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## **SUSFANS Newsletter No 3**

December 2017

### **2017 - An important year for SUSFANS**

*by Thom Achterbosch*

2017 has been an important and productive year for SUSFANS. Not only did we complete a long trajectory of developing metrics for sustainable food and nutrition security, we also assessed consumer diets in selected European countries against a common food-based dietary guideline.

In addition, a deeper understanding was gained on several drivers that have an impact on European diets and food system outcomes, and several research teams engaged to better model and quantify these across the domains of nutrition and integrated assessment. Apart from the scientific achievements, the project has been building its legacy. One major achievement here is that SUSFANS has entered into a partnership with FIT4FOOD2030, a new project for building the platform for dialogue on the FOOD2030 agenda of the EU.

Through this partnership we are able to leverage our food systems thinking and foresight on EU contributions to the sustainable development goals (SDGs) towards over a 100 policy and city labs and a think tank on research and innovation for a future-proof food system. We are thankful to our stakeholder core group, project advisory board and all other supporters and we look forward to continue engaging with you in 2018.

### **SUSFANS Project Advisory Board**

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Board fruitfully engaged with the research team during the project meeting in Paris in November. The Project Advisory Board is challenging the SUSFANS team and supports the scientific dialogue via participation in project workshops and meetings like the annual consortium meeting. It reviews key project deliverables and was created to strengthen the impact of the project in two ways. [Read more](#)

## Events



Vienna - Around 40 persons participated in the 3rd Workshop of the SUSFANS project on September 28, 2017. In the focus of the meeting, which took place in Vienna, Austria, was the role of livestock and fish for a sustainable food and nutrition security in Europe.

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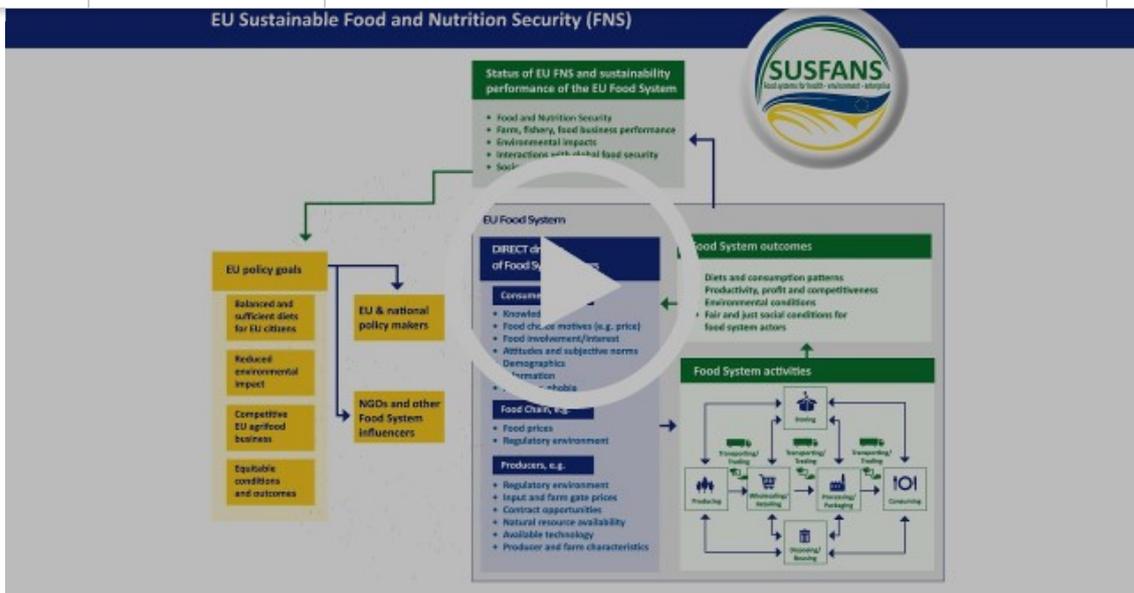
## Feedback



During the last year stakeholder continued to interact with the project team and gave motivating feedback for the future. Voices out of the private sector named the work done so far within SUSFANS 'impressive' - but expectations remain high.

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## The SUSFANS conceptual Framework

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The conceptual framework of SUSFANS - Animated!

## News



### Why consumers prefer both health and sustainability information - and why it should be done in a specific way

Consumers prefer combined information on health and sustainability benefits over only health or sustainability information. In addition, more specific information on health and sustainability is preferred over general information. This is the main outcome of the SUSFANS Deliverable D2.3 in which results of an online choice experiment conducted in The Netherlands, France and Czech Republic are shown. The aim was to analyze consumers' sensitivity to product information on fruit and vegetable products.

A central approach of the paper by Emily Bouwman, Harriëtte Snoek and Muriel Verain of SUSFANS Partner Wageningen Economic Research was to show the effect of four different product attributes on consumers' decision-making:

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- the level of specificity of the information (specific, medium, general),
- use and type of numeric information (percentage, grade, no number) and
- the price level, ranging from low and medium to high.

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## **The drivers of crop production at regional level in the EU**

Crop production is the most crucial primary agricultural production activity for food and nutrition security. In 2011, around 70% of the global calories intake per capita per day derived from plant-based products. Besides its importance for direct human consumption, crop production is also crucial for producing feed for livestock and, increasingly, also for aquaculture. Understanding what drives crop production and the development of crop yields helps projecting future developments that are crucial for food and nutrition security and allows identifying risks and (policy) measures for improvement. A regionally specific analysis enables the identification of regional hot spots and regions with potential for further intensification.

A new report by Andrea Zimmermann and Catharina Latka of the University of Bonn describes and analyses crop production in the EU.

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## **Insects for animals, in-vitro, reducing meat: Taking new dietary pathways**

Our current dietary pattern has a strong impact on the environment. Global food production releases more than 25 percent of anthropogenic greenhouse gases, pollutes terrestrial and aquatic ecosystems and uses about 40 percent of the earth's terrestrial surface.

The majority of this environmental impact originates from the consumption of animal-source food (ASF). In Europe, daily consumption of protein from animal source food is above dietary recommendation, resulting in an increased risk of chronic non-communicable diseases, e.g. obesity and heart diseases. To strengthen food and nutrition security, the livestock sector is and will continue to be an important part of the puzzle to ensure sustainable nutrition security.

In their new paper "Innovation pathways towards future nutrition security: Innovation pathways towards more sustainable production and consumption in the livestock-fish supply chain and their uptake in the SUSFANS models", the researcher identified innovations that will be assessed within the SUSFANS project (D5.4).

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## basic dietary guidelines

Modelling healthy diets is not an easy task. To do this, you first have to define the required consumer-based dietary intake data. This is one of the objectives of the SUSFANS project in Work package 2. In focus of this Work package are four European countries, namely Denmark, Czech Republic, Italy and France.

What kind of nutrition data are needed for a coherent modelling of Food and Nutrition Security diets? Not only do we have to look at the energy intake, but also at the adequate intake of specific nutrients, which are relevant for human health. Key nutrients have to be chosen and food groups defined, underpinned by dietary reference values.

This definition is needed in the research of SUSFANS. The outcomes will be applied to nutritional survey databases in four EU regions in WP7, which is needed for modelling of FNS diets, in particular with the SHARP (Sustainable, Healthy, Affordable, Reliable and Preferred) diets of WP7.

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### **"Gain insight in the impact of diet changes to health sustainability".**

*Interview with Jacqueline Bloemhof, WP7 Co-leader:*

"The benefits are to have a shared database linking different fields (environmental impacts economic data nutrient schemes) to gain insight in the impact of diet changes to health sustainability and economic impacts in food supply chains for various countries in EU."

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## Sustainability metrics for the EU food system: a review across economic, environmental and social considerations

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Deliverable 1.4

## A modelling strategy for quantifying the sustainability of food and nutrition security in the EU

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Deliverable 2.3

## Analysis of the online choice experiment on fruit and vegetables determining the importance of nutritional and environmental benefits and the level of information

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**their possible replacement by plant-based products: results from lab experiments and cost-benefit analysis**

**Deliverable No. D2.5**

Stephan Marette (INRA)

SUSFANS DELIVERABLES

The deliverable D2.5 analyses results of lab experiments conducted in France and Italy. These results are used for determining a cost-benefit analysis on the basis of a model of diet changes induced by the adoption of nutritional and environmental recommendations. 3 working papers were written for primarily studying the issues of this Deliverable.

Version: 1.0  
Revision date: 2018-07-10  
Change: none  
Date: 2018-07-10  
Deliverable: D2.5

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101019719

## Consumer choice related to meat/fish consumption and their possible replacement by plant-based products: results from lab experiments and costbenefit analysis

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**Simulations of diet recommendations and assessment of their economic, environmental and nutritional impacts.**

**Deliverable No. D2.6**

Xavier Irz (Luko), Jørgen Jensen (University of Copenhagen), Pascal Leroy (INRA), Vincent Riquillart (INRA), and Louis-Georges Soler (INRA)

SUSFANS DELIVERABLES

**Abstract:** We analyze the sustainability effects of diet recommendations in France, Denmark and Ireland to conclude that: 1. The promotion of animal diet recommendations would improve social welfare; 2. Healthy eating recommendations for limiting consumption of red-meat, fish and saturated fat should be prioritized for promotion; 3. Although strategies promote trade-offs between environmental and health objectives (such as lower CO2E) and 4. The sustainability cost of dietary change imposed on consumers should be included in the welfare analysis of diet recommendations.

Version: 1.0  
Revision date: 2018-07-10  
Change: none  
Date: 2018-07-10  
Deliverable: D2.6

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101019719

Deliverable 2.6

## Simulations of diet recommendations and assessment of their economic, environmental and nutritional impacts

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**The role of different food chain actors on setting private food standards**

**Deliverable No. D3.2**

Senne Vandevelde (KU Leuven), Rob Ruijters (KU Leuven), Jo Swinnen (CEPS)

SUSFANS DELIVERABLES

Consumers, retailers and producers are giving increasing attention to ensure that production and processing activities are sustainable from an economic, social and environmental point of view. The goal of this task will be to analyse the role different actors in the food supply chain play in the establishment of food standards and their impact on the sustainability of the food supply chain. The analysis will consist of theoretical modelling and an empirical analysis.

Version: 1.0  
Revision date: 2018-07-10  
Change: none  
Date: 2018-07-10  
Deliverable: D3.2

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101019719

Deliverable 3.2

## The role of different food chain actors on setting private food standards

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**Food chain for sustainability indices**

**Deliverable No. D5.3**

**SUSFANS DELIVERABLES**

Gema Carmona-García,  
Adrian Leip (JRC)

The analysis of post-harvest losses (PHL) is crucial for accurately quantifying the environmental impact associated with the food that we eat. It is also the primary route for identifying opportunities to move into the direction of an agri-food system with low emissions and with closed nutrient cycles. We identified a few scenarios in which the PHL assessment was not left possible with the tools available (CropSyst, crop growth, water management systems and emissions). In this report we perform a literature review for each of these tools and compile data that can be used as indicators that will be implemented for the SUSFANS toolset. The assessment is based on – and further developed – the methodology developed by the ICRISAT for the quantification of gaseous nitrogen losses.

Version: 01 | Release date: 2018/07/11 | Change: None | Status: Final | Contribution: JRC

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101019719.

## The role of the post-farm food chain for sustainability indices

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**The drivers of crop production at regional level in the EU: an econometric analysis**

**Deliverable No. D4.5**

**SUSFANS DELIVERABLES**

Andreea Zemanstratu (JRC),  
Catherine Lethia (JRC)

Crop production is the most crucial primary agricultural production activity for both food and nutrition security. Around 70% of the calories per capita and 80% of the income from plant-based products. The report provides a qualitative assessment of drivers of crop production and a quantitative analysis of crop yields in the EU. Crop yield trends are largely positive throughout the EU. Average efficiency in yield exploitation are between 70 and 80% depending on the crop. Climate has major effects on crop yields and farm size, fertilizer and plant protection all clearly positively affect crop yields.

Version: 01 | Release date: 2018/07/11 | Change: None | Status: Final | Contribution: JRC

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101019719.

Deliverable 4.5

## The drivers of crop production at regional level in the EU: an econometric analysis

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**Spatially explicit farm and environmental indicators at a scale of 1 km x 1 km**

**Deliverable No. D4.6**

**SUSFANS DELIVERABLES**

Adrian Leip (JRC), Markus Kempen (UBO), Xavier Fortin-Puig (JRC), Marie Bieba (JRC)

Land-use diversity and soil erosion are among the aggregated variables required for describing environmental sustainability in the domain (food security and natural resources). Both aggregated variables need to be quantified at high spatial resolution. The CAIWI model is able to do this, but the calculation procedure required improvements. This report describes basic features of the methodology, outlines deficiencies in the current implementation and identifies possibilities to update and improve the method.

Version: 01 | Release date: 2018/07/11 | Change: None | Status: Final | Contribution: JRC

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101019719.

Deliverable 4.6

## Spatially explicit farm and environmental indicators at a scale of 1 km x 1 km

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## Database on farm-level production and sustainability indices for assessing sustainable diets

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Deliverable 5.2

## Innovation pathways towards future nutrition security: Innovation pathways towards more sustainable production and consumption in the livestock-fish supply chain and their uptake in the SUSFANS models

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### Fundamentals, Speculation or Macroeconomic Conditions? On the Determinants of Commodity Price Dynamics, with an Application to Arabica Coffee<sup>1</sup>

Benno Engel<sup>1</sup>, Thomas F. Schoder<sup>2</sup>, and Michael Christmann<sup>3</sup>

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Abstract

The article analyzes the role played by market fundamentals, speculation and macroeconomic conditions in explaining fluctuations of commodity price dynamics. The authors model emerging volatility in commodity price using fundamentals as well as macroeconomic and financial variables. The results indicate that variables related to global macroeconomic and financial developments contain valuable information to explain the historical prices of coffee price dynamics, as well as to improve out-of-sample predictions of coffee prices.

Keywords: Commodity prices, forecasting, vector autoregression models, market anomalies, model misspecification

<sup>1</sup>International Institute of Applied Systems Analysis (IIASA), 2020. This document is part of the project "SUSFANS: Sustainable Food and Nutrition Security" funded by the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101019710.

Deliverable 8.1

## Fundamentals, Speculation or Macroeconomic Conditions? On the Determinants of Commodity Price Dynamics, with an Application to Arabica Coffee

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