20 The International Farmers' Café on Salinization and Saline Agriculture

A Test Case for Participatory Research on Saline Agriculture

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20.1 THE RISE OF PARTICIPATION IN POLICY AND RESEARCH

In the twentieth century, state policies were largely implemented through centralized planning and framed within the vision of the "provider-state". Today, however, many policy spheres are moving towards more engagement with stakeholders for the development and implementation of their government objectives, thus shifting from government to governance (Curry 2001). Instead of top-down, unilateral decision-making in government, governance reconciles politics and citizens by consulting and involving people and organizations in the shaping and monitoring of policy-making (Jansen et al. 2006). In other words, *"political decisions are being discussed and negotiated between state actors and private actors",* resulting in a co-creation of policy (Böcher 2008, p. 373).

The framework of participatory governance, a subset of governance theory, aims to involve citizens in public decision-making in a more direct and meaningful way

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(Fischer 2012). Participatory governance aspires to deepen the ways in which citizens can effectively participate in and influence policies that directly affect their lives (Fung and Wright 2001). Benefits of such an approach include greater responsiveness to complex situations and more deliberation than traditional governance processes (Leach 2006).

Similar to policy work, co-creation and participation are on the rise in academic research, including in agricultural research. Opposing unilateral knowledge transfer and linear innovation processes, there is increasing acknowledgment of the importance of knowledge co-creation processes that recognize science and society as equal co-producers of knowledge (Moschitz and Home 2014; Sumane et al. 2017). Hence, the farming community is not merely a consumer of research but adds to research. The premise of participatory research on agriculture is to bring that farming community into the research process and to facilitate collaboration between professional researchers and farmers in order to achieve better research results (Hoffmann et al. 2007).

20.2 A CALL FOR PARTICIPATORY RESEARCH ON SALINE AGRICULTURE

In this chapter, we argue that the development of saline agriculture requires a participatory governance perspective and, by extension, that research on saline agriculture must be embedded in a participatory process. Four distinct arguments, found in the literature on participatory research, underpin this call for participatory research on saline agriculture.

Firstly, there is the **substantive** argument. There are various types of knowledge on agriculture. Besides researchers' expertise that is acquired through experiments, there is farmers' tacit knowledge that builds on years of hands-on experience. Researchers and farmers work in different ways and have diverging epistemologies, nevertheless, it is vital to agricultural innovation that both actors collaborate and create synergies (Hoffmann et al. 2007). Likewise, we argue that both researchers and farmers each add essential pieces to the proverbial jigsaw that is saline agriculture.

Secondly, there is the **methodological** argument. By connecting different actors and by sharing experiences one often acquires crucial information much faster. For example, setting up a test site for saline agriculture and getting to credible (scientific) results can take months or even years, yet farmers might point out important opportunities and pitfalls for field trials at an early stage. Consequently, a broader participation in the research process can save time and resources.

Thirdly, there is the **moral** argument. We need to involve various actors in policy making and research processes in order to increase their legitimacy. In short, research on saline agriculture needs to include those stakeholders whom they will affect: farmers and water managers.

Finally, there is the **social** argument. Different actors with little or no connection meet throughout the participatory process and discover mutual interests and build bridges. Alternative modes of farming, e.g. saline farming, are often based on new

linkages between farming, local resources and the local community (Renting et al. 2003, Kirwan 2004). In this alternative mode of farming, the formerly independent processes such as food production, food processing, distribution and consumption constitute a singular, all-encompassing process. Hence, the social interaction in a participatory process is paramount for the creation of the multi-actor partnerships on saline agriculture.

20.3 AN INTERNATIONAL FARMERS' CAFÉ AT THE SALINE FUTURES CONFERENCE

In accordance with our call to embed the research on saline agriculture in a participatory process, the Saline Futures Conference (September 2019, Leeuwarden, the Netherlands) was not limited to scholarly discussions amongst academic experts on saline agriculture. In parallel to this conference – *which eventually gave rise to this book* – the Interreg North Sea Region project Saline Farming (SalFar) organized the International Farmers' Café on Salinization and Saline Agriculture. To clarify, a farmers' café is a farming-oriented version of the better-known World Café methodology: a structured conversational process that aims for open, meaningful discussions in an informal, "café-like" setting (Gordijn et al. 2018). Both the academic conference and the farmers' café took place at the same location, thus facilitating interaction between the researchers and the farmers.

The International Farmers' Café on Salinization and Saline Agriculture was open to farmers, agricultural advisors, consultants, water managers, policy workers, NGOs and other relevant stakeholders in the North Sea Region. A total of 32 practitioners from Germany (12), the Netherlands (9), Belgium (7) and Norway (4) participated in the two-day event. The international farmers' café had multiple objectives: inform about salinization and salt-tolerant crops, visit the SalFar test site for saline agriculture on the island of Texel, discuss the future of (saline) agriculture in the North Sea Region, exchange saline strategies across borders and receive feedback into the research of the SalFar project. An extensive report on the event and its outcome can be found in De Waegemaeker et al. (2020). This chapter first elucidates the architecture of the international farmers' café, and next addresses its results.

20.4 THE ARCHITECTURE OF AN INTERNATIONAL FARMERS' CAFÉ

Despite growing academic attention for participatory research, knowledge on the practical implementation of participatory governance in policy work and research remains limited. How do we structure and conduct a multi-actor, multi-level and multi-sector process? Participatory governance processes require customization and adaptability and, as a consequence, there is no fixed "blueprint" for participation (Ostrom 2007; Rogge et al. 2013). In this section, we discuss the "architecture" of the International Farmers' Café on Salinization and Saline Agriculture to provide a source of inspiration for future participatory research on saline agriculture.

First and foremost, it must be stressed that the topic of the international farmers' café was not limited to saline agriculture but included salinization. On the one hand, broadening the topic helped to draw more participants to the event. Since there was little awareness on salinization in the North Sea Region, many participants wanted to get a better understanding of the problem (salinization) rather than the proposed solution (saline agriculture). Broadening the topic in this way facilitated an open and constructive debate even though the need for saline agriculture is contested by many farmers in the North Sea Region. Throughout the international farmers' café there were multiple opportunities to debate climate adaptation strategies that mitigate salinization, e.g. the flushing of surface waters and level-controlled drainage. In other words, the event put forward the strategy of saline agriculture, yet not as the sole solution to salinization. Leeuwis and van den Ban (2004, p. 45–46) define a code of conduct for the organizers of learning processes on agricultural innovation and stress the importance of respectfulness, which includes a genuine willingness to see things from other people's perspectives. In line with this code of conduct, we stress that future participatory research on saline agriculture in the North Sea Region must provide opportunities to address all possible saline strategies, both the mitigation of as well as the adaptation to salinization.

Secondly, the farmers' café started with an informative plenary session that provided participants with knowledge about salinization and saline agriculture. It included presentations about the different types of salinization processes in the North Sea Region, the impact of salinization on soils, the experience with saline agriculture at the Salt Farm Foundation in Texel, and the array of climate adaptation strategies for the (Dutch) agricultural sector. The goal of the plenary session was to create a shared understanding about and a common language for salinization and saline agriculture. The need for such shared understanding and common language was particularly high because the participants in the international farmers' café had diverging professional backgrounds; in agriculture, water management and rural development. Moreover, the participants live and work in different parts of the North Sea Region, an area where the extent of salinization and its causes vary strongly (see chapter 5). The plenary session was needed to familiarize the participants with the terminology on salinization and saline agriculture, especially since none of them were native English speakers.

After the plenary session, there were two consecutive rounds of two parallel workshops: a workshop on the impact of salinization on soils and crop production (Figure 20.1), and a workshop on the potential for saline agriculture in the North Sea Region (Figure 20.2). Fixed and thoroughly researched methodologies for both of these workshops were developed to ensure that all voices would be heard. In the workshop on the impact of salinization on soils and crop production, for example, the participants were divided into small groups of eight. In this rather intimate setting, each practitioner was asked to present their local "saline context"; the location of the farm, the crops that they grew, and the experiences with salinization in their practice. An aerial view (via Google Maps) of the participant's working area was projected as a visual support. In the workshop on saline agriculture, the participants were first asked which crops they wanted to discuss. The participants indicated their interest on a series of posters with markers and post-its, a method known as

FIGURE 20.1 Workshop on the impact of salinization on soils and crop production. (Courtesy of Wim Van Isacker.)

FIGURE 20.2 Workshop on the potential of saline agriculture in the North Sea Region. (Courtesy of Wim Van Isacker.)

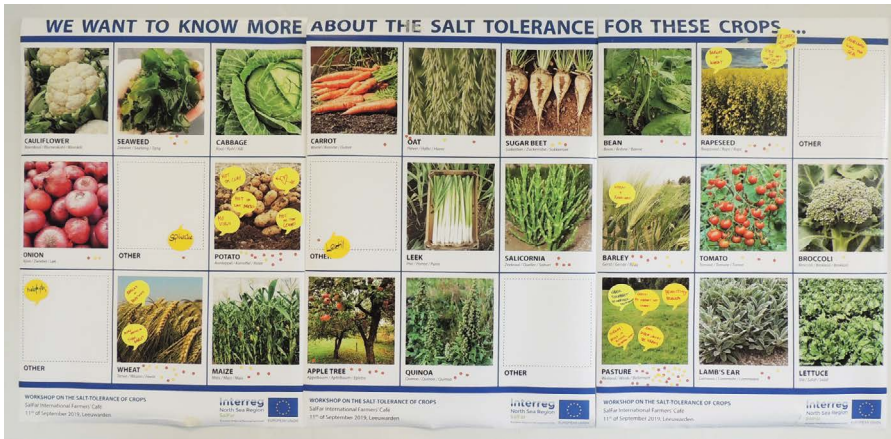

FIGURE 20.3 Results of the "dotmocracy" exercise in the workshop on saline agriculture.

"dotmocracy" (Figure 20.3). In this way, we prioritized those agricultural crops that multiple participants found interesting and that, as a consequence, could benefit from a transnational discussion. Furthermore, it helped to engage the entire group in the discussion rather than just the loudest voices.

The international farmers' café deliberately attributed a lot of time to the lunch and coffee breaks, since farmers highly appreciate and value interactions with their peers. In other words, farmers enjoy teaching to and learning from other farmers (Franz et al. 2010a). Long breaks throughout the international farmers' café offered participants the opportunity to exchange their experiences in one-to-one conversations. In the ex-post online evaluation of the event, the participants highlighted the added value of these interactions with their peers (e.g. quote).

> *"It was insightful to talk to people from another region/country about their specific situation. For me this is of great added value. It is good to be able to talk about specific problems on a practical level."*

Finally, the international farmers' café included an excursion to the island of Texel (the Netherlands) on the second day of the two-day event. In this way, we did not limit the international farmers' café to indoor, oral knowledge exchange but offered opportunities for on-farm interactions. These types of interactions, e.g. hands-on teaching, demonstrations and farm visits, are highly preferred by farmers (Franz et al. 2010b). During the excursion, the participants visited the demonstration sites on saline agriculture of the Salt Farm Foundation. Here, the participants could see the saline irrigation system as well as touch, smell and taste the test crops (Figure 20.4). What is more, many eagerly measured the salinity of the surface waters throughout the island (Figure 20.5).

FIGURE 20.4 Impressions from the visit to the demonstration site of Salt Farm Foundation. (Courtesy of Wim Van Isacker.)

FIGURE 20.5 Participants eagerly measured salinity levels in surface water by using an EC measuring tool. (Courtesy of Wim Van Isacker.)

20.5 THE ADDED VALUE OF THE INTERNATIONAL FARMERS' CAFÉ

The results of the International Farmers' Café on Salinization and Saline Agriculture are extensively described in De Waegemaeker et al. (2020). This section addresses only some of the insights that were acquired via this participatory event. In line with the scope of this book, we focus on those insights that are particularly relevant to future research on saline agriculture in the North Sea Region.

Firstly, the participants of the international farmers' café discussed which "saline crops" they favored and, as a result, the event identified key research questions on saline agriculture in the North Sea Region. First and foremost, the international farmers' café highlighted an enormous demand for salt-tolerant pastures in the North Sea Region. Far more than any other agricultural crop, participants were looking for information on salt-tolerant grass varieties. This interest for grass resulted from the fact that salinization currently occurs predominantly in the participants' pastures rather than on their arable land. The debate on grass clarified the farmers' expectations in terms of salt-tolerant grass varieties: saline grass varieties must be able to grow in saline conditions and, at the same time, need to maintain a high level of productivity and digestibility. Furthermore, there was a lot of interest for the salt-tolerance of conventional arable farming crops such as potato, wheat, barley, maize, rapeseed, oat and onion. As such, the international farmers' café indicated that farmers in the North Sea Region conceptualize saline agriculture as an incremental substitution of the current agricultural production by salt-tolerant cultivars rather than the cultivation of new, unknown crops such as halophytes (see quote 2).

> *"Why we are interested in the salt-tolerance of onions? We are growing them! And we would like to keep them. They are already in our system."*

Secondly, the practice-oriented discussions at the international farmers' café uncovered important barriers and opportunities for saline agriculture in the North Sea Region. Based on these discussions, De Waegemaeker et al. (2020) list guidelines for future research on saline agriculture. For example, the international farmers' café highlighted the need for research on "saline crop rotations". The participants stressed that the development of a sequence of alternating saline crops rather than one saline crop is a prerequisite to put saline agriculture into practice in the North Sea Region. Moreover, they pointed towards the history of the North Sea Region in order to find salt-tolerant varieties for the region's saline future. The participants often argued that historically farmed crops provide a useful gene pool for research on saline agriculture.

Finally, the international farmers' café clarified why it is necessary to research saline agriculture in the North Sea Region. Most of the participants stressed that they currently experience only a minor level of salinization. This observation, however, should not be interpreted as an argument to postpone local research on saline agriculture. The participants indicated that the road from the laboratory to the field is long. Moreover, they stressed that it takes a long time for the seed industry to commercialize the results of fundamental research. Hence, the research on

the salt-tolerance of crops is urgent even though the salinization in the North Sea Region is not yet acute.

> "[A salt-tolerant crop] *takes a lot of time to develop. If we don't ask it now, we don't have it when we need it.*"

20.6 A FARMERS' CAFÉ, A FIRST STEP

As saline agriculture grows to a field of research at the global scale, this chapter advocates embedding this research within a participatory research perspective. We hope that our description of the International Farmers' Café on Salinization and Saline Agriculture may inspire the organization of similar events in future research. We need to clarify, however, that a farmers' café is merely a first step in participatory research on saline agriculture. Since a farmers' café focuses on informing and consulting the farming community, the methodology is situated at the lower end of the participation ladder (Arnstein 1969; Pretty 1995). Hence, there is much room for growth in terms of participation. Besides the organization of the International Farmers' Café on Salinization and Saline Agriculture at the Saline Futures conference, the SalFar project currently experiments with other forms of participatory research on saline agriculture in the North Sea Region. In the United Kingdom, for example, the farming community is involved in the selection of crops and varieties for field trails on saline agriculture at the University of Lincoln. In Sweden, researchers from the University of Gothenburg are testing the salt-tolerance of wheat varieties on a private farm. In Norway, NMBU researchers and farmers are working together on the development of an irrigation system for saline agriculture. Future research on these participatory research processes is needed to define important parameters for these processes, and to clarify their added value to the development of saline agriculture.

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