New strategic approaches for promoting the diffusion of innovations within the horticultural sector

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1. Introduction

The diffusion of innovations has become an increasingly important theme in the horticultural business. Within the dynamic environment of rapidly changing socioeconomic and global market factors, a platform that promotes and supports innovation is essential for ensuring constant progress and providing sustainable solutions that lead to a competitive edge within this important sector. In this regard, the German horticultural sector aims to maintain a competitive edge by initiating a range of measures that promote the diffusion of innovations, thereby fostering this sector's future successful development. However, to ensure the sustainable development of innovations, all actors involved in the horticultural value chain must provide a valuable contribution (Bokelmann and König, 2013; Bokelmann *et al*., 2012; Bokelmann, 2016). Achieving this requires not only a close exchange between horticulturalists, researchers and politicians, but also an intensification and professionalisation of exchanges between these key stakeholders. Partnership Alnarp in Sweden (Ekelund, 2016) provides evidence that this type of close collaboration along with a clear readiness to engage in dialogue will enable knowledge transfer into marketable products as well as the application of new technologies. Moreover, present-day market forces and emerging needs from the horticultural industry should lead to additional ideas and further impetus for new research projects.

Of note is that the importance of close cooperation between research scientists and those involved in the horticultural value chain as well as having multi-actor projects for developing and spreading innovations has been highlighted by the Europe 2020 Strategy (European Commission, 2010). Based on the strategy's objective for strengthening research and innovation, European Innovation Partnerships have been established as a "new interactive approach to innovation" (European Commission, 2015). By bringing together researchers and actors along the horticultural value chain, the agricultural European Innovation Partnership (EIP-AGRI) and the Horizon 2020 framework (European Commission, 2011) aim to ease knowledge transfer between research and industry, thereby increasing efficient and effective innovation processes. However, although the importance of multi-actor projects in innovation processes is widely recognised, few examples of such projects are found in current scientific literature.

This chapter discusses practical experiences and lessons learnt when involving scientific, industrial and political partners in strategic planning processes within the horticultural sector. Based on a project example – the development of a future strategy for the entire horticultural sector in Germany (Schreiner *et al*., 2013) – a detailed strategic approach for innovation diffusion in horticulture is introduced, recommendations for successful innovation diffusion are given, and implications of a targeted strategic approach are discussed.

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2. Forming the future in German horticulture – the mandate

The Federal Ministry of Food and Agriculture (BMEL) provided the mandate to develop a strategy for the entire horticultural sector in Germany. Reduced natural resources, climate change, globalisation and dramatic demographic changes are some of the current challenges facing German horticulture. Our mandate was to devise and develop workable solutions for German horticulture in the future. To this end, the BMEL needs to be (1) provided with detailed recommendations for a master plan and (2) given evidence-based decision-making support from a range of actors. To help optimise horticulturally relevant processes in the future, the participating partners decided to disseminate their newly found knowledge and gain experience as well as provide helpful guidelines for other future actors and partnerships.

3. Mode of diffusion – structured and participative

The conscious decision of highly inclusive participation was the central methodical approach for developing the future strategy. Involvement of all horticulturally relevant players included experts from directly related as well as cross-cutting fields in the kick-off meeting, strategic workshops and a planned conference in 2013. Considering every opinion and viewpoint led to a general consensus and broad acceptance of the future strategy. Ultimately, this approach helped in the successful diffusion of these innovations.

To ensure the conditions of success from the start of this project, all actors of the horticulture value chain (e.g., suppliers, producers, wholesalers, retailers) and of cross-cutting fields of actions (e.g., communication, education, technology, cooperation) were involved in the development of a future strategy. At the kick-off meeting, experts from different fields were gathered: fresh and convenience products, European horticulture, trade, (chemical) industry, labour market representatives, demographical development and human resources, politicians, consultants and scientists from various economic, natural and engineering sciences. The involvement of a comprehensive and wide range of experts and stakeholders in the kick-off meeting ensured cross-party definition of future challenges to be addressed by the strategy and was regarded as the first step of implementation, and thus the first step of innovation diffusion.

The project future strategy development included five simultaneous subprocesses (Figure 8.1):

- Evaluation of existing academic literature
- Conducting strategic workshops of horticulturally relevant topics identified by the experts at the kick-off meeting
- Reviewing the results of each strategic workshop by the supervising expert committee (SEC)
- Integration of the strategy identification process via various online tools, including a newly formed XING group and online surveys
- Use of press relations, including press releases in journals and newspapers

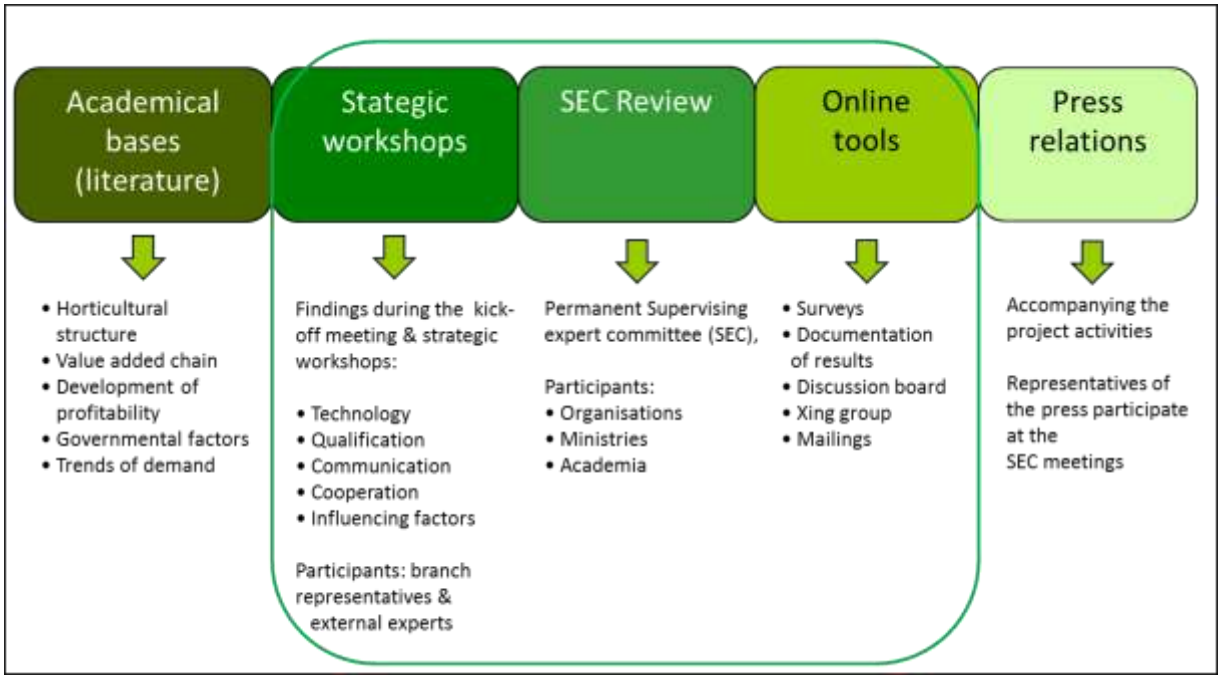

Figure 8.1. Design of the project "Future strategy for the entire horticultural sector in Germany" comprising five simultaneous subprocesses.

In the three core subprocesses – strategic workshops, SEC review and online tools – we again included all horticulturally relevant players as a further step of overall implementation. During the future strategy development process, seven strategic workshops were conducted accompanied by four SEC review meetings. The SEC was composed of a multitude of representatives originating from various stakeholder organisations, ministries and academia, who also acted as informative multipliers. The SEC was envisioned to also support the innovation diffusion process. At the beginning and at the end of the whole process, a conference was organised to initiate and finalise the future strategy elaboration. In all, nearly 300 experts were involved in the entire process for developing the future strategy for the entire horticultural sector in Germany (Figure 8.2).

Figure 8.2. Timeline of the activities in the project "Future strategy for the entire horticultural sector in Germany", SEC.

Since active and inclusive participation was our goal, all stakeholders involved this project were invited to participate in online surveys for implementing suggestions, opinions and additions to the SEC's and other experts' views from the workshops, meetings and conferences. In addition to this online activity, we used the latest technology to help better dissemination of our knowledge and ideas to the public in general and to the younger generation in particular. For this purpose, we set up a new XING group and details of the future strategy were published on Facebook, Hortipendium, Hortigate and Grüne Branche (Green Sector).

4. Achieving successful innovation diffusion

To address the challenge of developing a future strategy for the entire horticultural sector in Germany, it is important to enforce successful innovation diffusion processes across the entire German horticultural sector. Overall implementation can only be achieved with cooperation from the many stakeholders in the horticultural value chain. From our direct experience of this process, we have distilled seven key guidelines about how to achieve effective innovation diffusion.

1. Active involvement is the first step to overall implementation. Active involvement of all stakeholders from the very beginning of the project widens the scope of ideas, creativity and input of existing knowledge in the innovation process. This approach allows the resulting vision to exceed the single contributions of sole actors. Participants experience and are involved in the growing creative stage of the project and become familiar with the innovation process. They also increasingly view themselves as part of the group of innovators rather than as a "lonesome expert". Such development is generally known as the "interactive innovation model". Identification is the crucial point in this phase as it evokes the desire for successful implementation of innovation in the market. This is particularly true for industrial stakeholders who want to implement "their" innovation and do not show any fear of contact. When convinced by the innovation, they take up the role of gatekeepers among their colleagues.
2. The research design must be flexible to account for changing requirements. Integrating experts and practitioners from various backgrounds and supporting their collaborative efforts is a learning experience for everyone. Stakeholders must get to know each other and rules for communication and collaboration need to be defined, tested and accepted. Progress depends on the members involved. Therefore, the research design plan should be set up to identify milestones, set timeframes and priorities, define procedures and allocate resources. However, all plans need to allow for adaptations to the "real process" underway. Some groups may require more meetings to implement working modes; others are only successful if experts can work as independently as possible. Sometimes additional experts with their particular expertise should be included at a later stage of the process. The research design must be flexible enough to react quickly to any changing requirements in the innovation process.
3. Actively involve practitioners and invest time and a budget for this task. The development of a future strategy for the horticultural sector in Germany included a workshop about technical innovations. Workshop participants quickly brought up a challenging gap between the development of a prototype and market entry, i.e. the starting point for the diffusion of innovation. They discussed various reasons for this issue, such as insufficient financial resources or the fact that research funds are only available until the prototype is tested, or differences in language and viewpoints between scientists and practitioners. Integrating practitioners in innovation processes helps to overcome several of the abovementioned problems, although this is a challenge in and of itself. In this context, our experience was

that most practitioners are not spontaneously willing to participate since any involvement in innovation processes takes them away from management and operational tasks in their respective companies. This was found to be particularly true for small- and medium-sized enterprises. Thus, several pre-discussions, convincing arguments and solutions for operational challenges must be considered if these practitioners are to be involved. There is significant risk for underestimating the investment required to make this essential step successful.

4. Provide a competent moderator and share ongoing results as soon as possible. If participants recognise that their investment of time, ideas as well as other contributions and resources lead to concrete results, they look at the output and progress rather than at the inputs and costs. Positive results are among the best motivators to encourage further participation in the process. A competent moderator ensures that results become visible in the exploratory stage and are documented afterwards. In addition, adequate moderation supports communication, ensures that everyone gets involved and uncovers critical points which otherwise might be neglected.
5. Stick to a proper workshop method. The quality of results and the success of the project are partly based on the workshop method chosen. For developing the future strategy, an open method which allows as much input from the participants as possible was found to work best. The workshop was carried out in such a way that every participant could openly discuss topics with other participants in a nearly all-day conversational environment. Results were collected and reflected on at regular intervals by the whole group, which again enhanced the quality of results.
6. Allow adequate time for the innovation developmental process. More than two years were spent on the actual development of the strategy. This is a reasonable time frame for such a large and important undertaking. Key subjects were identified in the working phase and needed to be adequately addressed. In other words, their priority and place in the process had to be defined and experts on this subject, interdisciplinary complementary partners and participants from the whole horticultural value chain also needed to be identified. Time is not only necessary for the preparation of meetings, but also when specific experts are required.
7. Take advantage of multi-channel communication. Communication is the channel by which project ideas are disseminated in respect to recognition, appreciation and diffusion of project ideas. Since the target audience usually shows a diverse pattern of information-seeking behaviour, communication policy must include various channels. In the case of the development of the future strategy for the horticultural sector in Germany, an industrywide discussion needed to be initiated. Using social networks, online queries and existing horticultural communication platforms ensured the possibility of feedback and reaction from those who could not be invited to the workshops or SEC meetings.

A multitude of factors will always exist that affect the adoption of the decision of each individual stakeholder in respect to each particular innovation. However, considering the abovementioned key guidelines, we predict that the stimulus for adoption or the changing resistance to adoption (Kemp and Volpi, 2008) will be positively influenced in ultimately accepting the proposed innovations (Bitsch, 2016).

5. Well-equipped for the future – strategic guidelines

The “Future strategy for the entire horticultural sector in Germany” led to three strategic guidelines, generally valid for all branches of the horticultural sector (Schreiner *et al*., 2013).

The future of horticulture in Germany depends not only on economic, societal and ecological settings, but on active participation by the protagonists in the horticultural value chain as well. To achieve a future outlook that is as positive as possible for the multiple actors involved, they all should position themselves strategically and pool their strengths and resources to enhance their global competitiveness. This approach assumes (1) a clear primary goal including subgoals and (2) the specification of action strategies for which strategic measures comprising various activities must be developed (Figure 8.3).

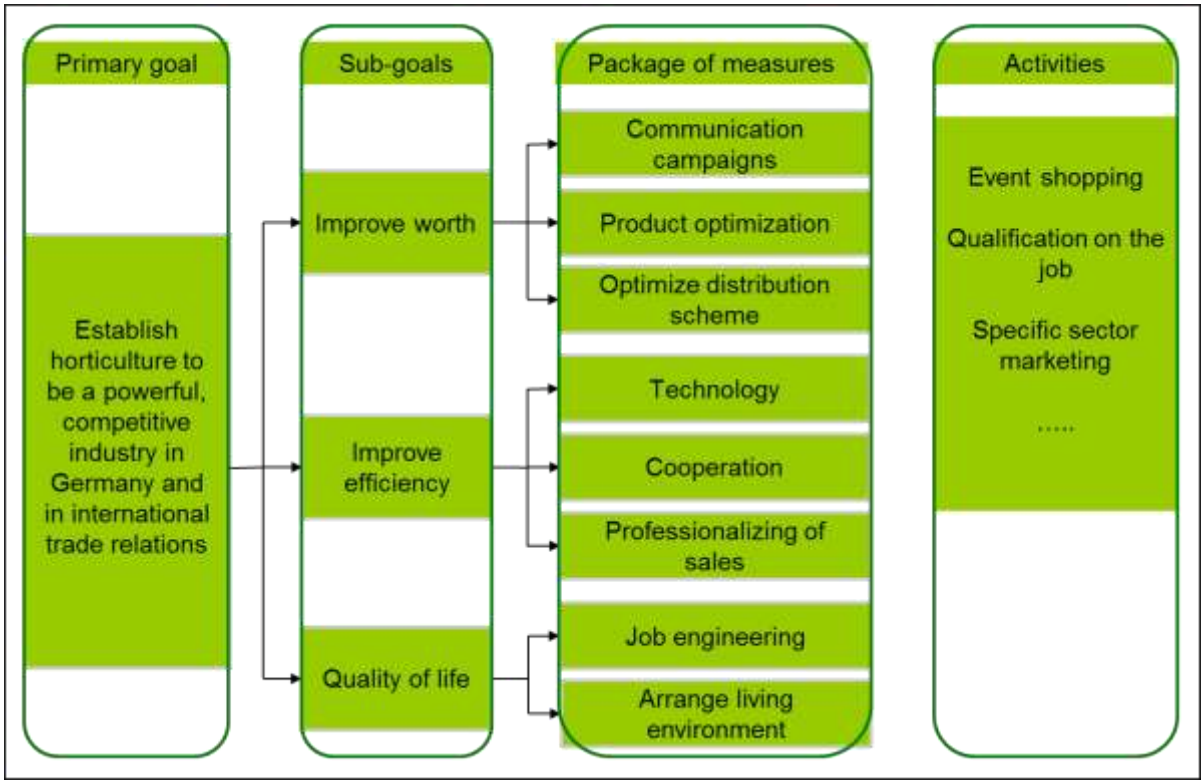

Figure 8.3. Primary goal and subgoals as well as strategic measures comprising various activities of the "Future strategy for the entire horticulture sector in Germany".

The action strategies are defined as guidelines by which the different actors as well as horticultural sector businesses and organisations can develop a dynamic evolution.

It is the primary goal of the future strategy to establish horticulture to be a powerful, competitive industry not only in Germany but also in international trade relations. This primary goal comprises three subgoals:

- Horticulture makes a large contribution to quality of life within German society (strategy to improve quality of life).
- The German horticultural sector has available competitive structures for production and marketing, thereby leading to increased value creation in the horticultural supply chain (strategy to improve efficiency).
- The estimation of horticultural products and performances in horticulture is increased (strategy to improve worth).

Never before in the entire sector of German horticulture was such a comprehensive process for generating knowledge initiated and accomplished with the implementation of a multitude of experts from horticulture and cross-cutting areas. The results of the project "Future strategy for the entire

horticultural sector in Germany", such as the strategic guidelines, can be immediately used to promote future performance.

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