P08: THE IMPORTANCE OF METROFOOD RI FOR/IN THE DEVELOPMENT OF THE AGROFOOD SECTOR IN THE SOUTH EASTERN EUROPEAN (SEE) PARTNER COUNTRIES

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Abstract - METROFOOD-RI is a European Research Infrastructure (RI) aiming at promoting metrology in food and nutrition. In the present work, a mapping of existing RIs and networks of the South Eastern European (SEE) METROFOOD partner countries (i.e. FYROM, Greece, Hungary, Republic of Moldova, Romania, Slovenia), related directly or indirectly to the Agrifood sector, is presented and discussed. As reference METROFOOD partner country, The Netherlands is considered.

Keywords – PROMETROFOOD, METROFOOD-RI, Research Infrastructures, South-Eastern European countries, Agrifood-sector

1. INTRODUCTION

METROFOOD-RI (Infrastructure for Promoting Metrology in Food and Nutrition, www.metrofood.eu) is currently in its "Early Phase" through the "PRO-METROFOOD" project (GA n. 739568) (www.prometrofood.it). In the frame of the latter, potential synergies among METROFOOD-RI and other existing networks and RIs are currently under investigation. The present work focusses on the current status of RIs in the SEE METROFOOD partner countries [i.e. Former Yugoslav Republic of Macedonia (FYROM), Greece, Hungary, Moldova, Romania, Slovenia], related to the Agrifood sector. The SEE territory is a, heterogeneous and complex transnational area in Europe, made up of a broad mix of countries, which are characterized by a wide political, cultural and economic diversity, as expressed by the Social Progress Index (Fig. 1). In order to bridge the gap between them, the SEE countries have begun slowly but steadily to build up collaboration strategies to speed up development. The most recent example is the commitment to create an integrated gas market, signed in 2015. [1].

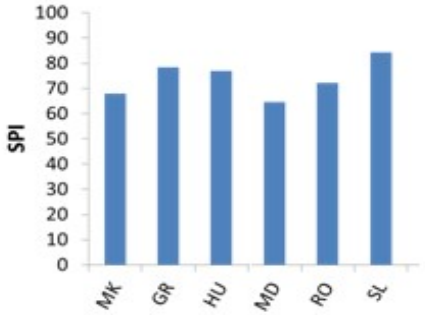

Fig. 1. The social progress index (SPI) of FYROM, Greece, Hungary, Moldova, Romania, Slovenia (Source: http://www.socialprogressimperative.org/global-index/) [2]

2. RI LANDSCAPE ANALYSIS OF THE SEE METROFOOD PARTNER COUNTRIES

In this section, the current status of the RI framework of each SEE METROFOOD partner country is presented along with the key regional S3 priorities and the organization of the national RIs. Furthermore, the involvement of each country in ESFRIs and Joint Programming Initiatives (JPIs) is discussed.

2.1. Former Yugoslav Republic of Macedonia (FYROM)

Till now, FYROM has neither issued a National Roadmap which would contain information about

the national RIs, nor is reported as an involved party in the European Strategy Forum for Research Infrastructures (ESFRI). To the best of our knowledge, the only documented RI is the Macedonian Academic & Research Network (MARnet) e-infrastructure, which aims at the documentation and dissemination of scientific knowledge among the academic institutes of the country [3]. Such an initiative could be integrated in the METROFOOD-RI and serve as a platform for scientific databases. Moreover, FYROM is not registered to the RIS3 platforms (S3P) yet [4].

2.2. Greece

At a national level, the Greek RIs are reported at the National Roadmap published in 2014 [5]. The Greek RIs can be divided into physical and electronic ones. The physical RIs are dedicated to the fields of environmental, biological and medical sciences. For example, the PlantUp RI will utilize already existing networks and facilities to promote the biodiversity preservation and plant health protection. Moreover, this RI aims at the formation of a pan-European EU-PlantUp RI. The CMBR RI focuses on the sustainable exploitation of marine resources and takes an active part in the EMBRC and LIFEWATCH ESFRIs. Additionally, in the field of biological and medical sciences, the Greek RIs take part in the INFRAFRONTIER, BBMRI-EATRIS, EURO-Bioimaging and INSTRUCT ESFRIs. Electronic RIs consist of databases in life sciences, many of which are fully incorporated in the pan-European grid of ESFRI projects and landmarks, such as EU-OPENSCREEN, ELIXIR and PRACE [6]. Therefore, the challenge for Greece is the harmonization of the already existing RIs with the METROFOOD-RI and the formation of synergies and collaborations at a transnational level. Finally, Greece has identified as top S3 priorities the food production and bio-agrifood sector [7].

2.3. Hungary

Even though Hungary has not published yet a national roadmap (under preparation) [8], it is participating in the ECRIN ERIC and Euro-Bioimaging, ERINHA, EMPHASIS and EU-OPENSCREEN ESFRIs of the Health & Food sector. On a regional level, Hungary is registered to the RIS3 platforms and its S3 priorities in agro-food focus on advanced technologies in the vehicle and other machine industries; healthy local food; agricultural innovation [4, 9].

2.4. Moldova

Moldova has not published yet a national roadmap, but is included in the Horizon 2020 program of the EU for the strengthening of scientific innovation [10]. In this context, Moldova has started to develop the scientific society “Digital Moldova 2020”, though information regarding this project is limited [11]. Currently, Moldova participates in two JPIs relevant to the agrifood sector. The WATER JPI focuses on the sustainability of water systems and alongside Moldova, Romania participates as a member whereas Greece and Hungary as observers. The Bio-based industries (BBI) JPI aims at promoting the bio-based industry sector in Europe and is operating under Horizon 2020. On a regional level, Moldova has been registered in the S3 platform but has not set clear priorities for the agrifood sector [4].

2.5. Romania

Shortly after joining the EU (2007), Romania issued its national roadmap for research infrastructures and is currently preparing a revised version [12]. On a regional level, Romania’s S3 priorities for the agrifood sector are: sustainable forestry and crop production; safe, accessible and nutritionally optimized food; biotechnologies for agrifood [4]. In the recent years, Romania has expanded its transnational collaborations by participating in the EMSO-ERIC and by being a prospective member in the EU-OPENSCREEN, MIRRI and ECRIN ESFRI projects [6]. Furthermore, Romania has assumed the leading role in the upcoming DANUBIUS-RI. This distributed RI is expected to be operational by 2022 and will aim at the study of large river-sea systems, a topic of close interest for the agrifood sector. Finally, with Greece, Hungary, Moldova and the Netherlands being prospective members of the DANIBIUS RI [6, 13], the opportunity for common networks between METROFOOD and DANUBIUS RIs for transnational collaboration arises. In addition, Romania participated in the Agriculture, Food Security and

Climate Change (FACCE) JPI together with Italy and the Netherlands and other 8 PRO-METROFOOD partner countries [14]. Romania is also participating in Healthy Diet for a Healthy Life JPI and the Neurodegenerative Disease Research JPI (JPND) [15, 16] along with other countries including Greece, Hungary and the Netherlands [16].

2.6. Slovenia

On a regional level, the RIS3 priorities of Slovenia for the agro-food sector focus on the sustainable production of food and supply chain innovation to promote the local production of organic food [4]. Slovenia has not issued yet a national roadmap. However, at the EU level the country participates in the SHARE ERIC and ELIXIR ESFRI databases [6].

3. THE CASE OF THE NETHERLANDS

Taking into account all the abovementioned information, it is shown that the SEE METROFOOD partner countries differ a lot in the number, type and organization level of their RIs. However, in order to analyze the landscape of such RIs on a broader scale, the comparison with a country with very high activity in research in the agrifood sector, the Netherlands, is presented. At a European level, the Netherlands are participating in a total of ten ESFRIs [6]. Its regional RIS3 platform is divided into 4 geographical areas, each of which has set its own specific S3 priorities in the agrifood sector. These priorities are determined by the strengths of each area and the private stakeholders active. For instance, the Northern Netherlands focusses on starch and dairy products whereas the Eastern Netherlands focus on scientific innovation [17], [18]. On a national level, all areas collaborate towards the development of a bio-based economy [17]–[20]. These efforts are supported by 5 large-scale research facilities relevant to the agrifood sector, which are managed by certain consortia of universities, public institutes and private companies [21]. The success of this type of collaboration can be used as a guide for the SEE countries despite the differences in the developmental stage between them and the Netherlands. A culture of collaboration within each country and among them is necessary to ameliorate their position in the unified European research landscape.

4. CONCLUSIONS

The landscape analysis for the SEE METROFOOD partner countries identified the key national and regional priorities of each country, concerning the research in the agrifood sector. It became evident that the differences are mainly due to the socio-economic and political realities in each country, as well as their relations with the EU. The challenge for the upcoming METROFOOD-RI is to find ways to create synergies among these countries and to efficiently utilize the already existing resources and RIs. The formation of a network of shared resources/knowledge would assist greatly the development of the agrifood sector of the south-eastern Europe.

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