
THE AGRIFOODMED DELPHI

THE AGRIFOODMED DELPHI: MAIN TOPICS AND GOALS

The **AGRIFOODMED Delphi** is a forecasting exercise on the short- (2020) and medium-term (2030) future of the Mediterranean basin in three areas: Water Management, Farming System, and the Agrifood Value Chains. The **AGRIFOODMED Delphi** is a **source of information** for researchers and stakeholders in the agrifood sector. In particular, it will contribute to:

- Identifying the most important trends in the agrifood system to describe their most **likely evolution** in the North and the South of the Mediterranean basin.
- Assessing the desirability and feasibility of a number of **policy initiatives and actions** aimed at increasing the sustainability of the current approaches towards water management, farming systems and agrifood value chains.

The final results of the Delphi will be a set of **scenarios** on the future challenges that the region will face in terms of water resource management, farming systems, and agrifood value chains. The results of this exercise will also serve as a source of information **for decision makers to develop sound policies to respond** to such challenges.

THE AGRIFOOD DELPHI: METHOD AND DESIGN

The Delphi technique is a structured communication method to analyse complex policy issues **through a systematic and interactive survey of a restricted panel of distinguished experts**, selected for their expertise in the sector under scrutiny. In a Delphi exercise, the panel of experts is asked to answer questionnaires **in two or more rounds**. After each round, experts are presented with a **summary of the panel's results from the previous round** and, in light of them, are given the opportunity to **revise or confirm their views** on those questions where the group did not reach a consensus. The Delphi interaction ensures the full anonymity of participants, in order to avoid any biases that could affect a participants' responses. In order to stimulate a debate among experts over critical and contested issues, experts are also strongly encouraged to provide any relevant commentary on

their assessments. The Delphi does not ask about experts' opinion but, rather, it asks respondents to provide **informed judgements** on issues and encourages debate among them.

The **AGRIFOODMED Delphi** has been designed according to this methodology by a research team based at the University of Siena,¹ Italy. The exercise is currently underway with the first round complete and the questionnaire for the second round in preparation. In total, at least three rounds are expected.

Experts' selection and recruitment

The AGRIFOODMED Delphi has been designed to adequately represent subject matter experts within the agrifood sector from the countries under analysis. This includes those from academia, think tanks, and other stakeholders and practitioners. An initial list of approximately 120 prospective participants from the North and the South of the Mediterranean area was formally invited via email to participate in the exercise. Seventy-Nine of those accepted and completed the first round.

Round 1 "Exploring Trends and Policy Solutions"

The first round explored experts' opinions about:

1. The likelihood and direction of change of a number of indicators describing trends concerning the management of water resources in agriculture, the sustainability of farming, and agrifood systems. For each indicator, experts were asked to provide an estimate of whether it would increase, decrease, or remain stable over the short- (2020) and medium-term (2030) future.
2. The desirability and feasibility of different policy initiatives and interventions aimed at increasing the sustainability of the current approaches towards water management, farming systems, and agro-food chains. For each policy solution, experts rated their desirability and feasibility on a 1-10 scale.
3. A set of miscellaneous statements on salient issues concerning agrifood systems in the region, where experts were asked whether they agree or disagree.

Round 1 questionnaires were administered to experts via CAWI (Computer Assisted Web Interview) mode from February 19 to March 19, 2018. Each expert received a unique, personal link to the questionnaire and was given a two-week deadline to complete the survey. At the end of the Round 1, 63 experts completed the questionnaire (80% response rate, 48 from the North of the Mediterranean countries and 15 from the South).

¹ The UNISI research team is composed of Marta Antonelli, Linda Basile and Francesca Gagliardi, with the support of Francesco Olmastroni, and it is coordinated by Pierangelo Isernia.

Towards Round 2

The answers of the first round have been analysed, in order to identify the patterns of convergence or divergence among experts across the items proposed in the questionnaire.

In Round 2, currently in progress, the experts will be presented with the results of the first round for those items in which a consensus has not been reached. They will then have the opportunity to revise or confirm their views, in light of the answers provided by their colleagues within the panel.

AGRIFOODMED AND FOOD 2030

The **AGRIFOODMED**, an initiative undertaken in the context of the PRIMA project, and **FOOD2030**, for the development of a new approach to EU Research and Innovation, are fundamentally linked by the common set of food-related challenges and needs of the EU and the broader Mediterranean.

Firstly, the **AGRIFOODMED** and **FOOD2030** share the need to identify and implement sound and effective responses to provide food and nutrition security. Tackling the increasingly pressing natural resource scarcity, climate change and nutrition-related concerns (from obesity to malnutrition) is a common objective for both the EU and the Mediterranean region.

Secondly, the **AGRIFOODMED** and **FOOD2030** need to align policy objectives and agendas to the international targets set out by the United Nations with the 2030 Agenda, the Sustainable Development Goals (SDGs), and the COP21 commitments on climate. Both **AGRIFOODMED** and **FOOD2030** call for the need of an integrated systemic approach to food that delivers multiple outcomes across sectors through policy coherence, transdisciplinary approaches, and socially distributed actions.

Thirdly, both **AGRIFOODMED** and **FOOD2030** focus on sustainable and healthy diets, environmentally sustainable agrifood systems, innovation and circularity of farming systems, as well as the empowerment of communities (farmers and citizens).

By shifting from a definition of food security based on quantity of *enough food* to *nutritious and healthy food*, the EU and the Mediterranean can build a new bio-economy. Food is linked to all SDGs, whether directly or indirectly, and can provide coping mechanisms for issues of growing concern – migrations, nutrition-related health expenditure, the need to provide jobs and growth, or to contribute to the digitalization of the EU. The agrifood sector thus provides a unique opportunity to deliver a sustainable future for all, both in the Mediterranean and in the EU.

Common priorities of FOOD2030 and AGRIFOODMED

Nutrition and Health (FOOD2030) → Agrifood Value Chains; Farming Systems (AGRIFOODMED):

- Sustainable diets
- Food safety
- Societal awareness

Climate & Sustainability (FOOD2030) → Water Management; Farming Systems (AGRIFOODMED):

- Adaptation and mitigation of climate change
- Biodiversity conservation
- Soil water and land management
- Agroecology

Circularity & Resource Efficiency (FOOD2030) → Farming Systems; Agrifood Value Chains (AGRIFOODMED):

- Efficiency and circularity of supply chains
- Food loss
- Food waste

Innovation & Communities (FOOD2030) → Agrifood Value Chains (AGRIFOODMED):

- Innovation in food value chains
- Food in cities
- R&D
- Education & capacity building
- Research in food systems
- Empowerment of communities

AGRIFOODMED: A SUMMARY OF THE EMERGING SCENARIOS

We present here some of the preliminary results as they emerge from the first round of the Delphi exercise. They will be further explored in the next round of the Delphi.

4.1 Water Management

The Mediterranean's water-related challenges are expected to intensify in the Southern Mediterranean countries both in the short- and long-term. Specifically, the increase in freshwater withdrawals as a proportion of total renewable water resources, coupled with an improvement in the rural access to sanitation facilities. However, there was no consensus made regarding the future outlook of water use in the Northern Mediterranean region.

Against this backdrop, experts agree on four main areas of desirable improvement: (1) the development of binding water resources policies at the Mediterranean level (à la Water Framework Directive), coupled with integrated water resource planning at the national level and the adoption of climate change mitigation measures at the national level, (2) technological developments for more effective management and use of non-conventional water supplies to meet agricultural water demands, (3) an improvement in the water distribution networks, and (4) the establishment of common water resource assessment criteria in the region. Experts disagree on using water charging to manage water demand and cost recovery.

Experts show much less agreement on the feasibility of all these developments, especially in connection with the use of water charging and the development of water-related binding policies at the regional level. Experts also disagree about the desirability and feasibility of establishing public-private partnerships for water management (with significant differences among experts from the North and the South, the latter showing higher desirability).

4.2 Farming Systems

Farming systems in the North and South Mediterranean are expected to face an increased vulnerability to climate change, both over the short- and long-term future. In the South, experts expect that the agricultural sector will experience an increase in fertilisers, energy consumption, and Greenhouse Gas (GhG) emissions. There is no consensus on whether these changes will be associated with an increased in agricultural labour productivity. The extent to which the North will revise its agricultural paradigm with respect to land use, labour productivity, and GhG emissions is either uncertain or unclear.

Experts agree on the desirability of most of the policy options suggested. In particular, experts consider the development of a legally binding policy framework to make food production carbon neutral by 2050 as one of the most prominent actions to be undertaken in the region. Other desirable interventions are the prioritisation of sustainable intensification in national agricultural planning; the growth of organic and conservation agriculture (particularly experts from the North); the promotion of youth employment; and the ban on antibiotic use in healthy animals as prescribed by the World Health Organisation (WHO). Experts agree on the greater integration and cooperation between Northern and Southern countries in order to generate value in the agrifood sector. According to experts, feasible interventions are the development of dual-purpose crops to improve yields and soil fertility, and well-targeted policies to empower rural women.

4.3 Agrifood Value Chains

Experts converge more in their expectations about the future trends in the South than in the North. The Southern Mediterranean countries are expected to experience, both in the short- and long-term, an increase in the ecological footprint associated with food consumption, an improvement in healthy life expectancy, and an increase of overweight among children and adolescents. The impact of overweight and obesity among the youth is also expected to increase in the Northern Mediterranean. The region is thus expected to continue toward a nutritional transition characterized by the abandonment of the Mediterranean diet coupled with a more sedentary lifestyle.

The most promising policy actions identified include the establishment of common targets of reducing food loss and waste, through recycling of organic waste and donations of food waste to food banks that supports local communities. Policies deemed by desirable and feasible by experts include health education in school curricula, a push for innovation through vocational training for youth, investments in ICTs and primary technologies, as well as favouring an increased collaboration with academia. Experts are uncertain about the capacity to increase public R&D spending in the region as well as the imposition of progressive taxes on sugary food and drinks.