DATA SETS AND RELATED MATERIALS

Trends in the Food System

In a nutshell

FIT4FOOD2030 has gathered evidence and strategic intelligence and mapped out the trends that are affecting the complex food systems. This tool contains the data set on identified trends and related materials.

What for?

- To explore and understand the food system.
- To work with my community on transforming the food system
- To train or educate people on food system transformation

For whom?

Facilitators; Policy makers; Researchers; Businesses; Funders; Educators; NGOs / CSOs

Created by

AIT – Austrian Institute of Technology, (Beatrix Wepner, Susanne Giesecke, Manuela Kienegger, Doris Schartinger, Petra Wagner) with contributions from Thom Achterbosch, Beatrice Biondi, Chrissie Brierley, Just Dengerink, Marina Pino Cebrián, Barbaros Corekoglu, Rebeca Fernandez, Anja Köngeter, Rosina Malagrida, Mario Mazzocchi, Tom Redd, Bettina Schelkle, Jolien Wenink

Something to share?

Leave us a comment about this tool on the platform.
You can also contact Ms. Beatrix Wepner at Beatrix.Wepner@ait.ac.at

This tool was developed as part of FIT4FOOD2030 project. See this tool and others on the FIT4FOOD2030 Knowledge Hub.

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What is this data set for?

FIT4FOOD2030 has gathered evidence, strategic intelligence and mapped out trends that are affecting the complex food systems. This work is presented as an inventory of trends and as a freely downloadable card game.

The trend analysis is part of a series of analytical tools that serve as instruments supporting the processes of vision development, system understanding, road-mapping and action planning in the FIT4FOOD2030 project and can be implemented in a variety of settings and projects.

This analysis has to be considered as a living document, as trends emerge, disappear and change over time and can be supplemented from other sources.

TRENDS IN THE FOOD SYSTEM

Analyzing the trends that are affecting our food system

What are the trends that will shape our food system in the nearby future? Is it climate change, digitization, our increased awareness of health and environment? Perhaps the first question we should answer here is: 'what is a trend?'. A trend, which only becomes visible after it happened, is a development or change over time that is likely to affect society after a few years, and which cannot be changed easily.

FIT4FOOD2030 project aimed to support the European Commission in rolling out the FOOD 2030 initiative and transform the European food system to make it 'future-proof'. Therefore, it was essential to map out the trends that are affecting the complex food system. This trend analysis was chosen as the first of a series of analytical tools that served as instruments during the processes of vision development, system understanding, road-mapping and action planning in the FIT4FOOD2030 project. The results of the trend analysis can be used for similar purposes in a variety of settings and projects.

This tool contains two documents that are presented in separate pdf's:

1) An inventory of trends of the food system
2) The trends presented as cards to be used as a card game and for other purposes

A summary of how the inventory of trends were compiled and what it contains are presented on the following pages.

Inventory of Trends

The inventory of trends was compiled through stakeholder interviews, desk research, a workshop and several rounds of online consultations with the project partners. Furthermore, a survey was used to direct questions on trends to stakeholders in the food system. Drivers and barriers behind the trends as well as consequences for society, challenges and needs for R&I strategies were included in the trends description. The document focuses on *trends* rather than *megatrends* and has to be considered as a living document, as trends emerge, disappear and change over time. The descriptions are kept short and may not be exhaustive, as the intention for it is to serve as source for information and stimulate discussions within the instruments of FIT4FOOD2030. The descriptions focus primarily on the Food and Nutrition System but are also extended by relevant social and political trends as well as megatrends.

A trend is a development or change over a long time which is likely to affect society or parts of it after a few years*. A trend cannot easily be influenced in a mechanic way by individual organizations, players, or nations. It is often a result of specific drivers or can be promoted by strong influencers. It becomes visible only in retrospective.*

Megatrends

The OECD defines megatrends as 'large-scale social, economic, political, environmental or technological changes that are slow to form but which, once they have taken root, exercise a profound and lasting influence on many if not most human activities, processes and perceptions'[1].For our purpose some of the megatrends defined by the OECD, which were considered relevant for the food system, were adopted. Climate change, scarcity of resources and demographic change for example will have direct influence on agriculture and food security potentially leading among other things to malnutrition and migration. Digitalisation as a megatrend will have direct influence on all aspects of life and food production, strongly intertwined with big data analysis and an increase in energy consumption. Megatrends can be seen as drivers behind new emerging trends. It is difficult to describe them as single items, as they also cause and influence one another.

Agricultural production

Trends in agricultural production are strongly influenced and driven by megatrends like climate change, availability of natural resources or urbanization. All this results in changes in farm structures, urban and indoor agricultural systems but also reaches out for new technologies in breeding, alternatives for pesticides, organic farming or permaculture. Digitalization is likewise making its way into agriculture, leading to precision farming and other game-changing technologies. Recent discussions and an increased awareness for marine problems as well as for nutritional benefits from sea food stirs trends in development of new technologies in aquaculture and an increased demand for sea food production.

[1] OECD (2016). Megatrends affecting science, technology and innovation. http://www.oecd.org/sti/oecd- science-technology-and-innovation-outlook-25186167.htm , OECD Publishing

Food Processing

Trends in Food Processing are including new technological developments regarding food production itself, but also new raw materials as new resources become available. Novel foods are introduced, new protein sources are searched for taking into account environmental impacts but also increased nutritional awareness. Changes in lifestyle influence the development of high and ultra-processed food, while on the other hand we see trends going into the direction of minimal processing, natural preservatives or milder production conditions.

Consumer Trends

Increased awareness of health issues and consciousness for environment lead to a series of special diets and 'free from' or transparent products, but also in the long run to personalised food. Higher consumer engagement goes hand in hand with the possibilities of social media open up. Responsible consumers address their demands towards food companies and agriculture and may also put pressure on policy makers. Demographic changes, migration, globalisation and changes in life-style trigger trends like fast and convenient foods, but also lead towards the necessity to have cheap calories available.

Packaging, Waste and Markets

Globalisation is one of the causes leading to a concentration of food retail markets and chain clustering along the whole food supply chain. Digitalisation is beneficial for new shopping behaviour resulting in new logistical challenges. Contrasting this development, the trend towards local and regional products entails short supply chains. Logistics is supported by developments in digitalisation, such as physical internet concepts or smart and intelligent packaging 4.0. Packaging as one of the causes for the increase in plastic waste is focus of some trends that aim for example at reduction of packaging or biodegradability. An increased awareness for waste both from packaging and food stimulates a series of interesting developments, from waste cooking to up-cycling.

Further information on the methods on how the trends were selected can be found in this deliverable of the FIT4FOOD2030 project.

An overview of the trends is provided in Table 1, in the next page.

Identified trends in thematic clusters

MEGATRENDS

- Climate Change
- Malnutrition
- Rise of Non-Communicable Diseases
- Urbanisation
- Demographic Change
- Migration
- Scarcity of Natural Resources
- Rise in Energy Consumption
- Industry 4.0 – Digitization in Food Production
- Big Data Analysis
- Economic Globalisation

AGRICULTURAL PRODUCTION

- New and Game-Changing Digital Technologies in Agriculture
- Alternatives to Conventional Pesticides
- Changes in Farm Structures
- Agricultural Pollution
- Biodiversity Loss
- Transboundary Pests and Diseases
- Organic Farming
- Genome Engineering
- Bio-Fortification
- Indoor Cultivation Systems
- Urban Agriculture / Urban Farming
- Food from the Sea
- Closing the Loop in Aquaculture
- Permaculture

FOOD PROCESSING

- Blockchain Technology for Secure Food Supply Chain
- Cultured / In-Vitro Meat
- New Technologies in Food Production
- High/Ultra Processed Food
- Clean Eating / Transparent Labels
- Novel Food
- Natural Preservatives & Milder Processing Methods
- Alternative Protein Sources
- Functional Foods incl. Pro&Prebiotics

CONSUMER TRENDS

- Health and Food Consciousness
- Responsible Consumers
- Special Diets like Vegetarian, Vegan or Low Carb
- Destabilized Consumer Trust
- Fast and Convenient Food
- Low Prices, High Calories
- “Free-from” Products
- Smart Personalized Food
- Changing Households and Food
- Globalisation of Diets
- Consumer Engagement
- Traditions and Do It Yourself
- Social Media and Food

MARKET ECONOMY, RETAIL AND LOGISTICS

- Concentration in Food Retail Markets
- New Shopping Behaviour
- Short Food Supply Chains
- Chain Clustering Along the Food Supply Chain
- Physical Internet (Logistic)

PACKAGING AND WASTE

- Biobased Packaging
- Packaging 4.0
- Reduction of Plastic Packaging
- Packaging & Health
- Food Waste Recovery Up-Cycling / Waste Cooking

POLICY AND OTHER TRENDS

- Women’s Empowerment
- Responsible research and innovation (RRI)
- Food Regulation

Table 1: Overview of the identified trends that are affecting our food system

FIT4 FOOD 2030

NUTRITION · CLIMATE · CIRCULARITY · INNOVATION

Coordinated by:

VU VRIJE UNIVERSITEIT AMSTERDAM

Partners

AIT AUSTRIAN INSTITUTE OF TECHNOLOGY

eit European Institute of Innovation & Technology

ILSI Europe International Life Sciences Institute

food for life

ecsite EUROPEAN NETWORK SCIENCE CENTRES & MUSEUMS

eufic

JPI a healthy diet for a healthy life

OSLOMET OSLO METROPOLITAN UNIVERSITY WORK RESEARCH INSTITUTE AFI

PRIMA

JPI OCEANS

SUSFANS

MILAN URBAN FOOD POLICY PACT

FACCEJPI Agriculture, Food Security and Climate Change

Living Lab for Health IrsiCaixa Institut de Recerca de la Sida

ESSRG Environmental Social Science Research Group