

Study on the research, innovation and technology transfer capacities and on the recent agricultural policy developments in the context of the EU approximation process in the pre-accession countries

Task 2: Assessment of research, innovation and technology transfer capacities in the agri-food sector in the Western Balkan countries

FEDERATION OF BOSNIA AND HERZEGOVINA

Interim report

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Sarajevo, 26/06/2020



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Introduction remarks

- Due to COVID-19 pandemic restricted mobility and closed institutions, reduced ability of finish planned data collection
- Most of activities regarding fulfilment of questionnaires done before COVID-19 pandemic
- The response of the surveyed institutions/organizations is satisfactory
- A comprehensive and extensive questionnaire is the reason why some institutions did not provide answers
- Avoiding answers related to financial questions
- Received data from 4 research institutions, 4 faculties, 7 secondary agricultural schools, 3 clusters, 3 advisory services, 2 ministries (Entity level)



Introduction

- Introduction of new technologies and innovations in agricultural production depend on the work of several ministries at both the federal (entity) and cantonal levels.
 - At federal level it is: Federal Ministry of Education and Science and the Federal Ministry for Encouraging Development, Entrepreneurship and Crafts
- Real activities have cantons that have their own laws on administration and ministries - in nine cantons for education, science, culture and sports, while in Sarajevo Canton only the Ministry of Education and Science and the Ministry of Culture and Sports are separated.
- There is no Strategy for the Development of Science at the federal level, there is just proposal for the Strategy for the Development of Scientific-Research and Research-Development Work in the Federation of BiH for the period 2011-2021 (never adopted because of proposal 1% of GDP for implementation)
- The budget of the Federal Ministry of Education and Science for the field of science in the last few years is around 1.3 million Euros (about 0.1% of the total annual budget, or 0.01% of total GDP)



Inventory of all relevant agri-food research capacities

- **Research institutions (4)**
 - Institute of Biotechnical Engineering and Biotechnology of the University of Sarajevo - INGEB
 - The Federal Institute of Agropedology
 - The Federal Institute of Agriculture
 - The Federal Agro-Mediterranean Institute
- **Faculties (5)**
 - The Faculty of Agriculture and Food Sciences, the University of Sarajevo
 - The Agro-Mediterranean Faculty of the University "Džemal Bijedić" in Mostar
 - The Faculty of Agriculture and Food Technology of the University of Mostar
 - The Biotechnical Faculty of the University of Bihać
 - The Faculty of Technology of the University of Tuzla
- **Advisory and Extension Services (10 cantonal services as a part of MA)**
- **Business incubators (11)**
- **Clusters (5 clusters under IFAD project)**



Research staff (ASTI indicator)

(Total number 186, fulltime research staff 123)

Table 1. Structure of total number of employees (in %)

Level of education	Total	Male	Female	<30	31-40	41-50	51-60	≥61
	100,00	38,71	61,29	8,60	29,57	31,18	26,88	3,76
PhD	50,54	52,78	49,12	0,00	36,36	55,17	78,00	42,86
MSc	15,59	11,11	18,42	75,00	20,00	10,34	0,00	0,00
BSc	22,04	27,78	18,42	12,50	30,91	25,86	12,00	14,29
Secondary education	10,22	8,33	11,40	12,50	10,91	6,90	8,00	42,86
Primary school	1,61	0,00	2,63	0,00	1,82	1,72	2,00	0,00
Subtotal	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

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Table 2. Structure of employees in scientific-research work (researchers) (in %)

Level of education	Total	Male	Female	<30	31-40	41-50	51-60	≥61
	100,00	43,09	56,91	5,69	22,76	35,77	32,52	3,25
PhD	69,11	69,81	68,57	0,00	57,14	63,64	95,00	75,00
MSc	14,63	9,43	18,57	100,00	21,43	11,36	0,00	0,00
BSc	16,26	20,75	12,86	0,00	21,43	25,00	5,00	25,00
Secondary education	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Primary school	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Subtotal	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

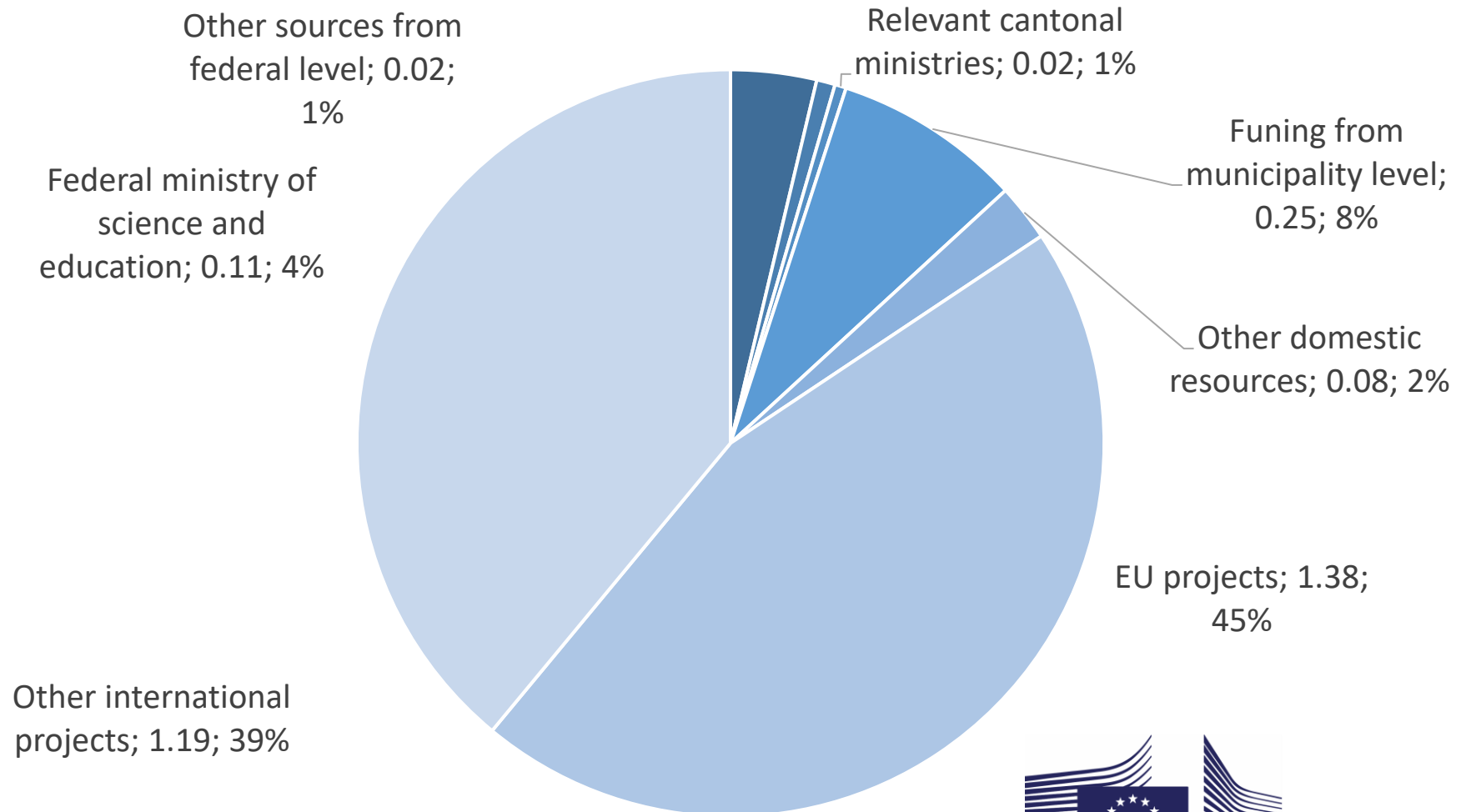
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Research focus (ASTI indicator)

- Research focus
 - Crop production
 - Animal production
 - Natural resources
 - Food technologies
 - Economics of agriculture and food industry
- Main themes of the research
 - Genetic research of fruit crops
 - Plant protection – research of economically important pests
 - Research in fisheries
 - Research related to soil
 - Research related to water quality, natural resources,
 - Rural development and agricultural policy research
 - Animal production research

Structure of funding of scientific research work in the FBiH in the period 2014-2018 expressed in millions of Euros



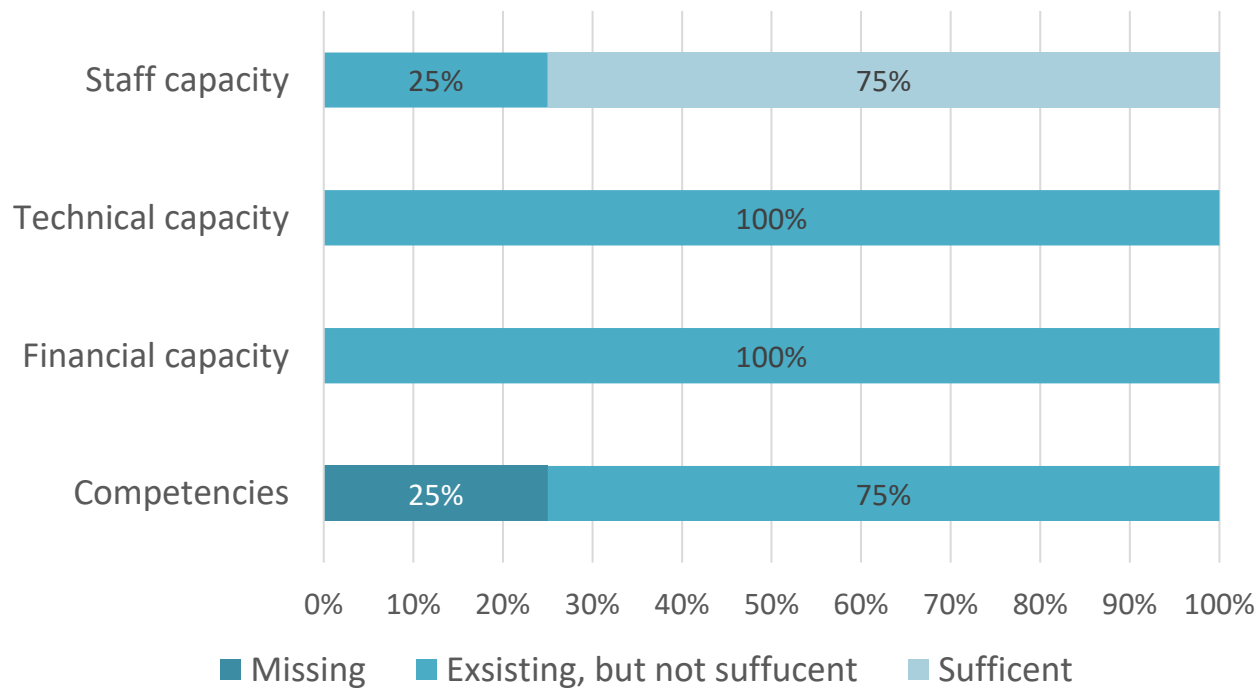
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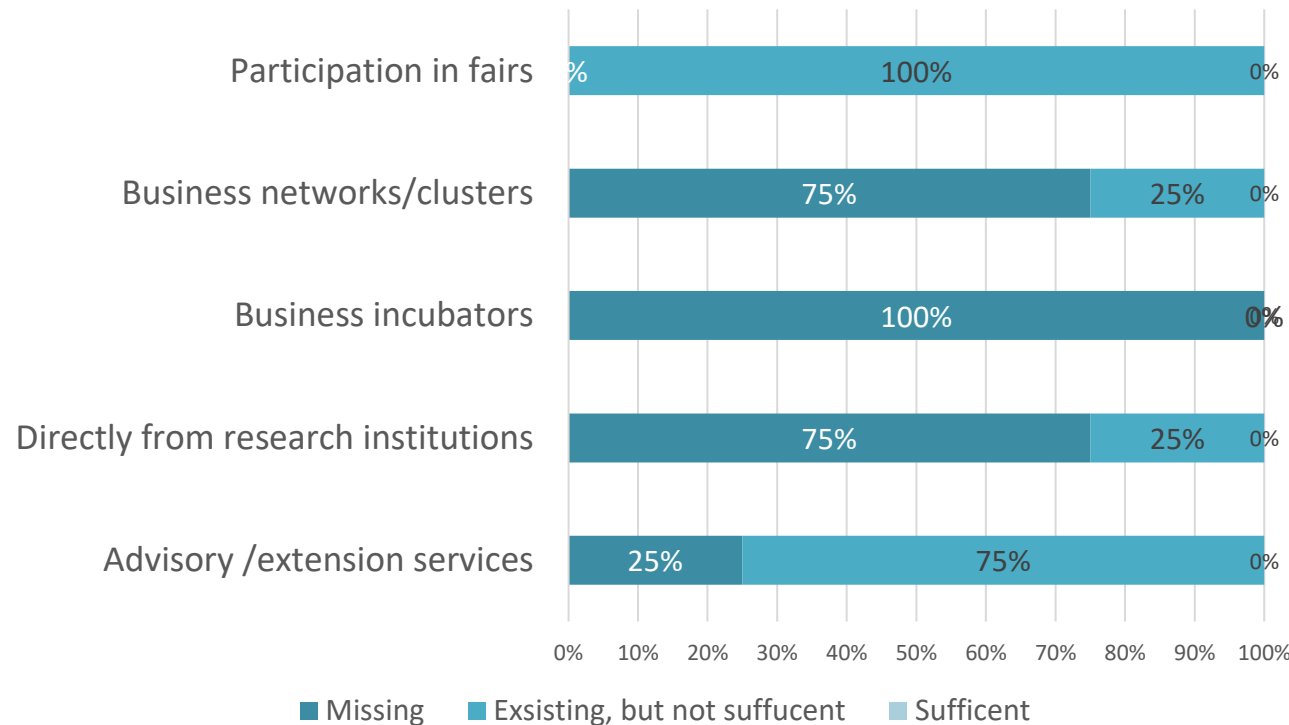
The capacity of small agro-food firms to adopt innovations and new technology (1)

- Small agri-food firms are sufficient regarding capacities in a skilled workforce. For all others (competencies, financial and technical capacities) capacities exist but are not sufficient.



The capacity of small agro-food firms to adopt innovations and new technology (2)

- The most common present form of learning and acquiring knowledge is participation in fairs, followed by consulting services. These two forms are judged to already exist but not sufficiently in practice. Business incubators and clusters are most lacking.



The role and capacity of the education system in supplying education and skills required in the labor market (1)

- All educational institutions have certain forms of improving the knowledge of teaching staff and their training, but still insufficient
- Faculties do not have courses for acquiring soft skills of their teaching staff and these are only sporadic cases as a result of individual initiative
- Faculties have student exchange programs (ERASMUS +, ERASMUS MUNDUS, CEEPUS, MEVLANA, IAESTE, etc.)
- Knowledge of new technologies is mostly acquired through seminars, workshops and through the media, and much less through lectures and cooperation between research institutions.



The role and capacity of the education system in supplying education and skills required in the labor market (2)

- All institutions (faculties, secondary schools and advisory services) work with agricultural producers in order to introduce new technologies.
- The lowest participation here is from the secondary agricultural school, and the highest from the faculties that have worked on the introduction of new technologies through organized trainings/workshops (financed by governmental or non-governmental organizations, municipalities, etc.).
- Extension services in FBiH undeveloped (responsibility is to cantonal institutions which mainly work on FMAWMF implementation of AP and DP, not for technology transfer
- Direct contacts (by phone or e-mail), seminars and conferences are mostly used to promote knowledge and their services. Somewhat less use is the Internet, visits to potential customers, i.e. through scientific papers and publications.
- Promotion is very modest through newsletter, and advertising is not used at all.



The role of the other relevant stakeholders in agi-food sector in prompting technological and knowledge transfer and adoption

- Farmers' cooperatives
 - Long traditions
 - More than 200 agricultural cooperatives with 12,000 members and 45,000 subcontractors
 - Purchase of production and supply farmers with raw materials and equipment
 - Insufficient coordination in the activities of the cooperative unions of the entities and the Cooperative Union of BiH (state level)
- Business network/clusters
 - FBiH does not have developed market infrastructure (system of purchases, auctions and stock exchanges)
 - Last few years – in FBiH positive examples of business connection thanks to Chamber of Commerce of BiH and MoFTER
 - Thanks to IFAD project in BiH five clusters have been established (agriculture and food processing industry)
- The foreign direct investments
 - Agriculture is not attractive to foreign investors (not at top 10 sectors)
 - Less than 1% of FDI goes to agriculture
- Processing and retail companies
 - Different approach for application of innovative technology



The role of Horizon Europe or Structural funds or IPA to the research, innovation and technology transfer capacities in agri-food sector

- None of the surveyed high education institutions (faculties) had experience with the implementation of one H2020 project in the last five years.
- Experiences exist from the previous period and the Faculty of Agriculture and Food Sciences University of Sarajevo has participated in 4 projects from the FP6 and FP7 programs.
- BiH still does not have access to IPARD funds, but some projects have been approved through UNDP – EU4-Agry Program (IPARD like).



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THANK YOU FOR YOUR ATTENTION!

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