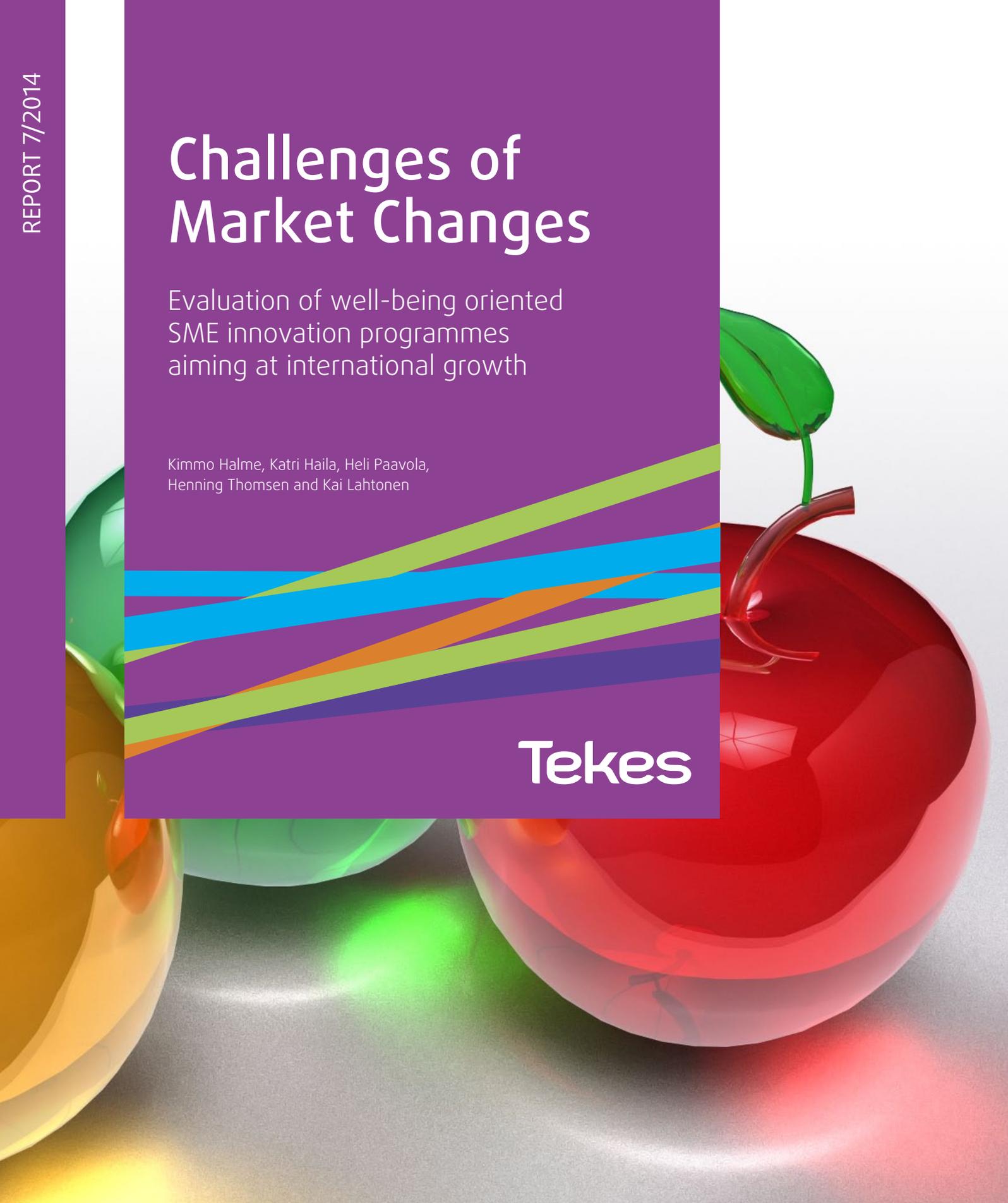


Challenges of Market Changes

Evaluation of well-being oriented
SME innovation programmes
aiming at international growth

Kimmo Halme, Katri Haila, Heli Paavola,
Henning Thomsen and Kai Lahtonen

Tekes



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programmes aiming at international growth

Evaluation Report



Tekes

Teke Report 7/2014
Helsinki 2014

Tekes – the Finnish Funding Agency for Innovation

Tekes is the main public funding organisation for research, development and innovation in Finland. Tekes funds wide-ranging innovation activities in research communities, industry and service sectors and especially promotes cooperative and risk-intensive projects. Tekes' current strategy puts strong emphasis on growth seeking SMEs.

Tekes programmes – Tekes' choices for the greatest impact of R&D funding

Tekes uses programmes to allocate its financing, networking and expert services to areas that are important for business and society. Tekes programmes have been contributing to changes in the Finnish innovation environment over twenty years.

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Foreword

As an export-led economy, Finland needs growth companies that can successfully commercialize ideas as products and services for international markets. Measures and support mechanisms have been created to support developments in internationalization of research and development. Tekes has interpreted its key task regarding internationalization in terms of helping firms to enter and expand in international markets, thus directly related to the new segmentation of companies and the focus on growth companies with a capability to export.

In this evaluation the goal is to find the lessons learnt in Tekes programmes, in which SMEs were the key target group and the well-being overarching theme. The evaluation covers four programmes: Food and Well-being; Sapuska – Added Value for International Food Markets; Tourism and Leisure Services; and Boat programmes. These programmes also represent a growing support for service-related innovations.

The evaluation utilizes survey, interview, workshop, minicase and benchmarking approaches to get a balanced view of the theme. In order to better understand the operating environment, a literature study has been made. The findings of the evaluation indicate good success in generating new product and service innovations. However, the recent economic crisis has been challenging. In the future, even more dedicated innovation activities, like new experiments in creating ecosystems, are needed.

The report has been written by an evaluation team from Ramboll Management Consulting Oy and Biocelex Oy. Tekes wants to thank the experts Kimmo Halme, Katri Haila, Heli Paavola, Henning Thomsen and Kai Lahtonen for their excellent and in-depth approach. Tekes expresses its gratitude to all those involved in steering group, interviews, surveys and workshops. The report shows valuable results and conclusions on the impacts and mechanisms, and it will serve as an important evidence base for on-going and future programmes.

Tekes,

November 2014

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1

Introduction

1.1 Objectives and background

The evaluation of well-being oriented SME innovation programmes involved the final evaluation of Tekes' programmes Boat, Sapuska – Added Value for International Food Markets – and Tourism and Leisure Services and *ex-post* evaluation the of Food and Well-being programme. The programmes are described in Chapter 2. In this case, the definition of well-being is limited to the fields covered by the four programmes (Boat, Sapuska, Tourism and Leisure Services and Food and Well-being), which have been evaluated. The target sectors of the Tourism and Leisure Services Programme were tourism, culture, creative industries, and sports. Recently, the impact assessment of Tekes on environment and well-being included two other Tekes programmes with a specific well-being focus (Innovations in Social and Health and Pharma programmes).¹

In this evaluation the main goal has been to find the lessons learnt in promoting international growth and success of SMEs (small to medium sized enterprises) in Tekes programmes. Tekes has emphasized the role of SMEs in strategies and programmes. The trend in innovation policy has been the focus on customer- and demand-orientation and towards ecosystems; SMEs are also key components in EU-level research and innovation activities.

In 2005 strategy Tekes challenged start-up companies to grow and growth enterprises to strive for global market leadership by identifying opportunities on the basis of customer needs and by pooling different competences. Year 2006 was a turning point for Tekes. Tekes changed its name, mission statement and organisation. The Tekes law was also changed

to meet the new mission and new programs were launched. With these changes service innovations had a central role in Tekes' activity. Tekes strategy 2008 emphasized development of service business and service innovation across all industries. In the 2011 strategy, Tekes' main target groups were SMEs and pioneers seeking growth in internationalisation. Tekes focus areas included Health promotion, Affective and meaningful free time experiences and Radical renewal through business concepts.

The report at hand presents the results of the evaluation. The evaluation report structured as follows:

- Chapter 1. Introduction
- Chapter 2. Overview and context of well-being oriented SME programmes aiming at international growth
- Chapter 3. Final evaluation of Boat, Sapuska, and Tourism and Leisure Services
- Chapter 4. Ex-post evaluation of Food and Well-being
- Chapter 5. International benchmarking with Denmark
- Chapter 6. Conclusions and Recommendations.

1.2 Evaluation questions and framework

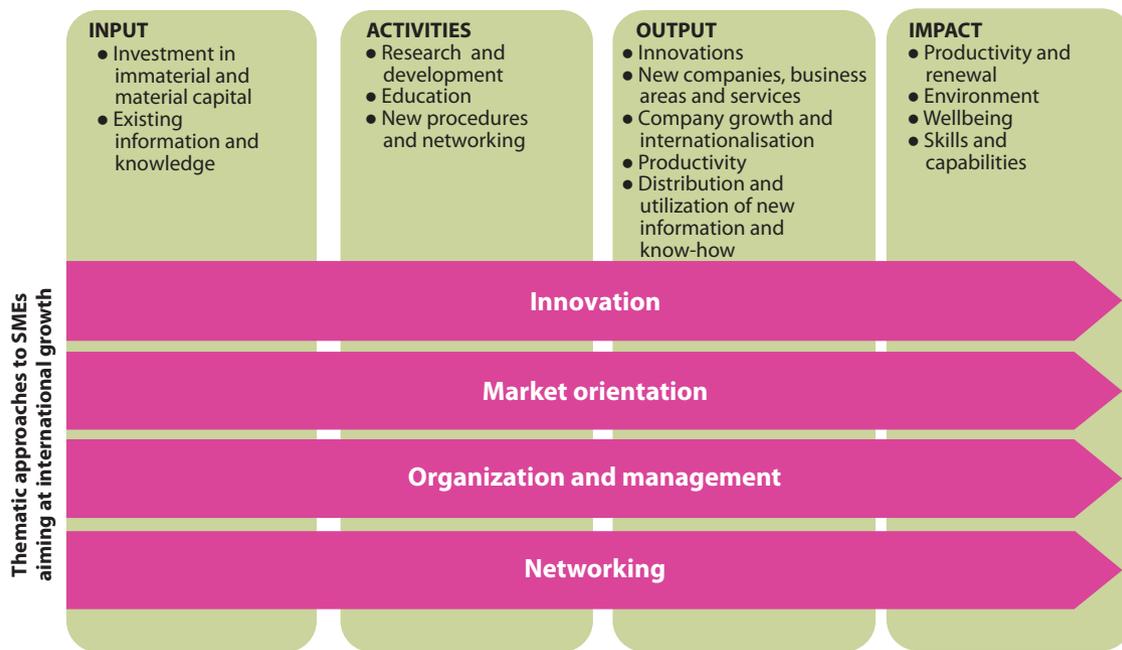
The evaluation included four work packages as shown in Table 1. The evaluation questions for final evaluation of Boat, Sapuska and Tourism and Leisure Services are shown in Work package 2 and the evaluation questions for the *Ex-post* evaluation of Food and Well-being are shown in work package 3. The evaluation questions in work packages 1 and 4 concerned all four programmes being evaluated (Boat, Sapuska, Tourism and Leisure Services and Food and Well-being).

¹ Valovirta, V., Lehenkari, J., Lehtoranta, O., Loikkanen, T., Suominen, A., Bodewes, H., mostert, B., Zegel, S., & van der Veen, G. 2014. The impacts of Tekes activities on wellbeing and environment. Tekes review 308 / 2014. www.tekes.fi

Table 1. Work packages and evaluation questions.

Work packages and evaluation questions
<p>Work package 1: Literature review</p> <ul style="list-style-type: none">– What are major changes in the operation environment?– International benchmarking: insights of RDI in some comparable countries
<p>Work package 2: Results achieved, relevance and efficiency</p> <ul style="list-style-type: none">– Final evaluation of Boat, Sapuska and Tourism and Leisure Services– How relevant and challenging can the programmes' objectives be considered? To what extent have they helped to implement Finland's strategic choices, and Tekes' own strategies?– To what extent have the objectives set for the programmes been achieved? What are the important results supporting the main objectives of the programmes? To what extent is there a basis for international growth potential?– What other programme results can be found that were not listed as programme objectives? Which of the results would not have been achieved without the programmes?– How well were the most important customer groups (international growth-oriented SMEs) reached?– How well did the programmes, their services and administration meet the needs of the participants?– How should the results and programme services of the programmes be utilised so that performance can be improved and more impacts generated after the programme and in future programmes?– How efficient have the programmes been?
<p>Work package 3: Impacts achieved and expected, effectiveness and utility</p> <ul style="list-style-type: none">– Ex-post evaluation of Food and Well-being– What are the impacts of the programme? How permanent, comprehensive and significant can the impacts be considered?– To what extent and in what ways has the programme impacted the following areas (give indicators or case examples):<ul style="list-style-type: none">• R&D and innovation inputs in the sector• establishment of domestic and international networks• changes in companies' operating practices• important innovations and business opportunities• growth (especially international) of participating companies• competitiveness of the industrial sector• Finnish industry and society more generally.
<p>Work package 4. Conclusions and recommendations</p> <p>Recommendations are given at three levels as follows.</p> <p>A. For the R&D and innovation activities in the sectors:</p> <ul style="list-style-type: none">– How could the R&D and innovation activities be developed in the future?– Which international programmes and initiatives have the greatest significance for the sector and how could they be influenced more effectively? <p>B. For funders:</p> <ul style="list-style-type: none">– Give the good practices that are concrete and workable and that can be used in the development of programme services and the programmes themselves. What kind of new indicators are needed that gauge the results and impacts of new Tekes' programmes. Give the recommendations for the development of other Tekes' activities (Team Finland etc.). <p>C. For research and innovation policy:</p> <ul style="list-style-type: none">– How should the recommendations of recent Tekes evaluations be considered? What other research and innovation policy measures should, in addition to the measures taken by Tekes, be applied so that programme impacts can be strengthened?

Figure 1. Framework of the evaluation of the well-being oriented SME innovation programmes aiming at international growth.



Framework

Tekes' impact analysis model was applied in the evaluation. In the model, impact is analysed on four levels: impact on society and economy, output, activities and input. Our approach of the framework of the evaluation of the well-being oriented SME programmes is a matrix consisting of the impact analysis model and thematic approaches to SMEs aiming at international growth (Figure 1). The thematic approaches are innovation, market orientation, organization & management and networking. Previous studies show that these dimensions are especially characteristic of high-growth SMEs and they thus provide important aspects to further understand best practices for promoting the high-growth of SMEs.

1.3 Evaluation methodology

A multimethod approach was used to evaluate well-being oriented SME programmes aiming at international growth. The qualitative data collection included interviews, mini case studies, the workshop, an e-survey and a literature review. The quantitative data included the e-survey. The evaluation material was compiled by following methods:

- Literature review of programme documentation and previous evaluation reports. The desk study included the description of the programmes (Boat, Sapuska, Tourism and Leisure Services, Food and Well-being) and the analysis of the operational environment and the position of the programmes in the Finnish research and innovation system.
- International benchmarking. Denmark was chosen as a benchmarking country.

- Interviews. Interviews were used both for the final evaluation of Boat, Sapuska and Tourism and Leisure Services and *ex-post* evaluation of Food and Well-being. A total of 27 interviews were carried out. The interviewees are presented Annex 1.
- Survey. An e-survey was used for the analysis of results achieved, relevance and efficiency of Boat, Sapuska and Tourism and Leisure Services programmes. The total number of respondents was 100 (33 Tourism and Leisure Services, 28 Boat, 39 Sapuska). The background information of the respondents is shown in Annex 2.
- Mini case studies. The mini case studies were used to deepen the analysis of impacts achieved in the Food and Well-being programme, which had finished ten years ago in 2004. Instead, e-survey was not used as a method because of the long time period (10 years since the programme finished). Four company projects were chosen as mini case studies. The four selected cases represented well the themes of the Food and Well-being programme: well-being of alimentary tract, health promoting plant components, separation technologies and productization.
- Workshop. The preliminary conclusions and recommendations were tested at a validation workshop (Annex 3).

The evaluation process is summarized in Figure 2.

Figure 2. Evaluation process.



2

Overview and context of well-being oriented SME programmes aiming at international growth

2.1 Description of the SME innovation programmes aiming at international growth

The evaluation of well-being oriented SME innovation programmes involved the final evaluation of Tekes' programmes Boat, Sapuska and Tourism and Leisure Services and *ex-post* evaluation of Food and Well-being programme. Tekes invest-

ed in these well-being programmes a total of 118.7 million euros. The programmes are summarized in Table 2. The key of objectives of the programmes were related to the development of new products and services, business concepts, networking and internationalisation. Except the Food and Well-being programme, the programmes did not have goals for well-being.

Table 2. Description of Boat, Sapuska, Tourism and Leisure Services and Food and Well-being programmes.

Programme	Boat	Sapuska	Tourism and Leisure Services	Food and Well-being
Programme key objectives	To fully advantage the combined expertise of industry businesses, subcontractors, research facilities and institutes of higher education.	To improve the business of SMEs in the Finnish food industry, increase research, development and innovation and promote networking with regard to international markets.	To develop innovative, customer-oriented service concepts for companies in the sector.	Concentrated on four themes: the wellbeing of the alimentary canal, using plant components to promote health, separation and capsulation techniques and productization know-how.
Time period	2007–2011	2009–2012	2006–2012	2001–2004
Total volume in euros	€ 22.2 million, half of which was funded by Tekes	€ 34.5 million, half of which was funded by Tekes	€ 25 million	€ 37 million, of which 19 million for public research projects
Number of projects funded	44 company projects and 31 research projects	97 company projects, 18 research projects	80 company projects, 35 research projects	37 company projects (11 SME projects)
Other remarks		Business mentoring development where 39 companies participated; project activation service providing help in the internationalisation track was used by 39 companies; 40 events targeting companies were arranged	50 networking events	

2.2 Internationalisation and growth

High-growth firms, as measured by employment expansion rates, account for a significant share of jobs created and are key players in economic growth. Among such firms, small firms exhibit higher net job creation rates than large ones, as they also do in the general population of firms. Studies show that more than 25% of European small and medium-sized enterprises (SMEs) are involved in exporting or importing; the smaller the country, the more its SMEs are internationalised.² As a small and an export-led economy, Finland needs growth companies that can successfully commercialise ideas as products and services for international markets. However, the number of high-growth SMEs in Finland has been quite limited.

According to Autio³, the high-growth of companies is not limited to specific industry sectors or young or small firms only. Finland's prevalence rate of high growth entrepreneurial activity lags behind most of its European and all of its Scandinavian peers. On the other hand, the Finnish support system for SMEs and high-growth entrepreneurship is in par or better developed than most of its peers' system.

During the past few years, Finland has developed in the area of entrepreneurial culture. There have been considerable improvements in the areas of attitude to entrepreneurship, product and labour regulations, and entrepreneurial mindset⁴. Recently, the government and its agencies have introduced new policy instruments for promoting entrepreneurship and growth. For example, the Growth Track service⁵ was established for companies seeking quick growth and internationalisation.

Internationalisation may take place at each stage of the technology programme i.e. definition stage, implementation place and follow-up stage⁶. The type, direction and magnitude of international co-operation are made at the design and definition stage. The previous study, in which internationalisation of a total of 64 Tekes' technology programmes was evaluated⁷, showed that a home-base leveraging internationalisation mode has been dominant. The bulk of R&D was carried out domestically. Universities and research institutes, which have greater internationalisation readiness in technology programmes as compared to companies, have an important role as mediators of international influences to domestic industrial R&D processes. Technology programmes could work as platforms using different types of internationalisation approaches as shown in Table 3 below⁸.

The Table 4 summarizes the different international aspects of the programmes to be evaluated. In Sapuska, the objective of the programme was to boost to international growth and success of SMEs. On the other hand, the aim of internationalisation was indirect in Boat, Tourism and Leisure Services and Food and Well-being programmes. Boat, Tourism & leisure and Food and Well-being programmes had internationalisation activities even if they were not stated among programme aims. In all four programmes, the most common internationalisation activities were the benchmarking tours. As discussed below, the challenges of internationalisation varied between the programmes to be evaluated.

² European Commission 2010: Internationalisation of European SMEs.

³ Autio, E. 2009. The Finnish paradox: the curious absence of high-growth entrepreneurship in Finland. ETLA Discussion papers. No. 1197. www.etla.fi.

⁴ The Nordic Growth Entrepreneurship Review 2012. Norden.

⁵ www.yrityssuomi.fi/web/kasvuvayla

⁶ Halme, K., Kanninen, S. & Lemola, T., Autio, E., Arnold, E. & Deuten, J.2004. Competitiveness through internationalisation. Evaluation of the means and mechanisms for promoting internationalisation in technology programmes. Technology Programme Report 10/2004. Tekes.

⁷ Halme, K., Kanninen, S. & Lemola, T., Autio, E., Arnold, E. & Deuten, J.2004. Competitiveness through internationalisation. Evaluation of the means and mechanisms for promoting internationalisation in technology programmes. Technology Programme Report 10/2004. Tekes.

⁸ Halme, K., Kanninen, S. & Lemola, T., Autio, E., Arnold, E. & Deuten, J.2004. Competitiveness through internationalisation. Evaluation of the means and mechanisms for promoting internationalisation in technology programmes. Technology Programme Report 10/2004. Tekes.

Table 3. Approaches for internationalisation in technology programmes (Source: Halme et al. 2004⁹).

	Big Science programmes	Up-grading Finnish competence	Exploiting Finnish competence	Regulatory & other changes as drivers
Design and definition	Selective participation with ambitious objectives. Ensuring the industrial relevance. National parallel or internationally integrated programmes. Integration with national basic research programmes.	Preparatory studies on up-grading needs and available technological expertise abroad. Internationalisation plan, with specific objectives and emphasis of domestic dissemination.	Preparatory studies on market needs and structures abroad. Key market / application oriented internationalisation plan. Collaborative design with other service providers.	Preparatory studies on policy and regulatory developments. Preparatory studies on similar programmes and developments abroad – possible joint action.
Implementation	Active promotion of and participation in international research funding mechanisms. Aim at highest quality projects and domestic competence clusters. Seminar & conference participations and organisation. Develop researcher training and mobility mechanisms.	Technology oriented benchmarking. Ensuring access to best available expertise. Aim at strategic collaboration with strong foreign partners. Inviting foreign experts and companies to programmes. Encouragement for international joint R&D projects and technology transfer.	Application oriented benchmarking. Selecting a steering group with international contacts. Selection of projects with international application objectives. Focus on credibility increasing and awareness raising. Support by outsourced internationalisation / export services.	Follow-up & active dissemination of regulatory, policy and market developments. Lobbying on policies, standards and legislation. International network facilitation among actors.
Follow-up	Ensure a seamless follow-up usually with a new programme.	Follow-up with other programmes or specific follow-up instruments.	Technology programme as a catalyst – follow-up with other (business oriented) instruments.	Follow-up with specifically targeted programmes or specific follow-up instruments.

Table 4. International aspects of Boat, Tourism and Leisure Services, Sapuska and Food and Well-being programmes.

Programme	Aims of internationalisation	Activities e.g.
Boat 2007–2011	Indirect	Benchmarking tours International exhibitions Study trips International speakers
Tourism and Leisure Services 2006–2012	Indirect	Benchmarking tours International surveys International speakers
Sapuska 2009–2012	Direct (Export of SMEs)	Export concepts Benchmarking tours Mentor services Activation services
Food and Well-being 2001–2004	Indirect	Networking Benchmarking tours International collaboration in research projects

⁹ Halme, K., Kanninen, S. & Lemola, T., Autio, E., Arnold, E. & Deuten, J. 2004. Competitiveness through internationalisation. Evaluation of the means and mechanisms for promoting internationalisation in technology programmes. Technology Programme Report 10/2004. Tekes.

2.3 Operation environment of the programmes

2.3.1 Boat

The Boat programme, carried out in 2007–2011, was dated at the period of dramatic changes in the boat market. It was the first Tekes programme focusing on the boat industry. Finnish Marine Industries Federation Finnboat had made programme initiatives for Tekes already in 1990's. In 2004, domestic boat trade had increased considerably. Sales exceeded the EUR 100 million mark for the first time in 2005.¹⁰ Turnover for 2006 increased to EUR 116.9 million. Of this total, imported boats accounted for some 30–35% in terms of value.¹¹ The export share of Finland's total marine industry production was very high. The export billing share of total invoicing for the year 2005 was 69.7%. The dedicated work of industry enterprises on both traditional markets and in creating new markets brought dividends over the years. While the invoice value of boat exports in 1990 was around 42 million euros, the corresponding figure for 2005 was EUR 195.9 million and 2006 EUR 239.8 million.¹² In all, 10418 boats were exported to 34 countries during January–October 2006.

Thus, when the Boat programme was planned and launched, prospects for the boat industry were good. Domestic trade and exports were increasing remarkably and rise was estimated to continue. Programme planning was based on pre-study that was published in 2007. During the planning stage it was noted that demand exceeded supply and companies rarely had time for product or production development. Also, international competition was anticipated to grow. Thus, it was concluded that developing production was important in order to answer growing demand and to remain competitive during slowdown.

The Boat programme aimed to develop better boats and better services for consumers by profitable and competitive Finnish companies. The programme plan determined eight specific goals to reach this aim. These included promoting R&D projects in boat industry, developing methods for information collection and technology transfer, enlarging and increasing co-operation at all levels, improving competitiveness and fitness for trade cycle in boat industry, developing support services for entire life cycle, securing supply of competent workforce and finally, tenfolding R&D investments in the boat industry. Internationalisation was not an explicit programme goal as such. Boat industry was already an international industry. The export invoicing share of total invoicing in 2007, when programme was launched, was very high, over 75%. In all, 11,707 boats (+12.3%) were exported to 34 countries during January–October 2007. Programme either had no specific growth targets. When the programme started in 2007, there was a strong growth in domestic boat trading. Turnover for 2007 increased by 38.8% to EUR 162.3 million.¹³

After programme launch, the financial crisis changed the situation dramatically. During 2008, domestic trade in small-craft and motorboats eased off after many years of growth. Though an increase in turnover was again recorded for 2008, it was a more modest 8.1%. By year end, turnover for the domestic market amounted to EUR 175.5 million. The rapid economic turnaround and the uncertainty resulted in a fall in consumer sales towards the end of 2008. The marine industry and traders had to adapt production and activities to respond to this variation in demand. Of the approximately 5000 workers employed by Finnboat member enterprises, around 17% were laid-off at the beginning of January 2009.¹⁴

¹⁰ MARINE INDUSTRY AGAIN REGISTERS GROWTH Source: FinnBoat news 10.2.2006 http://www.finnboat.fi/en/en_3_3_read.html?id=1139477425.html

¹¹ SIGNIFICANT GROWTH IN TURNOVER FOR MARINE INDUSTRY. OVERALL NET SALES INCREASE OF 17,9% Source: FinnBoat News 9.2.2007 http://www.finnboat.fi/en/en_3_3_read.html?id=1170926038.html

¹² MARINE INDUSTRY AGAIN REGISTERS GROWTH Source: FinnBoat news 10.2.2006 http://www.finnboat.fi/en/en_3_3_read.html?id=1139477425.html

¹³ FURTHER GROWTH IN TURNOVER FOR FINNBOAT MEMBERS. TOTAL NET SALES INCREASE BY 10,5% Source: FinnBoat News 8.2.2008 http://www.finnboat.fi/en/en_3_3_read.html?id=1202395407.html

¹⁴ DESPITE A TIME OF ECONOMIC UNCERTAINTY, THE FINNISH MARINE INDUSTRY RECORDED A SLIGHT GROWTH IN TOTAL NET SALES FOR THE YEAR 2008 Source: FinnBoat news 6.2.2009 http://www.finnboat.fi/en/en_3_3_read.html?id=1233729239.html

Slowdown accelerated rapidly – turnover figures for 2009 fall to 2004 levels.¹⁵ Domestic boat trading for 2009 was valued at EUR 97.7 million, a significant fall of 47.9% when compared with the previous year. The invoice value for 2009 boat exports was EUR 147.6 million, a decrease of 45.6% compared with 2008. Still, the export invoicing share of total invoicing remained high, at 75%. During January–October 2009, 6398 boats (-40.5%) were exported to 38 countries. During January–October 2009, 1306 boats were imported at a total value of EUR 24.4 million (-45.5%).

This dramatic change in the market was considered in programme strategy by emphasizing goals relating to growing and expanding markets and improving companies' competitiveness and fitness for economic cycle in strategic and operative level.

Today, turnovers in boat industry are anticipated to grow, although turnover was still in 2013 lower than it was in 2006. The boat industry has not yet reached the level before the economic turnaround and before Boat programme. Total net sales of Finnboat members for 2013 was EUR 460.7 million. Turnover from trading on the domestic market in 2013 was EUR 104.0. The invoice value of boat exports for 2013 was EUR 149.7 million. In 2013 there was distinct growth in main export destinations Sweden and Norway despite a fall in total exports. The export share of the Finnish marine industry's total output in 2013 was 68%, which is 7 percentage points less than when Boat programme started. During January–October 2013, 6045 boats were exported to 33 countries. On the other hand, the value of imports was EUR 45.8 million.¹⁶

2.3.2 Tourism and Leisure Services

The Tourism and Leisure Services services programme was carried out in 2006–2012. The programme's contents were altered during the planning stage. In the preliminary planning stage the programme was more technology oriented and focused on leisure services and experience industry. At that time the aim was to promote business development focus-

ing on enlarging user experience with rich contents, products and service concepts. In final stages of planning, as the programme manager was changed, the focus was moved from technology to services in order to create synergies with other programmes. Programme planning was based on number of studies, seminars, workshops, and corporate discussions.

The Tourism and Leisure Services programme's mission was to develop companies' business capabilities so that companies would be able to develop internationally competitive leisure services with growth potential. The programme aimed to promote leisure service development in whole Finland and network internationally. The programme's vision was that Finnish companies producing tourism and leisure services have advanced business capabilities, they can operate in networks and they use best know-how in their processes. Customer-oriented development of internationally competitive service products and businesses was in programme's vision part of companies operations. Also, use of technology in leisure service business was seen to be diverse and supportive to various business areas in the future.¹⁷

The Tourism and Leisure Services programme focused on holistic business development. New innovative services and new ways of producing internationally successful services in a networked business environment played an important role in this aim. Also, it was noted that utilizing technology is often, but not always, part of innovative business. Procedures enabling growth, brand knowledge and value chain management were also important areas on business development. The programme's specific goal was to network leisure service companies with knowledge intensive business service firms and research organizations and thus promote business development in the sector.

As the Tourism and Leisure Services programme was launched it was one of the first service programmes and cross-industry programmes in Tekes. With strong service development focus and holistic business development view it was one of the pioneer programmes anticipating and implementing the change in Tekes' strategy. As a cross-industry programme

¹⁵ DESPITE A TIME OF ECONOMIC UNCERTAINTY, THE FINNISH MARINE INDUSTRY RECORDED A SLIGHT GROWTH IN TOTAL NET SALES FOR THE YEAR 2008 Source: FinnBoat news 6.2.2009 http://www.finnboat.fi/en/en_3_3_read.html?id=1233729239.html

¹⁶ Finnish marine industry turnover at previous year's level Source: FinnBoat news 7.2.2014 http://www.finnboat.fi/en/en_3_3_read.html?id=1391766951.html

¹⁷ Vapaa-ajan palvelujen tutkimus- ja kehittämisohjelma – ohjelmasuunnitelma Source: Tekes 2006

with fragmented markets full of micro-organizations Tourism and Leisure Services programme faced more difficult task compared to other programmes in reaching the customers, creating visibility in the market, and networking companies. Programme's specific target sectors were tourism, sports, culture, entertainment and wellness which were all new customer groups to Tekes. Challenge of creating common language and understanding one another was thus a major bottleneck in the initial stages of the programme.

The programme's target sectors, tourism, culture, creative industries, and sports were all evaluated as growing sectors in the pre-study. In 2007 travel industries employed 130 500 people and accounted 3.8% of GDP in Finland. Tourism sector has wide effects on economy. The tourism sector is a workforce and SME intensive industry that employs many young people.¹⁸

The Tourism and Leisure Services programme was dated in an interesting development period in tourism sector. During the programme tourism sector faced in addition to financial crisis, also dramatic change as internet became primary source for travel information and major buying channel for consumers. Today, a major share of tourism services such as flights and accommodations are bought online. Although this change was anticipated as programme was planned the change was perhaps yet larger than foreseen. Thus, the megatrend of digitalization of services had major impact in tourism and leisure services. Other identified megatrends that were in the pre-study estimated to have a major impact on target industry and thus the programme were ageing population, climate change, pollution of environment, economic crisis, decreasing security and global energy situation. Also, increase of free time and growing demand for experience services were expected to increase growth potential of tourism and leisure services.

In the Tourism and Leisure Services programme internationalisation was a secondary goal. Programme aimed to increase the international competitiveness of tourism and leisure services and thus promote growth of Finnish firms. Primary focus was on holistic business development and especially in the development of new, innovative services. International competitiveness was promoted by providing international examples in benchmarking trips, seminars, and programme

communication. The programme also promoted internationalisation by funding R&D projects aiming to international growth. Interviews carried out in the evaluation indicate that internationalisation was an explicit goal in many company project plans, but in some cases internationalisation meant the development of services in home market to international tourists.

2.3.3 Sapuska

According to its name, the Sapuska programme – Added Value for International Food Markets – focused on export. The goal was to improve the business of SMEs in the Finnish food industry, increase research, development and innovation and promote networking with regard to international markets.

The Sapuska programme was a part of the series of programmes in the field of food and nutrition. The continuation of the programmes has been funded by Tekes, Sitra and the Academy of Finland for 15 years as follows:

- 1997–2000 Uusiutuva elintarvike (Tekes)
- 2001–2004 Food and Well-being "Elite" (Tekes)
- 2004–2009 Food and Nutrition "ERA" (Sitra)
- 2006–2010 Nutrition, Food and Health "ELVIRA" (Academy of Finland)
- 2009–2012 Added Value for International Food Markets "Sapuska" (Tekes)
- Forthcoming 2014: Food export programme (Team Finland).

Since 2010, the Strategic Center for Science, Technology and Innovation (Finnish acronym "SHOK") in Health and Well-being (SalWe Ltd) has had research programmes, which partly cover the field of food and nutrition. The share of Tekes funding of the SalWe's programmes has been 35–50%. The shareholders of non-profit limited liability company SalWe Ltd are companies and research organizations that represent the Finnish health and well-being cluster. Some of the companies and most of the research organizations have also participated in Tekes' programmes mentioned above or other Tekes' programmes such as Pharma, Diagnostics and Medicine 2000.

¹⁸ Suomen matkailustrategia 2020 Source: TEM, https://www.tem.fi/files/27053/Matkailustrategia_020610.pdf

In Finland, the food industry sector experienced significant growth during the 2000's. In comparison, the gross value of production was 8.1 billion euros in 1998 and 11.6 billion euros in 2012. Under the same period the value added in food industry was 1.9 billion euros (in 1998) and 2.6 billion euros (in 2012)¹⁹. In total, the food industry employed 32 500 people in 2012, and, respectively, 42 000 in 1998. The majority of the Finnish food companies are SMEs.²⁰

The Sapuska programme aimed to promote food exports primarily to neighbouring countries such as Russia. The Finnish food sector has internationalized strongly after Finland became a member of the European Union in 1995. Both export and import has increased significantly.²¹ The value of Finnish food exports increased from 0.9 billion euros (1998) to 1.5 billion euros (2012). In 2012, the majority of the exports were targeted to four countries as follows: Russia (27.4%), Sweden (18.5%), Estonia (8.8%) and Germany (5.2%). Furthermore, the value of Finnish food industry business abroad was more than 4.2 billion euros in 2011.²² Approximately 12–13% of the SMEs operate in the international market. The proportion of exports is approximately 5–10% for food sector SMEs, whereas exports account for approximately 20–60% of the revenue of the larger food companies.²³

Very recently, major changes have taken place in the operational environment of the Sapuska programme. The Russian Government has banned certain agricultural and food imports to Russia. The import ban is to last for a year from its announcement on 7 August 2014. Russia is the Finnish food industry's main export area. In 2013, the value of food exports was 1.6 billion euros, of which exports to Russia accounted for 430.2 million euros (26.5% proportion of the food exports)²⁴. The Russian retaliatory sanctions have a direct effect on in-

dividual food companies. It has been estimated that dairy products account for about 87 per cent of the Finnish exports to Russia as regards the products on the list of banned imports²⁵. For example, approximately 50–100 food sector SMEs export to Russia. Accordingly, the Russian retaliatory sanctions may also have an indirect effect on the impact of the Sapuska programme. This case of Sapuska programme emphasizes the importance of the operational environment. It raises the question how the programme can be prepared to unexpected changes in the operational environment.

The programmes in the food sector will continue in the future. A new food export programme will be launched by the Team Finland and the Finnish Federation of Food Industries in 2014. The forthcoming food export programme aims to double the value of Finnish food exports to 3 billion euros by the year 2020. The new growth will be searched from the Baltic Sea area and Asia.²⁶

2.3.4 Food and Well-being

The Food and Well-being programme was carried out in 2001–2004. The present *ex-post* evaluation has focused on the impact of the Food and Well-being programme ten years after the programme finished. The structural change and internationalisation of the food sector was continuing in the early 2000s (see also 2.3.3 above). In the field of Food and Well-being, the main challenges were the anticipation of market needs and behavior of consumers, the competence level of SMEs and business development.²⁷

There was a very positive enthusiasm in Finland in the business environment of functional foods and nutraceuticals in the early 2000s. Tekes' Food and Well-being programme

¹⁹ Source: The Federation of Finnish Food Industries. Statistics at: www.etl.fi (original source of statistics: Statistics of Finland and Customs of Finland).

²⁰ Source: The Federation of Finnish Food Industries. Statistics at: www.etl.fi (original source of statistics: Statistics of Finland and Customs of Finland).

²¹ Hjelt, M., Könnölä, T. & Luoma, P. 2002. Elintarviketeollisuuden teknologiaennakointi ja tutkimuksen arviointi. Teknologiakatsaus 131/2002. Tekes.

²² At least 50% Finnish owned companies. Source: The Federation of Finnish Food Industries. Statistics at: www.etl.fi (original source of statistics: Statistics of Finland and Customs of Finland).

²³ Source: The Federation of Finnish Food Industries (Press release 7 August 2014 in Finnish). www.etl.fi

²⁴ Source: The Federation of Finnish Food Industries (Press release 7 August 2014 in Finnish). www.etl.fi

²⁵ Source: Government Press release 308/2014. 7 August 2014. www.valtioneuvosto.fi

²⁶ Source: Finpro Tiedote 21.8.2014. Elintarvikevientiin lisää vauhtia (in Finnish). www.finpro.fi

²⁷ Hjelt, M., Könnölä, T. & Luoma, P. 2002. Elintarviketeollisuuden teknologiaennakointi ja tutkimuksen arviointi. Teknologiakatsaus 131/2002. Tekes.

aimed to promote the development of functional foods and technological innovations. In comparison to e.g. Sapuska, Boat and Tourism and Leisure Services, the Food and Well-being programme was more focused on R&D development. For example, 107 scientific research articles, 10 Ph.D. theses and 53 other theses were among the outputs of the Food and Well-being programme.²⁸

The Food and Well-being programme did not primarily focus on SMEs, and many big food companies also participated in the programme. According to the previous final evaluation of the Food and Well-being programme³⁰, 90% of companies stated new innovations or products as output of their projects, whereas 30% also mentioned other benefits e.g. related to costs-savings. Interestingly, only 35% of companies mentioned the results as strategically important.

Business development was not primarily emphasised in the Food and Well-being programme. According to the previous final evaluation of the Food and Well-being programme, no new companies, based on the research projects, were established during the programme (up to 2005). More than 50%

of companies saw the projects' results as beneficial for their international competitiveness although concrete results were quite limited during the programme period. The research projects supported business development. Half of the researchers believed they produced valuable basic level information for the companies e.g. related to products, product development, marketing or health claims.

The changes in the operation environment had an essential role in the Food and Well-being programme. According to Hjelt et al.³¹, the legislative framework should be taken into account already during project planning and before starting the development projects in the field of functional foods. On the other hand, in a fixed-term programme, there may be challenges to anticipate legislative changes due to the long-lasting preparation of the legislation at EU level. The changing regulatory environment in EU (e.g. Novel Food 1997 and Nutrition and Health Claims in 2006) forced the sector's companies, both SMEs and big companies, to reshape their product development strategies already during the programme.

²⁸ Elintarvikkeet ja terveysteknologiaohjelma 2001–2004. Teknologiaohjelmaraportti 6/2005. Tekes. www.tekes.fi

²⁹ Elintarvikkeet ja terveysteknologiaohjelma 2001–2004. Teknologiaohjelmaraportti 6/2005. Tekes. www.tekes.fi

³⁰ Elintarvikkeet ja terveysteknologiaohjelma 2001–2004. Teknologiaohjelmaraportti 6/2005. Tekes. www.tekes.fi

³¹ Hjelt, M., Gilbert, Y. & Pathan, A. 2005. Teknologiaohjelmat ja innovaatioiden kehittäminen muuttuvassa ympäristössä. Teknologiaohjelmaraportti 7/2005. Tekes.

3

Final evaluation of Boat, Sapuska, and Tourism and Leisure Services

3.1 Boat

Success in setting goals

The Boat programme faced major changes in operational environment. Before the programme was launched, a pre-study of the programme identified that major challenges in the Finnish boat industry called for a modernization of production methods and the securing of capable workforce in order to answer to the growing international demand. When the programme started it aimed to develop better boats and better services for consumers by profitable and competitive Finnish companies. The programme plan determined eight specific goals to reach this aim. After the programme had started the boat market faced a dramatic decline in demand. However, the goals and aim of the programme remained the same although goals relating to growing and expanding markets and improving companies' competitiveness and fitness for the economic cycle were emphasized at the strategic and operative level. Nevertheless, it can be asked whether the dramatic slowdown of the market and the changing operational environment of the programme should have led to a revision of goals and strategy of the programme. However, such an explicit and total redefinition of the programme was not considered imperative and goals were still seen relevant with this moderate change in center of gravity.

The Boat programme succeeded in setting the goals of the programme. The goals were on average estimated relevant and challenging and in line with Tekes' strategy in the interviews and e-survey executed as a part of this evaluation. Compared to other programmes, the Boat programme had more goals. Moreover, it can be even questioned whether eight goals could be too many for one Tekes programme. Prioritizing goals and

determining secondary goals could have helped reduce the number of goals and thus perhaps sharpen programme activity.

The Boat programme was most successful in setting goals focusing on the core of Tekes programme activity. Thus, promoting in boat industry (average 4.22 at the scale of 1 to 5) was seen the most successful goal in e-survey. Also, setting goals of developing methods for information collection and technology transfer (average 3.88), enlarging and increasing co-operation in all levels (average 3.74)(Figures 5 and 6), improving competitiveness and fitness for trade cycle in boat industry (average 3.71) and developing support services for entire life cycle (average 3.56) were estimated to have succeeded. Instead, the securing supply of competent workforce was the least successful goal (average 2.84). This goal was not so tightly connected to Tekes programme activity. It can be even questioned whether securing the supply of workforce is included in the role and activities of Tekes. Also, tenfolding R&D investments in the boat industry was estimated one of least succeeded goals (average 3.17). Interviews showed that research, development and innovation investments were in the boat sector partly invisible when the programme started, and this goal included making R&D investments visible. However, in the interviews the goal of tenfolding R&D investments was not seen realistic in the context of large companies with already systematic and large R&D activity. On the other hand, in small companies that had no or very small R&D investments, this sort of development could have been possible and a realistic goal in a different market situation. Yet, the dramatic slowdown of the market made this goal unrealistic in the eyes of interviewees. Over 60% of respondents in e-survey saw that programme planning in the Boat programme considered the needs of SME's pursuing international growth (average 3.65)(Figure 3) well. On the other hand, only 37% of respondents thought that planning

of the Boat programme considered well anticipated changes in the environment (average 3.23) (Figure 4). Market slowdown was difficult to forecast. However, programme goals were not

explicitly changed as a response to the changing environment, although the market situation was reflected in operative programme activity.

Figure 3. How well programme planning in Tourism and Leisure Services, Boat, and Sapuska programmes considered needs of SME's pursuing international growth. (1 = Very poorly, 5 = Very well)

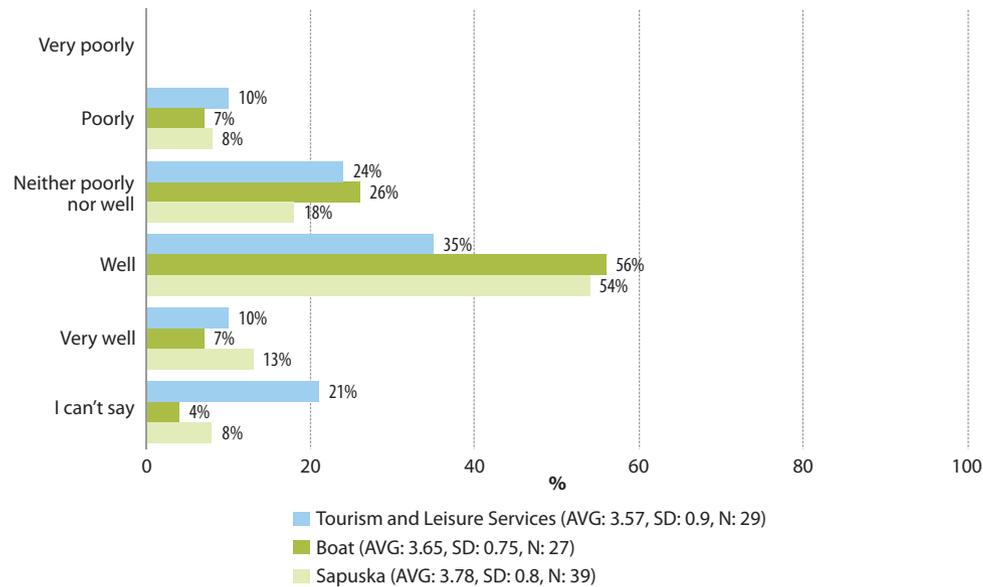


Figure 4. How well programme planning in Tourism and Leisure Services, Boat, and Sapuska programmes anticipated changes in operating environment? (1 = Very poorly, 5 = Very well)

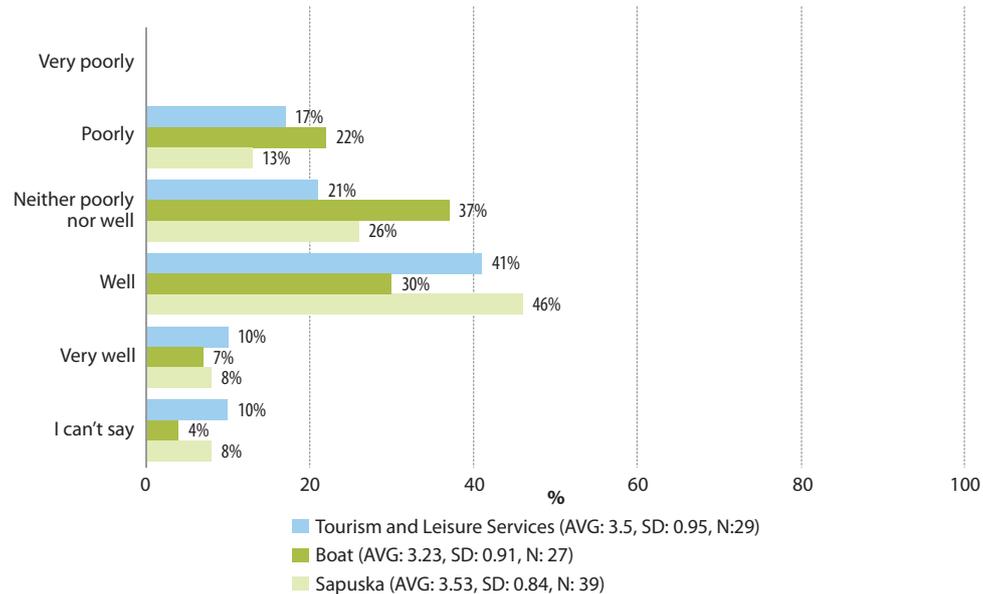


Figure 5. How well Tourism and Leisure Services, Boat, and Sapuska programmes promoted networking of Finnish companies? (1 = Totally disagree, 5 = Totally agree)

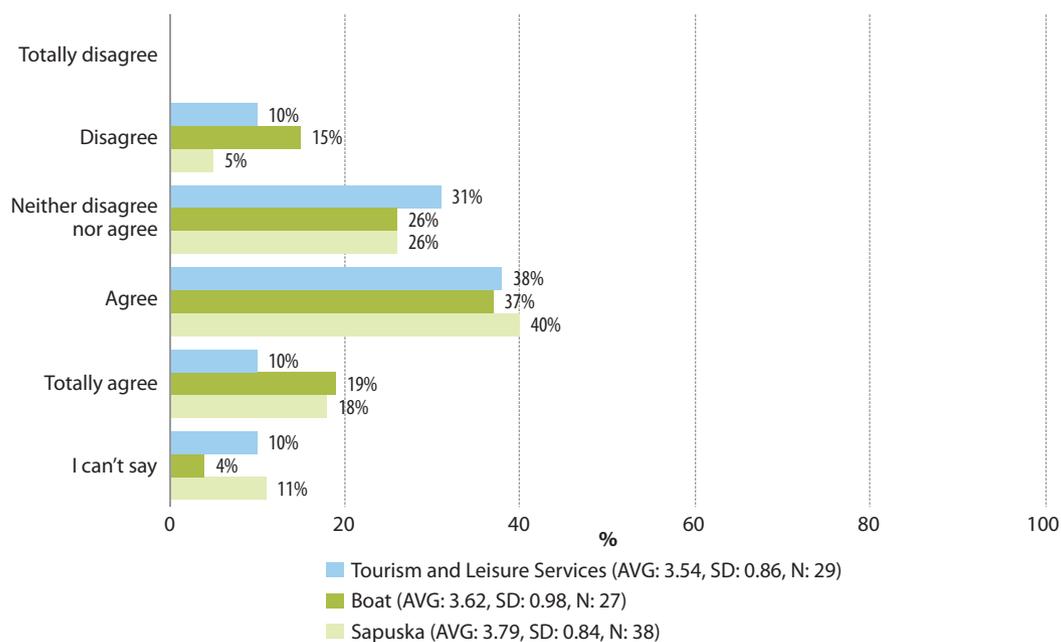
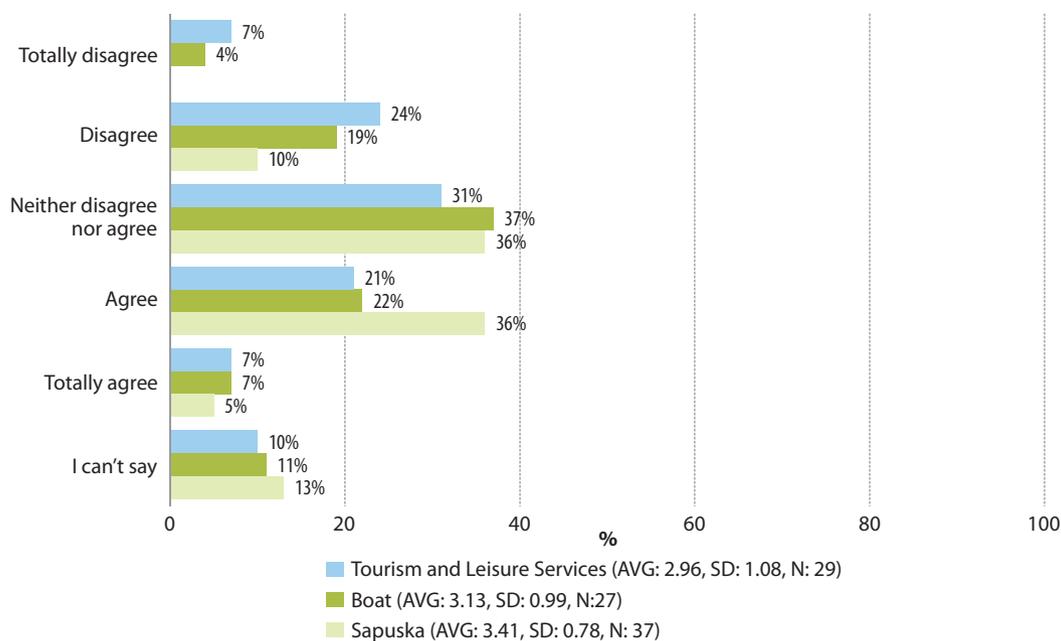


Figure 6. How well Tourism and Leisure Services, Boat, and Sapuska programmes promoted international networking? (1 = Totally disagree, 5 = Totally agree)



Success in reaching the goals

The e-survey and interviews showed that the Boat programme accomplished its goals well on the average. Yet, it should be noted that averages remain rather moderate in all questions, even in best results. Respondents take in general a positive, but neutral attitude towards the Boat programme's results in reaching the goals. The Boat programme was most successful in reaching the goals focusing on the core of Tekes programme activity. Thus, the goal of promoting R&D projects in the boat industry was best obtained with a relatively high average of 4.12. Even 85% of the survey respondents estimated that programme gained this goal well. Also, the goals of developing methods for technology transfer (average 3.80) and enlarging and increasing co-operation at all levels (average 3.62) were also well achieved. Instead, securing the supply of competent workforce (average 2.92) and tenfolding R&D investments in the industry (average 2.95) were estimated to have been achieved somewhat poorly. Less than a quarter of respondents estimated these latter goals well achieved. Thus, in the light of the results, it can be considered whether goals that are well set are also better reached and *vice versa*.

Impact on the sector

Generally, the Boat programme was estimated to have had a notable impact on the boat sector, especially in regard of new product innovations, networking and R&D procedures of the companies. However, it should be noted that averages remain rather moderate in all questions, even in best results. Respondents take in general a positive, but neutral attitude towards Boat programme's results and impact.

Majority (67%) of respondents agreed that the Boat programme (also referred to as "Boat" hereafter) had a significant impact on networking between companies and research agencies in Finland. The Boat programme's impact on networking was estimated somewhat bigger than in other programmes (3.81). 56% of respondents estimated that the Boat programme had significant impact on networking between companies in Finland (average 3.62). Instead, only 29% of respondents agreed that the Boat programme significantly promoted international networking (3.13).

Majority (60%) of respondents agreed that Boat contributed remarkably to the development of significant technological and product innovations. Boat programme's impact on

the development of product and technological innovations was estimated to have been more significant than in other programmes (3.69). Also, 52% of respondents evaluated that Boat programme notably advanced the development of remarkable service innovations (average 3.63).

Instead, 44% of the respondents to the e-survey appraised that Boat programme strengthened companies' business capabilities significantly – Boat's impact on business capabilities was assessed somewhat lower than in other programmes (average 3.36). Also, only 40% of respondents were of the opinion that the Boat programme had significant impact on international growth of participating companies (3.31). Likewise, 40% of respondents valued the Boat programme's impact on growth of internationalisation know-how major (3.27). Instead, 63% of respondents agreed that the Boat programme had major impact on companies' procedures in the sector – Boat programme's impact was appraised greater than in other programmes (3.52). However, only 40% of survey respondents agreed that the programme had major influence on competitive capabilities in the sector (3.29). Instead, the programme was estimated to have had significant impact on the growth of research knowledge of the sector – Boat's influence was assessed to be somewhat larger than in other programmes (3.85). Also, 70% of respondents approximated that the programme had major impact on R&D&I investments in the sector (average 3.96) which was somewhat better result than in other programmes.

Results of programme activity

According to the e-survey and interviews, programme activity of Boat answered to the needs of the participants moderately well and co-operation with the programme and administrative procedures were perceived quite smooth in many aspects. Although application and report procedures are the same in all the programmes, it can be argued that personal interaction with programme and project correspondents also play a notable role in good results. Since Tekes procedures were new to the boat industry, coaching was particularly important – especially during the application phase.

Boat programme's activity included funding, coaching, events (15 seminars focusing on activating companies and presenting research results), field trips (e.g. to the university of Southampton and the IBEX trade fair to the USA), and communication (newsletters, internet pages, yearly publications, FinnBoat News).

Interviews established that Boat reached its important customer groups well. The boat sector is small in Finland and most of the companies in the industry belong to FinnBoat which had a remarkable role in the programme and thus Boat had significant visibility in the boat sector. Even 67% of respondents appraised that Boat's programme activity fulfilled needs of the participants well. Interviews shed light to the moderate average (3.70) – in some cases company participants perceived the programme to have been somewhat too research intensive. Some company participants would have preferred R&D projects with a focus on operational development without "obligatory" research.

Also, application and report procedures were evaluated smooth in the programme. Averages in these results were high, over 4, which implies that administrative procedures with good personal service are clearly among the strengths of Boat. Also, even 92% of respondents agreed that co-operation with the programme was fluent. The high average (4.33) reinforces the assumption of good personal service as one of the key strengths of the Boat programme.

Programme activity was estimated to be efficient and effective in interviews. However, co-operation with other programmes was not assessed sufficient or useful (average 3.14). Tekes programme activities were different compared to what they are today; there was less coordination and promotion of co-operation between Tekes programmes. Also, with the strong and narrow industry focus Boat programme had less in common with other programmes which presumably diminished possibilities for co-operation. Also, co-operation networks with companies seeking international growth were not estimated sufficient (average 3.18). On the other hand, co-operation networks with Finnish research organizations were adequate and they were estimated to be better than in other programmes although the average (3.73) is moderate. On the other hand, networks with international research organisations were not satisfactory (average 3.00). Then, co-operation networks of the Boat programme with public sector were working according to 48% of respondents (average 3.38). Even 59% of answerers assessed that programme's networks with business associations were sufficient (average 3.75) which is very understandable given FinnBoat's significant role in the

programme. Boat programme was perceived slightly more reformist than other programmes although it should be noted that the average is still rather moderate (3.52).

Impact on internationalisation, permanent changes and good practices

The Finnish boat industry was an international industry already when programme started. In 2013 the export share of the Finnish marine industry's total output was 68%.³² Inducing major change in internationalisation in market that was already so international was a difficult task for the programme, especially during the rapid economic turnaround. Today, market size is still smaller than before the slowdown and the Finnish boat industry is facing growing price competition from Poland and Baltic countries. However, according to interviews, Boat programme helped Finnish boat companies to renew their business, develop new models and find new international markets. These companies are in a better position to gain a bigger share of the international market when the economy takes a turn for the better.

"Finnish boat companies can't afford to make average boats, we need to make the best boats. It is a vital condition in the long run in international markets, and that is why the Boat programme was such a good thing for the Finnish boat industry."

One significant result that came up in interviews and that were not listed as programme objectives was creating Finnish boat industry's international reputation as a research and development intensive industry. Remarkable investments of Tekes for development and research in the boat industry, was something rather unique even at the international level. The Boat programme gained international attention and aided to build reputation of high quality based on research and development of Finnish boats. Translated and edited project catalogues of the programme were distributed to international networks of ICOMIA, The International Council of Marine Industry Associations, and gained visibility for the Boat programme and thus, Finnish boat industry.

³² Finnish marine industry turnover at previous year's level. Source: FinnBoat news 7.2.2014 http://www.finnboat.fi/en/en_3_3_read.html?id=1391766951.html

According to interviews, the Boat programme had significant impact on the sector that could have not been possible without the programme. Boat programme gave rise for systematic, long-term research and development activity in the boat industry and networked companies with research organizations. As one of the interviewees noted:

“Before the Boat programme the Finnish boat industry saw development very straightforward – as a downright highway. Today our landscape is more like Missouri-river with turns and tributaries – we see more and different possibilities.”

Boat programme opened the path to the new industry. However, remaining visible in the boat industry and activating companies in the long run requires systematic input. This presupposes active communication and activation via other Tekes programmes. Also, recognized good programme prac-

tices should be utilized in other programmes. Close connections with the industry association, FinnBoat, created better visibility in the sector and enhanced utilization of research results. Also, ICOMIA, The International Council of Marine Industry Associations, provided important an international media channel for programme communication. Thus, partnerships with industry associations can significantly assist in reaching the programme goals. Also, another good practice that should be noted was that programme publications were edited by a professional editor who knew the boat sector well. Publications were thus published in boat companies’ own language and distributed internationally. In interviews it was also noted, that programme’s success was largely a result of key persons’ deep knowledge of boat industry and wide industry networks. This assisted in activating new industry and gaining credibility for the programme.

Figure 7. How well Tourism and Leisure Services, Boat, and Sapuska programmes promoted development of important product and technical innovations? (1 = Totally disagree, 5 = Totally agree)

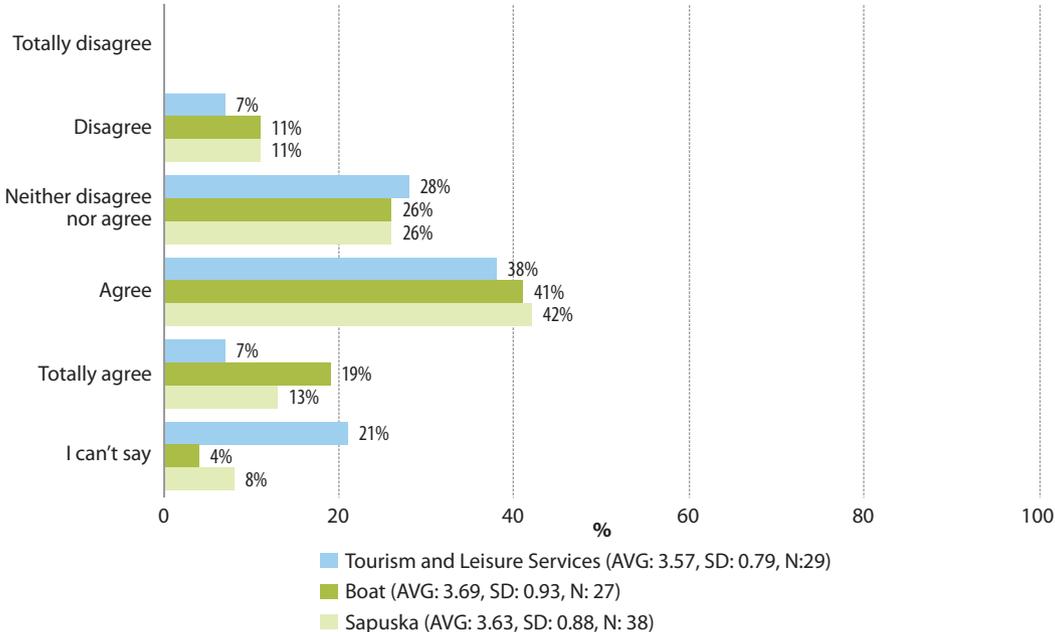


Figure 8. How well Tourism and Leisure Services, Boat, and Sapuska programmes promoted development of important service innovations? (1 = Totally disagree, 5 = Totally agree)

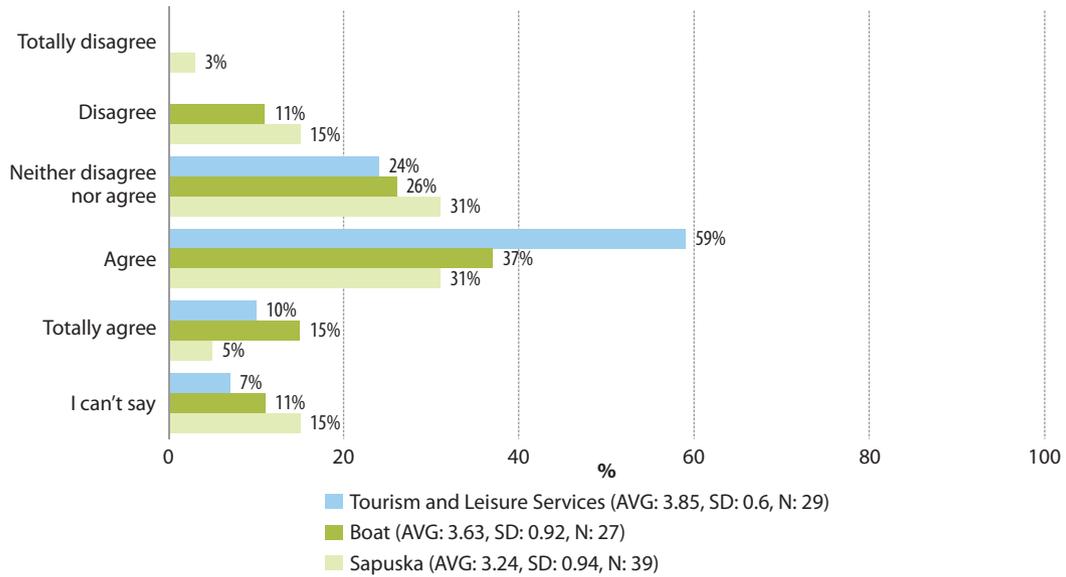


Figure 9. How strongly Tourism and Leisure Services, Boat, and Sapuska programmes enhanced development of business capabilities in participating companies? (1 = Totally disagree, 5 = Totally agree)

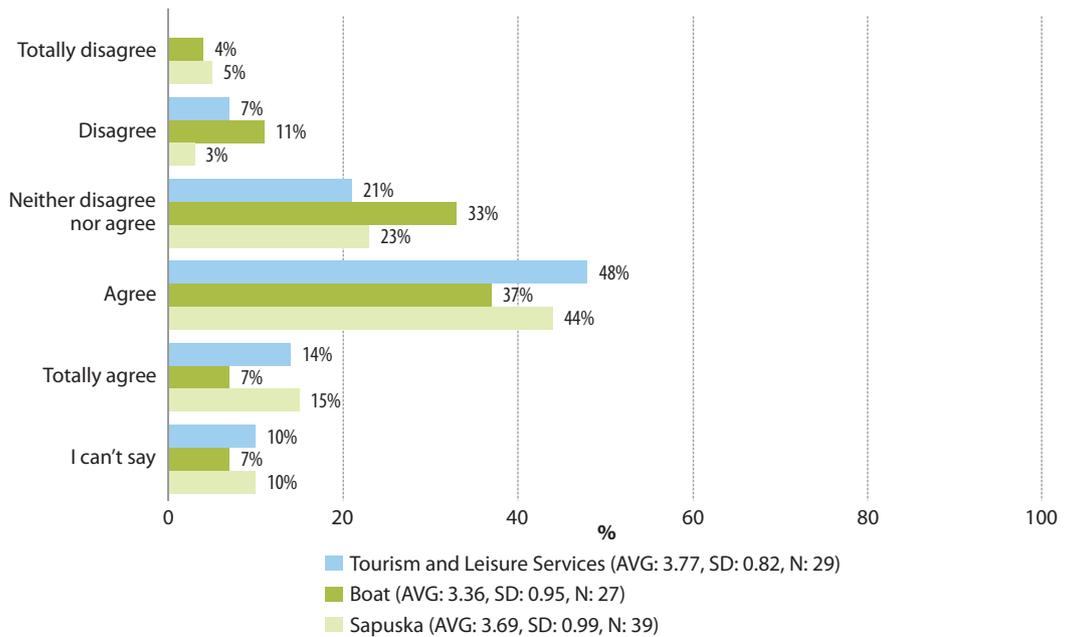


Figure 10. How well Tourism and Leisure Services, Boat, and Sapuska programmes promoted intrernational growth of participating companies? (1 = Totally disagree, 5 = Totally agree)

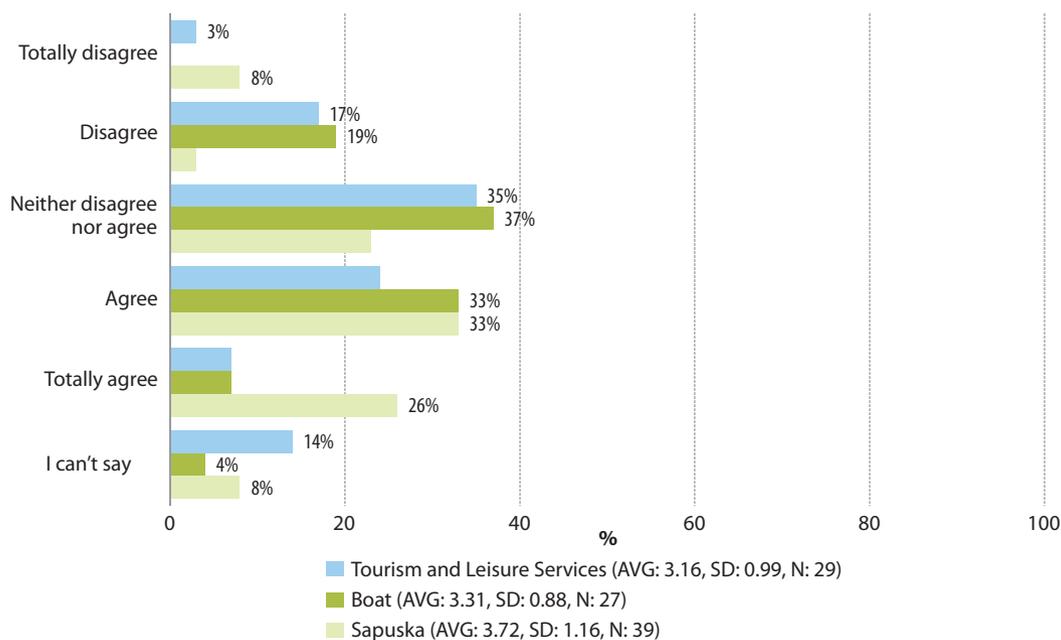


Figure 11. Did Tourism and Leisure Services, Boat, and Sapuska programmes strengthen SME's in-ternationalisation know-how significantly? (1 = Totally disagree, 5 = Totally agree)

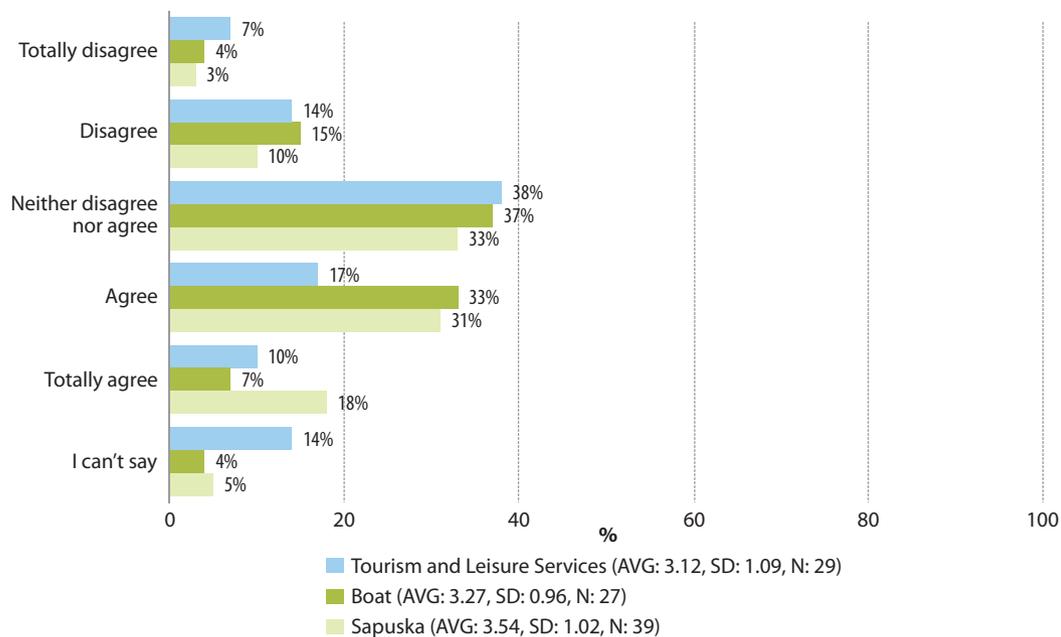


Figure 12. Did Tourism and Leisure Services, Boat, and Sapuska programmes have significant impact in companies procedures? (1 = Totally disagree, 5 = Totally agree)



3.2 Tourism and Leisure Services

Success in setting goals

The tourism and Leisure Services programme succeeded well in setting programme goals. In interviews goals of the programme were valued relevant and challenging and in line with Tekes' strategy. Although the programme was assessed to have succeed well in setting its goals, it should be noted that the averages are moderate, less than 4, even in the best results.

The programme managed best setting the goals focusing on the core of traditional programme activity. Thus, promoting innovative service concepts (average 3.96) and networking leisure companies and research organisations (average 3.89) were most successful goals on respondents view. Setting the goal of promoting development of leisure services in Finland was also seen well succeeded on average (average 3.86). Instead, promoting development of internationally competitive and growing SME's was least successful goal according to e-survey (average 3.58). Based on interviews, internationalisation of SMEs was not a primary goal of the programme. In-

stead, the programme aimed to bring international examples and thus increase international competitiveness and growth potential of SMEs.

Approximately 45% of respondents in the e-survey saw that programme planning in Tourism and Leisure Services considered well needs of SME's pursuing international growth (average 3.57). Approximately half (51%) of respondents estimated that programme planning considered well anticipated changes in environment (average 3.50). Digitalization had major impact in the tourism sector. Interviews implied that the change in sector was perhaps even more dramatic than anticipated.

Success in reaching the goals

According to the e-survey and interviews, the Tourism and Leisure Services programme accomplished its goals well. Programme reached the goals focused on programme core activity best, although the averages remain rather moderate (less than 4) even in the best results. It can be also noted that programme attained the goals that were most successfully planned, best. Thus, successful planning seems to have led to the best results.

The goal of promoting new, innovative service concepts was estimated best acquired (average 3.93) – even 72% of respondents see that programme obtained this goal, tightly connected to programme's core activity, well. Also, promoting development of leisure service business in Finland (average 3,86) and networking leisure companies and research organizations (3.79) were appraised well achieved. Instead, promoting development of internationally competitive and growing leisure services was estimated most weakly obtained (average 3.46). Still, 45% of respondents assess that the programme gained this goal also well. Interviews showed that the tourism and leisure sector in Finland is fragmented and consists of small enterprises selling services in national or regional level to international customers. Compared to the game industry for example, the enterprises in tourism sector rarely show big growth figures. Export in tourism sector mostly means selling services to international customers coming to Finland.

Impacts on the sector

The Tourism and Leisure Services programme was estimated to have had significant impact on the sector especially in regards of increasing R&D&I investments in the sector, creating networks between companies and research organizations, and increasing research knowledge. Yet, it should be noted that averages in results are even in the case of best results rather moderate, less than 4, which reflects overall positive, but neutral attitude towards programme's impacts on the sector.

In case of the Tourism and Leisure Services programme, 62% of respondents of the e-survey agreed that the programme significantly promoted networking between companies and research organizations (3.72). Interviews showed that before programme companies in leisure services and tourism rarely used research services and thus the programme aimed to create research co-operation and networks in the sector. 48% of respondents concurred that the programme had significant impact on networking between companies (3.54). The programme's target groups, especially the creative industries, is a wide and fragmented sector which made networking between companies a challenging goal. Only 28% of respondents estimated that the programme significantly promoted international networking. The low average (2.96) compared to other programs reflects that the Tourism and Leisure Services programme's impact on international networking was estimated neutral.

Only 45% of respondents agreed that the Tourism and Leisure Services programme significantly promoted the development of important product and technological innovations. Programme funded only services focused on development which explains moderate average (3.57) in this result. On the other hand, 69% of respondents concurred that the programme promoted remarkably development of important service innovations (3.85). Also, 62% of respondents agreed that programme had significant impact on development of business capabilities in participating companies. The tourism and Leisure Services programme promoted comprehensive view to service business development which led to good impact on development of business capabilities although the average (3.77) was still moderate. Only 40% of respondents agreed that programme had significant impact on international growth of participating companies. The low average (3.16) reflects the fact that the programme's influence on internationalisation was assessed to be neutral. Internationalisation was not the programme's primary goal – instead, the programme aimed to bring international examples and thus increase international competitiveness of companies. Also, only 27% of respondents agreed that the programme had remarkable impact on the growth of internationalisation know-how in companies. The rather low average (3.12) implies that programme's influence in this aspect is valued neutral. On the other hand, 55% of respondents concurred that the programme had significant impact on improvement of competitiveness in the sector (3.60). 62% of respondents agreed that the programme had remarkable impact on growth of research knowledge in the sector (3.81). 65% of respondents estimated that programme had significant impact on R&D&I investments in the sector (3.92). The programme was also estimated to have impact on well-being (3.76).

Results of programme activity

Overall, the Tourism and Leisure Services programme's activities responded well to the needs of the participants and succeeded well although results remain in neutral level with moderate averages below 4,00. However, obvious strengths of the programme lie in smooth administrative procedures regarding application and reporting and related fluent interaction with the programme.

The Tourism and Leisure Services programme's activities included funding, activation, coaching, communication,

and organizing events and benchmarking trips. Tourism and Leisure Services programme organized altogether 6 yearly seminars, 9 workshops, 32 roadshows, 4 benchmarking trips, 15 project application trainings, and 3 editor meetings, and participated in 5 travel fairs. 4547 participants were registered in these events.³³

Even 68% of respondents assessed that Tourism and Leisure Services programme responded well to the needs of the participants (3.75). Interviews showed that programme activity was perceived efficient and effective. Applying for funding was estimated smoother than in other programs (4.30) – fluent administrative procedures are clearly a strength of the programme. Tourism and Leisure Services programme developed project planning and application training targeted especially for new customers unfamiliar with Tekes, such as creative industries and travel sector companies. This training has remained one of Tekes' permanent services. Programme also invested coordinators' and mentors' time to coach companies in application and project planning phase. Also, reporting procedures were estimated working (4.23). Moreover, 86% of respondents agreed that co-operation with the programme was fluent. This result is better than in other programs and the average is especially high, 4.42, which shows that smooth co-operation is an obvious strength of the Tourism and Leisure Services programme.

Only 47% of respondents evaluated that co-operation with other programmes was sufficient and useful (3.58). Instead, only 25% of answerers estimated that co-operation networks with companies seeking international growth were sufficient which was less than in other programmes (3.09). On the other hand, 57% of respondents assessed that co-operation networks with Finnish research organizations were adequate (3.67). Only 14% of the respondents marked that co-operation networks with international research organizations were sufficient. The low average (2.92) is explained by the fact that the programme did not promote international research co-operation or aim to build international research networks. Yet, international research co-operation was self-guided in the programme. 46% of respondents rated that programme's networks with public sector were working (3.50). Only 26% of people answering the e-survey approximated that the programme's networks with business associations were sufficient. The low average (3.23) is

explained by the fact that the Tourism and Leisure Services programme manager was based in Lapland while major associations worked with Helsinki region and this made it difficult to allocate time for co-operation in otherwise busy programme activity. Tourism and Leisure Services programme was perceived slightly more problem-focused than other programmes, although the average is still moderate (3.80).

Impact on internationalisation, permanent changes and good practices

According to interviews, the programme reached its important customer groups sufficiently. Compared to other programmes, the Tourism and Leisure Services programme's target groups were more fragmented and thus more difficult to reach. Participating companies were mostly micro-organizations; mid-sized or large companies were scarce. Creative industry and cultural services was perceived the most difficult sector to contact. Nearly half (49%) of funded R&D projects were from tourism sector and 32% sports services, while culture (8%), entertainment (8%) and wellness-services (3%) each covered less than 10% of projects. As one of the interviewees noted: *"It was a very fragmented and small industry, but we aimed to find pearls, that could be developed to become international products"*.

Internationalisation and international growth was not primary goal for the Tourism and Leisure Services programme. Instead, the programme aimed to bring international examples, promote international networking, and thus increase international competitiveness of Finnish companies. According to programme's final report, programme aimed to promote development of tourism and leisure services business in Finland. Programme focused on developing companies' business capabilities so that companies were able to develop internationally competitive leisure services with growth potential. Based on interviews, growth figures in the sector are typically rather low although there is notable growth potential in the sector as a whole. Also, it was noted in interviews that internationalisation in this sector typically means selling services to international tourists in Finland rather than actual export. In the programme there were some international success stories such as the internationally recognized dance company.

³³ Vapaa-ajan palvelut ohjelman loppuraportti Source: Tekesin raportti 5/2013

However, growth can be seen in a longer period of time. Also, in interviews it was noted, that internationalisation is difficult for a one micro-organization. Thus, it would be a good idea to group small companies that have synergies and promote internationalisation of groups of selected companies.

Tourism and leisure services, including creative industries, were a new sector for Tekes. Also, at the time when programme was launched it was one of first service programmes in Tekes. In this sense, Tourism and Leisure Services programme was a pioneer. A lot of work had to be done to find common language and increase understanding on both sides, in Tekes and in new customer groups. Today, Tekes is more familiar and visible to the leisure services sector. In Tekes there is more understanding about service innovation and stronger foothold for service mindset. Also, knowledge about these fragmented markets, forms of innovations in this sector, and characteristics of these new customer groups has increased in Tekes. Moreover, the Tourism and Leisure Services programme contributed to the rise of self-esteem, status and credibility

of the sector. Launching a Tekes programme in tourism and leisure services sector was perceived to bring prestige to the sector that was previously perceived rather insignificant for the Finnish economy. These are some of results that were not explicit goals of the programme and that could not have been accomplished without the programme.

The Tourism and Leisure Services programme opened the path to the new sectors. However, remaining visible to these customer groups and activating companies in the long run requires systematic input. This presupposes active communication and activation via other programmes. Also, recognized good practices in programme services, such as project planning and application training, activation procedures (e.g. flow-café), should be utilized also in other programmes. For example, organizing programme seminars at the same time and in the same place as travel fair, which is the most important domestic event for tourism and leisure companies, helped to reach target groups better. This was another good practice that could be utilized in other programmes, too.

Figure 13. Did Tourism and Leisure Services, Boat, and Sapuska programmes improve significantly competitive capabilities in the sector? (1 = Totally disagree, 5 = Totally agree)

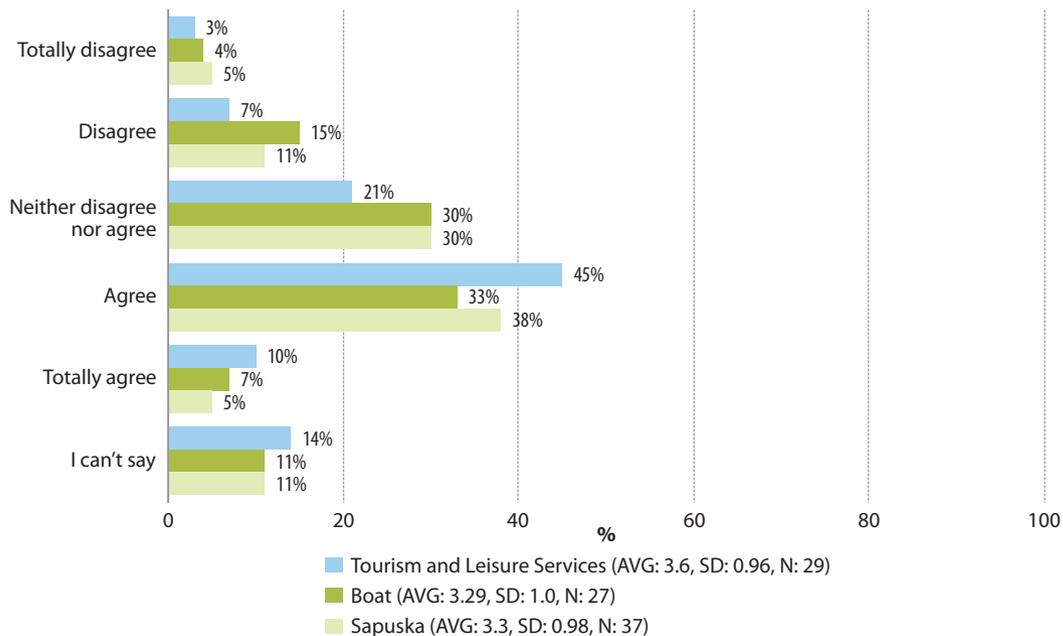


Figure 14. Did Tourism and Leisure Services, Boat, and Sapuska programmes have significant impact on growth of research knowledge in the sector? (1 = Totally disagree, 5 = Totally agree)

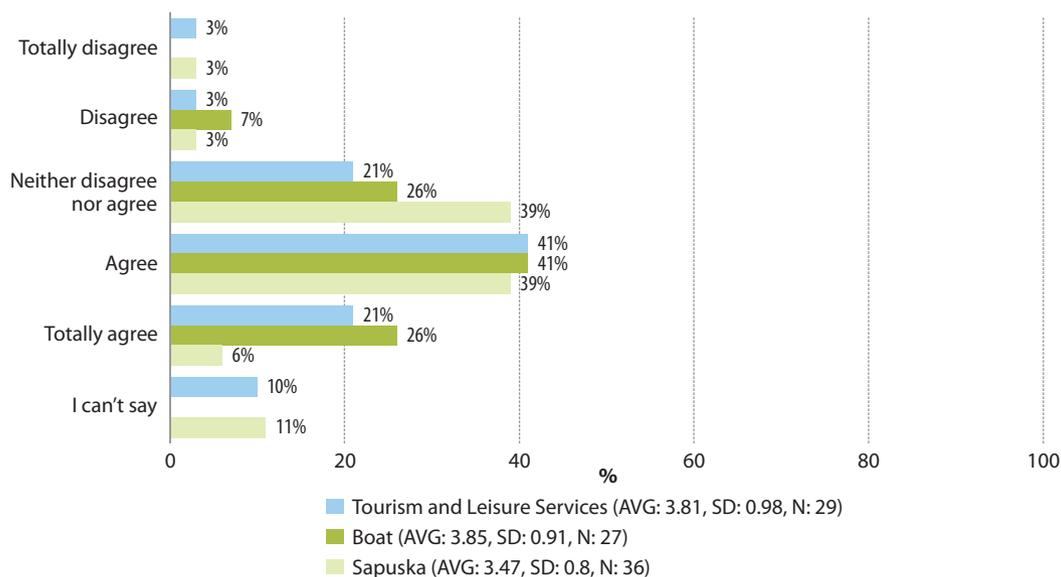


Figure 15. Did Tourism and Leisure Services, Boat, and Sapuska programmes have significant impact on well-being? (1 = Totally disagree, 5 = Totally agree)

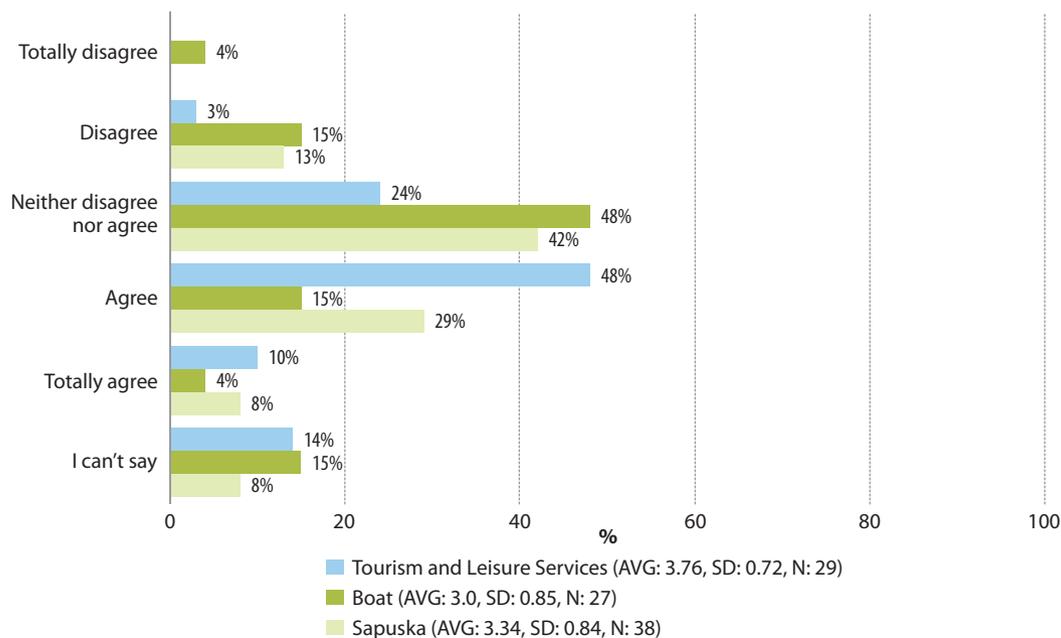


Figure 16. Did Tourism and Leisure Services, Boat, and Sapuska programmes have significant impact on R&D&I-investments in the sector? (1 = Totally disagree, 5 = Totally agree)

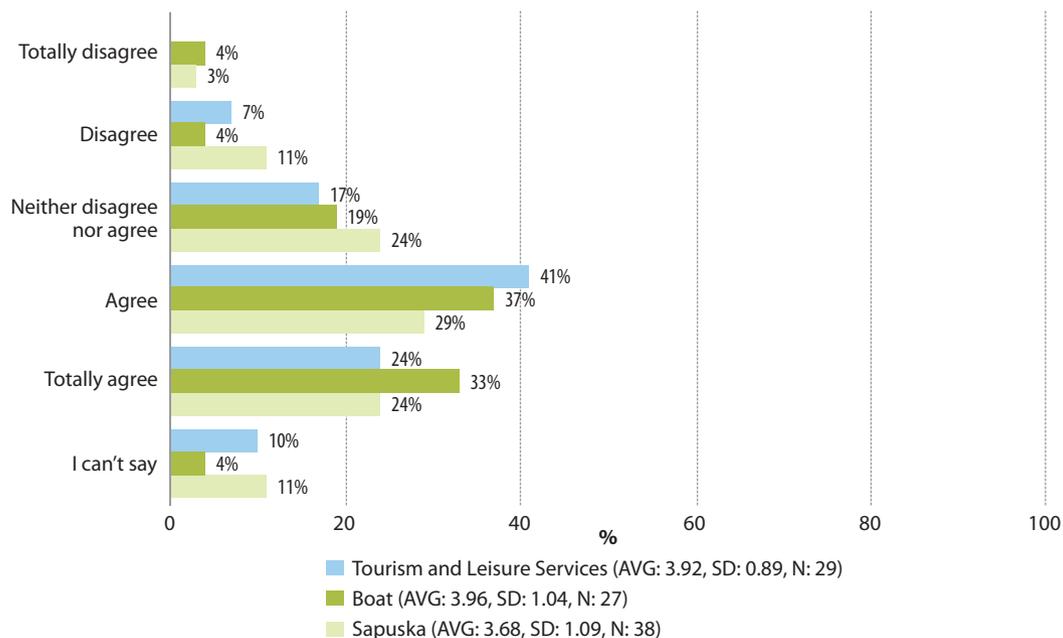


Figure 17. How well did Tourism and Leisure Services, Boat, and Sapuska programmes respond to the needs of the participants? (1 = Very poorly, 5 = Very well)

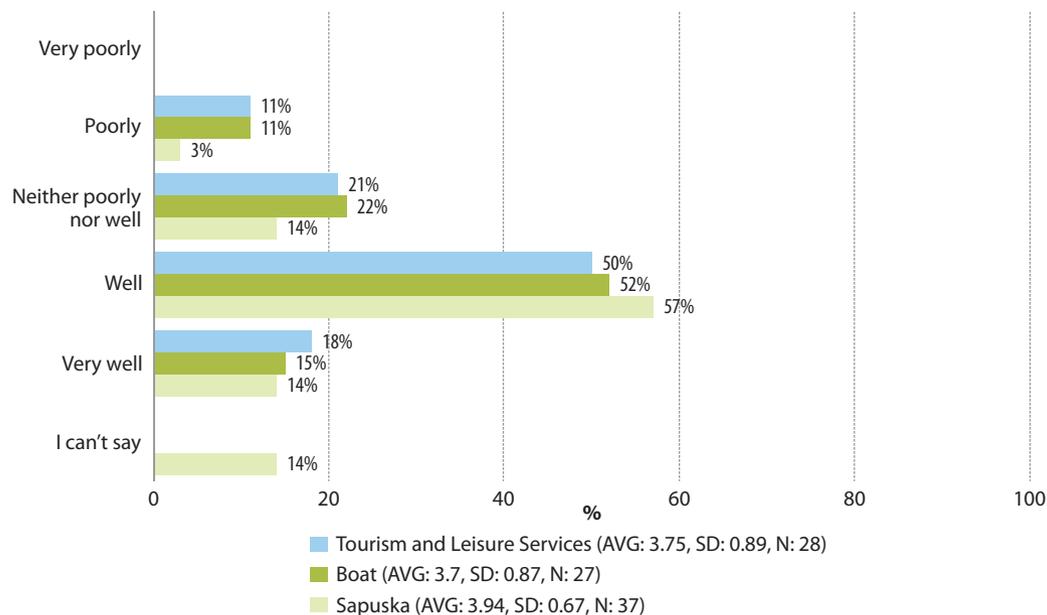


Figure 18. Was applying funding from Tourism and Leisure Services, Boat, and Sapuska programmes and project planning smooth? (1 = Totally disagree, 5 = Totally agree)

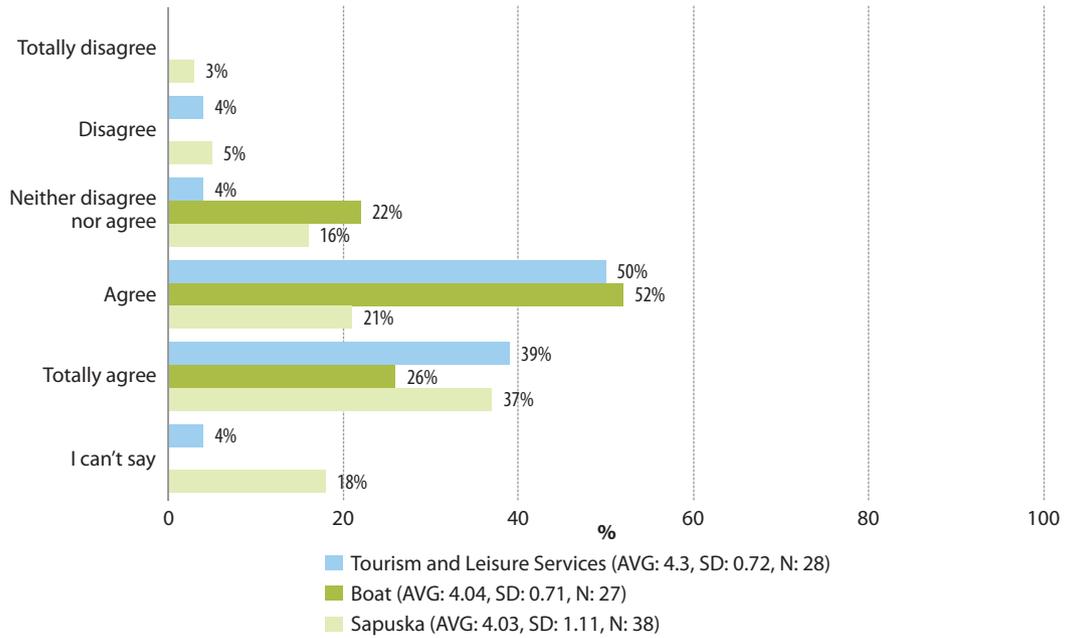


Figure 19. Were administrative procedures regarding project reporting in Tourism and Leisure Services, Boat, and Sapuska programmes functional? (1 = Totally disagree, 5 = Totally agree)

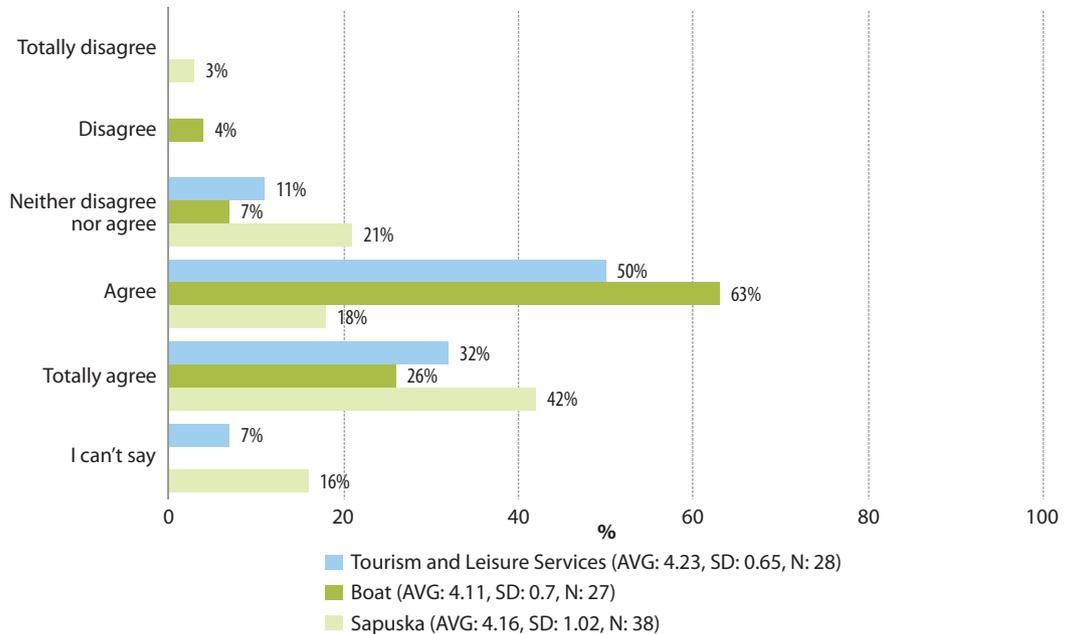
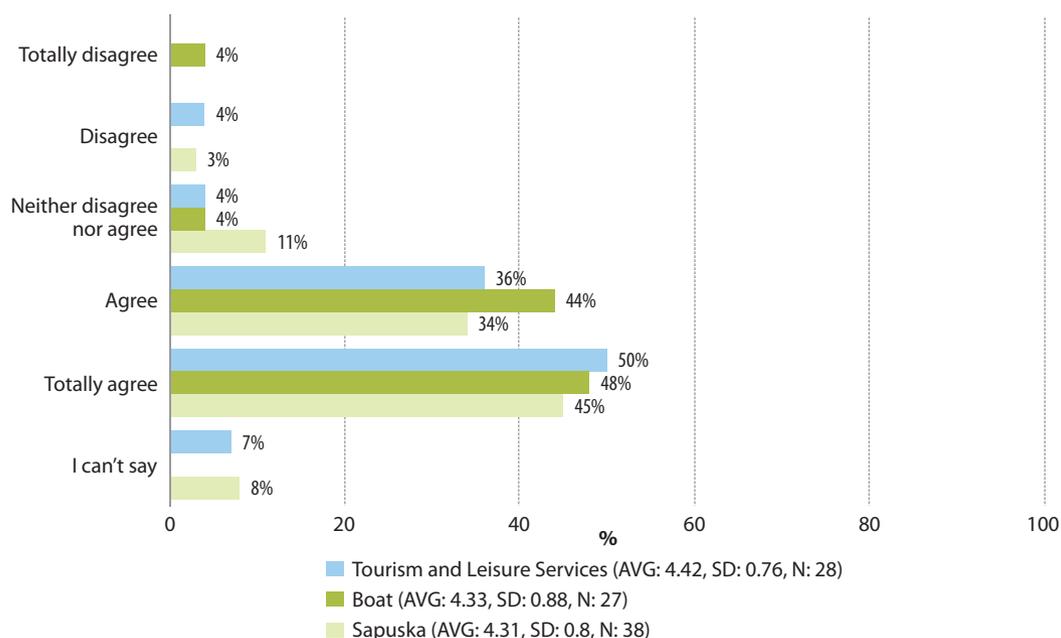


Figure 20. Was co-operation with Tourism and Leisure Services, Boat, and Sapuska programmes smooth?

(1 = Totally disagree, 5 = Totally agree)



3.3 Sapuska

Goal setting

The reasons for starting the Sapuska programme (also referred to as “Sapuska” hereafter) were clear (see also Figures 3 and 4). Sapuska aimed to promote the internationalisation of food sector SMEs. The level of internalisation has been low among food sector SMEs. As mentioned above (2.3.3), only 12–13% of food sector SMEs operate in the international market.³⁴ Furthermore, the Sapuska programme was a part of the continuum of programmes promoting food and nutrition sector (see also 2.3.3).

According to the e-survey, the goals of the Sapuska programme were considered successful. Most of the respondents agreed (“very well or well”) with the statements of the Sapuska programmes objectives³⁵ (average varied between 3.64–3.97 in the scale of 1 to 5). The objectives were as follows:

- to increase co-operation between SMEs and research institutes,
- to fund market oriented research, which was SMEs experienced interesting and useful for own business purposes,
- to combine international market needs and the research problem,
- to enhance the internationalisation competence of SMEs and operating models of the international markets,
- to enhance competence transfer during the project.

³⁴ Source: The Federation of Finnish Food Industries (Press release 7 August 2014 in Finnish). www.etl.fi

Success in reaching the goals

According to the e-survey and interviews, the Sapuska programme reached the above mentioned goals well. The advantage was that the goals were pragmatic. According to the e-survey, majority (61%) of the respondents agreed that Sapuska programme increased well or very well co-operation between SMEs and research institutes. The agreement with statement "increased co-operation between SMEs and research institutes" was 5% very well, 56% well, 26% moderately and 5% poorly (3% "cannot answer") (average 3.7).

The goal concerning funding of market oriented research, which SMEs experienced interesting and useful for own business purposes, was well reached. The agreement with the statement "funded market oriented research, which SMEs experienced interesting and useful for own business purposes" was 11% very well, 70% well, 8% moderately, 5% poorly, 2% very poorly (3% "cannot answer") (average 3.83). On the other hand, the satisfaction with combining international market needs and the research problem varied between respondents. The agreement with the statement "combined international market needs and the research problem" was 10% very well, 39% well, 28% moderately, 8% poorly and 3% very poorly (13% "cannot answer") (average 3.53).

The respondents' agreement with statement "enhanced the internationalisation competence of SMEs and operating models of the international markets" was 44% well, 18% very well, 23% moderately, 5% poorly, 5% very poorly (5% "cannot answer") (average 3.68). Furthermore, Sapuska succeeded in enhancing competence transfer during the project. In the e-survey, the agreement with statement "enhanced competence transfer during the project" was 10% very well, 51% well, 26% moderately, 3% very poorly (10% "cannot answer") (average 3.74).

Promoting networking and internationalisation of SMEs

The Sapuska programme succeeded in promotion of networking. More than 1 000 participants were present in 40 events arranged by the Sapuska programme. According to

the e-survey, majority (61%) of the respondents agreed that Sapuska programme increased well or very well co-operation between SMEs and research institutes (see also above).

When it was asked if the Sapuska programme significantly promoted networking between companies and research organizations / universities, majority (52%) of the respondents in e-survey answered "very well" or "well" (average 3.47). Respectively, 58% of the respondents agreed that the Sapuska programme promoted significantly networking between companies (average 3.79) (Figure 5).

The strength of the Sapuska programme was the promotion of internationalisation. The title of the programme was "Added Value for International Food Markets", which was achieved in practice. The programme focused especially on Russia and the St. Petersburg area. The six study tours attracted approximately 50 companies. Furthermore, internationalisation was promoted at project level. The research projects included seven international research groups.³⁵ According to the e-survey, majority (62%) of the respondents agreed that Sapuska programme enhanced well or very well the internationalisation competence of SMEs and operating models of the international markets (Figure 11). On the other hand, the satisfaction with promoting *significantly* international networking varied between respondents (Figure 6). The agreement with this statement was 5% very well, 36% well, 36% moderately, 10% poorly (13% "cannot answer") (average 3.41 in comparison to 2.96 of Tourism and Leisure Services programme and 3.13 of the Boat programme).

The results of the interviews supported the findings of the e-survey. It was emphasized that food sector SMEs are more interested and motivated in internationalisation than before the Sapuska programme. For example, the mentoring service on internationalisation was perceived as a useful method to boost internationalisation of SMEs. The positive results of Sapuska on internationalisation are in line with development of the food sector at the same time period. The food export has been increasing during the last years (see 2.3.3 above). However, according to the interviewees, the scale of export of the SMEs was lower than the export of one big food company.

³⁵ Sapuska Kansainvälistä liiketoimintaa elintarvikkeista Tekesin ohjelma 2009–2012 Loistavat toimenpiteet, käytännöt ja tulokset.

Promoting new innovations

The Sapuska programme promoted both technological product development as well as service and business concept development. Majority (55%) of the e-survey respondents agreed that Sapuska significantly promoted the development of remarkable technological and product innovations (average 3.63) (Figure 7). On the other hand, minority (36%) of the respondents agreed that Sapuska promoted significantly the development of remarkable service innovations (average 3.24) (Figure 8). It should be noted that even 15% could not answer the question about Sapuska's service innovations.

Programme services

The Sapuska's programme services received positive feedback both by e-survey respondents and interviewees (Figures 17–20). In the e-survey, Sapuska received highest scores for the quality words describing the programme "attractive" and "cooperative" (both 4.22 in the scale of 1 to 5) (Figures 27–29). The services of Sapuska, which included funding, activation, mentoring, communication, and organizing events and benchmarking tours, responded very well to the needs of participants.

As comes to Boat and Tourism and Leisure Programmes, the application and report procedures of Sapuska were considered fluent by e-survey respondents. According to both interviewees and e-survey respondents, the Sapuska programme succeeded well in communication. For example, the Sapuska brochure published in Russian language and organized a videoworkshop were perceived successful. Sapuska became a brand.

More than 1 000 participants were present in 40 events arranged by the Sapuska programme. The six study tours attracted approximately 50 companies. The internationalisation of SMEs was promoted in a pragmatic way by providing e.g. mentoring and activation services to develop business concepts for international markets and by organizing benchmarking tours. For example, the mentoring service was a useful tool for promoting internationalisation. As a by-product of the programme activities, the preparation of contracts based products such as Angry Bird candies or other brands turned out to be a useful good practice to promote access to international markets.

The satisfaction with co-operation with other programmes varied between respondents (average 3.47) (see also above 3.1 Boat) (Figure 21). In the e-survey, the feedback concerning sufficiency of different networks of the programme was moderate on average. The satisfaction with co-operation networks varied clearly between the respondents (Figures 22–26). Also, the proportion of "cannot answer" respondents was rather high (variation between 11–21%). Only in case of co-operation networks with Finnish research organizations, the majority of the respondents considered the network sufficient (Figure 23). The co-operation networks with companies seeking international growth, the co-operation networks with international research organisations, the co-operation networks with public sector and the co-operation networks with business associations were considered moderate on average. In these cases, only minority of the respondents considered the networks sufficient.

Impacts

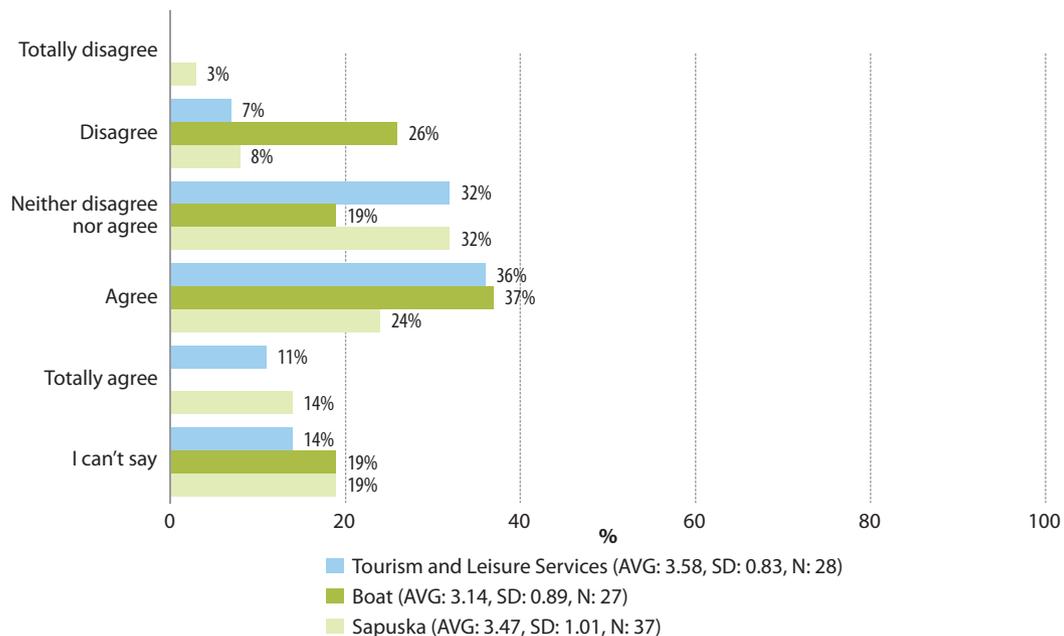
In the e-survey, different perspectives of the impacts of the programmes were surveyed. It is an early stage to assess the impacts of the Sapuska programme, which finished two years ago in 2012. Therefore, the timing should be taken into account in the interpretation of the results on impacts. The long-term impacts of the Sapuska programme will be seen at later stage. For example, the increased internationalisation competence and networking will have indirect effects in the future.

According to the e-survey and interviews, the Sapuska programme had a positive impact at company level by enhancing business and internationalisation competencies of SMEs. Majority (59%) of the respondents agreed that Sapuska had a significant impact both on business capabilities (average 3.63) and on international growth of participating companies (average 3.72). Almost half (49%) of the respondents agreed that Sapuska had a significant impact on growth of internationalisation know-how major (average 3.54). On the other hand, only approximately one-third (34%) of the respondents agreed that Sapuska programme had impact on operating models of the company. The impact on operating models of the company was weaker in Sapuska (average 3.18) than in Boat (3.52) and Tourism and Leisure Services programmes (3.46) (Figure 12).

The impacts of the Sapuska programme were weaker at sector level than at company level (Figure 14). The target group of the Sapuska programme was limited to food sector SMEs aiming at international growth. This target group represents a minority of the whole food sector, which may partly explain the results of the impacts of one single programme. Approximately 43% of the respondents agreed that Sapuska had a significant impact on competitive capabilities in the sector (average 3.3). Likewise, 45% of the respondents agreed that Sapuska had significant impact on research competencies of the sector (average 3.47) (Figure 13). Naturally, in case of a funding programme, majority (67%) of the respondents agreed that Sapuska programme had significant impact on R&D&I investments in the sector (average 3.68) (Figure 16).

The impact of Sapuska on well-being was less significant (Figure 15). The e-survey results varied clearly between respondents. The agreement with "impact on well-being" was 8% very well, 29% well, 42% moderately and 13% poorly (8% "cannot answer") (average 3.34). The moderate impact on well-being can be partly explained by the narrow focus of the Sapuska programme i.e. internationalisation of the SMEs. A significant and measurable impact on well-being is dependent on successfully commercialized and products adopted in a significant scale.³⁶

Figure 21. Was Tourism and Leisure Services, Boat, and Sapuska programmes' co-operation with other programmes sufficient and useful? (1 = Totally disagree, 5 = Totally agree)



³⁶ Valovirta, V., Lehenkari, J., Lehtoranta, O., Loikkanen, T., Suominen, A., Bodewes, H., mostert, B., Zegel, S., & van der Veen, G. 2014. The impacts of Tekes activities on wellbeing and environment. Tekes review 308 / 2014. www.tekes.fi

Figure 22. Was Tourism and Leisure Services, Boat, and Sapuska programmes' co-operation networks with companies seeking international growth? (1 = Totally disagree, 5 = Totally agree)

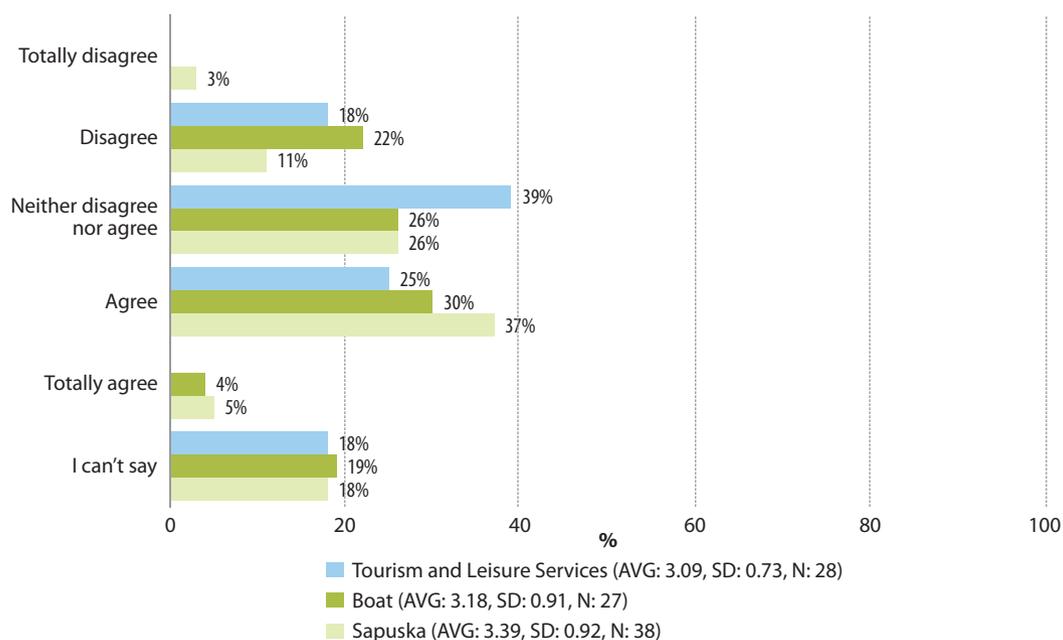


Figure 23. Were Tourism and Leisure Services, Boat, and Sapuska programmes' co-operation networks with research organizations in Finland sufficient? (1 = Totally disagree, 5 = Totally agree)

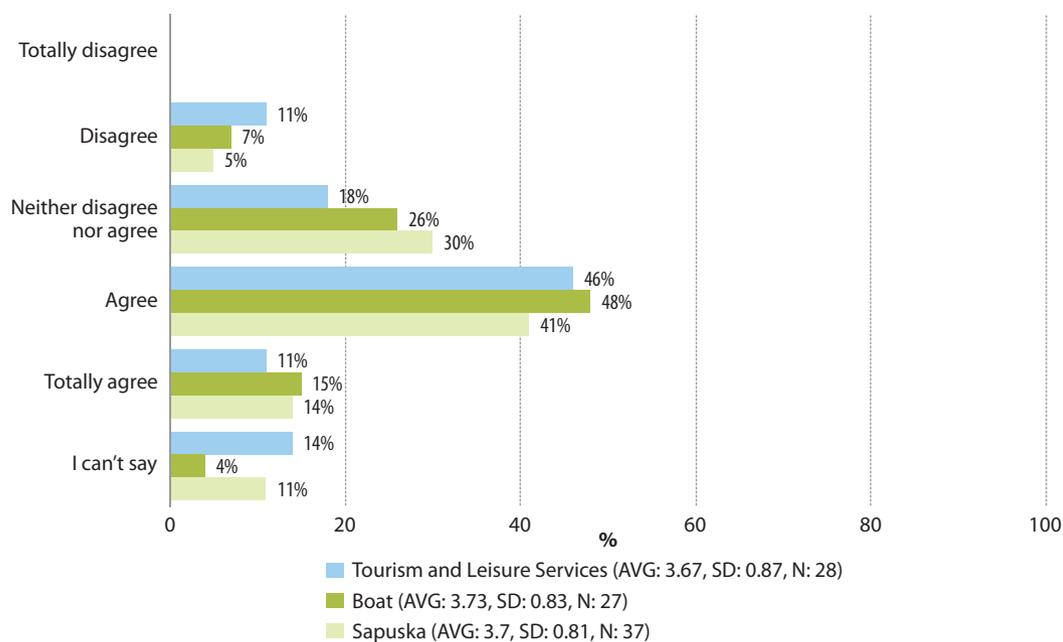


Figure 24. Were Tourism and Leisure Services, Boat, and Sapuska programmes' co-operation networks with international research organizations sufficient? (1 = Totally disagree, 5 = Totally agree)

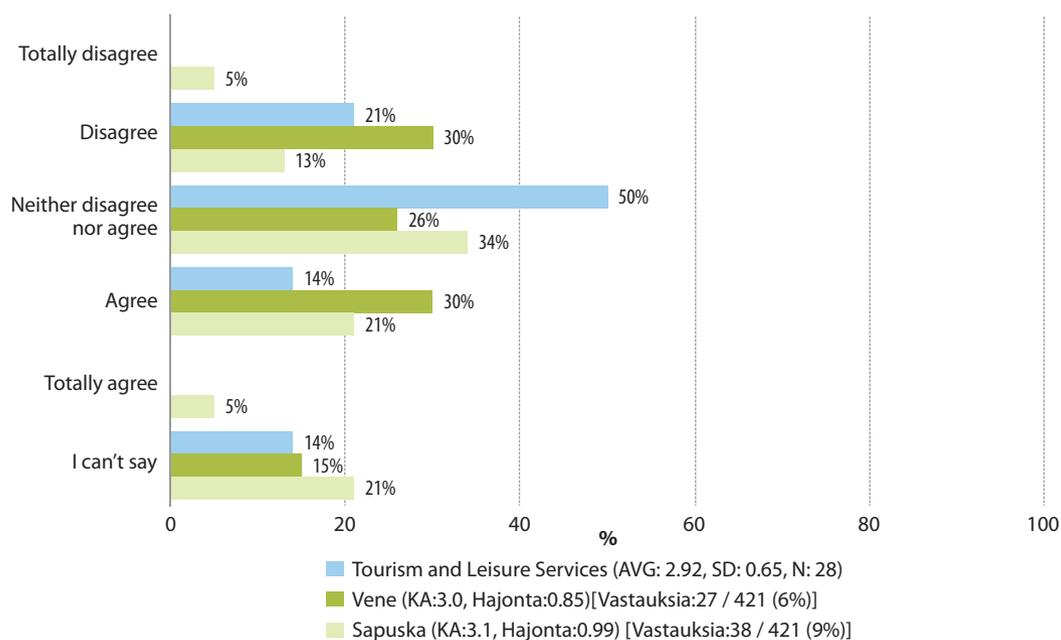


Figure 25. Were Tourism and Leisure Services, Boat, and Sapuska programmes' co-operation networks with public sector sufficient? (1 = Totally disagree, 5 = Totally agree)

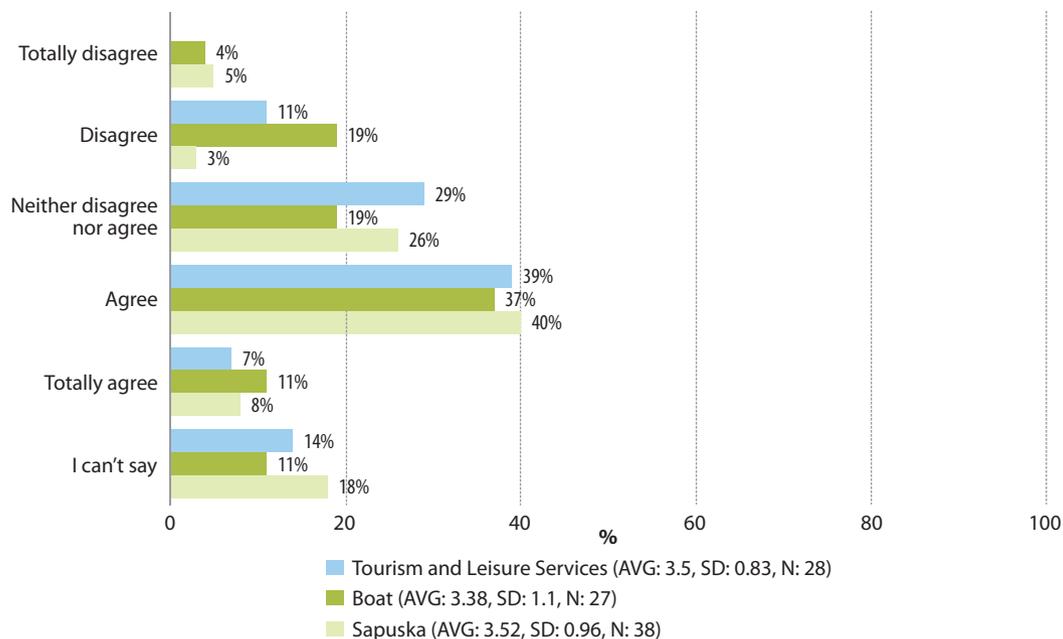


Figure 26. Were Tourism and Leisure Services, Boat, and Sapuska programmes' co-operation networks with business associations sufficient? (1 = Totally disagree, 5 = Totally agree)

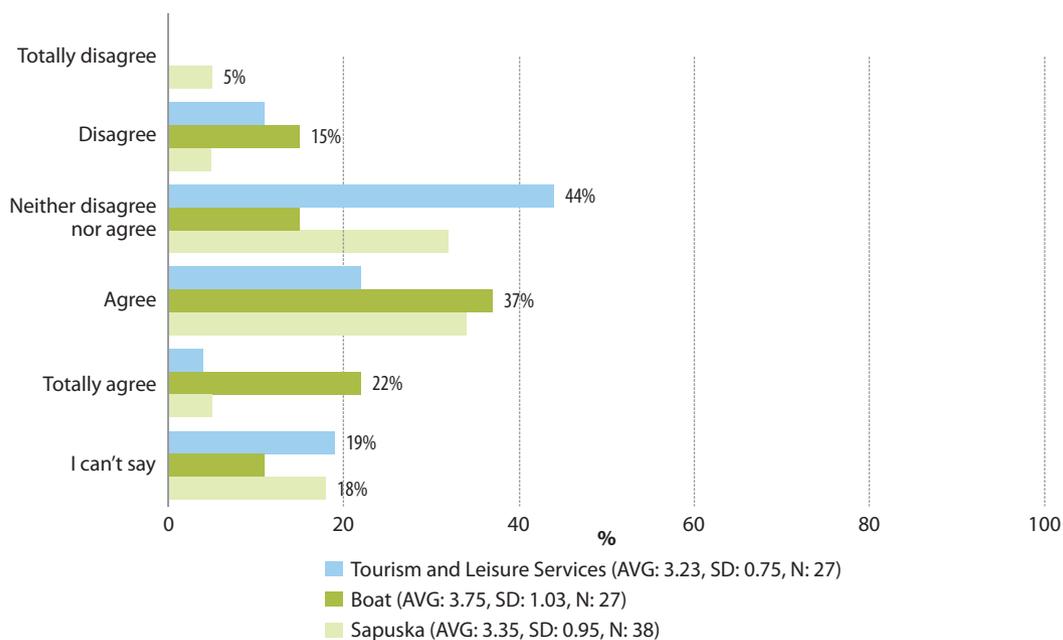


Figure 27. How well do features describe Tourism and Leisure Services, Boat, and Sapuska programmes? (1 = Very poorly, 5 = Very well)

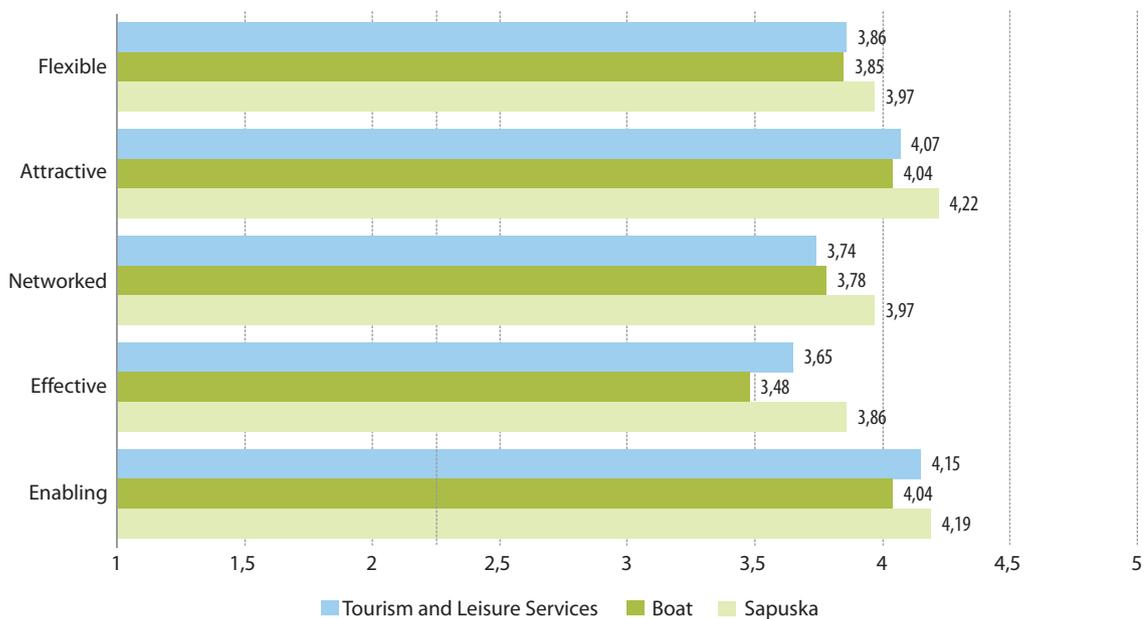


Figure 28. How well do features describe Tourism and Leisure Services, Boat, and Sapuska programmes?

(1 = Very poorly, 5 = Very well)

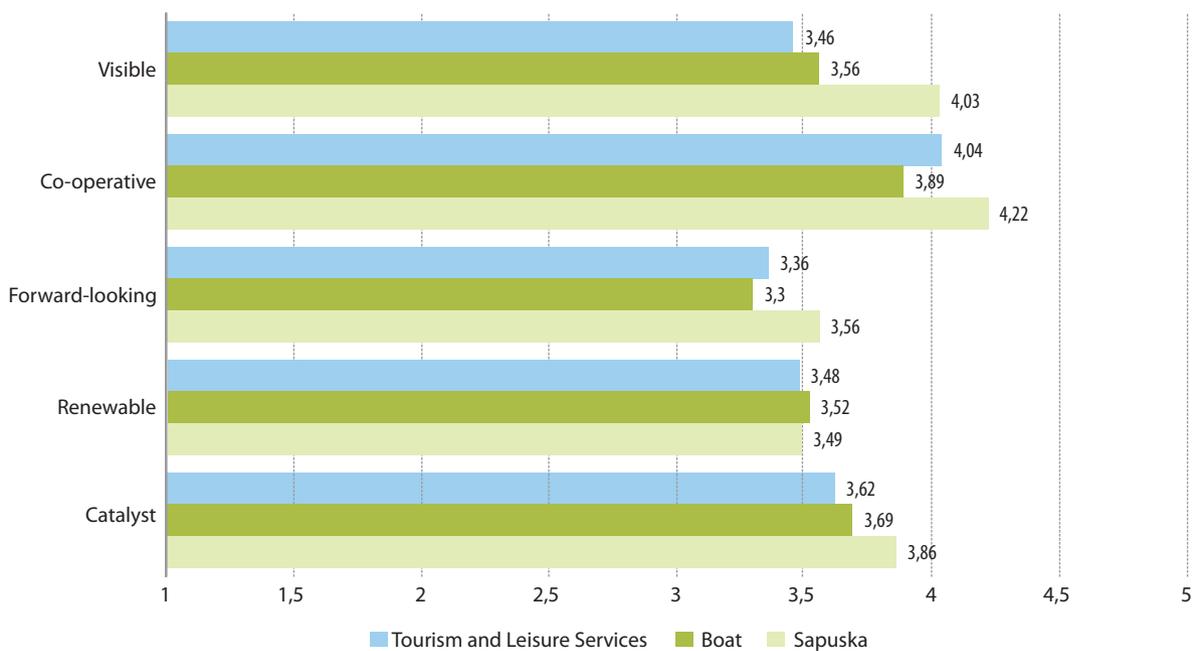
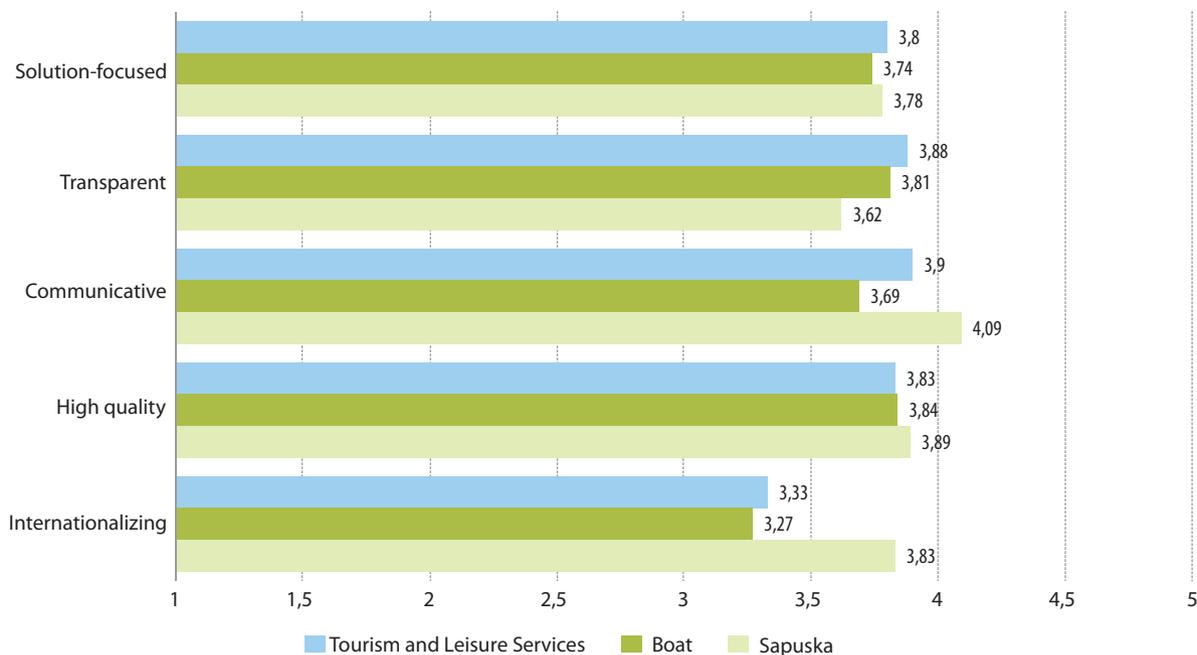


Figure 29. How well do features describe Tourism and Leisure Services, Boat, and Sapuska programmes?

(1 = Very poorly, 5 = Very well)



4

Ex-post evaluation of Food and Well-being programme

4.1 Summary

The aim of the company case descriptions has been to give more in depth information about the impacts of the Food and Well-being programme on business development and international growth of some selected SME companies during the last ten years after the programme. A total of 20 SME companies participated in the Food and Well-being programme through their own R&D or product development projects.

Functional foods and nutraceuticals represent an R&D area in which long-term collaboration between companies and research institutes is essential. The Food and Well-being programme clearly enhanced the interdisciplinary and intertechnological collaboration between companies and research institutes in Finland and this also resulted in positive outcomes. According to interviewees, the Food and Well-being programme promoted successfully new co-operation between Finnish SMEs and big companies. This collaboration, which started during the Food and Well-being programme, is still ongoing.

The changing regulatory environment in EU (e.g. the Novel Food 1997 and Nutrition and Health Claims in 2006) forced the sector's companies, SMEs and big companies, to reshape their product development strategies already during the programme. Overall the companies reacted to this challenge surprisingly well.

The Tekes funding through the Food and Well-being programme for SMEs was very important, even crucial for start-up phase micro or SME companies having challenging research objectives in the programme but lacking of in-house finan-

cial and specific competence resources. On the other hand, financial support is not enough to realize growth and societal impacts. The dynamics of new market creation is different for consumer demand (e.g. food with health claims), regulated demand (pharmaceuticals) and institutional demand (health and social care services).³⁷

The Food and Well-being programme was a part of the Tekes' food sector programmes from 1997 to 2012 (Uusiutuva elintarvike 1997–2000, Food and Well-being programme 2001–2004 and Sapuska 2009–2012) together with some related programmes of Sitra and Academy of Finland between 2005–2011 (see also 2.3.3 above). This long-term programme continuum showed to be necessary for this research oriented and long-term product development sector. Three companies (Biokia Oy/Kiantama Oy, Bioferme Oy and Aromtech Oy) proceeded with their company projects in the Sapuska programme focusing mainly on further productization and internationalisation of their technologies and products developed during the Food and Well-being programme.

According to the interviewees, the selection of international benchmarking countries was a challenge in the Food and Well-being programme. For example, the United States and Japan differ from the European market. Lack of knowledge about consumer behavior in different markets as well as cultural differences was considered as a problem. It was stressed that foresight information on the target markets should be better used in the programmes.

The four selected cases represented well the themes of the Food and Well-being programme programme: well-being

³⁷ Valovirta, V., Lehenkari, J., Lehtoranta, O., Loikkanen, T., Suominen, A., Bodewes, H., mostert, B., Zegel, S., & van der Veen, G. 2014. The impacts of Tekes activities on wellbeing and environment. Tekes review 308 / 2014. www.tekes.fi

of alimentary tract, health promoting plant components, separation technologies and productization. All the four case companies succeeded during the Food and Well-being programme – in spite of regulatory challenges – to develop commercially exploitable technology, functional foods or nutraceutical products for domestic and international markets. In some cases commercial results realized already during the programme (Aromtech Oy and Bioferme Oy) and in some cases soon after the programme ending (Hormos Medical Oy and Biokia Oy). An important observation is that the functional food and nutraceutical business of three out of these four companies (Hormos Medical Oy fully out-licensed its nutraceutical business in 2005) still progresses well and is significantly based on the technologies developed by the companies and their collaborators during the Food and Well-being programme.

The turnover of the case companies (Aromtech Oy, Bioferme Oy and Biokia Oy/Kiantama Oy) have been constantly

increasing during the last ten years from just about a million or two up to several millions or even ten million. The numbers of employees has also been increasing varying today at the level of about 10–30 employees per company.

In principle research-intensive functional food and nutraceutical products are per se aiming at international sales together with domestic sales success. All the four case companies have reached this internationalisation objective and their future sales increase potential is also primarily based on export activities. In two cases (Aromtech Oy and Biokia Oy / Kiantama Oy) the exports account today even clearly more than 50 % of their total sales. An interesting note is that in addition to the traditional export model also international out-licensing model (Hormos Medical Oy) as an internationalisation route was successfully implemented.

The objectives and main results are summarized below. The case studies are presented in 4.2.1–4.2.4.

	Objective of the company project	Main results achieved
Aromtech Oy	Development of separation technology and berry based health products	<ul style="list-style-type: none"> – Optimization of the supercritical fluid extraction (SFE) technology for specific berry strains – Berry seed oil capsules for consumers and extracted oils for cosmetic industry – Productization continued during Sapuska programme 2009–2012 – Turnover 4,9 M€, 23 employees (2013) – Export sales about 80%, more than 20 export countries
Bioferme Oy	Development of products for alimentary health and weight loss	<ul style="list-style-type: none"> – Patented bifido bacterial products for alimentary health and patented emulgator technology preventing absorption of fat from some foodstuffs – Oat-based snack products and weight loss drinks for consumers – Productization of weight loss drinks continued during Sapuska programme 2009–2012 – Turnover 3 M€, 14 employees (2013) – Export sales at early growth phase
Biokia Oy	Increase extent of value added of berries by developing processing technology	<ul style="list-style-type: none"> – Pre-preparation and processing technology for wild berry product selection development – High-value added berry products for food, health supplement and cosmetic industry – Internationalisation strategy planning continued during Sapuska programme 2009–2012 – Turnover 10,5 M€, 33 employees (2013, today Kiantama Oy) – Export sales about 50–60%, mainly to far East and part of Europe
Hormos Medical Oy	Development of new dietary supplement for prevention of certain diseases	<ul style="list-style-type: none"> – Isolation technology for purified plant lignan (7-hydroxy-matairesinol) and demonstrating its safety and efficacy on humans – New dietary ingredient (NDI) clearance by FDA for patent protected HMRLignan containing dietary supplements for increasing enterolactone levels - published data on alleviation of menopausal symptoms – Global rights of HMRLignan fully out-licensed in 2005 to Linnea SA (Switzerland) comprising down payment and royalties – Further development by Linnea SA for additional registrations and new health claims

4.2 Case studies

4.2.1 Case study 1. **Aromtech: Internationally marketed biologically active plant extracts from arctic nature**

Aromtech Oy is a Finnish nutrition company established in 1991 focusing on the research of Northern plant species bringing value for human health and well-being. Its key competence is based on highly-developed supercritical fluid extraction (SFE) technology and exploitation of sea-buckthorn as plant matrix, especially. The SFE technology is used in isolation and extraction of bioactive lipophilic ingredients (e.g. fatty acids, oil soluble vitamins and plant sterols) from plant matrix like sea-buckthorn, blackcurrant and lingonberry. The company produces final extracts, mainly berries' seed oils, as final capsule products to consumers and as extracted oils straight to the cosmetic industry.

The key element of Aromtech's company project in the Food and Well-being programme was optimization of the supercritical fluid extraction (SFE) technology to be used for the product development. The company is a pioneer in Finland in applying that technology for plant extraction. A secondary objective was to develop micro-encapsulation technology improving the usability of extracts especially in different industrial applications and also in consumers' daily consumption.

Aromtech achieved good results in the optimization of the SFE technology on berries, like sea-buckthorn, bilberry, cranberry and blackcurrant. Also birchbark was an applicable source for extraction. The optimization had to perform separately for every single berry strain which made the process development challenging – it was not just a "product line optimization". The optimized extraction technology is an effective and gentle way to recover lipophilic healthy ingredients from berry matrix. Together with the optimization task the company succeeded during the programme to produce already commercial batches of berry oils for the cosmetic industry. The cosmetic industry is a remarkable customer segment for Aromtech. The developed SFE technology is still a solid

ground for the product development and business growth of the company. In the micro-encapsulation project the company collaborated with VTT Biotechnology. The collaborators got indicative results about an encapsulation technology that could be commercially applicable in the future. In the Sapuska programme 2009–2012 Aromtech continued productization of its SFE technology developed during the Food and Well-being programme. The company has also performed independently new clinical studies for its product development and marketing purposes.

Aromtech had fruitful collaboration during the Food and well-being programme e.g. with the University of Turku, VTT Biotechnology, MTT (Agrifood Research Finland), its commercial partner Valioravinto Oy and Flavex Naturextrakte (Germany). A cosmetic industry company Lumene was Aromtech's commercial customer already during the Food and Well-being programme. Networking with bigger players was very instructive for Aromtech during the programme.

Aromtech's business has developed constantly during the last few years. The turnover 2012 was about 3.7 million euros (18 employees) and in 2013 about 4,9 million euros (23 employees). Today exports account for about 80% of the total sales – domestic sales being around one million already for years. Almost all the sales increase during the last few years has been resulted from the export – like the future sales increase as well, forecasted to be 10–15% per year. The cosmetic industry accounts about 25% of the turnover. Today Aromtech's nutraceutical products have more than 20 export countries, e.g. Sweden, Norway, Denmark, UK, Benelux countries, Germany, Switzerland, Spain, Italy, USA and Canada. Seed oil extracts for the cosmetic industry are exported also to Japan and South-Korea. The company offers also contract manufacture services for international customers' SFE extraction purposes using customers' own plant sources. This service business accounts about 8% of the turnover. Aromtech's production processes are GMP approved.

Sources: Interview Veli-Markku Korteniemi 20.5.2014 (Aromtech Oy) and www.aromtech.com

4.2.2 Case study 2. Bioferme: Development of healthy and award-winning products for consumers to domestic and international markets

Bioferme Ltd is a Finnish family owned company founded in 1977. The company focuses on developing, manufacture and marketing of high quality plant-based food products and organic products for health-conscious consumers. Its main products are a wide selection of Yosa® oat-based snacks and OATrim® oat-based weight loss drinks. Bioferme's key R&D areas are probiotics and weight management.

Bioferme had two company projects in the Food and Well-being programme. The first project was a collaborative project with Ravintoraisio Oy having an objective to characterize and apply some specific bifido bacterial strains for functional foods. The other project was also a collaborative project with Oy Marli Ab having an objective to develop technology to be used in weight loss products.

In the bifido project the aim was to prove clinically the health effects of specific bifido bacterial strains on elderly. The bifido bacterial strains were separated from Finnish and Japanese elderly having typically high intestine bifido levels. In a way, already the basis of the project was international. These specific bacterial strains are also patent protected. The clinical studies, run by Finnish geriatricians, succeeded well with positive results. The company also developed a cost-efficient fermentation method for the bacterial strains. The whole patented technology is today widely used in the company's probiotic oat-based snacks selection, Yosa® Smoothie, giving also an important competitive edge for the company. The current Yosa® technology is fully based on the technology developed during the Food and Well-being programme programme.

In the weight management project the primary objective during the Food and Well-being programme programme was to develop emulgator technology preventing absorption of fat from some foodstuffs. The results of the preliminary study showed that an emulgator, E494, effectively prevented

the absorption of fat from some foodstuffs. This property is also patented by the company. It should be mentioned that E494 has been approved as food additive but not as dietary supplement. Comprehensive clinical studies showing fat-absorption preventing functionality of E494 in humans were not performed during the programme and was not even as an objective. The company continued productization of the weight loss product in the Tekes' Sapuska programme 2009-2012. Bioferme utilized glucomannan fiber as an ingredient of its OATrim® oat-based weight loss drinks. Drinks also contain E494 as an emulgator. OATrim® was the first food product in Europe utilizing the European Food Safety Authority approved weight loss claim of glucomannan, which is combined with Finnish oat. OATrim® drinks were launched in 2012. Bioferme established in 2012 a joint-venture company, OATrim Finland Oy, for marketing of its weight loss drinks.

Bioferme had active collaboration during the projects, in addition to its project partners, with universities and research institutes in Finland, e.g. University of Turku, University of Helsinki, The Hospital District of Helsinki and Uusimaa, VTT Biotechnology and a couple of expert service SME companies.

Bioferme's both products families, Yosa® and OATrim®, have been awarded by some Finnish industry federations and consumers – Yosa® Smoothies was the Star Product and Ecological Product of the Year 2009 and OATrim® the 2013 Star Product.

Bioferme's turnover in 2013 was about 3 million euros and personnel 14 employees. Most of the turnover and export is comprised of Yosa® products. The main export countries are Belgium, Sweden, Russia and the Baltics. Export activities of OATrim® will kick-off in the near future and international partner negotiations are on-going. Bioferme's product families have still a remarkable growth potential both in domestic and in international markets.

Sources: Interview Merja Scharlin 16.5.2014 (Bioferme Ltd) and www.bioferme.fi

4.2.3 Case study 3. Biokia: Competitive functional foods to international markets by increasing the extent of value added of wild berries

Biokia Oy was established in 2001. At that time the company was a subsidiary of the Kiantama Group. Biokia's main business was the processing of wild berries and increase the value added of wild berries. The company also focused on the development of new business in the group, e.g. to develop new colors and aromatic ingredients for the food industry. Later in 2009 Biokia's operations were merged to its parent company Kiantama Oy, which was established already in 1979. Customers of the company's high-quality and high-value added berry products are food, health supplement and cosmetic industry.

There were several objectives in Biokia's company project of the Food and Well-being programme. The first objective was to develop the pre-preparation technology of the berries and to develop technological alternatives for the separation of anthocyan colors from the berry material. The second and very challenging objective was to separate functional anthocyan colors for the food, medicine, cosmetic and natural product industries – and especially such anthocyan colors where concentrations of anthocyan are very high and functionality also scientifically proved – “functional color-ingredients”. Typical wild berry sources are lingonberry, bilberry and cranberry. The development of efficient separation technologies was very crucial in the project in order to receive high concentrations of different color substances, together with the determination of physico-chemical properties of the colors. Thus by remarkably increasing the extent of berries' value added it is possible to develop new competitive products to domestic and international markets.

During the project Biokia collaborated intensively with some universities and research institutes (e.g. University of Kuopio, University of Oulu and VTT Biotechnology) and with some expert service companies as out-sourcing partners. The Food and Well-being programme programme had an important role in networking Biokia with other berry researchers in Finland. It is also self-evident that the project funding from the programme was crucial for a small start-up company in order to proceed with the development project.

Biokia succeeded well with the first objective of the project. The processing technology of wild berry matrices developed remarkably enabling healthy and nutritional properties of berries preserving high in different final products, like powders and extracts. Also in the development of separation technologies of color substances the company proceeded remarkably. However, the development of totally new anthocyan color ingredients with proven functional properties showed not to be cost-efficient. That is why the company decided to focus mainly on high-quality processing, manufacture and marketing of high value-added wild berry products to domestic and international markets. High concentrations of health-beneficial ingredients (e.g. flavonoids, vitamins, antioxidants) of wild berries growing in the northern latitudes are already well studied and known amongst final customers. The processing know-how developed during the Food and Well-being programme still plays a very important role in the company. The company achieved later a respected Japanese JAS certification (Japanese Agricultural Standard) for its processes. Biokia's Food and Well-being programme project had in a way continuum in the Sapuska programme 2009–2012 with headline “New export business activity for berry sector by marketing strategy”. In that project company strongly increased its international marketing and business competence in order to accelerate export sales.

Today the parent company Kiantama Oy (with which Biokia Oy in 2009 was merged into) employs 33 people having total turnover of 10,5 million euros. Both turnover and number of employees have been increasing during the last few years. About 50–60% of the sales are comprised of exports and most of the future sales increase, as well. Main export areas are Far East and German-speaking countries in Europe. All the consumer products are marketed under the Biokia® trademark. Export's growth is expected especially from Biokia® product family and mainly from the Nordic countries.

Sources: Interview Vernu Vasunta 12.5.2014 (Kiantama Oy) and www.biokia.fi and www.kiantama.fi

4.2.4 Case study 4. Hormos Medical: Successfully developed and internationally commercialized nutraceutical ingredient by a Finnish SME

Hormos Medical Ltd is a Finnish biopharmaceutical company founded in 1997 focusing on research and development of biopharmaceutical products for global markets. Since 2005 Hormos Medical has been a subsidiary of USA-based biopharmaceutical company QuatRx Pharmaceuticals Inc. Hormos Medical set up in 2000 a subsidiary, Hormos Nutraceutical Ltd, focusing on development of nutraceutical ingredients, HMR lignan (hydroxymatairesinol) as its main project. In 2003 Hormos Nutraceutical was merged back to the parent company Hormos Medical in order to enhance the comprehensive and intensive research work needed for the finalization of the project up to the commercialization phase.

The objective of Hormos Medical's project in the Food and Well-being programme was to develop a new dietary supplement based on highly purified plant lignan originated from Norway spruce. There were three main objectives: to develop a large-scale isolation technology, to perform safety studies with HMR and to show its efficacy on humans.

The lignan called 7-hydroxymatairesinol, HMR, is purified from Norway spruce knots, which have been found to be rich in lignans, especially HMR. Also daily foods contain trace amounts of different lignans – flax seed, sesame seed, grains and vegetables, for example. Lignans belong to phytoestrogens having weak estrogen-like biological activities. In humans 7-hydroxymatairesinol is converted into mammalian lignan, enterolactone. It has been shown in epidemiological studies that low enterolactone levels or low intake of lignans are associated with increased risk of some hormone dependent diseases, for example breast cancer and cardiovascular diseases. Phytoestrogens have also been shown to alleviate menopausal symptoms. In the Food and Well-being programme project researchers showed that HMR lignan increases already at milligrams doses the enterolactone level in humans. HMR lignan is one of the most potent lignan supplements available.

During the Food and Well-being programme project "From Norway spruce's lignan to health product" Hormos

Medical actively collaborated with university researchers and Finnish forest industry. Researchers at the University of Turku and Åbo Akademi University together with the forest industry company UPM have worked in a close collaboration with Hormos Medical during the project. Åbo Akademi's Laboratory of Wood and Paper Chemistry focused on large-scale isolation of pure and concentrated HMR from spruce knots – having cooperation also with the forest industry in terms of extracting pure knots from wood chips. Researchers at the University of Turku and Hormos Medical/Hormos Nutraceutical focused on hormonal activities and effects of HMR and on safety studies. After several years intensive research and development work during the Food and Well-being programme, Hormos Medical finally in 2004 received a new dietary ingredient (NDI) clearance from the FDA, which allows HMRLignan™ containing dietary supplements to be marketed in the USA. It needs to be mentioned that HMRLignan™ is widely IPR protected. The patent families cover its use as a dietary supplement and functional food for several health benefits as well as different manufacturing processes.

Commercialization activities with HMRLignan™ started extensively after receiving the FDA clearance in 2004. Already in 2005 Hormos Medical signed a worldwide licensing agreement about HMRLignan™ with Linnea SA, Switzerland, for dietary supplement use. Lineal SA is high-quality manufacturer of active ingredients for use in health food, pharmaceutical and cosmetic industries. The licensing deal comprised a significant down payment and royalties for Hormos Medical.

Since 2005 Linea SA has been fully responsible for the further development and commercialization of HMRLignan™. Currently HMRLignan™ is available mainly in US as different dietary supplement capsules as a lignin source with proof increasing the enterolactone levels. There is also published data on alleviation of menopausal symptoms. Further development of HMRLignan™ has been conducted by Lineal SA supporting additional registrations in Europe and other key markets and supporting potential health claims.

Sources: Interview Risto Lammintausta 14.5.2014 (Hormos Medical Ltd), www.linnea-worldwide.com and selected press releases.

5

International benchmarking with Denmark

5.1 Introduction and summary

In connection with the evaluation of well-being oriented SME innovation programs aiming at international growth in Finland, an international benchmarking study with a focus on the Danish SME growth policies related to well-being subsectors has been conducted. Similar activities, in which a public R&D&I funding organization has promoted products and services related to well-being to internationalize SME sector, have been benchmarked.

The overall Danish growth policies are formulated by the Danish government, which has launched two general growth plans and has identified eight growth sectors to be focused on in the SME targeted growth policies of the Regions. For each of these sectors, specific growth plans have been prepared by growth teams with participation of private companies, organizations and public institutions from the respective sectors.

The Danish government has established various institutions that support Danish businesses with advice, funding and know-how. These institutions have different purposes but a common vision, which is to sustain growth and internationalisation. As a general rule, they have their own strategies that are more or less independent of the actual government growth plans and strategies.

The five regions in Denmark have a regional growth forum that has been assigned the tasks of promoting regional growth in their geographical area. One of their key roles is to facilitate the funding from the Danish government and from the EU structural funds to the projects in the region.

The regions have the flexibility to create their own strategies according to the special challenges and opportunities that are characteristics for the respective regions. However, their strategies are developed with a view to the overall na-

tional strategy and growth plans to ensure coordination between the national and regional levels. A Growth Committee has been established to take responsibility for this coordination and to ensure the coherence between the national and regions growth strategies.

The report contains a section on the national growth plans and strategies with an emphasis on the eight growth sectors of which four are considered related to well-being. The second section describes a number of national growth instruments and their respective purposes and scopes. In the third section the regional strategies and SME support activities are described and supplemented with a brief résumé of an evaluation of the regional SME and business development efforts and their uses of the EU structural funds. The main conclusions regarding support instruments during the period 2007-2013 and the recommendations of the evaluators are finally given in the same section.

5.2 National strategy

The Danish national growth strategies do not directly focus on small and medium-sized enterprises (SME's), but as approximately 60 percent of the total turnover in the private sector³⁸ is generated by the SMEs, growth policies are most often implicitly targeting SME's.

The Danish government has developed two general growth plans, "Growthplan 2013" and "Danmark helt ud af krisen – virksomheder i vækst" (Denmark out of the crisis – growth companies) from May 2014.

The aims of the "Growthplan 2013" were to ease the administrative and tax burden and to generally stimulate growth in the private sector by improving access to financing and competitiveness of enterprises.

³⁸ <http://www.smvportalen.dk/Om-smvportalen/Noegtal-om-SME-segmentet>

In the government growth strategy "Denmark out of the crisis – growth companies" from May 2014, further 89 tangible actions to strengthen Danish businesses competitiveness were mentioned. The four focus areas were:

- Easier and cheaper to operate a business in Denmark
- Strengthened access to financing
- Lower prices for consumers and businesses
- More skilled employees and more advanced production.

Besides the two general growth plans, the government has developed regional growth strategies for eight sectors in which Danish companies have a strong international competitiveness. So-called "growth teams" have been established for the respective sectors with the aim of developing the growth strategies. The government generally considers innovation as a central driver for growth and employment.

5.2.1 Growth teams

The eight growth teams target the following growth sectors or areas, as they are identified as the sectors with the strongest international competitiveness:

- The blue Denmark (Maritime sector)
- Water, bio and environmental solutions
- Energy and climate
- Tourism and experience economy
- Creative business and design
- Health and welfare solutions
- Food
- Information technology and digital growth.

From each of these areas, a team of private companies, organizations and public institutions were appointed in the spring of 2012 and formulated in cooperation with the government, the strategies and initiatives in the plans.

The following growth areas are particularly relevant in relation to well-being. We have therefore selected them for a closer description.

- The blue Denmark
- Tourism and Experience economy
- Health and Welfare solutions
- Food.

a. The blue Denmark

The growth team consisted of the following private companies, public- and educational institutions:

- NORDEN
- MAN Diesel and Turbo
- Esvagt
- DESMI
- Thrane and Thrane
- The Market Development Fund (Public fund)
- Danish Maritime Authority
- Copenhagen Business School: Department of Operations.

The Danish maritime businesses represent 24 percent of the total export from Denmark and have a production of 287 billion DKK (38 billion EUR) which is 10 percent of the total production in Denmark.

The sector employs 80.000, with 17.000 of them employed on Danish ships. The sector includes ship brokers, harbors, logistics companies, shipyards and industrial- and service companies.

The visions for the growth plan are:

- Denmark must be the maritime center of Europe.
- Green solutions are the future for the blue Denmark.
- The growth in the maritime cluster must be supported by strong Danish competences.

The growth team has identified 6 points, on how to achieve these visions.

- Promoting Denmark as the core in the Maritime Europe.
- It must be appealing to operate a maritime business in Denmark.
- Creating green shipping and green solutions.
- The strengths in the Danish maritime businesses must be expanded and used to create growth.
- The maritime competences, educations, innovation and research must support growth.
- The growth should build on quality ship freight.

Besides these 6 points, there are several initiatives describing how these may be achieved. These are specified in Annex 4 part a.

Besides these initiatives, the government has developed the fund "Den Maritime Omstillingspulje" (the maritime business conversion group) which in 2013 distributed more than 20 million DKK (2.7 million EUR) to 9 demonstration projects, which contributes to the development of Danish strengths in green maritime solutions. The aim of the demonstrations projects was to develop and demonstrate new solutions within:

- Shipbuilding in new lightweight materials (e.g. composite)
- Environment and climate modernization of existing ships (retrofit)
- Use of alternative fuels for ships (LNG).

The fund supports project of public institutions and companies as well as of the private sector. The fund has no special focus on SMEs or the size of the companies.

b. Tourism and experience economy

The growth team for tourism and experience economy recommends the creation of a strong organization and an overall national strategy. The focus on tourism should be planned with an aim to ensure a greater effect of the resources spent.

The participants in the growth team are the following private and public companies and organizations

- ARP-Hansen Hotel Group
- Museum of Skagen
- Novasol
- University of Southern Denmark
- Wonderful Copenhagen
- Sport and Event Denmark
- Tivoli
- Manto A/S
- VisitDenmark
- Herning Messecenter.

The tourism sector in Denmark generates an annual turnover of 82 billion DKK (10 billion EUR) and employs 120.000 people. The growth team identifies several different tourism areas such as tourism related to cities, business, coastal areas and countryside tourism. A main challenge for the tourism in Denmark is the need to increase the service level and standards of tourism products and services.

The overall goal is to attract more visitors to Denmark – both domestic and foreign tourists. By development of the

product to tourists and the quality, the plan strives to increase the satisfaction for tourists and attract new guests.

The focus areas in the growth plan are:

- Danish tourism services should be of a high quality.
- The growth in city- and business tourism must be increased.
- Development of coastal and nature tourism.
- The efforts within the tourism sector must be better organized and coordinated based on a national strategy, in order to ensure a greater scale and higher effects.

The points and initiatives are further specified in the Annex 4 part b.

c. Health- and welfare solutions

The Danish health- and welfare businesses account for 3.6 percent of the value creation in the Danish economy, 12 percent of the export and employ 35.000 people, corresponding to 1.7 percent of total employment.

The sector includes companies that deliver solutions to health and care, i.e. pharmaceutical industry and medico.

The participants of the growth team are representatives from the following private and public companies and organizations:

- Falck A/S
- Mid-Europe 2
- Radiometer
- CSC Scandihealth
- CompuGroup Medical Denmark
- R82
- Medtech Innovation Center
- Copenhagen University and Rigshospitalet
- Ministry of Health
- Municipality of Aarhus
- Region of Southern Denmark.

With the growth plan the government aims at creating a competitive environment in the areas, where Denmark has some strength, e.g. medico, to give companies in such areas better development opportunities as well as further strengthen the framework for public-private cooperation and market development on health and welfare solutions.

There are four focus points, which are described in the following. The initiatives behind are specified in the Annex 4 part c.

- Better framework for research and development.
- Strengthened focus on growth companies and commercialization of research.
- A well-functioning and development oriented home market.
- Offensive use of the international market potential.

d. Food

The food industry has a great value for the Danish economy. In 2012, the value of export was 148 billion DKK (19 billion EUR), corresponding to one fourth of the total Danish export of goods. In 2011 the industry employed 140.000 people, which is 9 percent of the private sector employment in Denmark.

In cooperation with the food industry and other stakeholders, the Danish government attempts to strengthen the growth and employment in areas where Danish companies are internationally competitive and where the growing global demand creates new opportunities. The following private and public companies and organization participated in the growth team for food.

- Arla Foods
- DuPont
- Royal Greenland
- Dansk Supermarked
- Friland A/S
- Skærtøft Mølle
- Commission for nature and agriculture in Denmark
- ActilFoods
- Danish Innovation Fund
- Ministry of Food, Agriculture and Fisheries of Denmark
- Ministry of Business and Growth Denmark.

The growth plans for the food sector focus on improving the conditions for the food industry in Denmark with a more effective production, regulation and control and better access to financing, and there is also a focus on internationalisation.

The five focus areas are:

- Sustainable and resource effective food production.
- Solution oriented regulation and control.

- Talent, dynamics and export in the industry.
- Growth oriented research and development.
- Strengthened access to finance and focused strategic export.

See Annex 4 part b. for the initiatives for each focus area.

5.3 National growth promotion instruments

The main national growth instruments are five independent regional growth houses that are organized by the Danish Business Authorities, a Market Development Fund, the Danish Growth Fund, Denmark's Export Credit Agency and the Danish Trade Council. These institutions have operated for a number of years and under different government structures. Their overall goal reflects the national growth strategy within their specific areas, where they develop their own strategies. A brief presentation of each of them is given below.

5.3.1 Vaeksthus (Development houses)

Under the Danish Business Authorities, 5 regional development houses were established in 2007, in order to provide a strong regional business promoting system. It is funded by the Danish municipalities and organised as independent business enhancing funds.

The development houses develop growth plans for companies and they guide them to use relevant, needed private and public services and assistance.

The Danish Business Authorities is a business partner, who develops a series of projects, approaches, and initiatives for entrepreneurs to be implemented by the development houses. The authorities are not involved in the daily management and administration of the development houses.

The focus for the activities of the development houses are SMEs with growth ambitions and potentials. The development houses do not and are not obliged to follow the strategies at the national level, but focus on SMEs with growth ambitions and potential. The development houses were initiated as a national project, and have worked as an initiative to increase the number of growth companies in Denmark.

The Danish government and the Local Government Denmark (The union for all municipalities in Denmark) have

a yearly contract, which specifies target groups, assignments and goals for the development houses. The national contract is the foundation for the contract that each municipality signs with the development houses, which includes the same target groups, assignment, responsibility areas between the development houses and the municipality, etc. The regional contract can have additional regional goals, which are relevant in the specific region.

5.3.2 The Market Development Fund

The Market Development Fund is a close-to-market, enterprise-oriented and commercially focused fund, which seeks to assist Danish enterprises in overcoming the barriers encountered in the market development phase. This is done, e.g. by providing co-funding for the testing and adaptation of an enterprise's innovative prototypes on-site for prospective customers or by providing a guarantee to give peace of mind to the buyer of an innovative new product.

The aim of the fund is to sustain growth, employment and export – especially for SMEs in the eighth sectors identified in the national strategy described in section 5.2.1. The fund is thus closely linked to the national strategy.

An evaluation made by Deloitte in 2012, finds that the fund had financed 80 projects with 339 mio. DKK (45,5 mio. EUR) in total. The result of the fund was a revenue increase of 15 bio. DKK (2 bio. EUR), and 6400 new jobs.

5.3.3 The Danish Growth Fund (DGF)

One of the challenges for the SME is to get access to venture capital. The Danish Growth Fund (DGF) is a public investment fund that aims at making a significant contribution to innovation and economic growth by co-financing growth and development of small and medium sized companies (SMEs). DGF aims at alleviating the credit constraints for promising entrepreneurs and SMEs, who lack sufficient collateral and/or track record to obtain a bank loan on normal market terms.

The DGF focuses on SMEs and innovation aiming at creating international growth. The –DGF does not focus on any specific sector.

5.3.4 Denmark's Export Credit Agency

The Export Credit Agency is owned and guaranteed by the Danish state but operates as a modern financial enterprise. It assists Danish companies by helping raise and provide funding and by insuring companies and banks against the potential and political risks of trading with other countries.

The export credit guarantee is an insurance against the risks of doing business and investing in other countries, and this is important as financing is becoming an increasingly critical factor in international trade.

The agency helps stimulate export, and helps both small and large companies, within all sectors.

5.3.5 Danish Trade Council

The council is the governmental export and investment promotion organization under the Ministry of Foreign Affairs of Denmark. The organization comprises all governmental activities designed to promote Danish export and foreign investment in Denmark under one roof. The strategy is "value, growth and knowledge for Denmark".

The Ministry of Foreign Affairs considers itself as Denmark's growth ambassador with the entire Ministry as Denmark's growth agent. The Ministry of Foreign Affairs contributes to the further growth and private sector employment through targeted efforts and sharper prioritization. Focus is on export promotion and efforts to attract foreign direct investment to Denmark and to increase the level of competence and knowledge.

The strategy "value, growth and knowledge for Denmark" is targeted at the companies' needs with a special focus on their export growth in all sectors. A broad selection of companies – small and large – has taken part in the development of the strategy. The strategy will be valid up to 2015.

5.3.6 Danish Innovation Incubator

The innovation environments are incubators for innovative entrepreneurs and SME with knowledge-based ideas with commercial potential. The innovation incubators are private limited companies, approved as operators by the Danish Ministry of Science, Innovation and Higher education, which funds the program.

The incubator assists with:

- Due diligence. A primary analysis and evaluation of the technological perspectives and commercial potential of the project.
- Primary project funding. They can facilitate to a maximum of 3,5 mio. DKK (470 mio. EUR) in loans and/or equity.
- Secondary project financing. Seed funding for further development activities.

The Ministry of Science, Innovation and Higher Education measures the economic performance of the innovation incubators by their ability to attract private capital and to generate return on investment to the Danish State. From 2007 there has been allocated 1,4 bio. DKK (550 mio. EUR) to the program.

The incubators are evaluated by an external company every year, and the evaluation from 2013 shows in particular that the different incubators have varying economic performance. The ratio of private capital attracted to public funding range from 2,4 to 8,6 and the centers have returns on public investment from 9 to 33%.

When the innovation incubator scheme started, it was the ambition that the incubators would develop into revolving and self-funded funds, which has not been met.

The focus of the innovation incubation program is on high-risk investment in knowledge-intensive and innovative firms that often stem from public or private research. The evaluation illustrates a general willingness to take risks among innovation incubators and that most firms would not have been founded as early or to the same scale without the innovation incubators.

Intensive cooperation with knowledge institutions is one of the key tasks for the incubators. They have close connections to and good working relations with knowledge institutions. They work on a continual basis to maintain and improve their network within relevant knowledge institutions. Given that five of the six innovation incubators indirectly or directly have a university among their owners, a considerable level of cooperation should be expected.

Lastly, each innovation incubator devotes substantial resources to establishing strong relationships with private providers of finance. Thus only one of the centers has developed a unique relationship with Seed Capital Management. The remaining innovation incubators have struggled to improve their network of private capital providers. This has made it dif-

ficult to raise private financing needed to match secondary project funding and has limited opportunities for further financing ground.

The innovation environments are addressing start-ups related to both small and large companies, within all sectors.

5.4 Regional strategies and instruments

The five regions in Denmark (North Jutland, Central Jutland, Southern Denmark, Zealand and the Capital region) have been assigned the task of sustaining growth and development of businesses in their respective areas. The assumption behind their growth strategies is in general that productivity and growth can be strengthened through a targeted regional action for innovation and sustainability. The efforts of the five regions are targeted at focus areas according to the special challenges and opportunities that characterize the regions.

The main operators in the regional growth strategies are the Danish Growth Committee at national level and the regional growth forums that have been established in each of the regions.

5.4.1 Regional growth forums

There are six regional growth forums – one for each region and an additional one for the island of Bornholm, which is part of the Capital region.

The regional growth forums consist of representatives of the regional councils and of businesses, trade unions, schools and universities of the region. They have three main tasks of:

- Drawing up amendments to the regional growth and development strategies. Their focus is on business growth and development in the region.
- Developing and prioritizing efforts, targeting business growth and development in the regional strategy and transform the strategy into actions. The regional growth forums, together with the national Business Development Agency, are responsible for allocating governmental and EU funds to projects in the regions. 90 pct. of the funding from the EU structural fund, which contributed with 492 mio. DKK (66 mio. EUR) each year from 2007–2013 is allocated to the growth forums. The last 10 % goes to a fund, from which the growth forums may apply for financial support.

- Controlling and supervising the regional and local growth condition and environment. The regional growth forums thus are obliged to target and evaluate the growth and the growth initiatives in the region.

The EU structural funds, which consist of the Social Fund and the Regional Fund, have four focus areas:

- Development of human resources
- Establishment and development of new companies
- Innovation, knowledge sharing and building
- Development of new technology.

For the sake of competitiveness, as a main rule, no single business can apply for funding from the EU structural funds. In the consolidation act for business development it is also stated

that the work in the regional growth forums, shall not support a single company but an open group or network of companies and organizations. The funding provided for SME projects and other growth activities are therefore typically given to groups of participants including a number of SMEs together with one or more knowledge institution.

Whereas the development houses give advice to the SMEs in many practical matters, the growth forums develop strategies in cooperation with the Regions and administer the EU structural funds and other public funds according to these strategies.

Table 5 gives an overview of the primary and secondary focus areas of the regions according to their regional strategies. It is seen that the focus sectors are all growth sectors of the national strategy.

Table 5. Overview of the regional focus on different sectors.

	Southern Denmark	Central Jutland	North Jutland	Zealand	Capital
Energy & Environment	Primary focus	Primary focus	Primary focus	Primary focus	Primary focus
Tourism	Primary focus	Primary focus	Primary focus	Primary focus	Secondary focus
Welfare and health solutions	Primary focus	Primary focus	Primary focus	Primary focus	Primary focus
Innovation and business development	Primary focus	Primary focus	Primary focus	Primary focus	Primary focus
Network and cluster	Primary focus	Secondary focus	Primary focus	Secondary focus	Primary focus
Education, competences and entrepreneurship	Primary focus	Primary focus	Primary focus	Primary focus	Primary focus
Agriculture				Primary focus	
Food		Primary focus	Primary focus	Primary focus	
Internationalisation / Globalization	Primary focus	Secondary focus	Secondary focus	Primary focus	Primary focus
Digitization		Primary focus			



5.4.2 Danish Growth Committee

The Danish Growth Committee consists of representatives from companies, organizations, municipalities, regional growth forums, and educational institutions and is appointed by the Ministry of Business and Growth.

Their purpose is to guide the ministry when making national business- and growth policies and strengthen the coordination between local, regional and national policies, in order to create an effective and coherent effort for growth in Denmark.

The overlap between the regional and national growth strategies is therefore intended, but the current split between regional and national strategies ensures that the regions have the flexibility to create relevant strategies for their region.

To strengthen the coherence between the national and regional effort in growth and business development, the government and the regional growth forums conclude in partnership agreements on future strategies and action plans for the individual regions.

The partnerships work as a tool for an ongoing dialog between the parties, in the discussion of relevant growth strategies and secure the regional roots in the national growth strategy.

5.4.3 Evaluation of the use of EU structural funds in the regions for the years 2007–12

An evaluation of the deployment of the EU structural funds by the regional growth forums was conducted in 2013. The evaluators looked both the Social Fund and the Regional Fund, and they evaluated the projects and the applied instruments, assessing whether the instruments had been effective in achieving the goals of the projects.

The overall goal of the two funds is to create growth and employment, and reduce the economic differences between the various regions of EU. The Social fund supports projects regarding the labor market, while the regional fund supports the regional competitiveness and innovation.

In the period from 2007 to November 2012, Denmark got a total of 3.200 mio. DKK (428 mio. EUR), which supported 489 projects. The following table shows the regional allocation of the funds.

Figure 30 shows the distribution of the funds according to the types of projects. More than a third of the funds had been spent on projects developing human resources in the region (The Social Fund). The remaining 65% were spent on innovation, start-ups and development of new technology.

The evaluation concludes that many goals and instruments had been used. The projects were divided into the following categories:

- Entrepreneurship. Project with the focus to increase and enlarge entrepreneurship.
- Employment. Projects which focus on increasing the employment
- Competitiveness and value added. Project which focus on increasing the turn for companies, or reduce the costs.
- Innovation and development of technology. Projects that create new product, services, organization models, marketing or that improve and further develop the existing.
- Tourism. Project that increase the tourism, with more tourists, longer stays or more tourists spending.
- Development of competences. Project which seeks to skill existing competences or develop new recruitment that can sustain new competence accumulation.
- Cluster development. Project that seeks to establish or develop existing clusters of businesses.

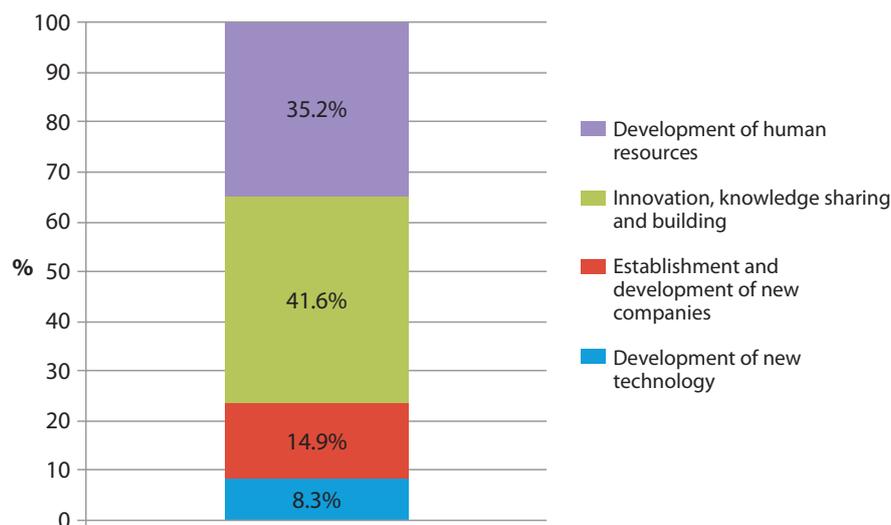
Table 6. Overview of the distribution of the EU structural funds between the regional growth forums.

	Total	North Jutland	Central Jutland	Southern Denmark	Zealand	Capital	Fund
European Social Fund	100%	22,7%	15,1%	20,5%	14,5%	17,8%	10%
European Regional development Fund	100%	23,2%	14,2%	20,8%	12,7%	19,3%	10%

Note: Total distribution from 2007–2012

Figure 30. Distribution of the EU structural fund on the focus areas.

Note: Total distribution from 2007–12



Each of the 489 projects has a focus within these seven points. The evaluation looked at the tools that had been applied in connection with each type of projects and assessed their effectiveness. The result of this is illustrated in Table 7. The green color indicates that the instruments have had a positive impact on the achievement of objectives, and the yellow indicate uncertain impacts.

The evaluation concluded that a number of instruments had positive effect on the achievements of the objectives, but the evaluators were cautious in recommending instruments with uncertain effects for the coming Structural Funds period.

The recommendations from the evaluation are:

- Prioritize instrument with proven impact
 - On-going education directed at industry
 - Counselling of entrepreneurs
 - Research and development activities
- Consider new instrument with proven impact
 - Counselling of unemployed persons readily available for the labour market
 - Loans for entrepreneurs
- Be cautious with instruments having uncertain impacts
 - Educational programs and courses in entrepreneurship
 - Support for clusters
 - Subsidies for the purchase of assets for companies or other organizations
- Investigate further the impact of undocumented instruments
 - Instruments for the development of tourism
 - Instruments for encouraging and retaining young people in the educational system
 - Counselling of established companies
 - Establishment and facilitation of contact.

Table 7. Overview of the instruments distributed by goals and number of projects.

	Entrepreneurship	Employment	Competitiveness and value added	Innovation and development of technology	Tourism	Development of competences	Cluster development
Education and courses	33	31	16	5	11	80	15
Workshops, conferences, etc.	10	24	6	7	6	16	12
Counselling activities	32	2	56	10	2	5	20
Establishment and facilitation of contract	16	30	20	23	15	29	48
Subsidies for the purchase of assets	5	-	15	13	12	2	-
Loans	6	-	-	-	-	-	1
Studies and strategy development	3	10	12	16	13	23	16
Research and development	9	7	7	56	19	42	25
Sum of projects	54	56	71	84	50	106	58

	Instruments and goals where evidence is showing a positive effect
	Cases with some evidence for a positive effect
	Uncertain effects
	Unknown effects

5.4.4 Conclusions

As a conclusion the benchmarking with Denmark showed differences relating to promotion of growth and internationalisation of SMEs in the field of well-being. In comparison to Finland, the Danish government has developed two general growth plans and has identified eight growth sectors to be focused on. Furthermore, the Danish Growth Committee has been established to take responsibility for this coordination and to ensure the coherence between the national and re-

gions growth strategies. Unlike Finland, Denmark has prioritized specific sectors which have been identified as the sectors with the strongest international competitiveness. Four of the eight growth teams are related to the topic of well-being. The Danish growth teams are as follows: The blue Denmark (Maritime sector), Tourism and Experience economy, Health and Welfare solutions, Food, Water, bio and environmental solutions, Energy and climate, Creative business and design, and Information technology and digital growth.

6

Conclusions and recommendations

6.1 Conclusions

6.1.1 Final evaluation of Boat, Sapuska and Tourism and Leisure Services

Goal setting of the programmes

At the time of their inception, almost by definition, all three programmes were very relevant to the Finland's strategic choices and in particular those pursued by Tekes. The programmes had been prepared, justified and selected to focus their activities on sectors, in which Finnish SMEs had particular competence and opportunities for growth and internationalisation. In 2011 strategy, Tekes' main target group were SMEs and pioneers seeking growth in internationalisation. Tekes focus areas included Health promotion, Affective and meaningful free time experiences and Radical renewal through business concepts.

There was variation between the objectives of the programmes. The key of objectives of the programmes were related to development of new products and services, new business, networking and internationalisation. The programmes reached the objectives focused on programme core activity best.

With strong service development focus and holistic business development view the Tourism and Leisure Services programme was one of pioneer programmes anticipating and implementing the change in Tekes' strategy.

The Tourism and Leisure Services programme reached the goal of promoting new, innovative service concepts best. Also, promoting development of leisure service business in Finland and networking leisure companies and research organizations were appraised well achieved. The programme enabled to group SMEs' projects into large scale projects.

The Boat programme was most successful in promoting R&D projects. However, it can be asked if promotion of R&D projects, should be set as a goal of the programme.

The Sapuska programme reached the objectives set for the programme well. In case of Sapuska, an advantage was that the objectives were relevant, pragmatic and clear. Sapuska succeeded well in promotion of networking and internationalisation of SMEs (see below).

The promotion of internationalisation was direct in the Sapuska – indirect in the Boat, Tourism and Leisure Services programmes

In Sapuska, the main objective of the programme was to boost to international growth and success of SMEs. The objectives of the Sapuska programme were relevant and clear. Sapuska succeeded well in promoting internationalisation of SMEs by using different tools such as funding, activation, mentoring, communication, and organizing events and benchmarking tours.

The Sapuska programme reached international growth-oriented food sector SMEs well. The Tekes programmes were well-known among Sapuska's customer groups, because of the continuum of the programmes in the field. However, it should be noted that these companies represent minority of the food sector SMEs. Only 12–13% of the food sector SMEs operate in the international market.

The Sapuska boosted food export of SMEs especially to Russia and St. Petersburg area. The competence of exporting to Russia was improved by the Sapuska. Furthermore, the growth potential of food sector has been positive until today. The value of Finnish food exports has increased at the same time. Very recently, the Russian Government has banned certain agricultural and food imports to Russia. The Russian retaliatory sanctions may have a direct effect on Finnish food exports, because Russia is the Finnish food industry's main export area. Accordingly, the ban will also have an indirect effect on the impact of the Sapuska programme.

The aim of internationalisation was indirect in the Boat Tourism and Leisure programmes. Both programmes organized benchmarking trips abroad, presented international examples and promoted internationalisation by funding R&D projects. Boat and Tourism and Leisure Services programmes reached their important customer groups sufficiently. It should be noted that international growth-oriented SMEs were not explicitly determined as a target group in Boat and Tourism and Leisure Services programmes.

The boat industry was already an international industry when the programme started. The Boat programme reached international growth-oriented SMEs well. The export share of total marine industry production was very high to begin with i.e. over 75% in 2007. The Boat programme reached its goal relating to international growth potential moderately. The Boat programme helped Finnish boat companies to renew their business, develop new models and find new international markets. These companies are in a better position to gain bigger shares of the international market when economic turn changes.

In the Tourism and Leisure Services programme, the participating companies were mainly focusing at domestic

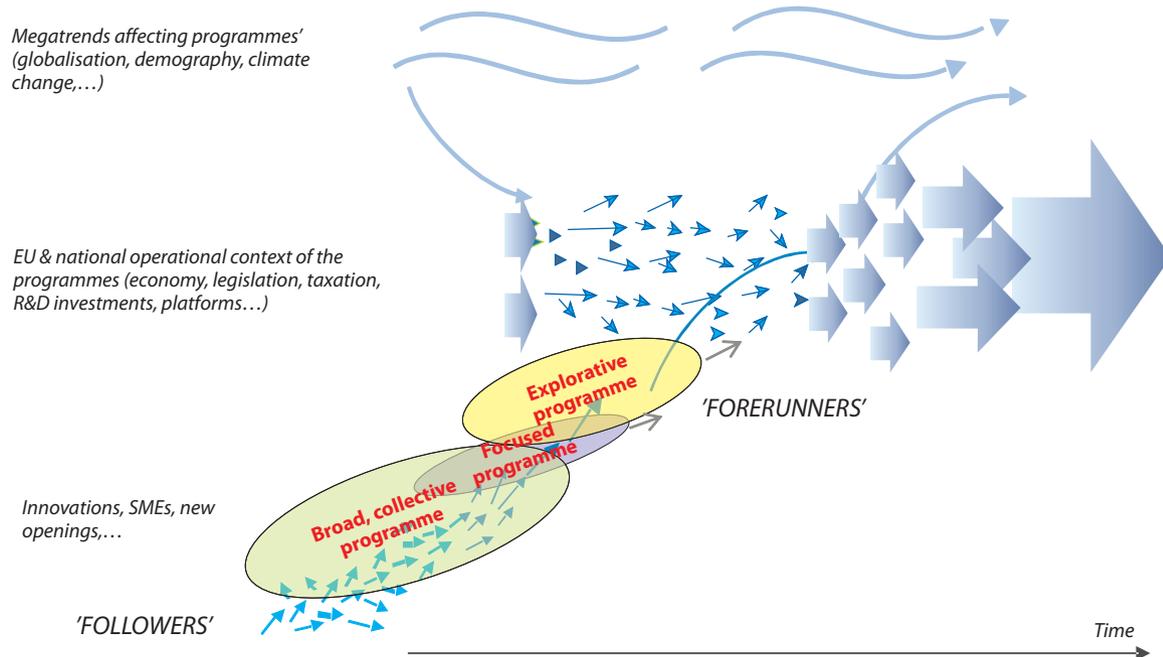
markets. Compared to other programmes, the Tourism and Leisure Services programme's target groups were more fragmented and, thus, more difficult to reach. Growth figures in the tourism and leisure services' sector are typically rather low although there is notable growth potential in the sector as a whole. Internationalisation in this sector typically means selling services to international tourists in Finland rather than actual export.

The main challenge was to respond to changes in the operational environment

Significant economic and industrial transitions took place within the sectors of each programme during the programme period. Most of these transitions were not anticipated, nor foreseeable by the time of programme inception. Yet the transitions changed the operating context of the programmes and challenged the original programme objectives to large.

The position of the programmes in relation to the operational context is shown in Figure 31. For example, the Tourism and Leisure Services programme could be seen as a broad and collective programme, whereas the Sapuska, Boat and Food

Figure 31. The position of the programmes in relation to the operational context.



Adapted from Geels (2011)

and Well-being were focused programmes. The Food and Well-being programme, which was performed in 2001–2004, could be seen as explorative programme in the field of nutraceuticals.

Rapid changes in the operational context of Tekes programmes is in today's economic reality rather common. It is therefore an important notice why some programmes have been quick to respond and adapt to such changes.

Amongst the three programmes, Sapuska adjusted best to the changes in the operation environment. The timing of promotion of export Russia was right. However, significant changes in the Russian market have occurred after the programme period. Sapuska focused on Russia and neighbouring areas. In addition, the Sapuska was a part of the continuum of programmes in the field of food and nutrition. The Finnish food industry as well as food export has been increasing in 2000s.

The strength of the Tekes programmes is the programme services

The strength of the programmes was the programme services, which responded well to the needs of the participants. The main challenge of the performance was not the programme services. Instead, the main challenge was to respond to changes in the operational environment.

Tekes' programme services received excellent feedback from the participants in all three programmes. However, obvious strengths of the programmes lie in smooth administrative procedures regarding application and reporting and related fluent interaction with the programmes. Since Tekes procedures were new to the target industries in Boat and Tourism and Leisure Services programmes, coaching and training were particularly important in application phase and both programmes invested in this.

The recognized good programme practices such as project planning and application training, mentoring services, activation procedures e.g. flow-café, preparation of contract based products for international markets should be utilized in other programmes. As an example of a good practice, the preparation of contract based products was not listed as a programme objective of the Sapuska programme. As a by-product of the programme activities, the preparation of contract based products e.g. Angry Bird candies or other brands turned out to be a useful good practice to promote access to international markets.

Enhancement of collaboration is an added value of Tekes programmes

All three programmes were successful in enhancing collaboration between companies as well as between companies and research institutes or universities. Sapuska and Boat were considered very effective in networking and bridging. However, in the field of Boat, companies had already been well-connected prior to the programme.

The promotion of the co-operation between SMEs and big companies, not only co-operation between companies and research institutes, has been a clear added value of the Tekes programmes e.g. Sapuska and Food and Well-being programmes. It is apparent that the results of new collaboration networks would not have been achieved without the Tekes programmes.

Tourism and leisure services were a new sector for Tekes. A lot of work had to be done to find common language and increase understanding in both sides, in Tekes and in new customer groups. Today, Tekes is more familiar and visible to this sector. Also, knowledge about these fragmented markets, forms of innovations in this sector, and characteristics of these new customer groups has increased in Tekes. Moreover, Tourism and Leisure Services programme accounted for rise of self-esteem, status and credibility of the sector. Launching a Tekes programme in tourism and leisure services sector was seen as a source of prestige, a tribute to the sector that was previously perceived rather insignificant for the Finnish economy. These are some of results that were not explicit goals of the programme and that could not have been accomplished without the programme.

Why is a well-planned exit strategy of the programme important?

Although it is too early stage to assess the long-term impacts of the programmes, which have finished very recently in 2011–2012, the basis for incoming impacts is good. First, in terms of the number of projects funded and the number of participants using programme services, the outcome of the programmes (Boat, Tourism and Leisure Services and Sapuska) was remarkable.

All three programmes were able to generate (attract, concentrate, systematize, leverage) R&D&I funding within their target sectors. This alone, is an important achievement of the programmes. For example, Tekes' investments in R&D of the

boat industry were unique even internationally. The Boat programme gained international attention and helped to build reputation of top quality Finnish boats based on research and development of Finnish boats.

Furthermore, all three programmes had a significant input in changing the behaviour or way of operation of participating companies. Both the Boat and Tourism and Leisure Services programmes opened the path to the new industries. The programmes introduced new and more systematic practices of collaboration for companies to carry out their R&D projects. The Boat programme showed that partnerships with the industry association i.e. FinnBoat created better visibility in the sector and enhanced utilization of research results. Also, The International Council of Marine Industry Associations was an important international partner for programme communication. This can be considered to be an important achievement by the programmes.

The importance of the exit strategy of the programmes should be emphasized. The impacts of the programmes can be improved by the exit strategy. For example, the exit strategy of the Food and Well-being and Sapuska programmes has included the planning of the next programme in the field. For example, the new Team Finland Export Program "Food from Finland" will be implemented in the beginning of 2015. The Sapuska and the Food and Well-being programmes were part of the long-term investments in the food and nutrition sector. It is apparent that the continuum of the programmes, which has been funded by Tekes, Sitra and the Academy of Finland for 15 years, has generated greater impact than a single programme.

6.1.2 Ex-post evaluation of Food and Well-being

The Tekes funding through the Food and well-being programme for SMEs was very important, even crucial for start-up phase micro or SME companies. On the other hand, financial support is not enough to realize growth and societal impacts. The dynamics of new market creation is different for consumer demand, regulated demand and institutional demand.

The Food and Well-being programme had a remarkable impact on networking between companies and research organisations in Finland. Furthermore, the promotion of the co-operation between SMEs and big companies was a clear added value of the Tekes programmes e.g. Sapuska and Food and Well-being programmes.

The four selected cases represented the themes of the Food and Well-being programme: well-being of alimentary tract, health promoting plant components, separation technologies and productization. All the four case companies succeeded during the Food and Well-being programme – in spite of regulatory challenges – to develop commercially exploitable technology, functional foods or nutraceutical products for domestic and international markets.

In some cases the commercial results realized already during the programme and in some cases soon after the programme ending. Important observation is that the functional food and nutraceutical business of three out of these four companies still progresses well and is significantly based on the technologies developed by the companies and their collaborators during the Food and Well-being programme.

As an example, the turnover of the case companies has been constantly increasing during the last ten years from just about a million or two up to several millions or even ten million. The numbers of employees have also been increasing varying today at the level of about 10–30 employees per company.

All the four case companies reached the internationalisation objective and their future sales increase potential is also primarily based on export activities. In two cases the export accounts today even clearly more than 50% of their total sales. An interesting note is that in addition to traditional export model also international out-licensing model) as an internationalisation route was successfully implemented.

In general, the evidence for impact on Finnish industry and society is rather weak. However, except the Food and Well-being programme, the programmes did not have goals for well-being. A significant and measurable impact on well-being is dependent on successfully commercialized and products adopted in a significant scale. Both Sapuska and Food and Well-being programmes were part of the continuum of the food and nutrition sector programmes, which has been funded by Tekes, Sitra and the Academy of Finland for 15 years. It is apparent that the continuum has generated greater impact on Finnish industry and society than a single programme.

6.1.3 Benchmarking with Denmark

The benchmarking with Denmark showed differences relating to promotion of growth and internationalisation of SMEs in the field well-being. In comparison to Finland, the Danish government has developed two general growth plans and has identified eight growth sectors to be focused on. Furthermore, the Danish Growth Committee has been established to take responsibility for this coordination and to ensure the coherence between the national and regions growth strategies. On the basis of benchmarking with Denmark, it can be asked if the need for a national growth strategy should be examined in Finland.

Unlike Finland, Denmark has prioritized specific sectors which have been identified as the sectors with the strongest international competitiveness. Four of the eight growth teams are related to the topic of well-being. The Danish growth teams are as follows: The blue Denmark (Maritime sector), Tourism and Experience economy, Health and Welfare solutions, Food, Water, bio and environmental solutions, Energy and climate, Creative business and design, and Information technology and digital growth.

6.2 Recommendations

1. **Special emphasis should be laid on the anticipation of the megatrends and unexpected changes in the operation environment of the Tekes programmes.** All programmes have faced significant transformations in their operational contexts – some more anticipated e.g. regulatory, others more sudden. These changes have also had the greatest impact on the ability of the sectors to invest in R&D and internationalisation.
 - Foresight information should be utilized in the preparation of the programmes. Furthermore, the need for external support e.g. reviews of market changes in case of unexpected economic and industrial transitions during the implementation of the programme should be examined.
 - Each programme plan should include an assessment of potential risks related to basic assumptions, markets and contexts. This is an effort most naturally to be conducted in collaboration with Team Finland. The open data and knowledge available in international data-

bases should be more effectively utilized and shared in the Tekes programmes. It should be considered what kind of indicators, and mitigating measures, could be developed for the anticipation, monitoring and managing of contextual changes and risks to the programmes.

- The Steering Committee's role in anticipating and evaluating the role of market change related to the topic of the programme should be enhanced. The Steering Committee of the programme should be composed of experts representing different fields, which would encourage thinking "out of the box".
2. **In terms of promoting internationalisation in Tekes programmes;**
 - **The selection of international benchmarking countries should be prepared carefully and foresight information on the target markets should be better used in the programmes.** Lack of knowledge of consumer behavior in different markets as well as cultural differences was considered as a problem. International growth requires creating visibility in international markets and thus, strong brands and distinguishable and apparent marketing. Hence, promoting development of brand and marketing know-how is vastly important. Also, tools for funding brand building and marketing are needed.
 - **An internationalisation plan should be developed for the programme.** The internationalisation plan should describe what is meant by internationalisation in the programmes. The specific objectives should include e.g. the type and direction of internationalisation at different phases of the programme. To monitor how well the objectives are reached, milestones for internationalisation should be defined.
 - **Tekes should strengthen the co-operation with other Team Finland players.** The promotion of internationalisation should be strengthened by offering a common platform for sharing information and experiences. The internationalisation services (benchmarking, forums) should be provided according to target countries and target markets so that companies of different sectors could also learn from each other. For example, the data by target country should be integrated by Team Finland players. This would support the long-term efforts needed for internationalisation.

- The co-operation between Tekes’ overseas offices and the other internationalisation services should be further developed.
3. **Recognized good practices in programme services, such as project planning and application training, mentoring services, activation procedures e.g. flow-café, preparation of contract based products for international markets, should be utilized also in other Tekes programmes.**
 - For example, organizing programme seminars at the same time and in the same place as the most important domestic event in the field e.g. travel for tourism and leisure companies, helps forward to reach target groups.
 - The mentoring services of Tekes should have a fee to commit the companies, which are mentored. Tekes should also make sure that the information gathered by mentoring services is collected in Tekes so that the useful information can be wider utilized and lessons learned.
 - The comparative analysis of similar programmes and benchmarking across countries utilized here for the four well-being programmes has proven to be more revealing and insightful than merely analyzing one single programme at a time. The comparison brings about the small variations across programmes, their approaches and implementation, and thus enables to identify good practices. Such comparisons could be expanded for the on-going monitoring and management of programmes, where relevant.
 4. **The intersectoral cooperation should be further developed to diminish the risks related to one sector e.g. in case one sector would be vulnerable to economic or industrial transitions.** Based on the evaluation data, new opportunities may exist at the interfaces between different sectors such as between food sector and e.g. IT, logistics, packaging technology, and wood sector.
 5. **It is important to utilize Tekes’ experience from service innovations (Serve etc.) in developing well-being sector.**
 - The well-being sector is largely a service sector and even well-being products today have a higher service component. Servitization and development of service culture requires long transformation processes and thus long-term R&D&I investments. Hence, Tekes’ role in transforming sectors is essential and there is a need for continuous dialogue.
 - Development of well-being sectors are tightly connected to development of service economy and experience economy. The well-being sectors are also very service-oriented, but in different ways. Even when consumers buy well-being products, they primarily buy feelings and experiences. Production of images will be as important as the production of tangible products in the future. Hence, promotion of brand and marketing know-how is becoming increasingly important in order to promote international growth.
 6. **Exchange of experience and practices across the well-being sub-sectors is important.** The experience from the evaluation of these four well-being sector programmes highlights the differences across the sub-sectors. For example, the role of small companies, large companies and research institutions varied significantly across these four programmes. The well-being sector is expected to grow and expand in the long-term. This will bring new opportunities for Finnish businesses, and places demands for new research and innovation.
 7. **The programmes should plan an exit strategy to strengthen the long-term impacts of the Tekes programme.** The exit strategy of the programmes of sectors undergoing transformation is particularly important. The programmes should be seen in the larger context as a part of evolution in the sector. Programme evaluation showed that strict industry focus helps to open the path to new target sectors. Gaining visibility and creating impact in the sector that is new for Tekes is easier for industry-focused programmes. Also, it was noted that close co-operation with business associations helps to create permanent changes in such sectors. Once sector is more familiar with Tekes, cross-industry programmes can better challenge their traditional ways of doing business in the sector and promote cross-sectoral networking.

8. The need for a national growth strategy should be examined. Growth and internationalisation of Finnish companies has become an ever more topical and important objective. In many cases, a sectoral policy approach may be quite suitable to address these challenges. However, supporting growth and internationalisation of sectors does require many complementary measures, beyond the offering of Tekes, and could perhaps benefit from dedicated overall objectives. To this end, following the example of Denmark, a national growth strategy, with a strong internationalisation aspect specified to key sectors, could be developed. In this regard, the progress already made within the Team Finland organization is much welcomed and would support Tekes' own objectives of enhancing sectoral growth and renewal. It is recommended that the Team Finland aspect and services are well integrated into future Tekes programmes.

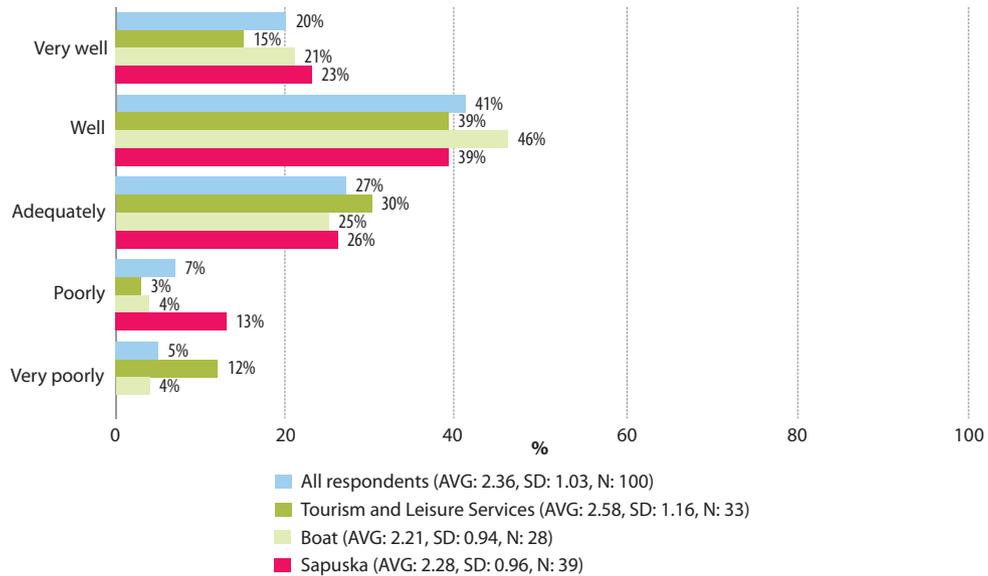
Annex 1. List of interviewees

Programme	Interviewees
Boat 2007–2011	<ol style="list-style-type: none"> 1. Matti Evola, Tekes (programme manager) 2. Markku Hentinen, VTT (coordinator) 3. Jouko Huju, Finnboat (steering group) 4. Raimo Sonninen, Bella-Veneet Oy (steering group) 5. Lauri Ala-Opas, Tekes / TEM (steering group)
Tourism and Leisure Services 2006–2012	<ol style="list-style-type: none"> 1. Risto Mäkikyrö, Tekes (programme manager) 2. Sanna Piironen, Tekes (team) 3. Jaana Myllyluoma, FCG (coordinator) 4. Sari Puumala, Creamentors oy (activator) 5. Ritva Ohmeroluoma (chair)
Sapuska 2009–2012	<ol style="list-style-type: none"> 1. Kari Venäläinen, Tekes (Programme Manager) 2. Eeva-Liisa Lehto, Foodwest Oy (Programme Coordinator) 3. Marika Ingman, Coachingman Oy (mentorointi) 4. Marleena Tanhuanpää, Elintarviketeollisuusliitto ry 5. Merja Scharlin, Bioferme Oy 6. Esa Wrang, Finpro
Food and Well-being 2001–2004 (Food and Well-being programme)	<ol style="list-style-type: none"> 1. Pirjo Hakanpää, Tekes (Programme Coordinator) 2. Ari Virtanen, Finpro 3. Sampsa Haarasilta, Fazer (Steering Committee) 4. Merja Scharlin, Bioferme Oy 5. Juha Ahvenainen, Capitus Oy 6. Risto Lammintausta, Forendo Pharma Oy 7. Taru Pilvi, Olli Tossavainen, Matti Harju, Valio Oy <p>Case interviews</p> <ol style="list-style-type: none"> 1. Vernu Vasunta, Biokia Oy 2. Risto Lammintausta, Hormos Medical Oy 3. Merja Scharlin, Bioferme Oy 4. Veli-Markku Korteniemi, Aromtech Oy

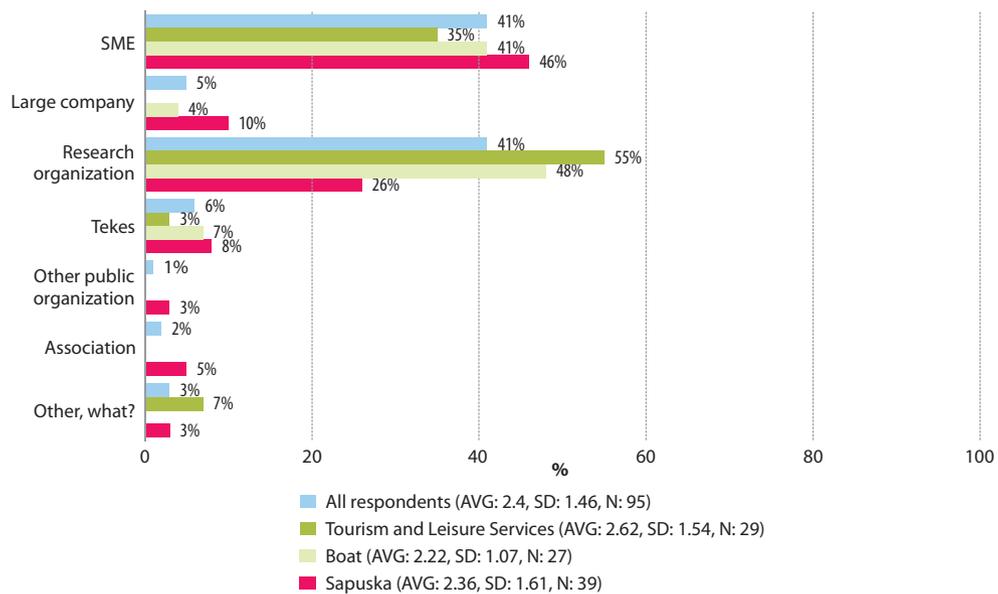
Annex 2. Background information of the E survey

How well do you know the programme?

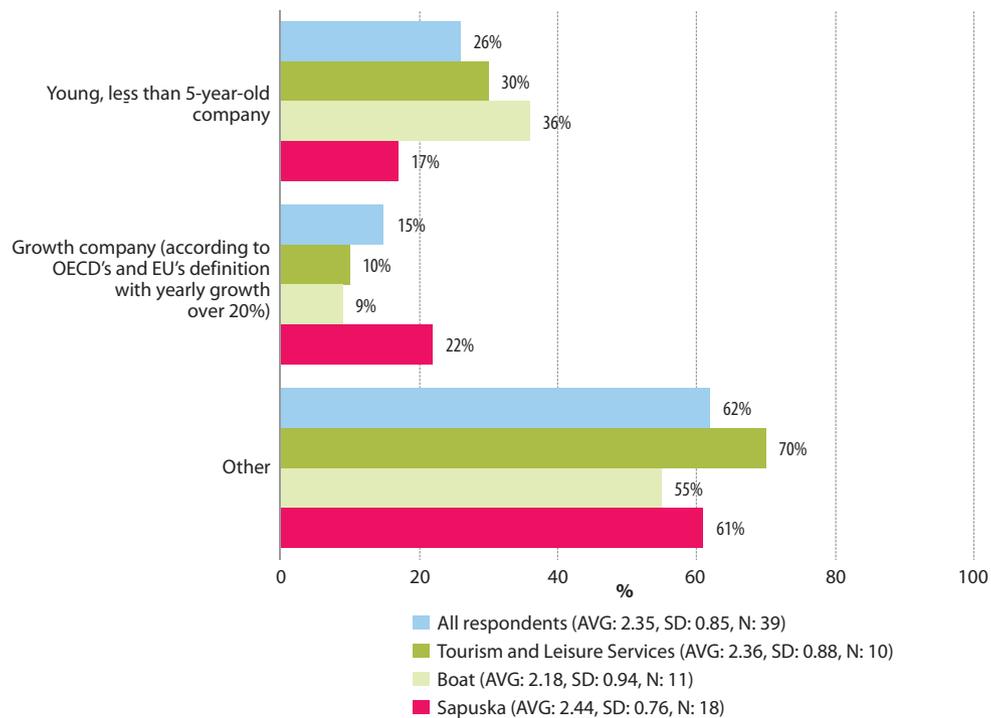
(1 = Very poorly, 5 = Very well)



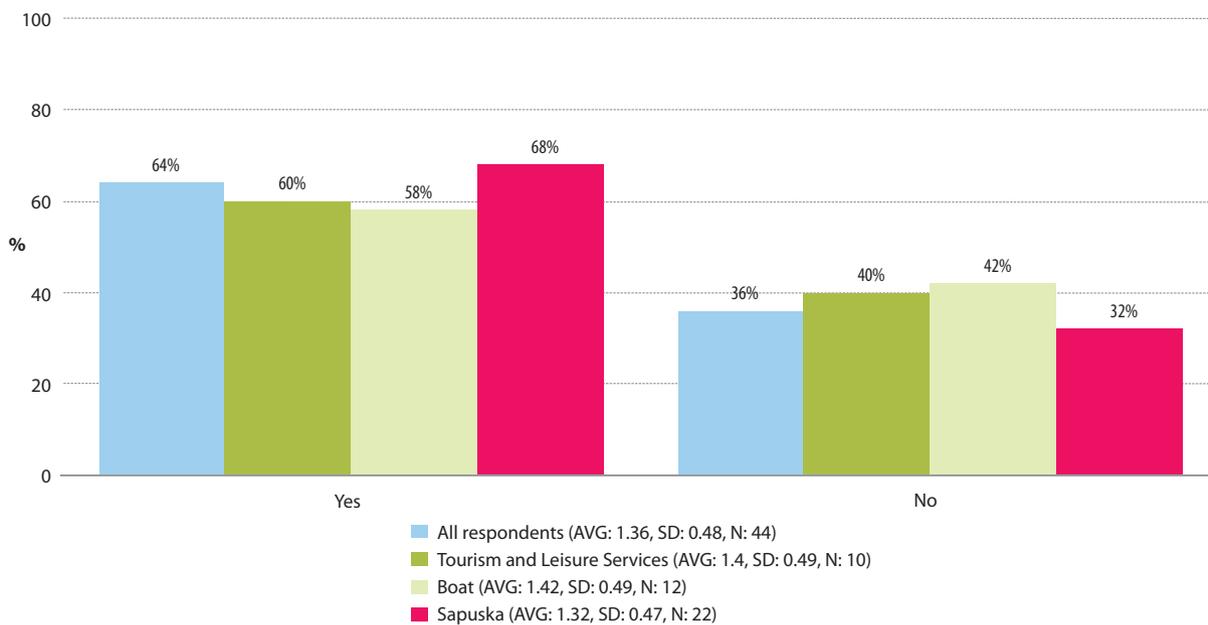
What organization do you represent?



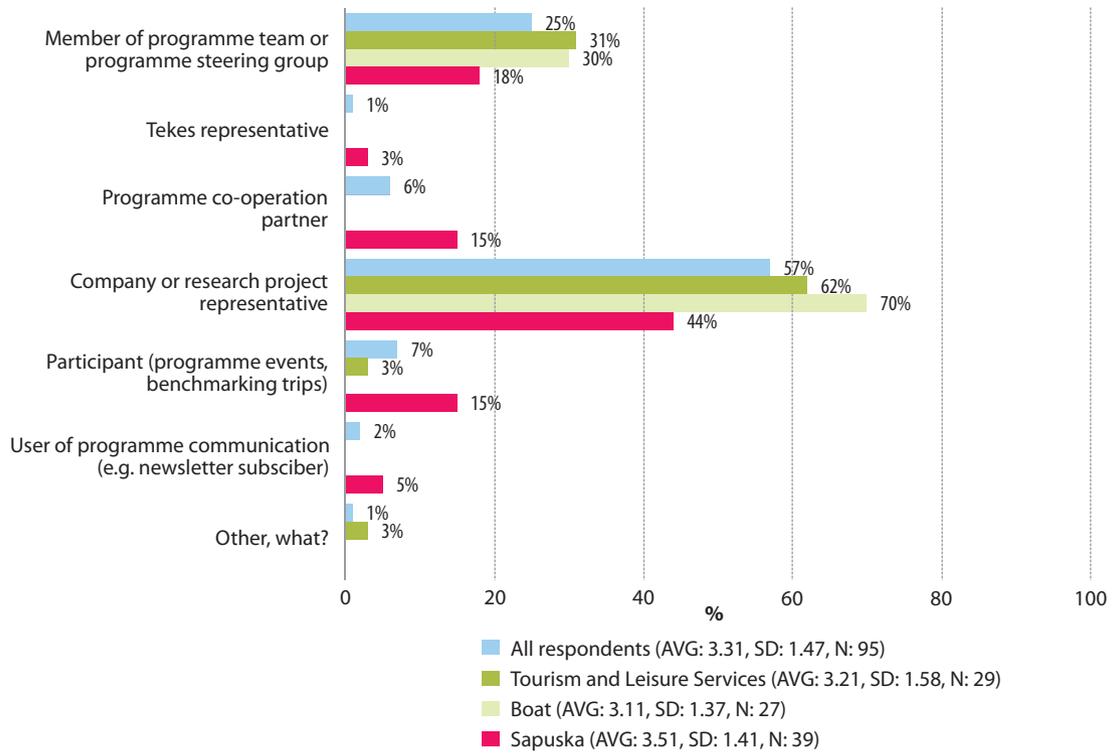
You represent SME – Which of the following describes your company best?



Did your company already operate in international markets when you joined the programme?



Which of the following describes your primary role in the programme best?



Annex 3. List of participants of the workshop

Matti Evola, Tekes

Markku Hentinen, VTT

Risto Mäkikyrö, Tekes

Kari Venäläinen, Tekes

Pirjo Hakanpää, Tekes

Pekka Pesonen, Tekes

Minna Hendolin, Tekes

Lauri Ala-opas, TEM

Jouko Huju, FinnBoat

Kimmo Halme, Ramboll Management Consulting

Katri Haila, Ramboll Management Consulting

Heli Paavola, Ramboll Management Consulting

Kai Lahtonen, Biocelex Oy

Annex 4. International benchmarking

Growth sectors, focus points and proposed initiatives related to well-being

The following contains initiatives from the 4 growth teams.

The blue Denmark

The six focus points and the initiatives are specified in the following.

Promoting Denmark as the core in the Maritime Europe. This should be done through:

- Branding and promotion of the Blue Denmark
- Attraction of foreign maritime companies
- Creation of an international conference about green shipping

It must be appealing to operate a maritime business in Denmark. This is done with:

- Abolition of special national requirements
- Reduction in the administrative burdens
- Digitalization of contracts with relevant authorities
- Modernization of the rules for authorization
- Better conditions of contract for goods transported by ship
- Better access to Denmark for foreign employees and customers
- Better access to financing to help export
- Better access to financing from the EU

Creating green shipping and green solutions. This is done through:

- Creation of documentation on ships climate- and environment performance
- More energy efficient ships
- Construction of ships in lightweight materials
- Improvements in the environmental impact of public ships
- Construction of alternative fuel (e.g. LNG)
- Creation of business opportunities for future environmental- and climate regulation

The strengths in the Danish maritime businesses must be expanded and used to create growth, though

- Creation of partnerships for marine retrofitting
- Crafting of better maritime services to offshore
- Ensuring that EU subsidies supports growth in the maritime sector
- Supporting maritime activities in the Arctic
- Strengthen the access to global markets
- Supporting the blue development in Danish harbors

The maritime competences, educations, innovation and research must support growth. This should be done through:

- Improved educations
- Increased global studies
- Strengthened education in the offshore
- Creation of a new education within shipping
- Better conditions for relevant master and MBA educations
- Flexible offers to postgraduates
- Increase cross-disciplinary maritime research
- Creation of a partnership with "Lean Ship of the Future"

The growth should build on quality ship freight, through:

- Strengthened enforcement both locally and globally
- Continued battle against piracy
- Strengthened effort in IMO (International Maritime Organization)
- Improvement in the effectiveness of a specific operating system through increased competition
- Imposing quality standards on equipment- and service providers
- International cooperation of creating a new design for ships
- Better representation of foreign seafarer in Danish council and board

Tourism and experience economy

The focus areas in the growth plan are:

Danish tourism services should be of a high quality. The following points contain initiatives to develop this.

- Development of a new standard for Danish quality
- Creation of partnerships to develop and administrate the digital infrastructure
- Development of an online booking platform "Denmark Direct"
- Evaluation of the possibilities to extend public hot spots to more municipalities
- Increase the level of education and competences in the tourism sector
- Better exchange of knowledge between the tourist businesses and educational institutions
- Add tourism as a focus area for Danish Agency for Trade and Industry
- Attract more international investment to Denmark

The growth in city- and business tourism must be increased, through:

- Development of Danish culture, which aims at an international audience
- Efforts to attract more Chinese and Russian tourists
- Increase the awareness of Denmark in foreign countries
- Create international events to increase the awareness of Denmark

Development of coastal and nature tourism, through:

- Development of Danish coastal tourism on the West coast and the Baltics
- Creation of new national parks
- Development of the bike cycling tourism according to international standards
- Increase the culinary experience for tourists
- Strengthen the tourism on islands and land areas
- Improve the general digital infrastructure, especially increase the internet and cellphone access in areas with beach houses
- Simplification of rules

The efforts within the tourism sector must be better organized and coordinated based on a national strategy, in order to ensure a greater scale and effects. This should be done through:

- The establishment of a national forum of tourism
- Strengthened development efforts for city, business, coastal and countryside tourism
- United national strategy for tourism
- Better opportunities to create long run strategic promotion and branding

Health- and welfare solutions

There are four focus points, which are described in the following.

- Create a better framework for research and development, through
- Strong research within health and welfare technology
- Strengthened condition for a public-private cooperation-cooperation regarding clinical tests
- Greater Danish participation in European research and innovation projects and cooperations.
- Better cooperation between universities and companies regarding education of PHDs
- National strategy for the access to Danish health data and establishment of one effective access to national health data
- Public and Private Cooperation on the health- and welfare area.

Strengthened focus on growth companies and commercialization of research, though:

- Tax credits to research and development activities
- Continued good conditions for business oriented funding
- Fewer and better conditions for innovation and improvement of entrepreneurship for health- and welfare technology.
- Strengthened regional cooperation in welfare-technology
- Focus on commercialization of research on hospitals and universities, from a management point of view.

A well-functioning and development oriented home market, through:

- A more simple and flexible law of public procurement
- Intelligent public demand
- Public-private cooperation regarding market development
- Greater value of development projects
- Clear strategic goals for policymakers, concrete initiatives and strategic milestones in the future strategy for digital welfare
- Further development of Denmark as a development area for telemedicine and mobile solutions
- Improve the use of international standards
- Increased focus on the standardization of appliances in medico and health IT

Offensive use of the international market potential, through:

- Prioritized and targeted effort in exports
- Better conditions for commerce
- Better access to foreign investments
- Promotion of Danish strengths
- Cooperation with Denmark's council flats to promote senior housing
- Promote Denmark as an attractive education-, research- and labor country
- Strengthened cooperation between Denmark and Japan regarding welfare and robot technology
- A cooperation agreement with China regarding care- and welfare technology

Food

The five focus areas are:

Sustainable and resource effective food production. This should be done through:

- A united story telling about resource effectiveness and sustainability
- Greater access and better use of sustainable biomass
- Development of new business models, which reduce food waste and use surplus resources
- Secure a sustainable and effective use of the resources in the Seas
- Create a sustainable development and growth in the aquaculture

- Decrease the water use and improve the use of alternative water resources in the food industry
- Promote Danish interests and secure a high ambition level in international forums and their sustainability efforts.
- Promote Danish interests in the European environmental standards in the food industry

Solution oriented regulation and control, through:

- Extended use of environmental approvals in the food industry, regulated by limits for emission and not by levels of production
- Promotion the use of general standards for industrial settings
- Simplifying the environmental approvals in the food industry through a more collected regulation and effective digital case handling
- Improvement of forage gives the opportunity to produce more slaughter pigs
- Quality check of Danish food regulations and control
- Better conditions for growth in the business by a strengthened dialog about legislation in the food industry
- More effective and dialog based control in the food industry, in order to promote innovation and entrepreneurship

Talent, dynamics and export in the industry, through:

- Increased base for recruitment and attract talent through more attractive education
- Greater correlation between education and the expertise needed by businesses in the sector
- Strengthened entrepreneurship through funding to development and promotion of ecological products
- Support to regional efforts in the development of centre of excellence for the food industry
- More and better food products in the market
- Better access to the market for sustainable and locally produced food products
- Promotion the export through better political conditions for commerce
- Strategic use of the food industry's international market potential through a development of an export strategy.

Growth oriented research and development, through:

- Strengthened Danish participation in European cooperation in research- and innovation.
- Targeted effort to endorse Danish participation in the coming European knowledge- and innovation community "Food Kic"
- Continued focus on food technology, hereby production and process technology.
- Revisions of the funding system, to give better conditions for research and innovation in businesses
- Strengthened innovation efforts through private-public cooperation in research and innovation
- Targets for increased business cooperation in Universities' development contracts
- More innovation and higher business involvement in the public research based consultancy.

Strengthened access to finance and focused strategic export, through:

- Dismantling of the barriers in the law of agriculture to attract more capital to the market
- New way of financing in the Agricultural finance bank (Landbrugets Finansieringsbank)
- Creation of pilot projects for the employee investment cooperations model
- Subsidies to investment in environmental friendly stables

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