



# Feasibility and acceptance of SUSFANS Toolbox and results

## Deliverable No. 11.6

# SUSFANS DELIVERABLES

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## Abstract

Stakeholder workshops were held to increase awareness of the SUSFANS project outcomes and willingness to implement and consult the user toolbox in decision-making processes among stakeholders. Four workshops were held in France, Denmark, the Czech Republic, and Italy with in total 110 stakeholders from academia, national policy makers, industry, and NGO's.

We used a combination of general stakeholder workshops and specific group discussions with DEMOCs cards. Because of the complex and abstract structure of the SUSFANS toolboxes, the usability and feasibility outcomes were challenging for the stakeholders to discuss. Therefore, they were given future narratives of possible scenarios in the form of DEMOCS cards that helped workshops participants to come up with innovative ideas and propose further improvement, feasibility and acceptance of the SUSFANS toolboxes.

Stakeholders appreciated the structured approach of SUSFANS to define sustainability in its four dimensions: environment, economics, cultural/social, nutrition/health. The SUSFANS visualizer was considered a useful tool to evaluate sustainability impacts of policies and support decision making of public policy makers in a more holistic and evidence based way. The toolbox was considered helpful to facilitate discussions between disciplines, countries, public and private on the health and sustainability outcomes, to have an informed discussion and get people to move. The abstract form of the toolboxes and the complexity, in combination with limited time to digest the provided information left participants with a challenge to foresee the exact application of the toolboxes in their daily practice.

## SUSFANS DELIVERABLE

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## **Deliverable short summary for use in media**

A total of 110 stakeholders from academy, policy, industry and NGO's discussed SUSFANS outcomes in four workshops held in France, Denmark, the Czech Republic, and Italy. Stakeholders appreciated the structured approach of SUSFANS and the possibilities of the SUSFANS visualizer to facilitate discussions on the health and sustainability outcomes of policies. Finally, although the value of the visualizer was seen, a one-day workshop seemed too short to understand the complex project results to a degree that stakeholders could apply it directly to their own work.

## **Teaser for social media**

A total of 110 stakeholders discussed SUSFANS outcomes in four workshops held in France, Denmark, the Czech Republic, and Italy. Stakeholders from academy, policy, industry and NGO's appreciated the SUSFANS visualizer as a tool to discuss health and sustainability impact of policies.

# Introduction

## Goals

### ***SUSFANS goals in general and in relation to stakeholders***

Current practices in the food system are problematic in terms of sustainability and nutritional security (Zurek et al. 2016). Therefore innovation and supporting policy are needed to achieve better system outcomes. Addressing growing pressures on the natural environment (Frank et al. 2018) will have to go hand in hand with the need to ensure more adequate diets and the access to safe and nutritious food for all Europe's consumers (Mertens et al. 2018). In the past 3 years, a team of scientists from nutrition, economic, environmental, consumer behaviour and animal science research have worked together in the SUSFANS project. The overall aim of SUSFANS is to assess in which direction the EU food system can move, while accounting for the trends that we see on the basis of improved metrics on the drivers and outcomes of the food system, enhanced modelling and foresight (Rutten et al., 2016). SUSFANS team has developed analytical tools, models, and scenarios for assessing and monitoring current and future European diets and food systems to provide an evidence base for EU-wide food policies and R&I strategies.

SUSFANS is working with partners to develop EU food systems that contribute to health, environment, equity and viable enterprise. Steering the EU food system towards a sustainability transformation requires a vast and actionable knowledge base available to a range of public and private actors. SUSFANS delivers high-quality research on metrics, models and foresight to support evidence-based policies and innovation strategies for a sustainable, and food and nutrition secure EU. Also, SUSFANS modelling attempts to integrate the functionality of agricultural, food and nutrition sectors by integrating data sets and models addressing all sustainability dimensions of the FNS.

In summary this requires the heterogeneity of stakeholders across the sustainability dimensions of FNS, at EU, sub-regional and sectoral levels, and from the public and private domain. The SUSFANS project works with relevant stakeholders to:

- Strengthen the analytical capacity for assessing the state of EU FNS at sub-regional level.
- Improve the capacity of stakeholder to monitor developments, determine risks and long-term challenges, and by doing so support the design and formulation of long-term agro-food strategies.

To achieve these objectives, SUSFANS has organised four workshops with stakeholders in the four countries: Denmark, France, Italy and Czech Republic. This deliverable describes the outcomes of the four workshops and suggests future actions.

### ***Workshop goals and benefits for stakeholders***

The overall aim of the workshops is to increase stakeholder commitment to change by means of consulting/considering SUSFANS outcomes for assessing FNS and the modelling toolbox outcomes in decision making processes. Specifically the objectives are:

Objective 1: to increase awareness of the SUSFANS project outcomes through inspiration, information, and general discussion with a larger group of stakeholders.

Objective 2: to increase willingness to implement and consult the user toolbox in decision-making processes among key stakeholders.

Workshops were held in the Czech Republic, Denmark, France and Italy to capture EU diversity. In these workshops, SUSFANS shared results from the Project and discussed how the results could be used to improve public health, equity and the environment in the EU, the competitiveness of the EU agri-food sectors, and to contribute towards global food and nutrition security.

Benefits for the national stakeholder participants are as follows:

- Get updated on the latest scientific insights, metrics and models for assessing, monitoring, and addressing European and national diets and food systems, with particular emphasis on consumer diets in one of the four countries: Czech Republic, Denmark, France and Italy.
- Discuss how future trends in demand for food in Europe, towards 2030 or as far out as 2050, provides an opportunity to rethink the food system from quantity to quality. Get to know more which food innovation strategies and public food policies would improve future outlooks for nutrition and health, the environment, equity and viable enterprise.
- Discuss a common research and innovation (R&I) framework, at national and EU level, for addressing food systems transformation under the Food 2030 agenda. How to organise R&I from a multi-dimensional and multi-level perspective, which would include (1) healthier diets, environmental and economic outcomes together with social equity dimensions and (2) system interactions across country, EU and global scales?

### ***Task 11.6 goals***

T11.6: Draft an report paper on feasibility and acceptance of SUSFANS Toolbox and results (WEcR,, CREA,INRA, DTU, ANSES, SZU, UOXF)

Based on the report from each regional workshop (T11.5) the main results on feasibility and acceptance of the SUSFANS Toolbox and insights on sustainable FNS will be published in an academic paper.

D11.6: Report on SUSFANS Europe tour with the most important conclusions and commitment per country to use SUSFANS as a standard to analyse sustainable FNS (month 48).

## Research question

How can scenario workshops and general discussions contribute to feasibility and acceptance of complex research project outcomes such as SUSFANS toolbox by the stakeholders?

## Outline of D11.6 and link to other work packages

In the deliverable D11.6, we compare the workshops in terms of (a) helpfulness to understand the users' toolbox, (b) usefulness to identify opportunities and challenges in adopting users' toolbox, and (c) stakeholder/user intention (commitment) to consult the users' toolbox while making agricultural and food and nutritional decisions. We focused the workshop on the user toolbox (the visualizer), rather than the technical toolbox that is behind this user interface.

## Methods: Participatory action research

SUSFANS modelling toolbox scenarios are often rather abstract. They represent broad sustainability impacts that focus on groups rather than on individual users' perspective. However, the modelling toolbox provides a useful starting point to discuss the SUSFANS user toolbox, and the plausible future scenarios. To create a common vision, to bring the SUSFANS message across, and discuss feasibility and acceptance of SUSFANS toolboxes, scenario workshops with adaptation pathways have been organized.

Often, when the discussion subject is too complex and the usability outcomes are less obvious, narratives about the future are used, such as, telling stories about future scenarios, showing films and images, and showing the potential impacts. The future narratives should be sufficiently rich and varied, as well as inviting to reflect on daily practices. However, the future narratives should remain general (not too detailed) not to guide the participants to a specific direction. Thus, information about the user toolbox as such, providing future narratives, a balance between asking very open questions that generates vague answers and proposing precise scenarios help participants to come up with their own experiences and to propose further improvement, feasibility and acceptance of SUSFANS toolbox.

To make sure that workshop participants develop a rich view of what an envisioned innovation may look like and what impacts it may have, specific policy goals and the SUSFANS user toolbox in concrete terms have been delivered. By doing so, participants have been stimulated to imagine what other impacts they expected, and what the application of user toolbox might mean for them.

Regarding the tools used as future narratives, power point presentations, a short film, and discussion cards called "DEMOCS" have been used. The DEMOCS cards method had developed as democratic tool for citizens engagement in discussions of high technology complex topics (Felt et al., 2014). Participants had possibility to choose the cards that they considered most relevant to discuss and to add extra topics, comments or feedback. In choosing and adding topics, the participants got an opportunity to steer the discussion. Cards facilitated a structured and open exchange of experience and knowledge.

Additionally, group brainstorming and exchange about potential impacts are more useful, than just asking about individual experiences and knowledge. Group brainstorming often triggers less obvious thoughts and ideas. Group brainstorming and exchange about potential impacts followed by asking about individual experiences, preferences and knowledge often triggered less obvious thoughts and ideas. The questions asked during the group discussions were (among others): What would the application of user toolbox mean for the stakeholders, for their community and for the world in general? How might it affect their daily work? To what extent would that contribute to sustainability and health practices?

Finally, the moderator was crucial for workshops and had academic qualifications and professional experience with modelling and user toolbox, next to the skills and qualities to

conduct and facilitate the discussions. The geographical area of this study is bounded to four SUSFANS regions: Czech Republic, Denmark, France and Italy. One workshop training with local stakeholders will be held in every of the four regions.

## Workshop Proceedings

Every workshop had two main sessions planned: morning session and afternoon session. Prior to the workshop, participants received information on the SUSFANS program and the workshop goals and agenda. At registration, the participants were asked to prioritise the health and sustainability policy goals out of a given list.

### Morning session

The stakeholders at national level have been identified by the SUSFANS project partners. Whereas, the specific persons relevant for discussion in the specific country, have been identified and invited by the national representatives. Before the start of the morning session, participants have been asked to prioritize health and sustainability policy goals at the beginning of the morning and reprioritize towards the end of the session. The participants showed their priorities by choosing maximum five of the given 14 policy goals (SUSFANS deliverable 11.5).

After initial selection of the policy goals, participants have been introduced to the workshop goals, the SUSFANS results through power point presentation and a short film, and reflection to SUSFANS from a local perspective. Following, group discussions were run in English or in local languages in four main groups: academics, policy makers, NGOS and business (retail, production, processing companies). The group discussions have been facilitated by national SUSFANS representatives. At the end of the morning session, the results and conclusions have been presented in a short plenary session.

### Afternoon session

Within the group of stakeholders those who were expected to be users and/or possible ambassadors of the SUSFANS user (and model) toolbox were invited to participate in the afternoon session too. A mix based on background of stakeholders during the afternoon session was preferred. Here the role of moderator became more important to provide the SUSFANS input in-depth and facilitate the discussion process. The session had three main phases respective to SUSFANS approach: (1) the assessing, (2) modelling, (3) foresight and policy guidance. Participants were asked questions on every phase, such as how the stakeholders operate in a specific phase, what data and methodologies do they use, what is innovative, what are the benefits of the SUSFANS process.

Most importantly, during afternoon session, the participants were introduced to DEMOCS cards relevant to the phase under discussion (SUSFANS deliverable 11.5). Based on their selection and added written feedback on how the innovation could affect their work, and how the tools could be applied, participants were asked other usability related questions, such as



the relevance, further actions needed, and local and national impacts. The afternoon session has been (whenever possible) conducted in English. At the end of the session, the main conclusions have been summarized together with the participants, and further collaboration and follow-up projects have been discussed especially with the participants who identified themselves as ambassadors to spread the message of SUSFANS.

## Results

The purpose of this study was to find the extent to which the combination of general stakeholder workshops and specific group discussions with DEMOCs cards contribute to the understanding, feasibility, and acceptance of a complex research project results, such as the SUSFANS toolbox. In order to achieve this purpose, we have conducted four workshops with stakeholders in four European countries.

This section presents the workshop outcomes. First, we will summarise the number and background of the participants, then the outcomes of the choices that stakeholders made regarding policy goals, next, the of assessment tool they were willing to discuss by selecting DEMOCs cards, and finally the feedback they provided regarding the SUSFANS toolbox and future steps. At the end, the section provides process evaluation and workshop recommendations.

### Workshop participants

Table 1 shows the workshop participants by country. Stakeholders from different backgrounds were invited:

1. Business (retail, production, processing companies),
2. Policy makers,
3. NGO's,
4. Academics.

The organisers of the workshops were national institutes of health in France and Czech Republic (Anses in France; the National institute of public health in Prague, Czech Republic) and a University in Denmark (DTU), and a Research Centre in Italy (Council for Agricultural Research and Economics (CREA) - Food and Nutrition). Since several researchers from these organisations attended the workshops, academics were the well represented in the workshops. Policy makers were also well represented in the workshops, especially in the Czech Republic and Denmark. Companies and NGO's were also present but in smaller numbers. In the Czech Republic no representative from the private sector attended the workshop. In the afternoon session, usually a smaller group of stakeholders participated.

*Table 1: Workshop participants by country (excluding the organisers)*

	Czech Republic	France	Italy	Denmark	
<b>Academics</b>	10	19	35	9	
<b>Policy makers</b>	7	2	8	6	
<b>Companies</b>	-	1	3	2	
<b>NGO's</b>	1	2	1	2	
<b>Total</b>	18	24	49	19	<b>110 Participants</b>

In total, 110 participants attended the workshops (facilitators excluded). In all countries, the participants had a mixed background: academia, policy makers, companies, and NGO's. Most participants were from academia and least from companies and NGO's.

## Policy goals

At the very beginning of the workshops, the participants were asked to prioritise the health and sustainability policy goals out of a given list. Table 2 shows the policy goals by frequency of selection and by countries. The purpose of the exercise was to facilitate discussion on the multidisciplinary approach of SUSFANS, combining health and sustainability issues, data, and methodologies.

At the end of the morning session the participants were asked to re-consider their choices. The difference between selected goals in the morning before and after session were not significant. In addition, not in all countries the reselection was done. Therefore, Table 2 shows the numbers of policy goals selected in the morning only.

*Table 2: Policy goals by frequency of selection and by countries in Czech Republic (CZ), France (FR), Italy (I), and Denmark (DK)*

Policy goal	Specific goal	CZ	FR	I	DK	Total
Balanced and sufficient diets for EU citizens	Energy balance	8	3	6	1	<b>18</b>
	Adequate nutrient intake	6	1	19	2	<b>29</b>
	Adequate food intake	7	4	12	6	<b>30</b>
Equitable outcomes and conditions	Equity among consumers (outcomes)	3	6	6	3	<b>19</b>
	Equity among consumers (conditions)	1	5	7	3	<b>16</b>
	Equity among producers and chain actors	3	4	15	1	<b>22</b>
	Equity in footprint of food	6	1	4	3	<b>13</b>
Reduction of environmental impacts	Climate stabilisations	7	6	7	5	<b>27</b>
	Clean air and water	15	1	6	5	<b>26</b>
	Biodiversity conservation	10	6	6	6	<b>28</b>
	Preservation of natural resources	16	10	14	4	<b>43</b>
Competitiveness of the EU agri-food business	Relations between production and trade	3	3	7	3	<b>17</b>
	Orientation and specialisation of trade	2	0	1	2	<b>5</b>
	Economic performance and productivity	3	0	14	5	<b>22</b>

As Table 2 shows, the most frequent chosen policy goals **in Czech Republic** were the preservation of natural resources, clean air and water followed by biodiversity conversion. Similarly, **in France**, preservation of natural resources was chosen most frequently, followed by Biodiversity conservation, Climate stabilisations, and Equity among consumers (outcomes). Whereas **in Denmark** the most frequent chosen goals were biodiversity conversion and adequate food intake. **In Italy** the most chosen goals were adequate nutrition intake and equity among producers and chain actors followed by preservation of natural resources and economic performance and productivity. So, overall, the priorities chosen reflect the background of the participants in the domain of health (nutrition) and sustainability. Aspects related to environmental impact were chosen most often in France and Czech Republic whereas in Denmark it was also balanced and sufficient diets and in Italy aspects of all four policy goals were chosen. The policy goals related to competitiveness of the EU agri-food business have received the least priority by the participants, which exception of Italy.

Participants were asked to prioritise the health and sustainability policy goals and re-select at the end of the sessions, an exercise meant to facilitate discussion on the multidisciplinary approach of SUSFANS. The priorities chosen reflect the background of the participants. Along all workshops the most popular policy goals were goals related to environmental impact and balanced and sufficient diets: preservation of natural resources (43 x chosen), adequate intake (30 x chosen), followed by adequate nutrition intake (29) and biodiversity conservation (28). Reselection was not done in all countries and did not show significant changes.

## DEMOCS cards

During the afternoon session, the participants were given the chance to select the most interesting cards for the afternoon discussions (See the Methods section for the DEMOCS cards). Table 2 shows the themes of the CARDS the participants have chosen in Czech Republic, France and Denmark. In Italy, although all the cards have been distributed and shortly discussed, time constrains did not allow the participants to select their preferences.

Table 2: Choice of DEMOCS cards

		Czech Republic	France	Denmark
<b>Assessment</b>	1. Food systems framework			✓
	2. Metrics	✓	✓	✓
	3. Data harmonisation		✓	✓
	4. Data analysis: performance status (current)	✓	✓	
<b>Modelling</b>	5. Concept and gap analysis			
	6. Modelling toolbox	✓	✓	✓
	7. System dynamics			
<b>Foresight</b>	8. Contextual scenarios		✓	
	9. Driver quantification			✓
	10. Policy guidance	✓		

Notes: ✓ Card is included in the discussion

**In Czech Republic**, there was consensus about the toolbox and foresights cards whereas a broader discussion took place on card 2 (data analysis). **In France**, participants were mostly interested in the assessment phase compared to modelling and foresight. Cards that were chosen most often were 2 (metrics), 3 (data harmonisation), 4 (performance status) for assessment, 6 (toolbox) for modelling, and 8 (scenarios) for foresight. Also **in Denmark**, three cards in the assessment phase were discussed and one each for the modelling (6) and foresight phase (9). The same issue came up in the different phases: the importance of understanding what is behind the modelling and describe the possibilities and limitations of the models. Overall Cards 2, 3, 4 and 6 were the most chosen ones. It seems during the workshop the assessing and modelling phase were the most tangible, transparent, fundamental parts of SUSFANS user toolbox for the participants.

In three workshops the DEMOCS cards to be discussed were chosen by the participants. Participants were mostly interested in the assessment phase compared to modelling and foresight and more cards were discussed from this phase. Cards that were chosen most often were metrics (assessment phase) and modelling toolbox (modelling phase). For the foresight phase there was no agreements between the countries in the card choice.

The DEMOCS cards seemed to be a good way to start the discussion on the SUSFANS outcomes but the specific questions on the usability for and impact on stakeholders' work were not understood or the discussion did not reach that point. Rather, the discussion on the DEMOCS cards was about specific aspects of the content, such as data needs. For methodology development it is important to understand why and how this can be improved.

## Feasibility and Acceptance

This section presents the feasibility and acceptance of SUSFANS modelling and use toolboxes. The feasibility and acceptance has been discussed according to the clarity, uniqueness, usability of the toolboxes. Eventually, this section refers to the challenges, missing values, and future opportunities.

### Clarity

**In Czech Republic**, the participants expressed that the objectives of the SUSFANS project were quite clear to them. The systemic approach applied and SUSFANS contribution to the communication about sustainable FNS has been highly appreciated. The user toolbox and the visualizer, which translated the complexity of the conceptual framework into a manageable form has been assessed as very suitable for communication with different types of stakeholders. The majority of the participants stated that the workshops helped them understand the SUSFANS outcomes and get insights in scientific standards for assessing sustainable food and nutrition security. Remarkably, participants were interested in knowing more details about SHARP model, SUSFANS visualizer, and collaboration with FBDG in the Czech Republic.

**In Italy**, the participants indicated that the project objectives stand alone were quite clear. However, the participants also specified a number of ambiguities, in contrast to the cause-effect interactions of the conceptual framework presented. The discussion groups concluded that it was challenging to find an optimal method that could connect the different objectives. Accordingly, to understand how the models presented in the modelling toolbox were connected to each other seemed to be a difficult task. Another unclear aspect was if possible scenarios have already been analysed using the proposed modelling system. The participants were interested if the different sustainability dimensions of FNS (economic, social/cultural/health, environmental, nutritional) were considered as equally important in the modelling system. Does the model foresee the attribution of different levels of importance and/or priority to the different dimensions?

**In France**, clarity of the outcomes was not directly addressed in the discussion. Most questions in the morning session were about how environment was defined. In the afternoon session, stakeholders had difficulties to link the limited number of available indicators on environmental impact with food consumption data.

**In Denmark**, the planned discussion in the morning was skipped and clarity of the outcomes was not directly addressed. In the afternoon session, the SUSFANS outcomes on the DEMOCS cards seemed clear. For example, the stakeholders could see themselves in the Food systems framework (card 1). The biggest concern for the stakeholders was to understand what was behind the models. They felt that the use, limitations and estimates behind the models should be better described.

The toolbox and especially the visualizer was considered helpful and clear for non-expert people, especially for communication purposes. Also the objectives and systematic methodology of the project and scientific standards for assessment were quite clear and appreciated by stakeholders. Also, they felt that the workshop had contributed to their understanding. However, the results are expressed at a too high level, especially the different models used: major details would help, and information impact is intrinsic in the model. Specific parts of the model that were unclear were discussed, such as how environment was defined, and the inclusion of indicators (e.g. food access – see also below). Stakeholders also thought that in general estimates underlying the models should be better described, how can it be used and what the limitations are.

### ***Uniqueness***

***In Italy***, the participants recognized the novelty of the systemic approach that connects different optimization models. However, different issues were raised on the assessment and modelling. One of the concerns was if the performance metrics and indicators selected were innovative enough considering already established Sustainable Development Goals (SDGs).

The system approach where diet is embedded in the system and several models are connected is the main novelty of SUSFANS. The novelty of the performance metrics and indicators was less obvious.

### ***Usability and intention to use the SUSFANS outcomes***

***In Czech Republic***, the participants mentioned that they received applicable practical tips depending on their jobs and background. Especially, the usability of the toolbox as communication method has been explicit. Exchange of knowledge between disciplines and between countries can enhance the collaboration between research and policy, and expand the dialogue between private (production) and public (policy) sectors and the communication with consumers to facilitate improvements towards sustainable FNS. Despite usability potential, some of the participants were uncertain about the possibility to apply the knowledge directly in their current jobs.

Participants evaluated positively the user toolbox including a visualizer as a tool to translate the project results into practice and communicate with consumers, industries and other stakeholders. Especially the usefulness in communication with consumers, industries and other stakeholders was emphasised. The participants noticed the importance of scenarios as tools to support decision making, as a guidance for implementation of policy and innovation strategies. Finally, although the participants evaluated the toolbox positive, they also mentioned the difficulty to translate project results into practice.

***In Italy***, the participants stated that the question of usability and intention to use the SUSFANS outcomes were more a question of policy makers rather than of representatives of business

and production system. The participants mentioned toolbox enabled scenarios mainly for policy makers. In general, the toolbox was assessed as helpful and interesting to compare heterogeneous situations. However, trainings were necessary to increase the usability. Training not only among policy makers, but also the consumers can support them recognise the sustainable food as healthy food. Finally, usability test can be improved using real data as people tend to consider what is reported in the visualizer as the truth.

**In France**, usability and intention to use were not directly addressed during the discussions. The participants however indicated that they would appreciate to get a summary report of the main outcomes of the SUSFANS project, and to access to the modelling tools when finalised. Here, property and copy rights were recognised as an issue.

**In Denmark**, the country representative stated that SUSFANS modelling toolbox provides information for the policy debate. In the discussion, stakeholders discussed that “models will never be completely correct and it is better with “quick and dirty” models that make people move. The model served as a tool for further informed discussion. Explaining the users what to do if they what to influence the model, and how to use the model was emphasised as important. Moreover, it was concluded that the usefulness of specific indicators, metrics, and models was dependent on the user and if the perspective was food consumption or production. The visualizer was considered a powerful tool. Providing clarity on how it can be used and misused was therefore considered very important.

Regarding the modelling toolbox, the discussions concluded that models are not neutral, and the underlying building blocks needed to be explained more explicitly. Similarly, the limitations of the metrics should be described extensively.. Additionally, having the overview of the entire food system was considered useful, and the importance of taking equality into account was recognised.

The SUSFANS toolboxes is considered relevant to several stakeholders. Researchers can include sustainability in its four dimensions: environment, economics, cultural/social, nutrition/health. Policy makers can use the toolbox as a tool for evaluating the sustainability status at a certain moment or over a longer time period , and compare the different outcomes in a more holistic and evidence based way. The toolbox was considered being helpful for discussing agri-food policy issues, to have an informed discussion and get people to move. A communication tool between disciplines, countries, public and private, with consumers, etc. The scenarios were considered as helpful tools to evaluate impacts of policies, to support decision making of public policy makers. Despite usability potential, some of the participants were uncertain about the possibility to apply the knowledge directly in their current jobs and suggested the need for trainings, intellectual property, and copy rights.

## ***Data availability is a challenge***

The issue of data availability was raised several times:

- The current status of assessment together with the availability of up-to-date systemic data on food consumption at individual level, food composition, anthropometric and other data have been indicated as necessary prerequisite for an appropriate assessment or modelling. Unfortunately such data lacks in the Czech Republic. Absence of data could be a limitation for applying the SUSFANS tools. Additionally, data need to be harmonized in (at least) European countries. In this context, some innovations are important, such as usage of big data patterns as a possible solution of missing data in the future.
- Moreover, there is a need to get available harmonised data at the EU level. To link exiting databases foods have to be linked manually and there are over 2500 in France alone.
- Opportunities for data are EFSA (EU level) and Adème (France national level)
- Dietary intake data, nutrition recommendations, data food compositions, sustainability indicators need to be continuously updated in the modelling toolbox.
- The way the data is used should be standardised.
- Dietary surveys should also be used (not constructed diets)

Absence of data, especially the absence of harmonized data at EU level, was considered a main limitation for applying the SUSFANS tools. Next, continuous update of data is a challenge. Data that needs to be updated are mainly: dietary intake surveys, nutrition recommendations, food compositions, sustainability indicators.

## ***Missing indicators and specific suggestions to the model indicators and calculations***

Sustainability has been recognised as core for the modelling and user toolboxes. However, some indicators have been recognised that are still missing from the model. These indicators are:

- Diet outcomes in terms of **mortality**.
- (Geographic) **food access** in the model, or perhaps in an additional social model; Access to food in relation to specific population groups.
- **Individual level characteristics** (preferences, habits, food access, time for cooking, regional specifics).
- Specifics and differences at **national and regional levels** (e.g. Mediterranean diet)

**Specific suggestions for model improvement are:**

- The model should be able to include future innovations such as the production of artificial meat and water based growing of vegetables and other plants
- Consumers have a usually different perception of environmental impact than the academics. Scientific definitions of impact used in the model should take this into account, also by considering differences between countries.
- Scaling down to different sectors, showing results per sector
- The feedback loop needs time series
- Geographic differences in nutritional value of foods
- Make it explicit in the model that both public and private policy are present in the food system
- 
- In calculations, take distributions into account
- Unclear if the modelling system takes into account the trade-offs between improving diets and increasing production or preservation of natural resources.

The workshop participants believed that mortality, food access, and individual level characteristics such as preferences should be added to the model. Making the inclusion of both public and private policy more explicit and scaling down to sections and geographic regions was considered a useful functionality to add. The model could also be improved by adding current and future innovations in production processes.

***Limitations of the model and generalisability***

Several limitations of the model and the generalisability of the model results were mentioned:

- It should be transparent which data is used in the models to enable a better interpretation the outcomes (e.g. country differences)
- The sustainability calculations of the model are not as accurate as the output suggests, it should be better to present the outcomes as a range.
- Another challenge is the discrepancy of up-to-date systemic national wide data on food consumption at the individual level, anthropometric data and detailed data on food composition (in Czech Republic). The data are necessary prerequisite for an appropriate assessment or modelling, which serves as a limitation to apply the SUSFANS results.

A major limitation of the model was that it was not clear what the limitations were, more transparency was required on the underlying data (e.g. country differences) and estimates. Also the differences between countries in availability of up-to-date data is a limitation for the use of the SUSFANS toolbox.

### ***Other issues, challenges for implementation***

Several other issues have been discussed during the workshops that needs special attention, those were mainly related to challenges for implementation:

- To increase sustainability of the diet, seasonality and substitution (energy intake) are suggested as main strategies.
- The background of stakeholder is quite important for proper communication. The major challenge is promoting healthy and sustainable behaviours, respecting social norms and preferences by consumers, within a complex context where sustainability means also economics and social.
- The history must be considered together with the resilience by the production model. Nowadays, the challenge is to produce more while polluting less in a context where the economic sustainability is a constraint. Sustainable healthy food can be beneficial for sales increase, but it also depends on the demand. The producers should be trained in the same way as the consumers about e.g. the Mediterranean Diet.
- The toolbox can have major impacts of the diet according to the FOOD2030 DG-AGRI agenda. However, it should include the transformation and the resilience i.e., typical country-specific issues.
- Agriculture policies can be defined at EU level whereas the EFSA recommended to set the food based dietary guidelines at national level. It was not clear how a global integrative approach like SUSFANS takes this into account.

In sum, several challenges for the implementation of SUSFANS toolbox and healthy and sustainable diets were mentioned. Seasonality and substitution were seen as main dietary opportunities, social norms and consumer preferences as important issues to consider. The fact that sustainability also means economics complicates the issue. In implementation it is important to include the demand and the production side, the regional/ national/ EU level, and to take history, transformation and resilience into account.

### ***Future steps agreement***

From the evaluation forms, we could see how many participants were willing to be involved in future steps. **In Denmark**, the question was not answered by all respondents, two people added the topics they wanted to be involved in further collaborations: Projects of global/regional projections of supply/demand, and Economics and integration of sustainability and health. **In Italy**, 7 participants said they wanted to be involved in further collaborations, and 5 did not. Topic that they wanted to be involved on were: relations between SUSFANS (indicators) and the current policies on food system, production, health and sustainable diets, how to train to use the cards in a proper way, presentation of natural resources, and policy. In **Czech Republic**, 6 respondents were interested in future collaborations and 7 were not. Topic that they were interested in were: competitiveness of agri-food sector, environmental impact, use of results for

communication purposes, holding the adequate and sustainable diet, policy modelling, customers and diets, environmental input assessment, practical usage models for assessment and forecast. **In France**, the one person that filled out the evaluation form wanted to be involved on: food policy, link between national policies and European policies.

Other issues that were brought up in the discussions are:

- The SUSFANS coordinator suggested to create a network to continue the SUSFANS work
- There are several related initiatives that SUSFANS could connect with, such as the SUSDIET project, the META PROGRAM DIDIT, platform alimentation (France).
- In Italy, the participants concluded that exchanging knowledge and opinions in respective environments, especially to enhance the collaboration between research and policy, and the dialogue between private (production) and public (policy, manager) aimed at facilitating cross-level and cross-component agri-food sector.
- Challenges posed by the new Common Agricultural Policy must be included in the food system management agenda. Similarly, FOOD2030 European Conference and the collaboration with the Standing Committee on Agricultural Research, the Food Chain Analysis Network within the OECD, and other organizations managing the agri-food system.
- Also, the size of public procurement makes it an important player in transition of food consumption
- Promoting a data-driven decision-making process implies to spread the culture of data, i.e., to explain what data collection, indicators, and outcomes mean is a crucial point. A flexible and clearly presented tool is crucial. The challenge is to deliver the system that allows for comparing goals and actuality of the indicators in a simple way.
- It was concluded that eating behavior motives of the Czech population worth further research

The SUSFANS coordinator suggested to create a network to continue the SUSFANS work. Due to time, this could not be taken up in the discussion but stakeholders did mention some specific issues such as the possibility to connect with related research projects, platforms, policy initiatives (common agricultural policy). Benefits were seen especially for public policy makers, for whom a flexible and clear tool was considered an important way forward in data-driven decision.

## Process evaluation

### *Feedback participants*

Participants were asked to fill out evaluation forms, these included issues on the venue, the sessions, interactions with other participants, the moderator and the effectiveness of the workshop. Effectiveness was tested with the following questions: I got insights in scientific standards for assessing sustainable food and nutrition security; I understand sustainability trade-offs between scenarios; I have received applicable practical tips today; I got insights in how the tools and models developed by SUSFANS can impact sustainable food and nutrition security; I am planning to consult the suggested tools and models; I would recommend SUSFANS tools to a colleague or friend; The workshop helped me to understand the SUSFANS outcomes; Overall this was a high quality event.

**In Denmark**, 12 participants to the workshop filled in the evaluation questionnaire. Most respondents "agreed" to the statements of the sessions and the moderator. With exception of timing, which was not considered optimal. Participants were also slightly less positive about their opportunities to learned from each other to expand their network. Possible because no group discussion were held in the morning sessions. Participants on average also agreed with the effectiveness statements of the evaluation form, they did however not agree with the statement that they had received applicable practical tips.

**In Italy**, out of 49 participants to the workshop 14 filled the evaluation questionnaire. More than 50% of respondent were 'agree' or 'strongly agree' to most statements. Attendees appreciated the atmosphere and the openness and transparency in illustrating contents. On two items, participants did not agree: 'I have learnt a lot from other participants' and 'I have received applicable practical tips today' where most of the answers were 'neutral' or 'disagree'.

**In Czech Republic**, 18 participants filled out the evaluation questionnaire. Here again, there was strong agreement with the statement. None of the statements was rated below 2.5 (neutral) on average. The lowest scores were found for timing, interaction with other participants. For the effectiveness of the workshop, participants most strongly agreed with the statements that the workshop had helped them to understand SUSFANS outcomes and methods to assess sustainable food and nutrition security. They agreed somewhat less with the statements that they would consult the tools in future and that they understood trade-offs between scenario's.

Quantitative data from **France** were excluded since only one participant filled out the evaluation questionnaire. It was mentioned that SUSFANS presentation were found too conceptual and complex.

Stakeholders were satisfied with the workshop as a whole and especially appreciated the atmosphere, the sessions, and the moderators. The effectiveness of the workshop shows that in general the participants have gotten insights and understand SUSFANS and the tool to some extent. They were however less positive about the possibilities to learn from each

other and expand their network. Some participants considered the SUSFANS presentation too conceptual and complex.

## ***Feedback facilitators***

### *Lack of time was an issue in all four countries*

Interventions were done to deal with the lack of time, in France group discussions in the morning were limited to 15 minutes and in Denmark the morning group discussion were skipped, rather there was a longer discussion after the presentations were some of the issues, especially usability were discussed but not all (e.g. uniqueness). In Denmark, the closing of the morning session was a bit hectic due to lack of time. This was perceived as a missed opportunity to update the stakeholders willing to participate in the afternoon session on what to expect, this was not clear to them.

The challenge is in simplification of the tool. It is harder to achieve a synthesis with a simple tool. In fact, a long series of deliverables dealing with several aspects of such a complexity is planned within the SUSFANS project. These European toolbox workshops are expected to be very helping but discussing the model behind the indicators and the assessment process it is very time consuming. Therefore, the time of discussion on the tool and the stakeholder requirements is too short.

### *Ranking policy goals*

The ranking of policy goals was done in all four workshops, however the re-ranking was dropped to the lack of time or misunderstanding. Also, participants were asked to put a weight to the importance of the selected goals. There was a lot of missing data on these weights in France.

### *Discussions quality and interaction*

In France, the discussion in the afternoon were sparse, despite attempts of the SUSFANS team to stimulate discussions. The questions to be discussed were not always understood. In Denmark on the other hand, the afternoon discussions were perceived as profound and lively and the key stakeholders seemed very interested.

### *Time needed for preparation, understanding protocol/ methods/ workshop goals by facilitators*

The facilitators would have appreciated it if they had been involved in the drafting of the protocol and the changes to the protocol after the other (earlier) workshops. They indicated that it was hard for them to understand the protocol and purposes of the workshop. Also, they needed it in time to have more time to digest. In Denmark, France and Czech Republic, there was a pre-workshop meeting with the SUSFANS team and workshop facilitators, this was experienced by the facilitators as very beneficial.

### *Keep track on the time*

Timing during the workshop was not optimal. Especially the questions and discussions after the presentation took longer than expected. The timing of the program was quite ambitious.

### *DEMOCS cards were considered complicated*

- *In Italy*, facilitators observed that this simple synthesis of the workshop structure should be clearly illustrated to the organizers. As the facilitators were not engaged in protocol development, and were not properly instructed, they found it difficult to identify the structure clearly. Another feedback refers to timing of invitation. Participants would have liked receive information some time ahead. Also the text of invitation should have explained that in the afternoon session a fewer number of attendees was forecast and they were invited to attend afternoon session only if they were interested in becoming ambassador of the SUSFANS.
- Another crucial observation was made during the debriefing after the workshop. As the SUSFANS is very rich in contents the possibility to send a brief letter to participants together with the table of the policy goals and the DEMOCS ordered by modelling, assessment, foresight.
- It is important to send a feedback to them maybe a synthesis of the slides or the whole slides once revised or a summary.

A key element in the workshop was the preparation by facilitators in the different countries. Lack of time due to too challenging program and many questions after the SUSFANS presentations was an issues in all four workshops. For this reason, several parts of the workshop protocol were skipped or adjusted.

Time was also an issue in relation to the preparation, facilitators and participants would have appreciated to have received information, and especially the DEMOCS cards more in advance since they were considered quite complex and/or a summary with the synthesis after the workshop.

## Discussion

### **Process: Setting of combination DEMOS and discussion effective, efficient, useful**

The overall aim of the workshops was to increase stakeholder commitment to change by means of consulting the SUSFANS toolboxes in their decision making processes. The question was if scenario workshops and general discussions could contribute to feasibility and acceptance of such complex research project outcomes. The overall aim was expected to achieve through inspiration, information sharing and general discussion, as well as thorough raising stakeholder commitment to use the SUSFANS outcomes, become the SUSFANS ambassador.

The main method used was participatory approach through scenario workshops with wide range of stakeholders in four countries. Because of the complex and abstract structure of the SUSFANS toolboxes, the usability and feasibility outcomes were challenging for the stakeholders to discuss. Therefore, they were given future narratives of possible scenarios showing potential impact. In combination of group discussions on selected sustainability policy goals, the future narratives in the form of DEMOCS cards helped workshops participants to come up with innovative ideas and propose further improvement, feasibility and acceptance of the SUSFANS toolboxes.

In total, 110 participants attended the workshops with the highest number of participation in Italy (49). The participants had a mixed background (academia, policy makers, companies, and NGOs), which is coherent with the multi-disciplinary character of the SUSFANS project, specifically, the toolboxes.

At the very beginning of the morning sessions, all participants have selected health and sustainability policy goals. Interestingly, the most frequently selected goal was the preservation of natural resources. Other popular policy goals were ones related to environmental impact and balanced and sufficient diets, such as adequate intake and biodiversity conservation. Despite small differences, the selected policy goals were comparable in the four countries. The popularity of these goals are probably due to the fact that majority of participants were either academics engaged in environmental and food and nutrition research activities or policy makers that are concerned about environmental issues.

During the afternoon session, the participants have selected DEMOCS cards (SUSFANS deliverable 11.5) to discuss and give their comments, opinions. The cards were designed according to the three main phases of the SUSFANS approach, i.e. assessing, modelling and foresight and policy goals. Participants were mostly interested in the assessment phase, and more cards were discussed from this phase. Cards that were chosen most

often were metrics (assessment phase) and modelling toolbox (modelling phase). For the foresight phase there was no agreements between the countries in the card choice. The DEMOCS cards seemed to be a good way to start the discussion on the SUSFANS outcomes but the specific questions on the usability for and impact on stakeholders' work were not understood or the discussion did not reach that point. Rather, the discussion on the DEMOCS cards was about specific aspects of the content, such as data needs.

Regarding the clarity of the SUSFANS outcomes, the visualizer was considered helpful and clear for non-expert people, especially for communication purposes. Also the stakeholders felt that the workshops had contributed to their understanding. However, the SUSFANS outcomes were expressed at an abstract level. More details with concrete applicability examples would have helped to increase clarity. The ambiguous parts of the models referred mainly to definition of environment, the inclusion of indicators, and the description of estimates underlying the models.

Regarding usability, participants considered the SUSFANS toolboxes as relevant to several stakeholders. Such as, researchers can include sustainability in its four dimensions, policy makers can evaluate the situation, discuss agri-food policy issues, and make an informed discussion. The SUSFANS toolbox has also been considered useful as a communication method between disciplines, countries, public and private. Additionally, the scenarios were considered as helpful to evaluate impacts of policies and to support decision making of public policy makers. Despite usability potential, some of the participants were uncertain about the possibility to apply the knowledge directly in their current jobs and suggested the need for trainings and property and copy rights. The abstract form of the toolboxes and the complexity, in combination with limited time to digest the provided information left participants with a challenge to foresee the exact application of the toolboxes in their daily practice. Moreover, participants were rather uncertain about the implication in their current job. Finally, the availability of coherent and harmonized data has been defined as a challenge not only for the SUSFANS models, but also for the practical applications of SUSFANS outcomes. The models and the toolboxes require continuous update of data, which is currently a challenge if not resource intensive.

Despite the complexity and wide range of the disciplines the models tried to cover, some improvement suggestions have been provided by the participants. Participants suggested including more indicators, such as mortality, food access and individual preferences. Another point of improvement is the increase of transparency, especially the transparency of underlying indicators, estimates and assumptions.

In general, participants appreciated the workshops and perceived their understanding of the project and the toolbox increased. The selection of policy goals and DEMOCS cards proved to be a good starting point to initiate discussions, although specific questions on the usability for and impact on stakeholders' work were not understood or the discussion

did not reach that point. To translate the results from models to practical applications in their own work was perceived as a crucial and very difficult step. Eventually, one day workshop was too short to reach the goals. The participants needed more time to digest the SUSFANS outcomes and to thoroughly discuss specific aspects of the content, such as indicators used in the model. Also, future steps agreements were touched on but not discussed in terms of possible actions. Due to lack of time and the complexity of the issues there was a lot of interactions between stakeholders and facilitators and less between the stakeholders. Therefore stakeholders missed the opportunity to learn from each other and expand their network. Finally, although the subject was complex and the time given was limited, stakeholders showed interest in the SUSFANS outcomes and readiness to further collaborate towards more practical applications, which opens up new opportunities for further research and innovation projects.

## Limitations

Although workshops have been evaluated positively by the participants and by the moderators/facilitators (see Process Evaluation), several limitations should be underlined too.

First, by its nature, workshops are limited in terms of their ability to generalise findings to a whole population, mainly because of the small numbers of participants. Although 110 stakeholders participated in the four workshops, the results are difficult to generalise to the entire population.

Second, the moderator has less control over the results. The moderator allows participants to talk to each other, asks questions, and expresses doubts and opinions, while having little control over the interaction other than generally keeping participants focused on the topic. Sometimes participants may not express their own definitive individual view. They may be limited in a specific context, within a specific culture, thus making it difficult to identify clearly the individual view. These limitations we tried to overcome by careful planning. Structuring by a facilitator or moderator was necessary to enable meaningful exchange, to make sure the conversation stayed on focus, and to ultimately formulate conclusions that were clear and sufficiently shared among participants.

Third, because the SUSFANS project and the outcomes were complex and broad covering all aspects of sustainability of food and nutrition system (which is considered the strength of the project), participants needed sufficient time to digest the material and to prepare themselves for a more fruitful discussions. Participants experience complexity when understanding the information given and extreme challenge to transfer the usability in their daily practice. Unfortunately, no preparatory sessions have been planned neither with participants nor with facilitators because of shortage of time resources.



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