



**Agricultural Policy Forum 2022**  
***Agriculture and Rural Development in the context of the Green Agenda for the Western Balkans: Overcoming the Impact of the Global Challenges***

*Working Group 3: Agricultural knowledge and innovation systems in the Western Balkans*

# **THE NATIONAL AKIS PLAN MONTENEGRO**

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## **Presentation outline**

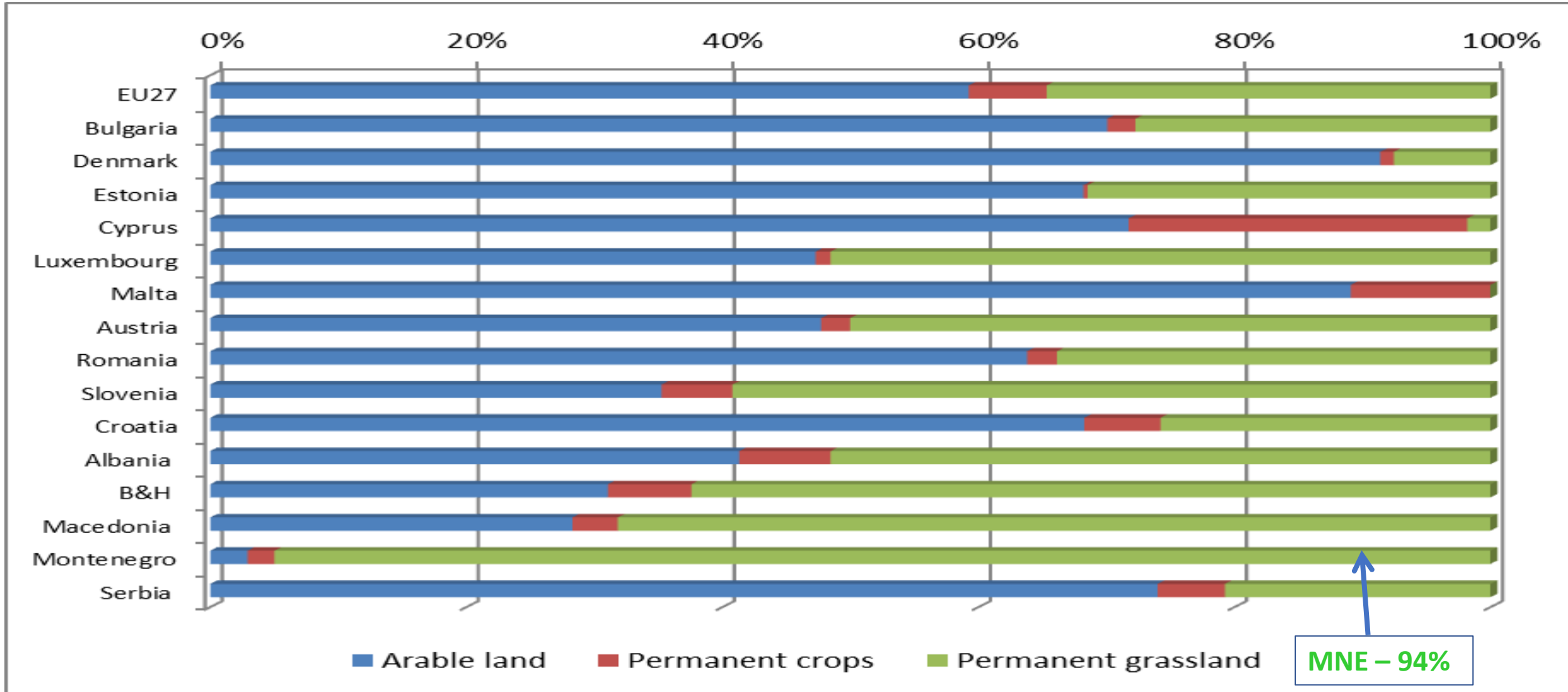
- Brief overview on Montenegrin agriculture
- AKIS map and key actors
- SWOT of AKIS
- AKIS Roadmap
- AKIS action plan

# MONTENEGRIN AGRICULTURE: the main characteristics

- Land resources: 257,950 ha utilized agricultural area (there were 516,000 ha until the Agricultural Census in 2010)
  - **Permanent grassland (natural meadows and pastures) 243,304 ha (94.4%)**
- Economic importance – high share in GDP >7.0%,
- Agriculture is labor intensive (about 23% of total employment) – as the source of income for 48,824 family farms (46,473 AWUs were engaged in the farming (Census of Agriculture 2010),
- Structural characteristics: small family farms prevail, average size  $\approx$  5 ha, low productivity
- Low level of use of chemicals – good opportunity for environmental friendly ways of production
- Agriculture is very diversified, from citruses and olive growing in the coastal part, vineyards and vegetables in the central part to continental fruits, potato growing and extensive livestock rearing in the northern part.
- Huge net deficit in foreign trade above 500 mil. euro; share of agri-food imports in the total imports of goods is 24.4 %, in the export only 15.5%; the total agri-food export hardly covers **11%** of the import



## UTILISED AGRICULTURAL AREA Montenegro vs WB and EU countries



# Montenegrin AKIS in a nutshell

**The starting points in designing** of the agricultural policy and development of the institutional frame for sustainable development of agriculture and interlinked food value chain/s, where AKIS has an essential role, should be:

- the size and key characteristics of the Montenegrin agriculture,
- the commitment of Montenegro to become EU member,
- Economic power of country, its social characteristics and natural and incl. very low population density (45 people per km<sup>2</sup>)

**The key characteristics of existing AKIS in Montenegro are:**

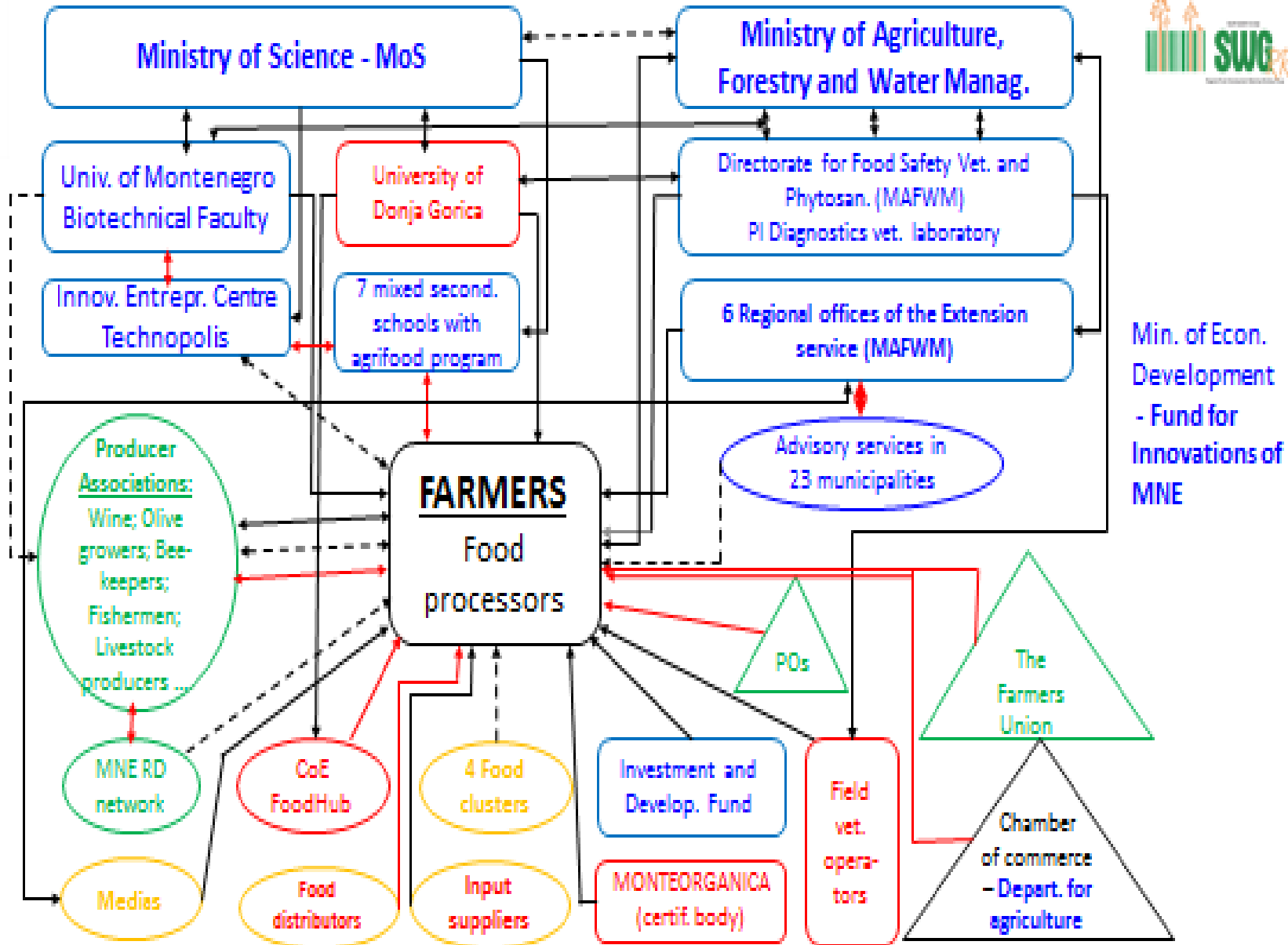
- Many stakeholders/players are involved
- Lack of coordination in the whole AKIS
- Connections among the key players are very weak
- No clear role of the main stakeholders
- Top-down approach is dominant
- Financial support for AKIS is unstable

# The AKIS map

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# The key actors in the AKIS

## **Universities:**

- The University of Montenegro - **Biotechnical Faculty** (state owned)
- The University Donja Gorica - **Faculty of Food Technology, Food Safety and Ecology** (private)

## **The governmental bodies**

- Ministry of Agriculture, Forestry and Water Management (MAFWM), including all its directorates and the National Advisory Service
- Ministry of Science (MoS)
- Ministry of Economic Development (MED) - Innovation fund of Montenegro

## **Other stakeholders**

- The farmers associations (Wine, Olive growers, Beekeepers, Livestock producers, Fishermen)
- The secondary schools
- Advisory service on municipal level
- The field veterinary service
- Others...

# SWOT analyses of AKIS

## STRENGTHS

- Diversified and heterogeneous agriculture and related food industries provide a wide base for AKIS
- Small countries is in advantage to organise and connect the main stakeholders in AKIS
- The state University (UoM) has developed the Research and development strategy in Agricultural sciences
- Well-equipped labs, the experimental field provide a ground for knowledge transfer to the production
- Advisory/Extension services in plant and livestock production have gained experience in linear knowledge transfer to the farmers
- The Ministries (MAFWM, MoS and MED) provide legal and strategic frame supportive for AKIS

## WEAKNESSES

- Many small fragmented family farms are not interested in knowledge transfer and innovations
- Top down approach in the whole AKIS system dominates
- Collaboration between actors in the food value chains are rather poor
- Knowledge transfer from researchers to the farmers is very weak due to lack of researchers interest in the practical technological solutions
- The advisors' experience in the AKIS facilitation and moderation is rather weak.
- Trainings of the advisors are mainly focused on the implementation of the agripolicy measures
- Low level of digitalisation of primary sector in agriculture.
- Generally, proactive role in adoption of the new technologies and innovations is rather poor
- The official advisory service is becoming a part of administration – thus advisory role is diminishing
- Poor state financial support for the key elements of the AKIS



# SWOT analyses of AKIS

## OPPORTUNITIES

- General fast modernization of agriculture and food production is a driving force for enhancement of the AKIS
- Implementation of the strategic state documents, particularly Smart Specialization Strategy, gives a wide range of possibilities for AKIS
- Young people with higher education enter to agricultural activities as their own business
- EU accession in agriculture opens a wide range of the possibilities
- The national and international research projects are more directed to the industry what opening new possibilities for AKIS

## THREATS

- Migration of young people from the countryside to the cities causes many negative trends and consequently lack of interest in AKIS
- Poor public perception of agricultural studies, instability of funding and insufficient investment in science and scientific infrastructure;
- Insufficient respect of the importance of knowledge and innovations in development of agriculture and food sector
- Short-term instead of long-term visions of businessmen in the food sector
- Inertness of businesses in terms of investments and participation in scientific projects
- Difficulties in attracting young candidates for research in agricultural sciences

# The AKIS Roadmap

Based on the AKIS Map and the SWOT analyses, presented in the previous pages, the Roadmap encompasses 6 priorities, as follow:

- 1. Development of the functional AKIS**
- 2. Establishment stronger links between AKIS actors, especially between the research and farming sector**
- 3. Providing Advisory/Extension service in agriculture being fully functional and meets farmers' needs**
- 4. Capacity building of the key AKIS players**
- 5. Digitalisation of the agriculture**
- 6. Raising public awareness on the importance of AKIS**

# The AKIS Roadmap

## **Priority 1: The functional AKIS with holistic approach is needed**

- Strategic and program documents, with detailed action plan for the AKIS have to be developed
- Adopt a National Partnership Programme of all AKIS' related organisations
- Legal frame has to be completed, with rules for the public and private, local/national advisory service
- Forming of **the AKIS Coordination body**
- Research and innovation infrastructure to be completed
- Clear financial rules for support and stable state financial support for AKIS
- Reporting, evaluation and control practices is the essential

**Responsibility:** The ministries: MAFWM; MoS and MED (Fund for innovations). These ministries have to collaborate closely with the other AKIS stakeholders, especially with the universities.

**Resources:** the National funds (all ministries budgets), donor funds, primarily preaccession support of EU.

# The AKIS Roadmap

## **Priority 2: Link of research and farming sector needs to be reinforced**

To enhance knowledge flows within the AKIS through facilitating the interconnection between AKIS actors and to build the systematic connections between scientists, advisors and the farming community, by using modern tools (knowledge and innovation hub, food clusters, techno and science parks), the focus should be on:

- Horizon Europe and other funds for the multi-actor projects, providing incentives for cross-thematic, multi-actors and applied-oriented projects
- Innovations projects and activities with stronger involvement of young educated
- Full implementation **Smart specialisation strategy**
- Close synergy between HE and IPARD is needed, which can be provided in tight collaboration of the MAFWM and the Ministry of Science
- Design a specific fund for after-project communication of innovative project
- Researchers have to share their work with practice, to work interactive with the advisors and farmers.

**Responsibility:** The ministries (MED; MAFWM; MESCS) in close collaboration with the academia (the Universities)

**Resources:** the National funds (the ministries budget), donor funds – primarily EU HE support, FAO and IFAD support projects.

# The AKIS Roadmap

## **Priority 3: Providing Advisory service in agriculture being fully functional and meet farmers' needs**

With the aim to develop the functional system of advisory service, the key activities are:

- Linear knowledge transfer should be extended and strengthened because the agricultural sector at this level of development simply needs it
- The key advisors have to act as innovation facilitators, capturing future farmers needs and sharing outcomes of advisors' trainings, especially on innovative techniques and soft skills
- The whole value chain approach, dialogue with society should be reinforced
- Involvement of private advisors: not only in training but in information flows
- To organize systematic trainings for advisory staff members for developing a career path and raising competences in an organized manner and continuous updating of knowledge
- To form country wide advisory networks to share generated knowledge after visits abroad
- Simplify administration and avoid dense control systems, instead develop indicator of quantitative monitoring
- In addition to active role in the implementation of the agricultural policy, the advisors have to be involved in the definition of the policy and programmes in an early stage

**Responsibility:** MAFWM in close collaboration with the key stakeholders

**Resources:** the National funds (the ministries budgets), donor funds - EU, WB, FAO and IFAD support projects.

# The AKIS Roadmap

## **Priority 4: Capacity building of the key AKIS players**

Fast progress in applying new technologies and innovations in agriculture, parallel with more and more challenges the sector face require permanent work on capacity building of the AKIS players. Hence, the main activities are:

- Regular education, trainings, lifelong learning accessible to advisors and farmers
- Regular winter and summer educational events (schools, on spot and demo trainings etc.)
- Advisors acting as innovation facilitators, capturing needs and sharing outcomes of advisors' trainings
- International cooperation providing the adoption of good practices
- Support advisors' placements in experimental research centres and training facilities
- Support methodological and social competences of advisors
- Educating and training AKIS 'system-oriented' advisers
- Mandatory education for young farmers
- Establishing advisory Licensing Program

**Responsibility:** MAFWM and MoS in close collaboration with the key stakeholders

**Resources:** the National funds (all ministries budgets), donor funds EU, WB, FAO and IFAD support projects.

# The AKIS Roadmap

## Priority 5: Digitalisation of the agriculture

In order to improve the flow of information and innovative solutions for agricultural practices, the unavoidable tasks are:

- **Interlink all public data** to enable additional services, GIS/LPIS based layers combining: soil, animal welfare, spreading harmful organisms, irrigation needs
- Organize training on digital skills for advisors, farmers etc.
- Build knowledge that are interactive and quality checked, and use common standards as much as possible
- Set up platforms to discuss how to manage the digital transition
- Share digital advisory tools, reducing the maintenance cost
- Provide tools to facilitate the transfer of knowledge in agriculture (computer software and hardware, digital applications, internet access, knowledge transfer platforms, databases, etc.)

**Responsibility:** MAFWM and MED in close collaboration with the key stakeholders

**Resources:** the National funds (all ministries budgets), preaccession support of EU, support projects of FAO and IFAD.

# The AKIS Roadmap

## **Priority 6: Public awareness raising on the importance of AKIS in agrifood sector**

There are still negative aspects of public perception on agriculture, like opinions that the sector does not need knowledge and educated producers, consequently AKIS is not one of the key developmental priorities. In order to change that situation, permanent need is to work on raising public awareness in several directions:

- Networks for informal knowledge exchange
- Medias electronic and written – to improve coverage of agricultural issues by mass media and put agri-innovation in the spotlight
- Ensure better quality information about farming issues
- Infrastructure for promoting knowledge exchange among researchers, advisers and practice
- Ensure a substantial budget for communication and dissemination of research and innovations

**Responsibility:** MAFWM, MoS and MED in close collaboration with the key stakeholders

**Resources:** the National funds (all ministries budgets), support of EU, support projects of FAO and IFAD.



# The AKIS Action plan

## Objective 1: To develop the functional AKIS

Required action	Milestones	Deliverables	Resources needed	Deadline	Impact	Feasibility
1.1. Strategic and program document, with an action plan	Government decision on strengthening AKIS is taken	The strategic document/s as a base for the next steps adopted	The mutual team of MAFWM and MoS, incl. state financial support	The middle of 2023	7	4
1.2. To develop the National Partnership Programme (NPP) of all AKIS' related organisations	NPP is developed	NPP is adopted	MAFWM and MoS, incl. state financial support	The end of 2023	6	3
1.3. To complete legal frame, with rules for the public and private, local/national advisory services	The Action plan – a list of legal docum. needed for AKIS is developed	The AP is adopted by the Govern. The legal frame is completed	The mutual team of the MAFWM and MoS, incl. state financial support	The end of 2024	7	4
1.4. To strengthen research and innovation infrastructure	The Guidance for RI is developed	The Guidance is adopted by MoS	MoS, financial support	Permanent	6	5
1.5. Gathering representatives of all AKIS actors with the aim to agree upon governing the AKIS	AKIS platform with Coordination board (CB) is formed	Rules are settled and Coordination board (CB) is functional	Govern. financial support + expert support	The middle of 2024	6	3
1.6. To develop guidance for reporting, evaluation and control practices	The Guidance is developed	The list of the key indicators is developed	The CB fully engaged, with govern. financial support	The end of 2024	7	3

*Note: In the last two columns (Impact and Feasibility) - 1 means the least; 7 means the highest impact or feasibility*

## The AKIS Action plan

### Objective 2: Establishment stronger links between AKIS actors, especially between the research and farming sector

<b>Required action</b>	<b>Milestones</b>	<b>Deliverables</b>	<b>Resources needed</b>	<b>Deadline</b>	<b>Impact</b>	<b>Feasibility</b>
2.1. Regular face-to-face exchange thematic events and meetings between research, farmers and advisors	The knowledge and innovation hub is established	The hub operational rules are adopted	MoS; MAFWM, univers. support	The end of 2023	6	4
2.2. Participation in the multi-actor projects of HE, with focus on cross-thematic and transdisciplinary approach	The rules of incentives for the farm sector participation in HE projects are developed	Number of the HE projects with farming sector participation is increased	MoS financial and admin. support	Permanent	7	3
2.3. Innovative projects with stronger involvement of young researchers	The guidance of incentives for YRs is developed	Number of innovative projects with YRs particip. is increased	MoS financial and admin. support	Permanent	6	4
2.4. The implementation of Smart specialisation strategy	The S3 is developed and adopted	Flagship initiatives are functional	MED - financial and administer. support	The end of 2022	7	5
2.5. Close synergy between HE and IPARD	List of the research topics relevant for IPARD is developed	Number of the realised projects relevant for IPARD is increased	MoS and MAFWM	Permanent	5	3
2.6. To create fund for after-project communication of innovative projects	The document with key elements of the fund functioning is developed	The Fund document is adopted First fund users registered	MoS financial and administer. support	The end of 2023	6	3
2.7. To establish the operational groups	The first operational groups are formed	Three OG are functional (Wine, Be-keeping, Organic production)	MAFWM & MoS, EU support	The end of 2023	6	3

## The AKIS Action plan

### Objective 3: Providing Extension service in agriculture being fully functional and meets farmers' needs

Required action	Milestones	Deliverables	Resources needed	Deadline	Impact	Feasibility
3.1. Strengthening of the linear knowledge transfer	The plan of the needs for advisors is developed and adopted	The plan is adopted and implemented	MAFWM administr. support	The end of 2023	5	4
3.2. The key advisors acting as innovation facilitators, capturing future farmers needs	The rules of the incentives for innovative advisors are developed	The reward system is implemented The number of rewarded advisors is increased	The MAFWM administr. and financial support	The middle of 2024	7	3
3.3. To enhance the whole food value chain approach	The guidance with clear instructions is developed	New advisors from non-primary production sectors are recruited	MAFWM	Permanent	7	3
3.4. Involvement of private advisors in training and information flows	The rules for the private advis. involv. are developed	The rules are adopted	MAFWM	The middle of 2024	5	4
3.5. Country wide advisory networks to share generated knowledge after visits abroad	The network is established	The periodical reports are produced and publicly available	MAFWM administr. and financial support	The end of 2024	5	4
3.6. Developing indicators of quantitative monitoring	The CB developed list of the key indicators	The key indicators are used in the monitoring of the advisors results	MAFWM & MoS	The middle of 2024	6	4

# The AKIS Action plan

## Objective 4: Capacity building of the key AKIS players

Required action	Milestones	Deliverables	Resources needed	Deadline	Impact	Feasibility
4.1. Regular education, trainings, lifelong learning accessible to advisors and farmers	The plan of education, training and LLL of the advisors is developed and adopted	The plan is implemented Trainings of the trainers, workshops, demonstr. are regularly held	The MAFWM	The end of 2023	7	3
4.2. Regular winter and summer educational events (schools on spot and demo trainings etc.)	The plan of winter and summer schools is developed and adopted	The plan is implemented – the schools are regularly organised	The MAFWM together with universities	The end of 2024	7	4
4.3 Support methodological and social competences of advisors	The CB developed the plan	The CB plan is being implemented	MAFWM & MED and MoS	The middle 2024	5	3
4.4. Establishing the Licensing advisory Program	The legal frame – rules are developed	The LAP is implemented	MAFWM administr. and financial support	The end of 2024	6	3
4.5. To implement of mandatory education for young farmers	The education program is developed	The EP is adopted and implemented	MAFWM, supported by EU funds	The middle of 2025	5	3
4.6. International cooperation providing the adoption of good practices	The concise plan is developed and adopted	Good practices are presented at regularly organised events	MoS supported by the universities	The middle of 2024	5	3

# The AKIS Action plan

## Objective 5: Supporting digitalisation of the agriculture

Required action	Milestones	Deliverables	Resources needed	Deadline	Impact	Feasibility
5.1. To interlink all public data to enable additional services, GIS /LPIS, soil, animal welfare...	The fund for innovations (MFI) developed the knowledge and innovation platform	The platform is functional, public data are accessible	MED (MFI), donor support	The end of 2024	7	5
5.2. To build knowledge that are interactive and quality checked, and use common standards	Clear guidance on the data flows is developed	The AKIS players widely use data from the platform	MED (MFI), EU and other donor support	The end of 2025	6	4
5.3. To set up forum to discuss how to manage the digital transition	The forum is established	Permanent dialogue of the users is regular	The CB is in charge	The middle of 2025	5	3
5.4. To organise trainings on digital skill for advisors and farmers	The guidance with the instructions is developed	The system is functional - Trainings are regularly organised	MAFWM & MFI, EU support	The end of 2025	6	4

# The AKIS Action plan

## Objective 6: Raising public awareness on the importance of AKIS

Required action	Milestones	Deliverables	Resources needed	Deadline	Impact	Feasibility
6.1 Strengthening rural multi-actor innovation networks, incl. informal knowledge exchange	The network is established, the rules of functioning are developed	Gathering information, promoting learning, enhancing farmers role in knowledge creation	MAFWM and universities	The middle of 2024	5	3
6.2. To provide budget for dissemination of research and innovations including infrastructure for promoting knowledge	Guidance with support instruments for dissemin. of research results is developed	The system is in place, the project teams use that budgetary support	MoS and MFI	The end of 2023	5	3
6.3. To improve coverage of agricultural issues by mass media and put agri-innovation in the spotlight	Memorandum of understanding between the CB and the national RTV is signed	Regular Radio and TV programs devoted to the agrifood sector, open discussions are on the national public media	The CB	Middle of 2023	5	7





Thank you for your attention!

