

Winland: research implementation and results

Introduction to Winland: our key elements

The Winland project (2016-2019) set out to explore how pressures and shocks and political decision-making related to energy, food and water security may affect Finnish comprehensive security now and in the future. We carried out our research on our key themes and sectors both separately and in cross-sectoral and integrative manner. To ensure this, the project was divided into three key themes (energy security; food security; water security), three key processes (decision-making; law & policy; resilience & learning) as well as two integrative elements (scenarios & foresight; co-creation and interdisciplinary research) - visualisation of these is available in our webpage: <https://winlandtutkimus.fi/english>.

The research consortium consisted of eight project partners: seven research groups from six different universities/research institutes (Aalto University (with two research groups), University of Helsinki, University of Eastern Finland, National Defence University, Finnish Environment Institute + Finland Future Research Center at the University of Turku) as well as Demos Helsinki, an independent think tank specialised on co-creation. Encouraged by SRC's incentive to form entirely new kinds of research consortiums, we put the consortium together for this specific project: most of the consortium members did therefore not know new each other beforehand and our expertise was equally diverse. To ensure efficient research implementation, each of the research groups was responsible for one key theme/process/element. To encourage collaboration, each research group contributed also at least to one additional theme or process, while all project partners participated in the work on two integrative elements.

Facilitating multi-, inter- and transdisciplinary research

This meant that we paid a special attention for establishing joint processes for multi-, inter- and even transdisciplinary research from the very beginning of the project. Given our various backgrounds and ways of doing research, this was seen particularly important, even when it did require plenty of time and effort. Such processes included e.g. joint research workshops, where project researchers with differing theoretical backgrounds were brought together around selected themes and contexts to discuss their views and approaches to study them. The ultimate aim of such workshops was to initiate joint research processes (and related scientific articles) focusing on those themes and contexts with a multi- and/or interdisciplinary view. This process also worked, as by the end of the project we have published altogether 23 multi- or interdisciplinary scientific articles (with co-authors from at least two different research groups), out of total published 52 peer-reviewed scientific articles. In addition, given that such joint research processes do take time, several more articles are still under preparation.

We discovered that facilitating truly multi-, inter- and transdisciplinary research takes time and resources, particularly when the consortium parties are new to each other and the common research theme (in our case comprehensive security) is novel as well. It also became clear that we needed first to discuss thoroughly their differences, noting the different ways the three research approaches (multi/inter/trans) look at the research questions as well as the differing role that different actors (researches and stakeholders) take in such approaches.

Our experience indicates that while multidisciplinary research is the most common and clearly the easiest approach, new insights and societally relevant findings emerge first and foremost through inter- and transdisciplinary research. We therefore also tried actively to push for such research, even when noting the difficulties they entail, including the fact that they require more time and resources and are typically more difficult and also risky to implement. (It should be noted, however, that we

planned our project from the beginning for six years, and if we had known our project only lasted for three years, we would have most likely planned our research differently, focusing less on time-consuming inter- and transdisciplinary research processes.)

We therefore consider multi-, inter- and transdisciplinary approaches to be extremely relevant for meaningful strategic research, and are happy that such approaches are increasingly emphasised also by the SRC. At the same time it seems that only some SRC consortiums are still actually systematically developing their research processes - and many consortiums seem even to lack an understanding on the basic differences between multi-, inter- and transdisciplinary research. This, we feel, is a very important issue and something that the SRC should pay particular attention to in the future.

Integrative elements: scenario workshops and co-creation

Facilitating this kind of research collaboration and co-creation requires willingness and openness, clear leadership and communication as well as integrative elements that bring different actors together. We paid particularly attention to such elements from the very beginning, making use of integrative concept (comprehensive security), integrative themes (energy, water and food security), integrative context (e.g. river basins) as well as integrative processes (scenario process as well as joint writers' workshops). These all were fundamental in bringing the different researchers together, and also provided ways to interact with our stakeholders.

A series of stakeholder workshops utilising foresight and co-creation methods formed the core integrative process in terms of our stakeholder engagement. The project started with a workshop mapping the key research themes, relevant policy processes and stakeholders (START workshop), and proceeded then to co-create undesired and even dystopic Failand-futures in three scenario workshops focusing separately on energy, food and water security. The findings of the workshops enabled identifying global, regional and local trends and potential shocks affecting energy, water and food security in Finland as well as the resilience of the Finnish governance and critical infrastructure systems. The Failand-futures and means to avoid them were then discussed and developed together with stakeholders in a fifth workshop in spring 2017.

After the fifth scenario workshop, however, we decided to revise completely our scenario process based on the discussion on the current needs of our stakeholders. As there were already several scenario processes on-going by several actors on our research themes (that were not existing/known when we planned our own scenario process), we decided not to co-create yet another round of desirable scenarios (i.e. 'Winlands'). Instead, we set the focus of our foresight work on conducting a critical assessment of the on-going scenario processes related to comprehensive security, synthesising the different processes and providing views on their better utilisation and coordination. That decision was in the hindsight a wise move, as it resulted in recommendations regarding the different scenario processes that were very well received by our stakeholders.

The synthesising workshop in autumn 2018 aimed to bring our different research activities together by focusing on two integrative elements, namely the foresight assessment and integrated framework on water security and its linkages to energy and food security. Our final workshop in spring 2019 - organised in Winlandia Hall - focused on synthesising and discussing the results of our research with our stakeholders as well as reflecting our joint process, providing thus lessons learnt for future strategic research. In addition to these workshops, we also organised several other thematic events and meetings, including two resilience workshops (in February 2018 and December 2018) as well as public world food day event focusing on the role Finland has in tackling the global food crisis. Majority of our events and workshops can be found from our website: <https://winlandtutkimus.fi/tapahtumat>.

While organising our own workshops and events was important for planning and implementing our research, we also understood from the very beginning that engagement in stakeholder-driven processes was even more important for planned societal impact. For that reason we also made a special effort in engaging in our stakeholders' own planning processes (and also tried to avoid creating overlapping processes: see e.g. Winland scenarios case above). Key examples of these kinds of stakeholder-driven processes where we participated included co-organising a preparedness exercise on the interlinkages between food security and energy security with National Emergency Supply Organisation (NESO) and its partner companies in October 2017, co-organising a regional preparedness exercise on drought (first of its kind in Finland) with the ELY Center of Varsinais-Suomi in April 2019 as well as active contribution for the revision of Security Strategy for Society (led by the Security Committee) in 2017 and participation in the related foresight process after that.

Our key research outputs

Our key results build on our key outputs, which include different events and workshops as well as number of publications, that are listed in our website. In addition, one very important research output and even result are the Doctoral Theses done within the project - most of them having also strong multi- or even interdisciplinary elements. There has already been three Doctoral Theses published in relation to the project (one of them fully done within the project, two other ones partly), and there are still additional four Doctoral Theses to be completed (three of them fully done within the project, one partly).

We have so far published altogether 52 peer-reviewed scientific articles and 12 conference publications as well as number of other publications that synthesise and also popularise our research findings. These kinds of other publications include our Policy Brief series (in total eight policy briefs), number of blog posts (in total 47 blog posts: <https://winlandtutkimus.fi/blogi>) as well as two research summaries that bring together the key findings of our research.

To synthesise our research and to put it into a broader perspective, we also edited a Special issue for the MDPI journal Sustainability titled "Enhancing Security, Sustainability and Resilience in Energy, Food and Water". The Special Issue included in total 10 articles, out of which seven were inter- and transdisciplinary publications by Winland researches and remaining three articles by other Finnish researchers working on these same themes. The Special Issue is open-access and can be accessed here: <http://bit.ly/WinlandMDPI>.

Our key research results: sustainable security

Given the diversity of our research activities, it is difficult to summarise our key findings: different researchers and stakeholders value different aspects of our research. Yet, there are some general findings that are of particular relevance for the SRC programme we belonged to (Security) as well as for the general theme of that programme (comprehensive security). First and foremost, our research indicates that the key challenges of Finnish comprehensive security -particularly in relation to energy, food and water security- where typically found on the interfaces between the different themes and sectors, and they also extended from national borders to regional networks and global value chains. It also became clear that security is closely linked to the concept of sustainability, as these three sectors (energy, food, water) have implications for both security and sustainability. This was also the key theme in our Special Issue, with different articles and the Editorial discussing the diverse connections between security and sustainability.

Such findings underline the importance of cross-sectoral and international collaboration, and also call for active reflection on the role that different (sectoral) actors have in both security and sustainability processes. Even though several multi-stakeholder networks and platforms for this purpose exist in Finland, security and sustainable use of natural resources are rarely looked at together. This also links

to their differing spatial and temporal scales and their view on the concept of resilience: while security and preparedness activities focus typically on maintaining and conserving the existing systems (i.e. 'bounce back resilience'), ensuring sustainability demands more transformative views (i.e. 'bounce forward resilience'), including consideration of broader temporal and spatial scales. The linkages between security and sustainability were also well visible in the foresight model for sustainable security that we developed within the project (see here: <http://bit.ly/KokonaisturvallisuusEnnakoi>).

In sum, we proposed in our final workshop and related publications that the concept of comprehensive security must better incorporate also key dimensions of sustainability and that we should therefore increasingly talk also about sustainable security.