

SYRI - Systemic Risk Management and Resilience Planning for Austrian Food Supply Security

The aim of SYRI is the first systemic risk assessment in real-time in food value-added networks that are critical for the supply of the population. These networks consist of thousands of actors and are digitally mapped from the origin of the food, via the processors and logistics, to the end consumers in retail, catering, and the hotel industry, and are assessed in real time concerning systemic supply risks.

The combination of analogue information processing and the expertise of individuals is often sufficient to solve locally isolated problems at the level of the demand side. However, major crises, such as COVID-19, have shown the limits of analogue and past crisis management. This problem applies to the primary food supply, which consists of complex, fast-moving, and interdependent value chains (from primary production to processing plants to consumers). Therefore, it is essential to proactively assess and analyse crisis scenarios in real time, as these can directly threaten the population's food supply. At the request of the Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLRT) and the Food and Agriculture Authority (AMA), a comprehensive digital systemic risk monitoring system is to be implemented in real-time.

For real-time monitoring, a digital crisis monitor is being created in the SYRI project for the first time at the nation level for five product groups defined by the stakeholders. Due to the development of a generic data model, this digital crisis monitor allows for the first-time digital recording of the value-added networks, including the interlinking of consumer and company data and the dynamic calculation of systemic risk indicators at the actor level. Networks, including risk assessment, are made available in real-time on an interactive and user-friendly interface (= the digital crisis monitor) to the stakeholders.

International expertise and planned and complementary interdisciplinaryity are the basic prerequisites for tackling a groundbreaking project like this one. CSH is a world leader in systemic risk assessment, JRC LIVE of the Upper Austrian University of Applied Sciences is a pioneer in the real-time visualisation of value networks at the enterprise level, and the University of Natural Resources and Applied Life Sciences and the University of Veterinary Medicine are proven experts in the primary production and processing of plant and animal product groups. In the SYRI project, a systemic risk index is to be calculated and presented in real-time for the first time at the stakeholder level in food value-added networks. According to the current knowledge of the SYRI project consortium, no similar research project exists worldwide. This uniqueness of the project has also been recognised by the economic partners and has led to the fact that - although in a fiercely competitive situation - almost the entire retail trade (SYRI members cover more than 95 % of the demand), central actors of the wholesale trade as well as central producers in the five product groups have agreed to participate.

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