



**SUMMARIES OF PRESENTATIONS AT**

**PLENARY SESSION**

# **NORDIC-BALTIC COLLABORATION TO BOOST PLANT BREEDING FOR THE FUTURE CLIMATE**

**Gintaras BRAZAUSKAS**

*Lithuanian Research Centre for Agriculture and Forestry  
gintaras.brazauskas@lammc.lt*

Plant breeding in the Nordic and Baltic countries has a long tradition and much in common as it is based on the need to provide plant varieties with specific characteristics to meet the requirements of local growers. Northern Europe represents some of the most northern agricultural areas on Earth which demands new varieties of crops specially adapted to the unique environmental conditions of the high north. Predicted climate change poses a threat to this long term achievement as rapid rise in temperature will bring new challenges, such as rapid fluctuations in temperature, especially during cold season compromising the snow cover, as well as breach in tight temperature-photoperiod regulation of plant ontogenesis. Given uncertainties will require new idiotypes of plants to meet the challenges of future climate.

In 2008 the Nordic Council of Ministers initiated a mission on defining possible ways of strengthening Nordic plant breeding. Two years later a Public-Private Partnership (PPP) for Pre-Breeding was established to secure the development of Nordic agricultural plant varieties to meet the demands brought about by climate change and consumer expectations for healthy and tasty products and to contribute to sustainable development of the agricultural sector. Soon after the establishment of the initiative plant breeding institutions from the Baltic countries joined the effort to pool the resources. The success of the PPP is based on four principles: (1) pooled public funding while allowing some countries to move faster; (2) project based participation from plant breeding companies; (3) engagement of the best research environments for the respective projects; (4) 50/50 funding between public sources and industry. Currently four PPP projects are being carried out: Pre-breeding for Future Challenges in Nordic Apples; Combining Knowledge from Field and from Laboratory for pre-breeding in Barley; PPP for Pre-breeding in Perennial Ryegrass and the Public Private Partnership Plant Phenotyping Project (6P). Furthermore the Nordic Plant Phenotyping Network (NPPN) was established to facilitate information exchange and networking of 6P project. In this presentation the experience of the Lithuanian Research Centre for Agriculture and Forestry gained through the collaboration in the established PPP among Nordic and Baltic plant breeding entities will be presented.

Keywords: plant breeding, private-public partnership, climate change.

## RURAL TERRITORIES AS SPACE FOR SUSTAINABLE AND SMART DEVELOPMENT

**Baiba RIVZA, Maiga KRUZMETRA, Linda SUNINA**

*Latvia University of Life Sciences and Technology*

*baiba.rivza@llu.lv, maiga.kruzmetra@llu.lv, linda.sunina1@gmail.com*

Rural territory is an important part of the community's living space, moreover, it is a living space for sustainable and smart development. With the growing public demand for a healthy living environment and healthy food, the role of rural territory as a living space for community and the necessity to maintain its sustainable development is increasing. However, the sustainability of the rural territories as a living space will be preserved only when residents will be ready for the changes, brought by the general development trends of the world and if the power structures (state institutions and local governments) are promoting trends politically and practically. The rural space has changed for centuries; however, the challenges of the 21st century impose demands for more rapid change, while demanding skills after innovative and traditional balancing at the same time.

The aim of the research: to assess the economic growth of the rural areas in Latvia for promoting sustainable and smart development direction during 2009-2016.

The EU and Latvian Rural Development Policy for 2014-2020 has been used as the methodological base of the research. The data were processed by quantitative (growth) and qualitative (structural change) statistical analysis, as well as grouping methods.

As information sources for the analysis was used: The Global Competitiveness Index<sup>9</sup> WEF 2016 – 2017.; Eurostat classification of industries (NACE Rev 2, 2008); LURSOFT and CSB data of changes in national economy; survey results on the contribution of "growth agents" to the sustainable and smart development of rural areas.

The analysis of the information allows making a number of conclusions. Firstly, Latvia has received the lowest competitiveness rating among the countries of the eastern coast of the Baltic Sea (Poland, Lithuania, Latvia, and Estonia). At the same time, it showed the highest growth rates and reduced distances between these countries. Secondly, the reduction of these differences was significantly influenced by the growth rate of the knowledge economy segment in Latvia. Thirdly, the growth of the knowledge economy in the rural territories has been faster than in larger cities, which has reduced the gap between cities and rural areas in the field of smart economy. Fourthly, the rural space has confirmed its suitability for the innovative functioning and growth of the economy, which creates the preconditions for sustainable and smart rural growth.

Keywords: rural territories, sustainable development, smart growth.

## FOOD SECURITY IN NORWAY – LEGITIMACY AND POLICY DESIGN

**Sjur Spildo PRESTEGARD**

*Norwegian Institute of Bioeconomy Research (NIBIO)*

*sjur.prestegard@nibio.no*

According to economic theory, market interventions with support and regulations may result in efficiency losses and can, in principle, only be justified by possible market failures. Lack of efficient private commodity and risk markets can cause such failures due to unstable food supplies and large price fluctuations. In affluent countries such as Japan, South Korea, Switzerland and Norway, with high purchasing power, residents will usually have enough and safe food for a healthy diet, even in periods of international food price spikes.

A free competitive economy may fail to "produce" enough public (common) goods compared to the social benefits of the good (for example, cultural landscapes). This can legitimize governmental interventions in the market with support and regulations in order to reach social optimality regarding market solution. Food security or food preparedness can thus be regarded as a public good that agriculture "produces" in addition to food, fibre and different services in the marketplace.

Norwegian food security should be about preparedness for crises where food supplies can be temporarily or more permanently threatened. Short term crises may arise from trade policy measures introduced in other countries, conflicts or war in our region, major environmental and pollution disasters, as well as outbreaks of serious plant and animal diseases. Moreover, earthquakes, volcanic eruptions, over-population, resource shortages and climate change can lead to long-term global food supply failures and require a different handling. Several crises may also occur at the same time. The risk of the different kind of crises may vary significantly but may be said to be small for crises related to conflicts and war in our region.

A well-functioning international trading system can ensure that food and feed imports will be possible in various crises. Storages of agricultural products and inputs (grain, seed and fertilizers) may be of importance in handling short-term food supply crises and provide time for conversion in cases of long-term changes. Storage can be done privately in the value chain for food or in publicly funded warehouses. In more prolonged food emergency situations, domestic production and changes in the diet to more farmed and wild caught fish, potatoes, cereals and horticultural crops and less of livestock products will have to take place.

Keywords: food security, Norway, legitimacy, public good, food supply crises, policy design.