



FARM RISK MAP – RISK ASSESSMENT TOOLS FOR FARMS

1. Organisations involved

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2. Description of the case

2.1. Introduction

Quality management systems, increasing demands for food safety and increasing farm size are slowly smoothing the way for more active use of risk analysis as part of proactive farm management. Systematic management practices and supportive management tools are needed to prevent risks. On farms, a formal risk analysis serves mainly for information and control purposes. The main purposes of the new risk management tools are to help farmers in collecting and categorizing information about farm risks and to ensure that necessary actions are taken to mitigate these risks. To support different farms in their risk management, it is essential to offer them useful farm management tools and methods for different situations during the farming year.

In this case study, results are presented from the development of a new risk management method and tool for farms, the Farm-RM toolset. This study was carried out in 2005-2007, and the tools were published for Finnish farmers in January 2008.

2.2. Aims

This study aimed at developing farm management practices and creating new risk management methods and practical management tools for farmers.

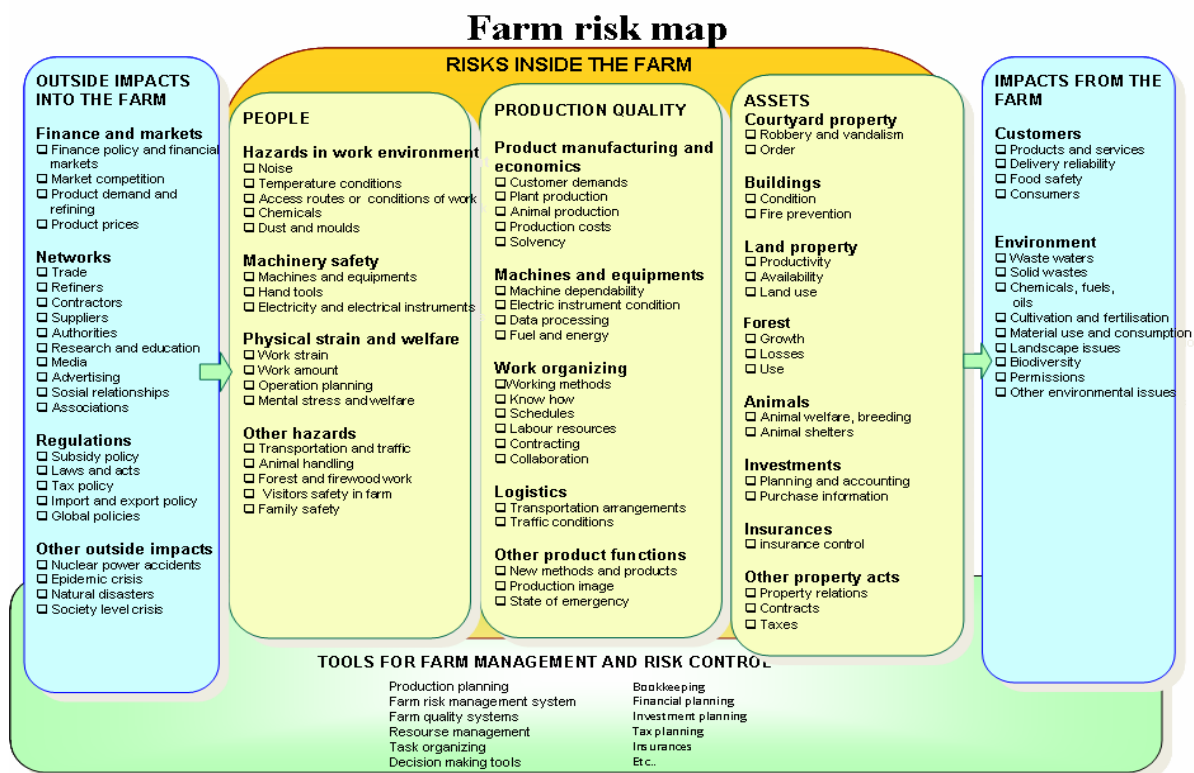
2.3. What was done, and how?

General risk management tools for small and medium-sized enterprises were tested on farms and they formed the basis for the development of the farm-specific risk management tools¹. The research and development methods included a farmer survey, expert workshops, a reference study and 10 farm interviews. Farmer perceptions were compared with national statistics and previous studies. The usability of the new tools was also tested with farmers.

The Farm-RM toolset includes a farm risk map, four check lists and risk analysis charts. The Farm Risk Map (Figure 1) is the most general risk analysis tool in the toolset. Modelling of the farm risk context is based on the general system view and concept, which considers outside risks to the farm and output risks from the farm. The basic idea behind the risk map is to provide the farmers with a single chart for rough risk analysis that covers a wide range of risks and operations on the farm.

CASE STUDIES

Figure 1: The Farm Risk Map²



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In comparison with the risk map, which is intended as an initial and rough tool for farm risk analysis, the risk checklists provide a far more detailed tool for further risk identification. The four checklists cover the following themes:

- People risks (safety and health at work, personnel risks)
- Production risks (profit, quality, image and inputs)
- Property risks (value decrease, robbery, fire, investments)
- Environmental risks (waste waters, solid waste, manures, consumption, and landscape)

While the risk map is a simple, one-sheet diagram with limited text, the checklists are very extensive. Each checklist consists of 70 to 188 questions, which are as clear and practical as possible, and divided into 7 to 15 sections. The questions are formulated as positive questions that both help to identify possible risk factors and at the same time give suggestions on how the risks can be prevented. For example, the following question: "Are you able to finish your daily tasks with no extreme hurry?" helps to identify both physical and mental strain, gives a measure (the amount of daily work) to evaluate the strain and suggests that if you decrease your daily tasks you may start feeling better (Table 1).

Table 1: Summary of the contents of the risk check lists in Farm-RM-toolset

Title	Sections	Questions in total	An example of a question
People	15	172	Operation planning: Are you able to finish your daily tasks with no extreme hurry?
Production	12	188	Customer demands: Are you aware of the customer needs and demands concerning the main products of your farm?
Property	10	136	Fire prevention: Are the electrical wires and systems in order in all farm buildings?
Environment	7	70	Waste waters: Do you have adequate practices and techniques for sewage disposal?
Total	44	566	

All the questions in the checklists have the same 3-step scale of responses: Yes / Partly / No. Due to the positive questions, the response “Yes” means that there is no need for further actions related to the specific question. Otherwise, actions are required to at least some extent. In addition, following each question there is a free space where the analysts can add their own notes and other comments. Since the checklists are quite long, each section includes separate prioritization tasks, where the analysts are asked to select the three most critical issues concerning the theme of the section. For example, in the Workload section of the People checklist, the analysts are asked to name the three busiest times of the year on their farm. Hence, it is easier for the analysts to anchor the questions presented by the checklist to their own work².

2.4. What was achieved?

- These formal farm risk management tools have been published as an Internet-based tool in Agronet, an agricultural and food-related network service in Finland, and for educational use in the Virtual Village web pages for Finnish farmers. (Virtuaalikylä 2009^{3,4}. There is a large database of detailed question lists designed to support farm risk management.

- The tools have also been tested on dairy and livestock farms in Finland². For example, a large-sized grain farm located in the south-western part of Finland performed a risk analysis by using these tools. From the People section the farmer identified 19 work safety risk issues on his farm in 2006. Many of the risks were prioritized as small risks, but some were evaluated as significant, such as the lack of a substitute worker network in case of sick leave. During the following three years, the farmer made improvements for two-thirds of the work safety issues identified on the development list. Most of the improvements were not expensive for the farmer, only costing from 0-100 euros per issue, but they needed time, planning and prioritizing⁵.

- A new contextual Farm Risk Map management tool was presented and analysed (Figure 1). The new tool includes a one-page model that serves as a quick visualization tool, augmented by an extensive list of corresponding farm risk areas. Using the Farm Risk Map tool, farmers and outside experts can identify and assess farm risks and focus actions on the most critical risks⁶.

2.5. Success factors

Most farmers are well aware of the risks on their farm, but so far the knowledge of risks has remained tacit, and formal analysis has not been widely used to guide risk management actions. The main motivator for the farmers in this study was the need to control the risks on the farm. Because they had no previous experience of systematic risk analysis, it took some time to familiarize themselves with the new tools. After the farmers became used to them, they found the tools to be quite straightforward. By using the Farm-RM checklists, it was possible to identify 74 development issues on the case farm and then prioritize them with risk analysis tools⁵.

Another factor was that by using the farm risk map, farmers, occupational safety and health advisers and other advisers are able to take a broader perspective on their operations and management interrelations⁶. For example, it is very important in agricultural work to remember that besides the typical production or product risks, there are also serious occupational health and safety risks and other risks that can stop the whole farm. By using these tools the advisers can help individual farmers to manage these risks in a holistic manner and find sustainable solutions.

2.6. Further information

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2.7. Transferability

Common risk management systems offer general perspectives and tools for risk management. Essentially, risk management is tailored to a certain area, industry or company. In the new risk management standard ISO 31000, context evaluation in risk management is also recommended. The Farm Risk Map is an example of a context evaluation tool for risk identification. Its compact hierarchical structure and concept based on the general system view could enable it to be transferred to other areas and small enterprises with few people. The experiences of modelling the risk management tools on farms could also be compared to other industrial cases.

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Further reading:

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