21 farms employed over 600 fulltime employees and almost 3,000 seasonal workers. Needless to say, these farms are very management and labor intensive.

Farms were selected for the program in January 2017 with the first session February 6-10. The final week of the program will be November 27-December 1, 2017. The core topics of the program are strategic planning, human resource management, financial management and family business issues (e.g. succession planning). In between the sessions, the class participates in a virtual session at least once each month. The topics for the virtual sessions range from commodity situation and outlook to tax management. CIMS provides leadership on strategic planning, ECU on HR and financial management, with ARE providing overall leadership, information and presentations on relevant

agricultural topics, and leadership on development of a case study farm. The result is a very strong and productive collaborative program. The two one week sessions are held on the campus of NC State University.

In the weeks preceding the session the participants provided input to the development of a case study farm for use in teaching the components of the program. The case study farm grows 300 acres of tobacco, 400 acres of sweet potatoes and 3,000 acres of corn and soybeans. While the farm in the case study is smaller and less diverse than some of the participants' farms, it looks very familiar to the class with many of the same challenges they face. The participation of the class in development of the case study ensures the case is relevant and invests the participants in the case. Many of the farms in the class know each other and are competitors. The case study provides a medium in which to practice what they are learning in the class with the benefits of group discussion and collaboration without having to reveal details about their own business.

During the first week session CIMS led the class in an environmental scan of the sweet potato and tobacco sectors using PESTEL that was in turn used in SWOT analysis. CIMS used IBM's Watson in the PESTEL analysis. The class divided into five teams with each team working on a business canvas for the case study farm. Before working on the business canvas, each team developed their own PESTEL and SWOT Analysis for the case. Each team identified which PESTEL factors they thought were significant threats or opportunities to the case, the degree of importance of the factor, the urgency of the threat or opportunity presented by the factor and which building blocks of the business canvas they thought the factor most affected. For example, more than one team thought a PESTEL factor, "Niche markets are appearing; Heat-not-burn cigarettes, organic sweet potatoes and tobacco, special varieties of sweet potatoes, etc," was an important (4 on a scale of 1-5) opportunity for the case farm and needed addressing quickly (urgency was rated 4 on a scale of 1-5). They thought this factor affected business canvas blocks VP (value proposition), R$ (revenue streams), CS (Customer Segment), and KA (key activities).

Each team mapped the PESTEL factors as threats and opportunities into a SWOT Assessment along with strengths and weaknesses from the case farm. For example, one team thought niche markets (from the PESTEL) were opportunities, lenders hesitation to lend funds for expansion was a threat, that the farm's current specialization was a strength, but that the farm's lack of emphasis on marketing was a weakness.

Figure 2 shows the business canvas developed by the class and instructors for a particular Value Proposition derived from this analysis. The Value Proposition is to develop small, custom packs of sweet potatoes for high-end organic or local foods markets. The packs would be hand packed with an emphasis on high quality. The Value Proposition is based on the Customer Segment block where niche markets such as high end grocery stores and CSAs with a local and/or organic focus are recognized as market opportunities.

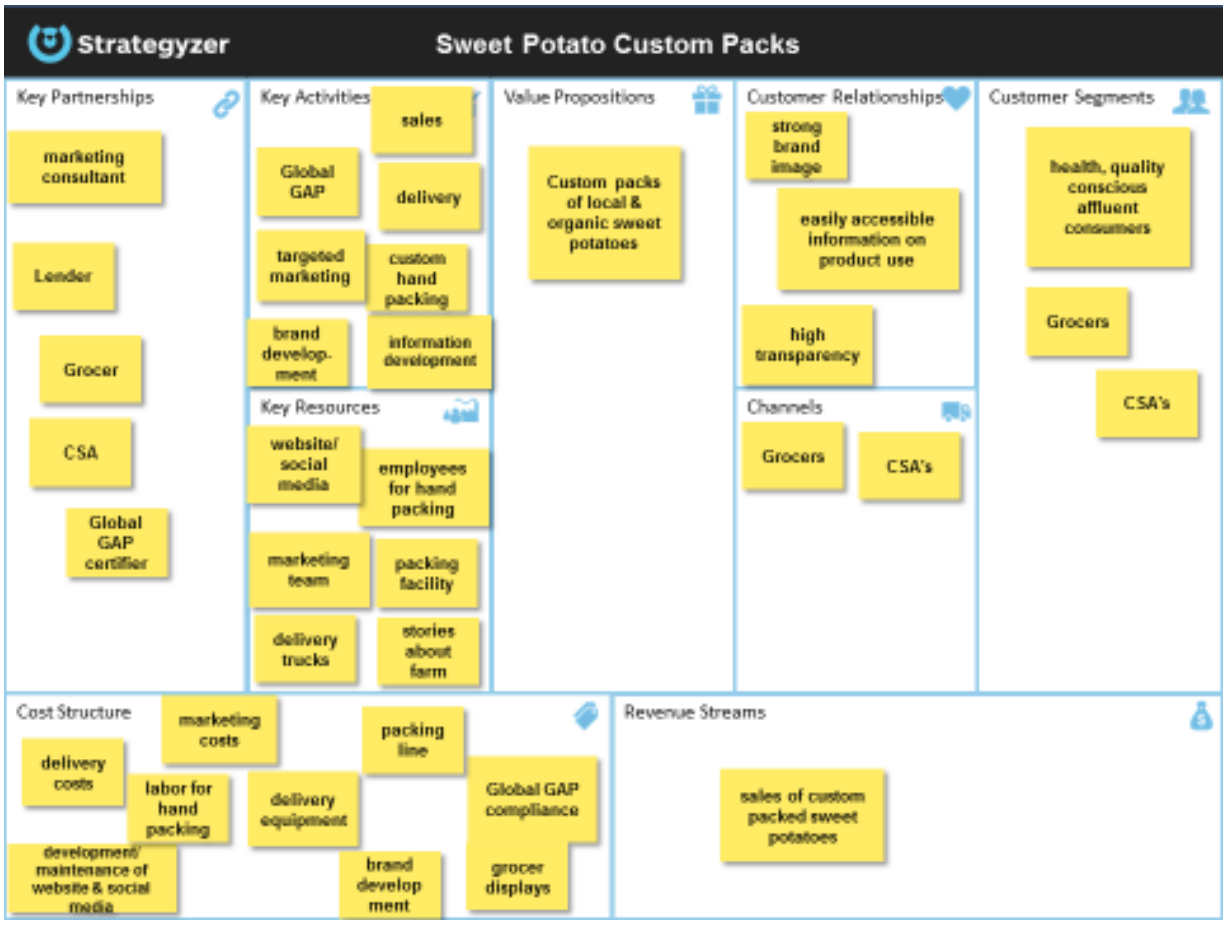


Figure 2. Business Model Canvas for Custom Packed Sweet Potatoes

The canvas in Figure 2 then shows actions in each building block where some change must be made in response to the market opportunity in Customer Segments with this value-proposition. For example in the Customer Relationships building block, the team thinks that in order to successfully create the Value Proposition for this Customer Segment, that the farm must create a strong brand image with transparency and information on product use. Key Activities needed to make this work are sales, brand development, a targeted marketing effort, custom hand packing, development of information on product use, Global GAPs compliance, and delivery. Key Resources will be a website and use of social media, a strong marketing team, employees for the hand packing and a packing facility with adequate equipment. Grocers and CSA's are both customers and the channels for sales of the product to the end users; health, quality conscious affluent consumers. Key Partners will be retailers, a marketing consultant, their lender, and their Global GAPs certifier. Their revenue stream will be sales of custom packed organic and local branded sweet potatoes. The changes in costs will be for capital purchases of a new packing line and delivery equipment, labor and management costs of hand packing and delivery, marketing costs, grocer displays, development and maintenance of website and social media, Global GAP compliance, and brand development. Changes in HR management and labor needed flow from the business model as well. Financial projections would come from fleshing out the changes in Cost

Structure and Revenue Streams. Cash flow, balance sheet changes, and projected income statements can all be produced as an addition to the business canvas. Obviously these financial statements are static since they flow from a "snap shot" of a particular business canvas and will need updating as the business canvas changes.

One of the appealing characteristics of the *business model canvas* is that discovery in working in one block may lead to changes in other blocks. Obviously, if the additional costs of this value-proposition exceed the additional revenues, then changes must be made. But the changes might be in Channels e.g. personal delivery may be very expensive so that another delivery option is considered. This might lead to different Key Resources being needed and new Key Partners investigated for delivery options, and so on. In other words the canvas is a living, working, dynamic document intended to facilitate discovery and adaptation in implementation of the business model.

Other business canvases for other value Propositions emerged from the teams. For example, another Value Proposition for the case study farm is producing very high quality tobacco to specifications set by tobacco manufacturers for the emerging innovation in heat-not-burn tobacco products. Another example, was planting and harvesting earlier soybeans to take better advantage of a high positive basis in North Carolina for early soybeans. We chose to illustrate the usefulness of the business canvas with a canvas for one value proposition, but a *business model canvas* can be developed to model the whole farm business. In fact the canvases developed by the class are more akin to a model for the whole farm. And, as noted, financial projections, changes in HR policies and management and labor needs flow out of the business model.

Another advantage to using the *business model canvas* to teach strategic planning is the farmers really enjoy this tactile learning process. Working in teams on the canvas stimulated excitement and sharing of ideas among the class. Evaluations by the class of the sessions on the *business model canvas* rated for applicability and interest were very high (4.4-4.6 on a scale of 1-5) with many comments like "group discussion was great" and "this pulled it all together so it started to make sense." Feedback from the class is that they are already applying in their farm businesses some of the new business skills and intuition learned in the first week's session.

The class will continue their work in teams on the *business model canvas* for the case study farm. During the summer the teaching team is working on further customizing the program to the needs of this specific class. This includes further development of the case study farm with input from the class. A team of 5 class members was chosen by their peers to work in between the sessions (via virtual meetings) on developing more information from IBM's Watson for a more detailed PESTEL analysis on sweet potatoes and tobacco. This information will feed into refinement of the *business model canvas.* Evaluation of the impact of the program on farms will continue after the program

concludes. In particular, evaluation of adoption and impact of changes in management practices will be conducted one year after completion of the program.

Conclusions

The *business model canvas* provides a lean, dynamic and flexible way to model the farm enterprise. Value Propositions for the farm business are formulated based on discovery of market opportunities in the Customer Segment and leverage of strengths in other parts of the business. Actions in other building blocks of the *business model canvas* flow from the value proposition. This approach to business modeling aids in discovery of new opportunities and the formulation of strategies to create value by facilitating change in the building blocks of the business model. Further, the *business model canvas* is a tactile learning process that is particularly effective for management education for farmers.

References

Blank, S. 2013. Lean Start-Up Changes Everything. Harvard Business Review 91(5):65-71.

Markham, S., and Mugge, P. 2015. Traversing the Valley of Death: A Practical Guide for Corporate Innovation Leaders. Innovation Press. U.S.A. 178 pages.

Osterwalder, A. and Pigneur, Y., 2010. Business Model Generation. John Wiley and Sons, Inc. U.S.A. 281 pages.

Osterwalder, A., Pigneur, Y., Bernarda, G., Smith, A., and Papadakos, P. 2014. Value PropositionDesign. John Wiley and Sons, Inc. U.S.A. 290 pages.

USDA. 2012 Census of Agriculture. Retrieved from www.agcensus.usda.gov.

Interactive Strategic Management combined with Canvas Business Modelling in a 'knowledge coalition'

N. Tomson and B. Smit

Wageningen Economic Research, the Netherlands
Contact: niels.tomson@wur.nl

Abstract

ISM (Interactive Strategic Management) is not only applied in the ERASMUS+ entrepreneurship project, but also in different projects in the Netherlands. Since 2006 Rabobank (the largest bank in agriculture in the Netherlands), NAJK (the Dutch Young Farmers Organisation) and Wageningen Economic Research apply ISM together in a 5-day training for young farmers who are preparing themselves to take over the farm from their parents. The training counts 100 participants per year on average. First, they have an intake with a psychologist, who focuses on the willingness and competences of the farmer to take over. Then, the account manager of the bank applies a financial scan to check whether a take-over is financially possible. The third step is the training.
In this paper, we present the special form in which this project had been organised, i.e. as a 'knowledge coalition' of a commercial, an advisory and a research organisation. Moreover, we show how ISM can be combined with Canvas Business Modelling. We present the added value of the coalition and the project for the quality of the take-over process.

Keywords: *strategic management, Canvas business, knowledge coalition*

Introduction to the background, principles and application of interactive strategic management

Since 2000, Wageningen Economic Research, the Netherlands, has developed the Interactive Strategic Management-method. This method is based on the theory of strategic management and deals in practice with strategy planning.

The ISM-method is developed in response to the huge changes the European agriculture has experienced in the last decades. Institutional, production and marketing changes, influenced by EU common agricultural policy, but also societal wishes like food safety, animal welfare and the environment, require adaptations of the way farmers produce and sell their products. Entrepreneurial skills are a key factor for survival during such adaptation processes. Many authors studied entrepreneurship in agriculture, agricultural entrepreneur's competences and their ability to adapt to changing economic realities (Bergevoet et al. 2005, De Lauwere 2005, Lans 2009, De Lauwere et al. 2010). Great adaptations can only be successfully planned and carried out through strategic thinking, which however is rarely present among farmers, especially but not exclusively in Central

and Eastern Europe (Beldman et al., 2013). Agricultural producers, focused on operational decisions taken "by the day" often do not see the need for a vision for their enterprise in a long-term, strategic perspective. This is even more the case with farmers in less favourable rural areas, in general with small-scaled farms. Building a future in such areas requires a certain level of entrepreneurial competencies (Malak-Rawlikowska et al., 2015). Therefore, training in entrepreneurial behaviour and decision making is essential, as are tools to support such trainings. A theory that deals with strategy planning is "strategic management". However, this theory is, in general, not incorporated in the consulting and educational efforts towards farming communities (Beldman et al., 2013).

Wageningen Economic Research has applied the Interactive Strategic Management-method including a web-based tool as a training concept in research, educational and commercial projects. The concept has been applied in both individual and group sessions with students and (future) farmers. They learn how to plan the strategy of their (future or imaginary) farm in a structured and solid way. In 2006, the largest agricultural bank in the Netherlands, Rabobank, adopted the concept in the Rabo Opvolgers Perspectief (Rabo Successors Perspective). In this coaching programme, farmers' sons and daughters who want to take over the farm, are trained according to the ISM-principles (Beldman et al., 2013). Wageningen Economic Research has also some experience with the method outside the Netherlands, e.g. in Poland, Lithuania, Slovenia, Austria and Sweden (partly in the Erasmus-project ISM+; see also Malak-Rawlikowska et al., 2015).

The ISM-method has three main principles: (1) the emphasis is on the entrepreneur; (2) interaction with the environment; and (3) a focus on actual progress or actions of the entrepreneur. We now explain these principles:

1) **Placing the entrepreneur** (in this case: the farmer) at the centre of the attention means recognising that, instead of an advisor, the farmer himself is responsible for the content of the strategic plan for his farm. The strategy developed by an advisor or expert could not truly fit with the individual situation of the farm and the farmer, his personal thinking, goals and abilities. The entrepreneur must therefore write the strategic plan himself; an advisor or, rather, facilitator is only there to guide and stimulate the process. The focus in the ISM-training is on strategic choices (3–10 years ahead). This means that tactical choices (choices for the next 1–2 years) and operational issues do not receive much attention. In general, a good strategy is based on a good fit between means and opportunities (Porter, 1980; 1998). Within the ISM–method, this is specified in the following way. A good strategy is based on a good match between: a) the entrepreneur: the ambitions and skills of the farmer, his family and/or employees; b) the enterprise: the structure and performance of the farm, and c) the environment: market and society (Malak-Rawlikowska et al., 2015);
2) **Interaction with the environment**. There is not only a lot of attention during the training sessions about presenting and discussing ideas and views among the participants. Farmers are also challenged, not only during the training but as a

basic principle of entrepreneurship, to communicate with one's partner, parents, children, advisors, industry agents etc. and also with citizens and customers. The main reason is: An entrepreneur needs to know how other stakeholders think about him, his farm and his products. Otherwise, he cannot optimally shape his farm;

3) **Focus on actual progress or actions of the entrepreneur**. It is not enough to show nice pictures and tell nice plans. To be really successful, an entrepreneur needs to translate all those nice ideas into concrete and smart action plans, which he evaluates on a regular basis.

An ISM-training is guided by a facilitator. This trainer facilitates the ISM-process. A good trainer recognises and applies the three principles listed. He or she must be able to stimulate farmers to think out-of-the-box and to stimulate them to interact with colleagues and others (Beldman et al., 2013). Facilitators are using game techniques in their trainings like cover story, context map and Empathy map (Gray et al., 2010). In the case that the facilitator is an advisor he should not play the role of the 'expert' but rather be the facilitator of the process that the entrepreneur goes through. The facilitator acts like a guide for the entrepreneurs who have to find their own answers. The ISM-facilitators are trained by Wageningen Economic Research.

More details about the ISM-Method and experiences from its implementation in Europe can be found in the paper: Strategic management training for farmers – the case of implementation of the interactive strategic management methodology in Europe (Malak-Rawlikowska et al., 2015).

ISM-application in a 'knowledge coalition'

From the start in 2006, ISM in the Rabo Successors Perspective has been carried out by a 'knowledge coalition' (Kortstee et al., 2011). A knowledge coalition is a combination of organisations, that offer a learning arrangement. A learning arrangement is a combination of different learning activities. A learning activity is a specific form in which people learn, e.g. a lecture, a practical or a training. Cooperating organisations in a knowledge coalition preferably originate from different branches e.g. education, research and business. The added value of a knowledge coalition is a more efficient use of resources in recruiting, developing and application of learning arrangements. The different partners in the coalition can divide the different tasks among themselves, using the strong aspects of each of the partners and optimising the business model of the coalition as a whole and of each individual partner. This concept naturally requires a well-communicated and organised cooperation of the partners in order to carry out the learning arrangement in an effective and successful way (Kortstee et al., 2011).

The concept of the knowledge coalition is applied in the Rabo Successors Perspective (RSP), specifically in the Rabo Successors Training (RST). There are two other elements

of RSP, i.e. the Rabo Successors Mirror Meeting, in which the capacities and willingness of the potential successor is evaluated, and the Rabo Financial Scan, evaluating the opportunities to finance take-over and (strategic) choices. The partners in the RSP are Rabobank Netherlands, local Rabobank offices, Advisory Office De Boer C.S., NAJK and Wageningen Economic Research, each with their own roles (summarised in Figure 1):

- Rabobank Netherlands, who facilitate the local Rabobank offices through offering the opportunity to develop the arrangement and to keep it up-to-date and through supporting the local offices with information, presentations and advice when they consider the application of the arrangement in their region;
- The local Rabobank offices have account managers, who communicate with their customers, in this case the farmers and the potential successors in their region. If the local offices are in favour of offering the RSP-arrangement to their customers, then they will organise this in their region and personally invite customers to take part of it. They often organise information meetings to share the RSP-concept with interested farmers and to inform also the parents of successors about the process that their children will go through. The account managers also assist the successors in filling in the Financial Scan;
- Advisory Office De Boer C.S. for personal development takes care of the first step in the RSP; they invite the participants to fill in a test on the internet followed by a personal advice meeting. The participants receive information on their willingness and competences to take over the farm and become a farmer and an advice whether it is wise to do so;
- NAJK (Nederlands Agrarisch Jongeren Contact; Dutch Young Farmers Organisation) takes care of the interests of young farmers on local, national and European level. They also organise different learning arrangements for young farmers, mostly linked to farm succession. In the case of the RST, they provide both in free-lance trainers for the training groups composed by local Rabobank offices and in the training materials that the trainers use during the session. The NAJK-office also gathers the evaluation forms of each participant after each session during the training and reports each year about the number of participants and the evaluation outcomes per training, trainer and training session of the most recent season (September – April), also in comparison with earlier seasons;
- Wageningen Economic Research (earlier known as 'LEI Wageningen UR' or as 'Agricultural Economics Research Institute) is an institute for social and economic, independent and applied research. With our unique data, models and knowledge, we offer insights and integral advice for policy and decision-making. We have developed the RSP-concept together with Rabobank Nederland and NAJK and specifically the training concept, contents and programme and the ISM-software and web-tools applied in the training, which we also host. The institute takes care of 'training of trainers', in this case of free-lance trainers of NAJK. Since the start in 2006, different steps have been taken to improve the training through interaction with Rabobank Nederland and the trainers. The

trainers received training when required due to the dynamics of the training. Finally, our institute functions as a helpdesk for both questions on the web-tool and on ICT-related problems.

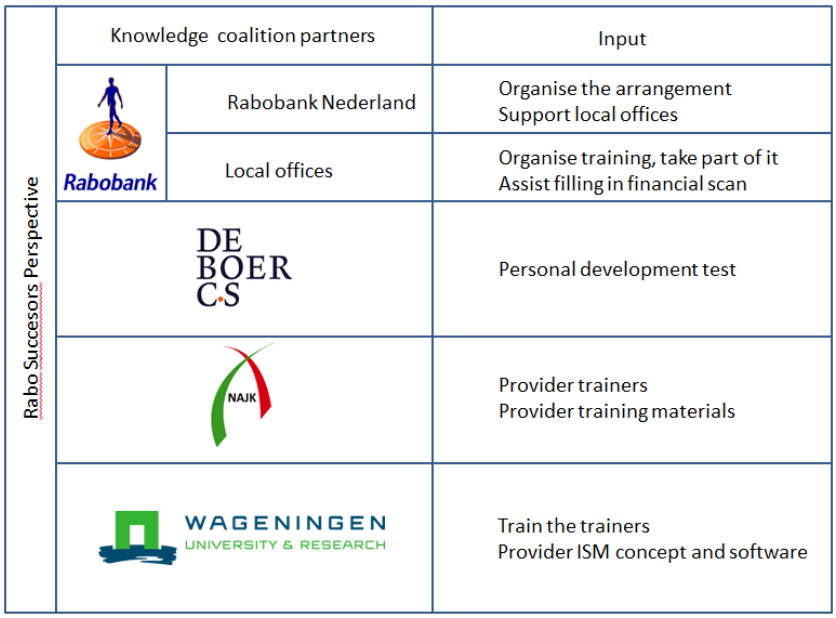


Figure 1. Knowledge coalition Rabo Successors Perspective.

In such a knowledge coalition, each partner has a specific role and task on which all partners agree. All partners need to do what is agreed to make sure that all RSP-elements are carried out in the right order and in time. The Rabo Successors Mirror Meeting needs to be carried out as a first step and the Rabo Financial Scan has to be filled in before financing as a theme is discussed in the Rabo Successors Training. During the annual evaluation meetings with the different coalition partners, such agreements are refreshed and confirmed. Thus, since 2016 more than 1,000 potential participants have filled in the Mirror test and 847 young farmers in 89 groups have been trained in the RST. Figure 2 gives an impression of the average evaluation outcomes over the last three years, showing that the evaluation reports have improved over time. The average score of the training over the 11 seasons sofar was 7.6 on a scale of 1-10.

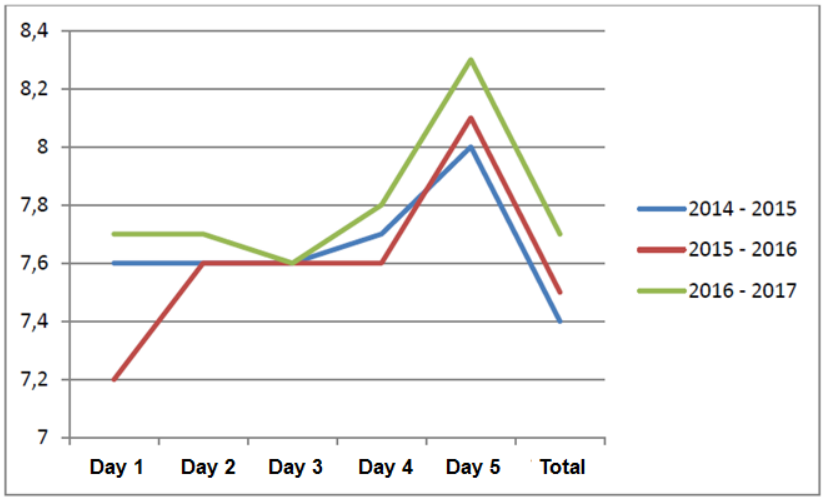


Figure 2. Average scores of the Rabo Successors Training in the Netherlands in the training seasons 2015-2015, 2015-2016 and 2016-2017. The scores are calculated as the average of all scores of all participants per training day (five in total) in that particular season.

Canvas business modelling

What is the Business Canvas?

The Business Canvas is a concept that allows the user to describe and think through the business model of the organisation, the competitors, or any other enterprise. This concept has been applied and tested around the world and is already used in organisations such as IBM, Ericsson, Deloitte, the Public Works and Government Services of Canada, and many more. This concept can become a shared language that allows to easily describe and manipulate business models to create new strategic alternatives. Without such a shared language it is difficult to systematically challenge assumptions about one's business model and innovate successfully.

The model is built of nine basic building blocks that show the logic of how an enterprise intends to make money. The nine blocks cover the four main areas of a business: customers, value proposition, infrastructure, and financial viability. The business model is like a blueprint for a strategy to be implemented through organisational structures, processes, and systems (Osterwalder and Pigneur, 2009), as shown in Figure 3.

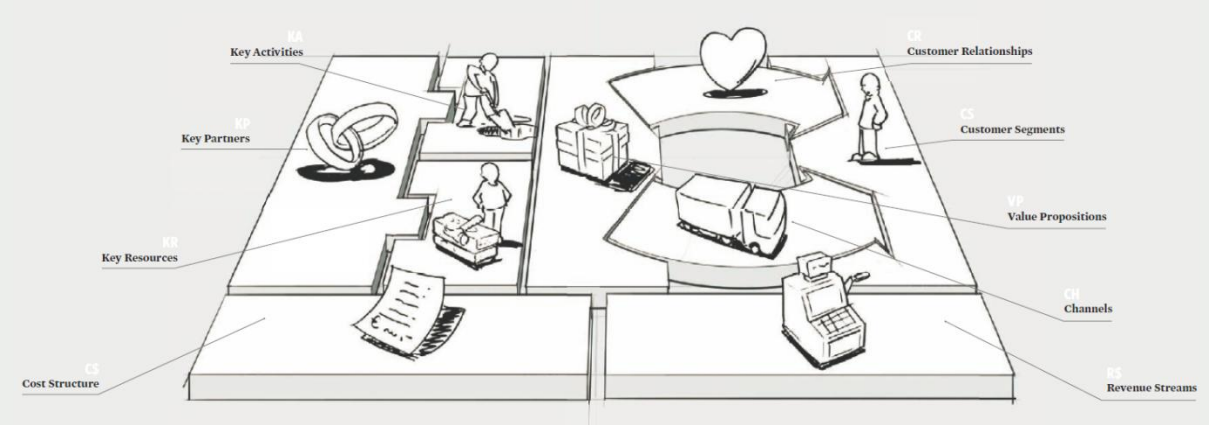


Figure 3. The Business Canvas and it's nine building blocks over four business areas (Osterwalder and Pigneur, 2009)

The Business Canvas is a concept that helps entrepreneurs to create and describe existing and new business ideas. The shared language helps them to do this with advisors, researchers, customers, NGO's, etc., creating a much richer output of new business ideas beyond existing boundaries and out-of-the-box compared to current business forecasts. The process of business modelling is essential, the format of Osterwalder and Pigneur (2009) helps to visualise the essential elements in the process:

- The process starts with the customers[7]: which segments can be distinguished and which segment(s) have perspective to focus on? Therefore, the approach is often customer-focused, which is not always usual in the agricultural sector (at least not at farm level). This analysis and selection process is the basis for the business model, in fact for the business itself.
- The next step is to deeply analyse the offering by the enterprise, the value proposition. The major question is which problems of the customer can be solved or which wishes can be filled in through the (existing, adapted or new) value proposition. The offering needs then to be extended into a package of different products and services in different layers;
- The next step is to define the type of relationship that an entrepreneur wants to have with the customers in the segment(s) selected and the channels to reach them with the product folio offered. Cf. the ways different retail concepts relate to their customers and present their products to them;
- Finally, partners and resources have to be selected and calculations to be made on the cost-benefit ratio in order to decide whether the business model is sufficiently profitable to carry it out.

In the Business Canvas, not only the profit element is described, but the customer, the infrastructure and the value proposition are also important.

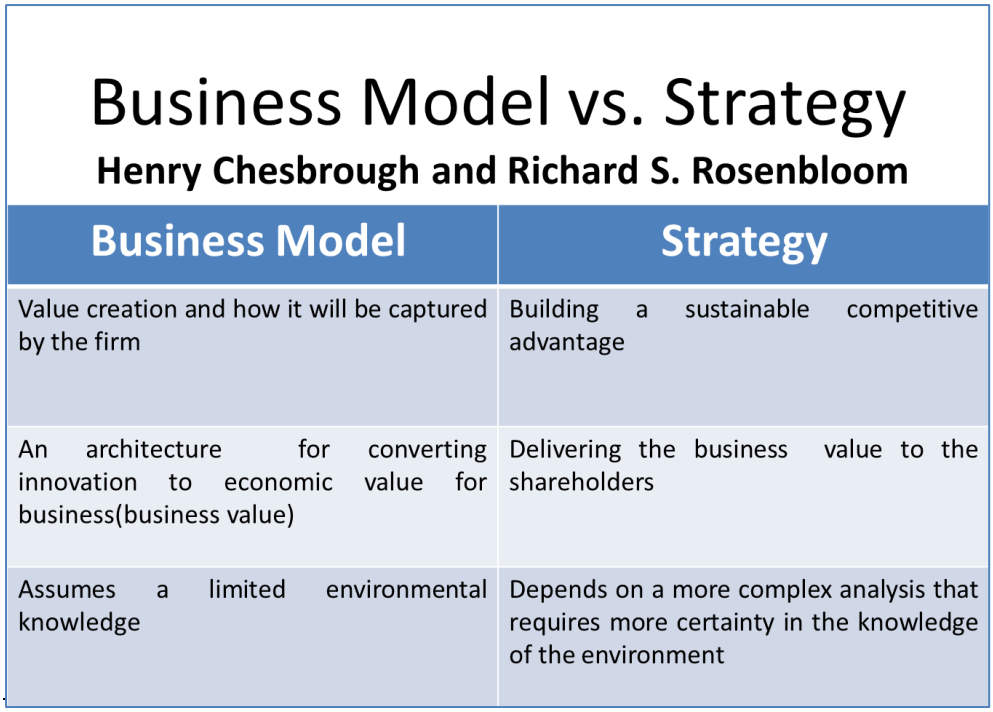
[7] This is true for the RST. In general, the process can start with any block (Osterwalder and Pigneur, 2009). For farmers with a fixed relationship with e.g. a cooperative, sometimes it may be best to start in the key resources block.

What is the difference with the ISM-concept?

ISM facilitates the training participant through quantitative and qualitative questions on the enterprise, the environment and the entrepreneur. These questions 'force' the participant to evaluate these three elements of his business. The ISM-tool facilitates the participants to make strategic choices and an action plan. The Business Canvas on the other side is a tool to analyse, transparently and clearly describe and present the business model. The process to create a business model is not facilitated by questionnaires. It is a more creative process in which tools like customer value tool ('pains and gains'), cover story and blue ocean help the business developers to reach their goal. A business model does not describe the organisation of a farm, contrary to ISM. It describes the way in which an enterprise creates value, without describing the executive processes.

The business modelling approach focuses on the market aspect of a business, whereas ISM pays more attention to strategic planning that matches with the enterprise and the entrepreneur. Business modelling is an approach that challenges entrepreneurs to think more out-of-the-box. As a consequence, this approach has its limitations in application on farms, having in (Western) Europe often only one entrepreneur with personnel. The competences and abilities of this entrepreneur are of essential importance, since they cannot be changed very easily. Working in enterprises with more entrepreneurs, directors and/or personnel gives many more opportunities to think of out-of-the-box chances. The pool of competences and abilities is in this case much greater, giving a greater flexibility to follow new business ideas. This is e.g. the case in large horticultural glasshouse enterprises in the Netherlands. Options for new segments of customers can be taken into account easier than in relatively small arable and dairy farms who deliver their products to a cooperative and are not directly involved with customers and marketing.

A summary of the differences between both concepts is given in Figure 4. A keyword in the business model approach is 'innovation', whereas ISM is more focused on a competitive advantage. The analytical aspect of the ISM-approach is stronger than in the business model approach, in which creativeness plays an important role (Chesbrough and Rosenbloom). In general, ISM leads to the selection of the best matching market and farm development strategies. The Business Canvas helps to better evaluate the market and customer aspects of an enterprise and therefore better distinguish between the market strategies 'operational excellence', 'product leadership' and 'customer intimacy'. It also helps to define the optimal product folio, which has an effect whether or not to choose the farm development strategies 'specialisation' or 'diversification'. The ISM-approach helps creative entrepreneurs to translate creative ideas on customer opportunities into well-defined strategies and, consequently actions plans including a monitoring and evaluation plan including the definition of key success factors.



Business Model vs. Strategy

Henry Chesbrough and Richard S. Rosenbloom

Business Model	Strategy
Value creation and how it will be captured by the firm	Building a sustainable competitive advantage
An architecture for converting innovation to economic value for business(business value)	Delivering the business value to the shareholders
Assumes a limited environmental knowledge	Depends on a more complex analysis that requires more certainty in the knowledge of the environment

Figure 4. Key differences between business modelling and ISM/strategy planning (Chesbrough and Rosenbloom, 2002)

The Business Canvas as a new element in the Rabo Successors Training

Despite the differences between the ISM and the business modelling concepts, is it quite well possible to combine both concepts, as we have applied in the Rabo Successors Training. We combine the thorough analysis, evaluation, discussion and description of the 'three E's' (Enterprise, Environment and Entrepreneur) with the creative business modelling approach. A relatively large part of the farmers in the training is not used to evaluate the value proposition for their customers. They deliver their products to a cooperative or private trader or processor, who take care of the marketing of relatively high shares of products like dairy, meat, vegetables and potatoes. In fact, many farmers have specialised on agricultural production and delegated logistics, trade and processing activities to others. Usually, such a chain partner clearly defines the specific characteristics the product(s) should comply with. The amounts and characteristics of these products are derived from the value proposition(s) of the chain partner, who made choices on the customer segment(s), relationships and channels for the proposition(s). For the farmer, his value proposition is not independently chosen but connected to his relationship with the trader or processor involved. When this relationship is not too close, he can change his cropping plan, altering the specific crop areas or livestock numbers on his farm. The business modelling approach can help them to re-think whether this is logical and optimal or that other arrangements could be worthwhile looking at. Instead of producing milk, livestock, cereals, vegetables and fruits as a relatively small chain partner for a usually big chain partner, the farm could convert to producing e.g. cheese, meat, bread, salads and fruit drinks for a specialised food shop or for home selling. In that case,

the farmer becomes more in control of the product chain. At the same time, he will need to learn how to plan his product folio or value proposition for the customer segment(s) selected. Some farmers let their wives do the daily shopping and never visit a supermarket. Converting to a different chain set-up as described will create a need to focus on the pains and gains of 'his' customers, which can be a 'steep' learning process.

Another (smaller) group of participants in the training is already market oriented and creative. For them, the ISM-method helps to define realistic strategies that well match with the three E's. Depending on the needs and challenges in the group (of about ten participants), trainers can choose which mix of the two approaches they implement in their sessions with the group including homework assignments.

In practice, some participants prefer the ISM-method and others the business modelling approach. The combination gives both types of farmers challenges to perform optimally during the training and have the best learning effect for the future of their farm.

Perspectives for the future

The ISM-approach has proven its added value for developing entrepreneurship among students and (future) farmers in the Netherlands. We have broadened our scope to the Erasmus ISM+-project (see Malak-Rawlikowska et al., 2015) and see more organisations with interest in Europe and also in Africa. Not only successors but also experienced farmers can benefit from the approach. The approach is also applicable in other sectors of the economy, but in that case sector-specific questions in the tool need to be adapted. In all cases, the set-up of new knowledge coalitions is a challenge but really promising.

In specific cases, especially when there is a need or an interest to give more attention to the product folio of a farm, the business modelling approach can be applied as an additional tool to shape the farm. We have seen several promising examples of this approach. In any case, the facilitator and his attitude and competences to stimulate participants in the training to be creative and communicative are key factors for success.

At the moment, Wageningen Economic Research is working on a business plan for the future. Brainstorming about ideas from different organisations in different countries is very welcome. Central and Eastern Europe are for now the major regions of interest.

Conclusions

- ISM facilitates the entrepreneur in detail to make strategic choices in which the enterprise, the environment and the entrepreneur optimally match, and work these choices out in an action plan;
- Business modelling 'forces' the entrepreneur to think more out-of-the-box and requires more of the creative competences of the entrepreneur;

- The Business Canvas is more involved in marketing and market opportunities and gives a quick overview of the profit opportunities;
- Interactive Strategic Management and business modelling are two approaches which complement and strengthen each other and can be applied within the same training set-up;
- The RST-trainers find the current combination of ISM and the Business Canvas excellent, mainly because they can select the optimal mix of both approaches, depending on the composition and the needs of the group of participants;
- Combining forces and talents in a knowledge coalition can lead to higher benefits from the training arrangements;
- An annual evaluation of the training with the coalition partners, based on the scores and remarks of participants, make it possible to constantly improve the training;
- At the end of the training, the participants present the results of their analysis, homework, discussions and exercises, which consist of ISM- and Canvas-elements. Remarkably, most participants use plots from the ISM-approach rather than slides from e.g. cover story, customer value map etc.

References

Beldman, A.C.G., D. Lakner and A.B. Smit, 2013. Changing conditions require a higher level of entrepreneurship by farmers: use of an interactive strategic management tool. In: A. Kuipers, A. Rozstalnyy and G. Keane (eds.), Cattle husbandry in Eastern Europe and China; Structure, development paths and optimisation, Wageningen Academic Publishers, EAAP publication No. 135, pp. 125-131

Bergevoet, R.H.M., G.W.J. Giesen, H.W. Saatkamp, C.M.J. van Woerkum, and R.B.M. Huirne, 2005. Improving enterpreneurship in farming: the impact of a training programme in Dutch dairy farming. In: 15th Congress Developing Entrepreneurship abilities to feed the world in a sustainable way, Sao Paulo, 14-19 August 2005 / Silva, A.P., Vidal, A.J., Ribeiro, P.G, Sao Paulo: - p. 70-80

Chesbrough, H., and R.S. Rosenbloom, 2002, The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. In: Industrial and Corporate Change, 11 – 3, p. 529-555

Gray, D., S. Brown, and J. Macanufo, 2010. Gamestorming: A Playbook for Innovators, Rulebreakers, and Changemakers. O'Reilly Media.

De Lauwere, C.C., 2005. The role of agricultural entrepreneurship in Dutch agriculture of today. Agricultural Economics 33(2): 229-238

De Lauwere, C.C., E. ten Pierick, V. Beekman and M.A.P.M. van Asseldonk, 2010. Behavioural change as a key to sustainable agriculture. In: Global food security: ethical and legal challenges, EurSafe 2010, 16-18 September 2010. - Bilbao: Wageningen Academic Publishers, Global food security: ethical and legal challenges, EurSafe 2010, 16-18 September 2010, 2010-09-16/2010-09-18 - p. 91 - 96

Kortstee, H., N. Hamers - van den Berkmortel, K. de Grip, H. Hermans, B. Smit, R. Stokkers en M. de Vlas, 2011. Een leven lang leren. Voortdurende ontwikkeling van ondernemerscompetenties in kenniscoalities (Life-long learning. A continuous development

of entrepreneurial competences in knowledge coalitions; in Dutch, with English summary), Den Haag, LEI-report 2011-069

Lans, 2009. Entrepreneurial competence in agriculture. Characterization, identification, development and the role of the work environment. Wageningen University, PhD-thesis.

Malak-Rawlikowska, A., A. Kuipers, A. Beldman, A. Stalgiene, and M. Klopčič, 2015. Strategic management training for farmers – the case of implementation of the interactive strategic management methodology in Europe. In: Proceedings 20th International Farm Management Congress, Laval University, Québec City, Québec, Canada, p. 169 – 176

Osterwalder, A. and Y. Pigneur, 2009. Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. Wiley.

Porter, M.E., 1980. Competitive Strategy. Techniques for analyzing industries and competitors. Free Press.

Porter, M.E., 1998. On Competition, Boston, Harvard Business School.