wiiw

JANUARY 2019

Research Report 438

European Innovation Partnerships:

How Successful Have They Been in Promoting Innovation in the EU?

Rumen Dobrinsky

The Vienna Institute for International Economic Studies
Wiener Institut für Internationale Wirtschaftsvergleiche

European Innovation Partnerships:

How Successful Have They Been in Promoting Innovation in the EU?

RUMEN DOBRINSKY

Rumen Dobrinsky is Senior Research Associate at the Vienna Institute for International Economic Studies (wiiw).

This paper was written in the context of the project ‘Investigating the Impact of the Innovation Union (I3U)’ which received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 645884.

Abstract

The paper presents an analytical assessment of the implementation of European Innovation Partnerships (EIPs) launched as one of the commitments of the EU Flagship Initiative Innovation Union with the aim to achieve innovative breakthroughs addressing major societal challenges. The EU launched five EIPs to address important societal challenges: (1) Active & Healthy Ageing; (2) Water; (3) Agricultural Productivity and Sustainability; (4) Raw Materials; and (5) Smart Cities and Communities.

The paper reviews the rationale of introducing the EIPs as a policy intervention aimed at promoting innovation in the EU and traces the organic evolution and governance structures of the newly emerging formations. It then provides an analytical evaluation of this EU policy initiative based on factual analysis of its implementation experiences and a comparison of its objectives and actual outcomes. In particular, the paper analyses the role of the EIPs as drivers of systemic change in the European innovation ecosystem and catalysts of new innovation activity in Europe.

This critical assessment serves as the basis for drawing some conclusions about the strengths and weaknesses of the EIPs as a new policy approach to foster innovation activity in Europe. One central conclusion is that while the EIPs have been very efficient in promoting collaboration among innovation stakeholders they have fallen short of breeding innovation activity of the expected scope and scale. The paper analyses the reasons for this weakness and formulates some recommendations that could serve as possible remedies.

Keywords: Innovation Union, innovation partnerships, innovation systems and ecosystems, innovation policy, innovation governance

JEL classification: O25, O32, O38

CONTENTS

TABLES AND FIGURES

1. Introduction

The Europe 2020 Flagship Initiative Innovation Union (IU) was launched with the objective to give a new impetus to research and innovation in the EU as vehicles for raising economic prosperity, addressing major societal challenges and supporting the EU's ambition to play a leading role in the global economy. The 34 IU Commitments form a broad policy intervention aimed at invigorating innovation activity in the EU and making it more effective and efficient.

Within the IU initiative, the European Innovation Partnerships (EIPs, or Commitment 29 of the IU) were envisaged as a new framework for bringing together all relevant stakeholders across policies, sectors and borders to speed up innovations and contribute to gaining competitive advantages for growth and job creation in Europe. EIPs were expected to address existing weaknesses in the European research and innovation system such as under-investment in knowledge generation and diffusion, unsupportive for innovation activity framework conditions, fragmentation and duplication of efforts by innovation actors, low involvement of users in the innovation process and insufficient alignment of public actions targeting innovation.

The European Commission (EC) defines EIPs as a new, challenge-driven approach to EU research and innovation, focusing on societal benefits and a rapid modernisation of the associated sectors and markets. By embarking on this initiative, the EU aimed to instal a new logic of innovation by integrating, harnessing and exploiting Europe's potential in a way that creates a new ecosystem of innovation and operating across demand and supply (European Commission, 2014).

› The EU launched five EIPs to address social challenges that were widely perceived as very important:

› EIP on Active & Healthy Ageing (AHA) (November 2011)

› EIP Water (June 2012)

› EIP on Agricultural Productivity & Sustainability (Agri) (June 2012)

› EIP on Raw Materials (RM) (October 2012)

› EIP on Smart Cities and Communities (SCC) (March 2013)

The paper presents an analytical assessment of the implementation of those five EIPs. Drawing on the related literature, the paper reviews the rationale of introducing the EIPs as a policy intervention. It then traces their organic evolution and governance structures and provides an analytical evaluation of this EU policy initiative based on factual analysis of its implementation experiences and a comparison of its objectives and actual outcomes. The paper analyses the role of the EIPs as drivers of systemic change in the European innovation ecosystem and catalysts of new innovation activity in Europe. This critical assessment serves as a basis to draw some conclusions about the strengths and weaknesses of the EIPs as a new policy approach to promote innovation in Europe.

2. Innovation systems and the rationale of innovation partnerships

The EU initiative to launch the EIPs is consistent with the systemic approach to innovation which regards it as a process that takes place in a complex system, involving the interactions of a range of 'innovation actors' or 'innovation stakeholders': innovative entrepreneurs, academic and R&D institutions, the business sector, innovation intermediaries and support institutions, public bodies, financial institutions, etc. The notions 'innovation system' and 'national innovation system' (NIS) reflect the understanding that the innovation process involves numerous interactions among innovation stakeholders and entails various systemic interdependencies that influence the processes of generation and diffusion of innovation in the economy (Freeman, 1987).

Governments and their policy interventions constitute inherent ingredients of the innovation systems, both as stakeholders and fixers of the rules of the game. The innovation literature has put forward a range of conjectures regarding the role of governments in the innovation process and the rationale for their policy interventions (for an overview see Dobrinsky, 2009). One of the most widely cited justifications for policy intervention is that of market failure, the case when market forces alone do not produce an efficient allocation of goods and services. Another important rationale for policy intervention is to address specific information and knowledge externalities, by stimulating a process of 'discovery' that would help filling knowledge gaps that restrain entrepreneurship (Hausmann and Rodrik, 2003; Rodrik, 2004). More recently, and especially with the advance of evolutionary economics, which emphasises the systemic nature of economic processes, the rationale for policy intervention has been enriched with the identification of the incidences of 'systemic failures' such as (Arnold and Thuriaux, 2003):

› Failures in social institutions

› Network failures

› Capability failures in firms and other stakeholders

› Framework failures, related to difficulties in the broad framework conditions.

Interactions and cooperation among stakeholders are both an important feature of the innovation process and a prerequisite for innovation to take place. Lack of, or insufficient collaboration between, innovation stakeholders can be considered as a systemic failure and therefore there is a rationale for addressing such problems by policy intervention. A number of innovation policy instruments target specifically the breeding of cooperation among the actors in the innovation process.

Recently, the innovation policy literature increasingly refers to the notion 'innovation ecosystem' which aims to capture the complex interactions leading to collaborative efforts among various innovation actors and which contribute to bringing innovations to the market (National Research Council, 2007). The metaphor 'ecosystem' reflects the variety of interlinkages among the innovation actors and stresses that

these collaborative interactions constantly evolve and change within the system (Autio and Thomas, 2014; Moore, 1996).

The actors in the innovation ecosystem are broadly the same as they are in a traditional innovation system and hence there may be an overlap or full match in their composition. The main difference, however, is that while an innovation system (such as the national innovation system) is usually considered in its static state, the ecosystem approach emphasises its dynamics and the evolving nature of the interactions and interlinkages among actors (Smorodinskaya et al., 2017). This reflects the fact that the collaborative relations linking the innovation actors of any given innovation process may and do change during the life time of the venture that brings this innovation to the market. Hence, the innovation ecosystem itself is regarded as a living body which evolves over time and may adapt to a changing environment.

The contemporary innovation ecosystems are considered as dynamic and agile collaborative structures that enjoy self-governance as a prerequisite for innovation based on interaction and collaboration. Such networked actors rely on a common vision and strategy as well as joint obligations. An ecosystem embodies the milieu that facilitates the co-creation of value through collaboration among actors.

An innovation ecosystem can be defined at different levels of geographic aggregation (local, regional, national, supranational, or even global), depending on the analytical purpose, but always stressing the role of interactions and collaboration for the innovation process(es). Smorodinskaya et al. (2017) point out that innovation ecosystems can have a different scale and design such as small ad-hoc groups of individuals, regional innovation hubs, local inter-firm networks, nation-wide innovation communities or global networks.

In turn, the term ‘partnership’ is widely used in different contexts. The OECD (1990) has put forward a useful definition of partnerships which seeks a more general coverage: ‘Systems of formalised co-operation, grounded in legally binding arrangements or informal understandings, co-operative working relationships, and mutually adopted plans among a number of institutions. They involve agreements on policy and programme objectives and the sharing of responsibility, resources, risks and benefits over a specified period of time.’ Partnerships that involve public sector participation – as do most of the existing ones – are thus a form of public sector intervention.

The evolutionary literature, which is one of the pillars of contemporary innovation policy, conjectures that the state has a superior ability and capacity to address market and systemic failures. In this context, partnerships can be regarded as specific policy interventions addressing some systemic failures as well as coordination externalities (Dobrinsky, 2009). Partnerships help in overcoming information and knowledge asymmetries among potential stakeholders and help in engineering of new projects. Reaching a mutually satisfactory agreement on sharing the risks of the venture is the basis for mobilising private sector participation in the project. In this context, innovation partnerships can help in devising and implementing of projects that would not have been in place in the absence of the public intervention.

Regardless of the nature of the joint venture, designing and running a partnership implies continuous knowledge- and information-sharing among the partners. Reaching a mutually satisfactory agreement on sharing the risks of the venture is the basis for mobilising stakeholder participation in the project. Thus Hartwich, González and Vieira (2004) view innovation partnerships as cooperative arrangements which

involve shared ownership and responsibility, joint investment, shared risk taking and mutual benefit. Boland, Phillips and Ryan (2011) highlight the importance of partnerships in promoting collaborative governance which is essential in the production and commercialisation of knowledge. This is so because innovation is dependent on combining of different types of knowledge into new ideas, markets, products or services that meet with market or societal acceptance.

Wessner (2003) stresses the role of partnerships in facilitating the transfer of scientific knowledge to real products by bringing innovations to the point where private actors can introduce them to the market. The upshot is accelerated progress in obtaining the benefits of new products, new processes, and new knowledge into the market which has positive consequences for economic growth and human welfare.

Sakakibara and Dodgson (2003) emphasise the fact that research partnerships involving shared commitment of resources and risk can occur both vertically throughout a value chain and horizontally, between partners at the same level in the value chain. Hall (2006) points out the importance of the way R&D and innovation partnerships recognise and value the diversity of stakeholders in the innovation process and the institutional factors governing their participation and roles. From this perspective, he highlights some important characteristics of innovation partnerships such as: the joint application of different types of knowledge; promoting not only science-based technical innovations, but also process, managerial, institutional and policy innovations; facilitating interconnectedness and interaction between technical and institutional innovations.

The notion of innovation ecosystems as discussed above implies additional rationale and objectives of innovation policy and hence a new role of governments, in particular, as regards innovation partnerships. These policy interventions may include, among others, the following (Dobrinsky, 2009):

› Help innovation actors/stakeholders jointly achieve mutually agreed goals
› Support the enhancement of connectivity between actors/stakeholders
› Help discover the nature and size of externalities and apply related remedies
› Help/coordinate actors in jointly establishing acceptable ‘rule(s) of the game’
› Create an enabling environment for change in behaviour to happen; facilitating the transition to new behaviour
› Facilitate the establishing of mechanisms of risk sharing among actors/stakeholders.

Innovation partnerships, including the EIPs, can serve as suitable policy intervention mechanisms for pursuing such objectives. The Communication from the European Commission on the Europe 2020 Flagship Initiative Innovation Union (European Commission, 2011) stressed the need to pool European resources in order to achieve innovative breakthroughs that would address major societal challenges that Europe is facing at the moment such as the ageing population, the effects of climate change, the reduced availability of resources, among others. The concept of EIPs was put forward as a practical approach to achieve this thrust. It was assumed that such ventures would also ‘boost EU competitiveness, enable European companies to lead in the development of new technologies, to grow

and assume global leadership in new growth markets, improve the quality and efficiency of public services and so contribute to creating large numbers of new quality jobs'.[1]

The EC further spelled out the EIPs' rationale as policy interventions in terms of their expected effect:[2]

› act across the whole research and innovation chain;

› bring together all relevant actors at EU, national and regional levels;

› step up research and development efforts;

› coordinate investments in demonstrations and pilots;

› anticipate and fast-track any necessary regulation and standards;

› mobilise demand, in particular, through better coordinated public procurement to ensure that any breakthroughs are quickly brought to market.

C29 targeted a niche where there is a perceived untapped pool of potentially viable innovation projects and deals which, however, do not materialise mostly due to knowledge, information and risk asymmetries across the potential stakeholders and not so much due to the lack of funding, even as regards the most risky early stages of the projects. When market forces alone are insufficient to bring stakeholders together, a public policy intervention in the form of 'information brokerage' helps to reduce uncertainty and perceived risk and contribute to the realisation of projects. Thus even in the absence of an in-built financial component (and hence of pecuniary incentives to guide the actors towards the desired objectives) or direct regulatory power (that would exert enforcement pressure to instigate the desired behaviour of the actors), it was expected that the EIPs would stimulate the materialisation of supplementary innovation projects, largely thanks to the coordinating capacity and convening power of the public authority (in this case, the European Commission). It was expected that the partnerships and their ecosystems would become a conducive environment for raising financial support from within their own stakeholder communities (both from public and private sources) and would also initiate proposals for regulatory changes aimed at facilitating the innovation activities that EIPs would breed.

1 https://ec.europa.eu/research/innovation-union/pdf/innovation-union-communication_en.pdf

2 http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=eip

3. Implementation practices and mechanisms

3.1. COMMON IMPLEMENTATION PATTERNS

The implementation of Commitment 29 (C29) started with the launch of five EIPs between 2011 and 2013: AHA, Water, Agri, Raw Materials and SCC. In contrast to other IU commitments, the initial drive of C29 implementation followed entirely a top-down approach driven by the EC. Both the topical/sectoral orientation of the five EIPs and their formal launch were designed and engineered by the EC which justified this intervention in the following way: 'EIPs are launched only in areas, and consist only of activities, in which government intervention is clearly justified and where combining EU, national and regional efforts in R&D and demand-side measures will achieve the target quicker and more efficiently.'[3] The EC also supported and facilitated the shaping of the EIPs' governance structures as well as the preparation and adoption of their guiding principles and planning documents.

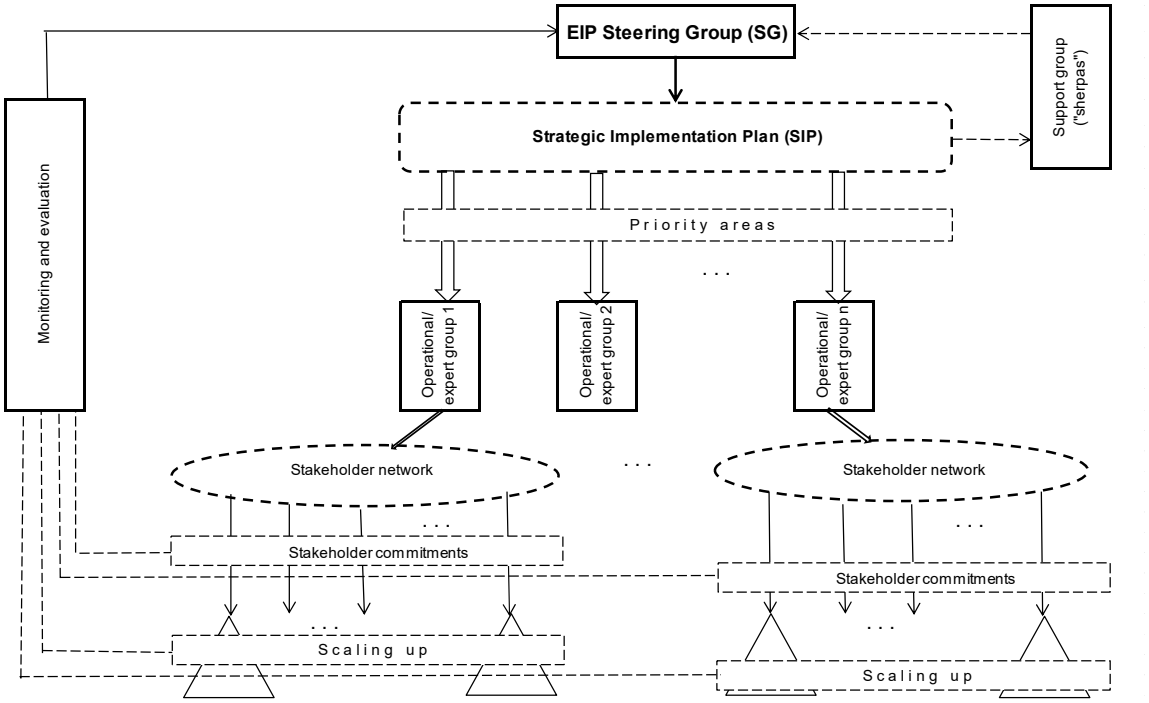
All five EIPs have identical governance structures as presented in Figure 1. Each EIP is led by a Steering Group (SG) composed of prominent stakeholders from the respective sector that provide strategic direction, leadership and guidance for the EIP. At the launch of each EIP, the EC took the lead in identifying and approaching the initial members of the SGs from within its stakeholder networks in each respective sector/area.

For this purpose, high-level EC officials (in most cases at the Commissioner level) approached and invited high-profile individuals from different EU Member States, typifying the stakeholder communities in the respective sectors with invitations to become members of the Steering Group in their personal capacity. High-level EC officials also chaired and led the initial sittings of the SGs and later took part in subsequent meetings. With time, the SGs became self-governing bodies with a rotation in their membership. Within some EIPs, the Steering Group is assisted in its work by a Support Group ('Sherpas') which acts as a kind of secretariat to the EIP providing technical assistance such as drawing up agendas, preparing working documents, organising meetings, etc. Some EIPs benefit from secretariat support offered by the EC.

The SGs' main initial task was the preparation and adoption of Strategic Implementation Plans (SIPs) for the respective EIPs; later the SGs led and guided the process of putting the SIPs into operation. SIP preparation itself was an iterative task involving both top-down and bottom-up elements. It involved the process of identifying the Priority Areas that each EIP set for itself and establishing the mechanisms for pursuing these priorities. In turn, the latter implied the establishing of Action (also called Focus or Expert) Groups (AGs) that took on themselves the planning, organisation and management of activities supporting the respective Priority Areas and, importantly, mobilising of international EU-wide stakeholder networks around each Priority Area.

[3] http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=eip.

Figure 1 / Governance structure of the EIPs



While the first push in setting this process in motion came from the top (starting from the SGs and then the AGs) the actual planning of concrete implementation activities was very much conducted in a dialogue between AGs and stakeholder communities. Stakeholder communities were invited to come up with ideas and initiatives that they considered relevant to the respective EIP. These were then processed and aggregated and passed back to the respective SGs as proposed inputs to the SIPs. Several iterative rounds of this sort were usually conducted before the SIPs took their shape and were endorsed by the SGs.

The SIPs themselves are considered as living documents and are subject to periodic reviews, updates and revisions depending on the success or problems encountered in implementation, the identification of new priorities and other factors. The same is valid for the Priority Areas and, respectively, the AGs within each EIP.

The structure of the SIP of all EIPs is broadly identical: it formulates key objectives of the EIP as well as headline targets that epitomise the objectives. The SIP then specifies the EIP Priority Areas and the main actions envisaged to be undertaken within the SIP horizon. The SIP also outlines the key tools that the EIP plans to develop/mobilise and use in the implementation of its actions.

In reality, the EIPs refrained from engaging in very specific quantitative objectives and targets. Most of the main C29 objectives, as defined in the SIPs (Table 1), are of a qualitative and long-term nature. Moreover, even most of the EIPs' targets are also formulated as qualitative rather than quantitative goals. Only some EIPs have also come up with quantitative headline targets for the year 2020 (the target year is aligned with the time frame of Europe 2020, EU's growth strategy for the present decade).

Table 1 / Main objectives and targets of the EIPs

Partnership	Main objectives	Main targets/Headline targets by 2020
EIP AHA	› Improve the health status and quality of life of European citizens, with a focus on older people › Support the long-term sustainability and efficiency of health and social care systems › Enhance the competitiveness of EU industry through an improved business environment	› To increase by 2 the average number of healthy life years in the EU
EIP Water	› Facilitate, support and speed up development and deployment of innovative solutions to water challenges › Create market opportunities for these innovations both inside and outside of Europe	› Identify, test, scale up, disseminate and stimulate the uptake of innovative solutions by the market and society for 10 major water-related challenges
EIP-Agri	› Foster a competitive and sustainable agriculture and forestry that works in harmony with the environment	› To reverse the recent trend of diminishing productivity gains by 2020 › To secure soil functionality in Europe at a satisfactory level by 2020
EIP RM	› Ensure sustainable supply of raw materials to the European economy whilst increasing benefits for society as a whole	› Up to ten innovative pilot actions › Substitutes for at least three applications of critical and scarce raw materials › Supportive framework conditions for primary raw materials › Framework conditions for enhanced efficiency in material use › European raw materials knowledge base › Network of Research, Education and Training Centres on RM management › Pro-active international cooperation strategy of the EU
EIP SCC	› Significantly accelerate the industrial-scale roll-out of smart city solutions integrating technologies from Energy, Transport and Information and Communication Technologies	› Create a number of 'Lighthouse Initiatives' that bring together groups of cities with industry and innovative SMEs › Apply new business and financial models, public-private partnerships › Advance Smart City open standards › Develop infrastructure platforms for smart city information › Develop tools for scalable integrated design › Create a common framework to develop citizen insight › Develop a Smart City Strategy at a policy level

Source: EIPs' strategic implementation plans.

Moreover, a comparison of the core rationale of C29 and its envisaged objectives as described in section 2 with the self-proclaimed objectives and targets of the EIPs (Table 1) reveals a discrepancy and mismatch: while the 'innovation component' features prominently in the core C29 rationale, it is largely and visibly missing in the self-proclaimed objectives and targets of the EIPs. The implications of such a deviation are discussed in section 4.

The most important and powerful operational implementation mechanism of all EIPs is the mobilisation of motivated stakeholder communities with the aim to generate bottom-up commitments within the respective Priority Areas and drive the pursuit of the EIPs' targets and objectives. For this to materialise, the EIPs' governance bodies were to develop appropriate incentives that would motivate the stakeholder communities to generate such commitments. This was a challenging part in the EIP implementation as they were not allotted with budgets earmarked to support implementation. EIPs were supposed to resort to existing EU and national funding sources and schemes for the support of their activities.

Ultimately, it was expected that the stakeholder commitments, or at least the most successful among them, would over time be scaled up. For this purpose the EIPs' governance structures were also tasked with the dissemination within their communities of indigenous best practice that they generated and with the showcasing of success stories accomplished in the context of their activities. In 'leading by example', it was expected that such success stories and best practice would be taken up by other stakeholders thus contributing to the scaling-up of successful practices. The key to success in scaling-up is the ability to mobilise and engage a critical mass of additional participants in the process.

All EIPs were also instructed by the EC to put in place a system of monitoring and evaluation of their progress in implementation as well as their success in, or problems with, the pursuit of their objectives and targets. For this purpose, EIPs were to develop their own monitoring and evaluation frameworks reflecting the specificity of their operation and then conduct regular monitoring and evaluation rounds. The results and conclusions of this monitoring were to be fed back to the SGs in the form of monitoring and evaluation reports.

Such reports would serve for a critical review of the appropriateness and effectiveness of the EIPs' actions and, respectively, for correcting the implementation course and amending the set of activities and tools in them.

3.2. EIP AHA

EIP AHA was the first C29 partnership launched in 2011 as a pilot. The experience of running EIP AHA was then used as a model and reference point in the setting up and putting in motion of the other EIPs. EIP AHA brings together key stakeholders/actors (service providers, end users, public authorities, industry) that are or should be present in the respective innovation cycle, from research to adoption or adaptation, along with those engaged in standardisation and regulation. The partnership provides these actors with a forum in which they can cooperate, united around a common vision that values older people and their contribution to society, identify and overcome potential innovation barriers and mobilise instruments to address existing challenges.

EIP AHA identified three main priority areas ('pillars') of its activity: (1) prevention, screening and early diagnosis; (2) care and cure; and (3) active ageing and independent living. In addition, horizontal actions were formulated that address framework conditions, promote links between the different priority areas and are enablers for all other actions, including regulatory and funding schemes.

To address existing challenges in these areas of activity, EIP AHA established 6 Action Groups which constitute new actors in the innovation ecosystem: A1. Adherence to medical plans; A2. Falls prevention and management; A3. Frailty and functional decline; B3. Prevention and early diagnosis; C2. Interoperable independent living solutions; D4. Age-friendly environments. The Action Groups, as self-defined by EIP AHA, represent '… communities of partners who are committed to work on specific issues related to active and healthy ageing. They do this by sharing their knowledge and expertise with their peers, increasing the added-value of their national and local experience, and identifying gaps that need to be fulfilled at European level'.[4] Each Action Group defined its own areas and developed Action Plans for its work, detailing projects and initiatives as well as their implementation schemes. Since inception, EIP AHA and its Action Groups have gone through two main planning periods: 2012-2015 and 2016-2018. The Action Plans are periodically being critically reviewed, revised and updated.

EIP AHA activities have been closely coordinated with other EU programmes, initiatives and organisations in related areas such as the Active Assisted Living Joint Programme, the European Association Working for Carers (EUROCARERS), the European Connected Health Alliance (ECHAlliance) and others. The European Commission acts as the main coordination body for cooperation and synergising across initiatives. In recent years, the EIP AHA annual conferences have been integrated with other meetings on related topics into European Summits on Innovation for Active and Healthy Ageing which are organised by the European Commission in cooperation with the European Parliament and the European Committee of the Regions.

Another new type of actors within EIP AHA are the 'Reference Sites', self-defined as 'inspirational ecosystems, delivering creative and workable solutions that improve the lives and health of older people and that can now be scaled-up and replicated across the EU'.[5] The Reference Sites can be regions, cities, integrated hospitals or care organisations that focus on a comprehensive, innovation-based approach to active and healthy ageing. As local ecosystems of their own they can also include different additional players, including regional or local governments, industry, SMEs and/or start-ups, research and innovation organisations and civil society, who are committed to the common objectives. As a result of a special call within EIP AHA, a total of 74 regional and local organisations were awarded the 'Reference Site' status.

Furthermore, the work of the Reference Sites is facilitated through the Reference Site Collaborative Network (RSCN) which enables knowledge sharing among all EIP AHA actors. This type of networking is essential for the scaling-up of successful innovations which is a key objective of the EIP activities. Collaboration through networking facilitates the Reference Sites in sharing good practices in a way that maximises the outcomes and reduces the risks associated with innovation.

[4] https://ec.europa.eu/eip/ageing/actiongroup_en

[5] https://ec.europa.eu/eip/ageing/reference-sites_en

The Blueprint on Digital Transformation of Health and Care (EIP AHA, 2016) aims to gather representatives from the demand and supply sides of digital health and care innovation and provide policy direction on measures that can support the adoption of digital health and care innovation in Europe. It seeks to reflect the policy vision of the EIP on AHA partners and become an interactive channel for exchanging policy inputs between the European Commission and the partners.

One of the key perceived challenges within EIP AHA has been the scaling-up of innovative solutions, including across borders. The EIP Innovation to Market (I2M) programme aims to improve the match between the demand side and supply side in the EIP AHA areas of work. This is a horizontal action within the EC on the digital transformation of health and care. The scaling-up strategy has five inherent steps: building a database of innovative practices, viability assessment regarding the scaling-up potential, classification for replication purposes, facilitation of appropriate partnerships and implementation of the innovative practices in other regions and countries.

In turn, the support to scaling-up of innovations (Scale AHA) is an action to accelerate the scaling-up of innovative approaches and practices through active knowledge exchange among partners. For implementation purposes, EIP AHA has developed a Repository of Innovative Practices as the basis for the implementation of its scaling-up strategy. The repository contains best innovative practices identified by and recommended by the Action Groups as the most prospective for uptake and scaling-up. It is a tool to support EIP AHA in mobilising sufficient resources and expertise to promote the uptake of innovative solutions for active and healthy ageing.

Another implementation instrument in Scale AHA is the Twinning Support Scheme aimed at the transfer of innovation. As a result of the 2016 call, twenty twinning pairs were selected to benefit from EC financial support to the exchange of knowledge and expertise within the twinning activities. Two types of organisations are involved in the twinning schemes: 1) organisations transferring the innovative practice (the originator organisations) – those with the experience and know-how in a particular field of intervention; 2) organisations adopting the innovative practice (receiving/adopter organisations) – those that receive the innovative practice and deploy it in their activity.

The objective of such schemes is to facilitate and support the transfer and deployment of digitally-enabled innovative solutions for health and care delivery to the ageing population from one location to another, in most cases, across borders. As indicated in the recent Study on Support to Scaling-up of Innovations (European Commission, 2017a), these schemes contributed to the establishment of close collaborative links and interactions among the twinning partners and successful transfer of knowledge and good practices. A key success factor of these ventures was the availability of funding, albeit limited, to support the networking and knowledge exchange, in particular, through face-to-face meetings and joint hands-on workshops among the partners.

As part of implementing the scaling-up strategy, EIP AHA undertook considerable effort in identifying existing tools and methodologies for scaling-up of advanced healthcare solutions. One main task has been to identify practices that are suitable to be scaled up. To this end, a synopsis of scalable health innovations and their attributes was developed as well as a description of the needed implementer capacity that would boost community uptake with local stakeholders.

Overall, EIP AHA has developed successfully its own innovation ecosystem with clearly defined actors and roles, interactions and linkages. The main collaborative mechanism is networking and knowledge sharing among stakeholders which helps the actors to identify actions of common interest and synergise in their implementation. As of 2014, EIP AHA already extended to over 1,000 EU regions, mobilised 3,000 engaged partners and 300 leading organisations with over EUR 1 billion of commitments. As of end-2015, EIP AHA had mobilised some 1,100 commitments by its stakeholders (Zuffada, 2015).

As regards the innovation dimension of EIP AHA activities, the main avenue that this EIP has followed was that of the diffusion of existing innovation, rather than the pursuit of ventures aiming to bring new innovative ideas to the market. Since 2015, four years after its inception, the main EIP AHA efforts have been focused on its scaling-up up strategy which puts the emphasis on the uptake and scaling-up of advanced solutions developed in leading EU locations by other, adopter locations within the EU (European Commission, 2017a). In terms of the nature of these activities, such actions constitute diffusive innovative processes based on imitation and adaptation and not on frontier, path-breaking innovation. This can be regarded as a certain deviation from the initially prescribed evolution course of the partnership.

3.3. EIP WATER

EIP Water aims to identify, test, scale up, disseminate and stimulate the market uptake of innovative solutions to address major European and global water challenges. The EIP Water Strategic Implementation Plan identified ten major water-related challenges by the year 2020 and eight priority topics. The strategic objectives that EIP Water set for itself are: (a) to provide safe, available and affordable water for all, while ensuring sufficient water for the environment; (b) to achieve the relative decoupling of the depletion of water resources from the level of economic activity in key EU sectors (including energy, farming and chemicals); and (c) to maintain and enhance the good status of waters in all EU river basins – in terms of quality, quantity and use, and in the context of increasing pressures on water resources.

EIP Water identified the following priority areas: (1) Water reuse and recycling; (2) Water and wastewater treatment, including recovery of resources; (3) Water-energy nexus; (4) Flood and drought risk management; and (5) Ecosystem services. Accordingly, EIP Water established 29 Action Groups with members from 23 EU Member States which develop their own innovations and support the work on identifying and removing barriers to innovation. The Action Groups also identify and disseminate best practices that can result in appropriate policy recommendations.

The EIP Water Action Groups are dynamic and flexible structures. They are profiled in different interrelated areas and facilitate cooperation among actors of common interest within the water sector. Most of these Action Groups are new collaborative structures which indicates that the EIP facilitated the establishment of new partnerships and helped to improve cooperation and networking. A recent monitoring and evaluation report of EIP Water (European Commission, 2017b) concludes that over time, one could observe the ‘maturing of many Action Groups either in bringing innovation to the market or in supporting the bottom-up approach of addressing various regulatory bottlenecks to the EC and its agencies’. EIP Water Action Groups were also successful in raising additional funding in support of their activities.

EIP Water has set up its Online Marketplace, a virtual platform that facilitates stakeholder collaboration in joint projects across the innovation value chain. The central role of the marketplace is the matchmaking function – facilitating stakeholder connectivity based on common interest. The EIP Water Marketplace has followed a demand-driven approach and its content and services have continuously been adapted to the demand and interest of its online community.

The Marketplace has been quite successful in mobilising an online community that brings together some 2,400 individuals from some 30 countries as well as 1,500 projects and 600 organisations. However, judging from the actual community activity (as suggested by the frequency of online site hits), it appears that the Marketplace customers mostly value it as a medium of knowledge sharing and a document repository, i.e. a source of information relevant for their purposes (European Commission, 2017b).

As regards its innovation outputs, EIP Water uses indicators such as 'number and type of innovations (patents, trademarks, business models, proprietary methods, etc.)'. After an initial surge in the first years of the EIP existence, the growth of new outputs in this category notably slowed down in later years; de facto, these innovation outputs comprise a minor share in the overall reported EIP activities. As commented in the recent monitoring and evaluation report of EIP Water (European Commission, 2017b), 'the focus of Action Groups gradually shifted from developing and testing the innovations to implementation, refinement and business development'.

Parallel to that, more emphasis has been put on the showcasing of successful innovation through demo-sites and pilot implementations by Action Groups. The Marketplace itself serves as a platform for improved visibility and dissemination and, accordingly, for spreading good innovation practice and its replication. It contains 'innovation directories' comprising inventories of available technologies, processes and approaches. These are seen as mechanisms supporting the scaling-up of successful innovations within the EIP constituency and in the water sector as a whole.

EIP Water has also been assigning significant attention to cooperation on the identification and elimination of barriers and bottlenecks for innovation in the water sector. This collaborative work started with the compilation of a comprehensive list of such barriers and a range of actions were taken for their reduction. In addition, there has been a coordinated effort within EIP Water on the development of new standards in the domain of the EIP.

The existence of numerous specialised Action Groups has been instrumental in covering a wide range of water-related issues and in instigating broad stakeholder cooperation on problems and issues of common interest. The Action Groups appear to function as efficient collaborative platforms for stakeholder collaboration. At the same time, the overall scope of EIP Water activities seems somewhat overstretched and lacking focus on what should have been its core activity: generating innovations and bringing them quickly to the market. Instead, similarly to EIP AHA, there has been an increasing emphasis on the diffusion of innovation – the replication and scaling-up of already developed innovative solutions.

3.4. EIP-AGRI

EIP-Agri has set for itself two main objectives and headline targets: (1) To reverse the recent trend of diminishing productivity gains by 2020 (indicator for productivity and efficiency); (2) To secure soil functionality in Europe at a satisfactory level by 2020 (indicator for sustainability of agriculture). Accordingly, the partnership has identified four main priority areas: (1) resource efficiency; (2) provision of societal and environmental goods and ecosystem services; (3) establishing of a sustainable consumption and supply chain and (4) innovation culture.

EIP-Agri supports two types of actors that drive the implementation of its activities:

a) Focus Groups are flexible or temporary groups that are part of the EIP networking activities at the EU level and bring together participants from the farming sector, researchers, advisors and other innovation actors to share knowledge and experience on specific topics. Focus Groups are thematic, specialising in different subsectors of agriculture or farming activity. Each group explores practical innovative solutions to problems or opportunities in the field, and draws on experiences derived from related projects. They also discuss research results and best practices that help to solve practical problems in the sector. Focus Groups are expected to prompt options for innovative agri-business solutions that would then be taken up by Operational Groups. As of March 2018, 31 such focus groups were functioning or were in the process of being established.

b) Operational Groups (OGs) are teams composed of specific actors with complementary knowledge relevant for given projects (farmers, researchers, advisors, businesses, environmental groups, civil society, etc.). OGs are project-based and are set up with the purpose of finding and implementing innovation solutions to address specific problems for the farmers. OGs are the EIP-Agri's main tool for turning innovative ideas into real solutions for the field. Most OGs bring together teams that work on innovation projects funded by Rural Development Programmes (RDPs). Operational Groups also share project results with the broader EIP-Agri network so that others with similar challenges across Europe can benefit from the outcomes. EIP-Agri aims at establishing some 3,200 Operational Groups for the period 2014-2020 (European Commission, 2016).

The EIP-Agri Service Point collects and disseminates the results of the work and helps in finding partners and information, facilitates the exchange of knowledge and experiences and liaises with other existing networks and initiatives. The Service Point acts as a mediator within the EIP-Agri network, enhancing connectivity and collaboration among different stakeholders in innovative agriculture. The Service Point also produces and distributes a range of information materials relevant for the EIP activity (articles, brochures, factsheets, reports, newsletters, etc.) and maintains a repository of such information materials.

EIP-Agri coordinates its activities with the permanent Subgroup on Innovation for agricultural productivity and sustainability within the European Network for Rural Development (ENRD). The Subgroup on Innovation is tasked with the provision of substantive and networking support to the implementation of the EIP-Agri projects in Rural Development Programmes (RDPs). The EIP-Agri Service Point provides various facilities for such inter-agency coordination.

EIP-Agri is the only EIP that benefits from dedicated funding for the implementation of its activities: OGs' projects can benefit from pillar II of the Common Agricultural Policy within the RDPs. Such funding can be used for purposes such as: support for the establishment and operation of OGs, support for pilot projects and the development of new products, support for horizontal and vertical cooperation among supply chain actors, knowledge transfer, advisory services, investments in physical assets, etc. In turn, the EIP-Agri network benefits from direct EC support through its Service Point which is run by DG AGRI. At present, EIP-Agri is being implemented in 26 Member States, in 96 out of the possible 111 RDPs (European Commission, 2016).

The EIP-Agri intervention logic relies on a bottom-up and demand-driven approach in which farmers, together with other actors and stakeholder engage in developing practical solutions to concrete problems as identified by the agri-businesses. It relies on an 'interactive innovation model' in which actors with complementary knowledge work together and co-create the innovative solutions. For this purpose, EIP-Agri has also established its own ecosystem as described above and which is part of the broader European innovation ecosystem. To this end, EIP-Agri and its ecosystem seek to create synergies with other existing policies such as the EU's rural development policy and research and innovation policy.

As of the moment of writing this paper, the evidence about the implementation of concrete innovation projects within the EIP-Agri framework was relatively scanty. Reportedly, there are a number of such projects that are being implemented (mostly under the RDPs and some under Horizon 2020) but most of them were in their initial phase. So far, the biggest achievements of the EIP have been in its networking activities – the mobilisation of innovation actors engaged in collaborative research and innovation activities and the establishment of a vibrant own ecosystem. Consequently, most of the EIP-Agri activities refer to raising awareness, networking advisors and innovation support services, matchmaking, collecting and disseminating good examples, innovation brokerage. The majority of these activities are implemented through the EIP-Agri Service Point.

3.5. EIP RM

EIP RM should ensure sustainable supply of raw materials to the European economy with rising benefits for the society as a whole. The key objectives of the partnership are formulated as: (1) reducing import dependency and promoting production and exports from the EU by improving supply conditions, diversifying raw materials, sourcing and improving resource efficiency, including recycling, and finding alternative raw materials; and (2) putting Europe at the forefront in raw materials sectors and mitigating the related negative environmental, social and health impacts. EIP RM implementation is closely coordinated with the EU Raw Materials Initiative which is an integrated strategy to respond to challenges related to the access to raw materials.

EIP RM has defined the following priority areas and actions (pillars): (1) a technology pillar focuses on actions in research, technological development and innovation coordination; (2) a non-technology pillar focusing on framework conditions as well as on knowledge and skills development in RM; (3) an international collaboration pillar which promotes synergies with leading non-EU countries. All in all, the three pillars consist of 24 action areas and 95 actions. EIP RM has formulated 7 concrete targets that should be achieved by 2020 in the pursuit of its objectives.

EIP RM has also established four Operational Groups (OGs) according to selected specific topics. OGs are tasked with the conversion of the Strategic Implementation Plan into actions and provide advice to the EIP RM Steering Group. They operate on the basis of flexible structures and time horizon and in close interaction with each other.

As a result of the two rounds of calls (2013 and 2015), EIP RM counted 123 recognised stakeholder commitments: 76 from the 2013 call for commitments, and 47 from the 2015 call for commitments. Respectively, EIP RM counted almost 980 unique partners, including 84 partners from non-EU countries. As regards the types of actors in the EIP RM commitments, they are distributed as follows: Private sector – SME: 27%; Private sector – large companies: 20%; Research technology organisation: 7%; Academia: 20%; Business association: 10%; Governmental (public bodies): 14%; NGOs: 2%.

Taken together the commitments have a total indicative budget of EUR 1,979 million. By 2015, the EIP commitments had secured approximately EUR 391 million for their implementation. EU sources (in the first place, Horizon 2020) accounted for some 45% of the secured funding; public and regional sources contributed about 22% of the funding and the remaining one-third came from private sources.

The largest share of the reported outputs by the commitments (27%) contributes to Target 2 (substitutes of traditional raw materials) followed by Target 1 (innovative pilot actions) – 21%, Target 6 (knowledge and innovation community) – 14%, and Target 5 (knowledge base) – 13%; Target 4 (framework conditions for materials efficiency and waste management) and Target 7 (international cooperation) – 10% each; and Target 3 (framework conditions for primary raw materials) – 5%. The partnership also delivered a number of strategic documents (such as policy recommendations, standards, methodologies, etc.) and was very effective in supporting knowledge sharing. As regards the delivered innovative outputs or pilots, the aggregate picture since 2014 looks as follows: joint R&D through pooling of competences/resources: 38 reported outputs; new product: 1; new service: 7; new business model: 5; new technology/process: 29; improvement of existing technologies: 30; patent application: 55; other: 19.

While the monitoring reports do indicate that EIP RM delivers innovation outputs, a 2016 survey indicated that the most common activities within the EIP RM commitments were of organisational nature (enlarging the scope of the partnership, securing funding, re-structuring). Research and development activities were reported by a relatively small, albeit increasing number of commitments. A number of commitments reported that they had not undertaken any significant activities towards their commitment goals; most of these due to a lack of funding (European Commission 2017c).

3.6. EIP SCC

EIP SCC combines information and communication technologies (ICT), energy management and transport management to come up with innovative solutions to the major environmental, societal and health challenges facing European cities: reducing high energy consumption, greenhouse gas emissions, bad air quality and congestion of roads. The partnership aims to overcome bottlenecks impeding the changeover to smart cities, co-fund demonstration projects and help coordinate existing city initiatives and projects. This should be achieved through the wide roll-out of integrated, scalable, sustainable Smart City solutions – specifically in areas where aspects such as energy, mobility and

transport, and ICT are closely linked. To this effect, EIP SCC aims to establish strategic partnerships between industry and European cities to develop the urban systems and infrastructures of tomorrow.

The EIP SCC consists of the High Level Group (supported by its Sherpa Group) and the Smart Cities Stakeholder Platform. The High Level Group includes top representatives from industry, research and city administrations. The Sherpa Group is formed from associates of the High Level Group and a set of additional associated members. The Smart Cities Stakeholder Platform (the EIP SCC Marketplace) is a collaborative, networking and knowledge sharing tool of the EIP. It collects and processes inputs from all stakeholders and supports networking among them, in particular, with a view to formulating new activities and projects. EIP SCC holds annual general assemblies of the partnership involving its broad community and constituency. The workflow within EIP SCC concentrates on three specific vertical areas:

› Sustainable Urban Mobility – alternative energies, public transport, logistics, planning;

› Sustainable Districts and Built Environment – the energy efficiency of buildings and districts, increasing the share of renewable energy and the liveability of city communities;

› Integrated infrastructures and processes across Energy, ICT and Transport – connecting infrastructure assets to improve the efficiency and sustainability of cities.

Accordingly, EIP SCC has set up 29 Action Groups to organise, plan and implement the activities in their respective areas. In addition, the EIP SCC Action Clusters are assemblies of partners committed to work on specific issues by sharing knowledge and expertise with their peers, generating added-value through their local experience and identifying gaps that need to be fulfilled at European level. The work of each Action Cluster is organised under thematic initiatives. As a result of a 2014 call, 441 commitments were submitted by groups of stakeholders from both the public and the private sector out of which 370 were selected to build up the Action Clusters.

The EIP SCC Business Models Repository (which is part of the EIP SCC Marketplace) provides structured and detailed information on business models of projects developing Smart City solutions. The aim of this tool is to provide information, which can foster Smart City projects' development and replicability. As regards the future, the EIP SCC Marketplace aspires to become the place where demand can meet supply for smart city solutions. It will seek to bring together (physically and virtually) municipal actors and their demand, with supply from investors, technology providers and financiers, who can jointly lay the foundation for actual smart city project solutions.

As of the moment of writing, EIP SCC had not published a monitoring and evaluation framework for the periodic monitoring of its activities; respectively, in the lack of monitoring and evaluation reports, so far there is not much publicly available information on its outputs and outcomes.

4. The effect of the European partnerships: a tentative assessment

4.1. THE EIPS AS DRIVERS OF SYSTEMIC CHANGE

As already discussed, the EIPs can be regarded as systemic policy interventions which recognise the complex interlinks between the targets of the policy and are mostly directed towards specific behavioural aspects of the innovation actors. Among the main C29 objectives, there is a range of systemic effects that the EIPs exert or are expected to exert in the future which should result in the enhancement and strengthening of the innovation systems both at the national and EU level and which should facilitate and foster the innovation process.

C29 is also expected to address weaknesses in the European research and innovation system such as under-investment in knowledge generation and diffusion, framework conditions which are not sufficiently innovation-friendly; fragmentation and duplication of efforts, low involvement of users and insufficient alignment of public actions. From this perspective, the EIPs should exercise a positive systemic effect and help to strengthen the European innovation ecosystem.

Systemic effects usually take the form of changes in the behaviour of economic agents or behavioural additionalities that could be associated with the intervention. Other possible positive systemic effects can take the form of elimination or dampening of existing systemic failures and/or a reduction of their negative effect. Such changes happen gradually due to their long-term nature and can be difficult to measure or quantify directly.

When trying to assess the effects of the EIPs, one should take into consideration the fact that policy evaluation usually deals with tangible outcomes that can be measured in the form of results or indicators of the exerted socio-economic impact. Given the limited time span of C29 implementation such outcomes and performance indicators are very limited and sketchy. This is why the assessment of the effects of the EIPs at this stage can only be tentative and rough.

The main mechanisms and channels through which the EIPs exert their effect are related to the systemic coordination of the innovation process and the way such coordination takes place. From this perspective, one needs to recall that the EIPs support linkages among innovation actors, facilitate knowledge spillover and support risk sharing, promote connectivity and collaborative models among stakeholders. They also bridge sources and users of innovation and affect the incentive structure of the targeted agents. Partnerships thus act as catalysts for the emergence and shaping of networks of stakeholders of innovation projects that address the targeted societal challenges.

All EIPs gave birth to a range of new innovation actors and assigned new roles in the innovation processes. Furthermore, they motivated these actors to engage in new kinds of relationships and established new linkages (both networking and collaborative) among their communities of actors. Most EIPs were also actively engaged in the search for new solutions for improving framework conditions and

were successful in delivering new collaborative solutions for aligning and synchronising the actions of different stakeholders, including users and public bodies.

As already pointed out, in effect, the EIPs bred their own new indigenous ecosystems which function on their own but are also integrated into the existing regional, national and EU-wide innovation ecosystems. There are several channels and mechanisms through which such integration takes place:

› The establishment of new functional cooperative linkages with other innovation actors. Thanks to the efficiency of some of their incentive mechanisms, in particular, their convening power which was boosted by the EC direct involvement at a high level, the EIPs were able to mobilise broad communities of innovation actors and incite networking both within the EIPs and with actors from the wider EU ecosystem. In turn, this later contributed to the formation of more stable linkages and collaborative interactions among the actors.

› Synergising with other EU and national policies, programmes, initiatives and instruments. It was envisaged that all EIPs would seek to generate – and they did generate – mutually beneficial synergies with existing programmes, initiatives and instruments and benefit from their funding. In the first place this is Horizon 2020, the EU's main vehicle for funding research and innovation collaboration with a focus on funding for international multi-actor projects. Synergies were generated also with similar national and local programmes and instruments, and – at the EU level – with a number of interconnected EU policy frameworks such as the Rural Development Programme and other funding mechanisms in the CAP, the Inter-regional Programmes (Interreg), the European Regional Development Fund (ERDF), the Cohesion Fund (CF), the European Social Fund (ESF), the European Agricultural Fund for Rural Development (EAFRD), the EU Water Framework Directive, etc.

› Delivering EIP outputs with wider systemic effects such as the development of new regulation and standards (some examples are presented below). Most EIPs did engage in efforts to improve the regulatory environment in their specific domains and in drafting proposals to modify existing standards. They also produced 'soft regulation' in the form of guidelines and recommendations. Such outputs can have a wide systemic effect if followed by a considerable number of adherents both within and outside the EIPs' indigenous ecosystems.

› Scaling-up and dissemination of good innovation practices. All EIPs have been engaged in identifying and disseminating showcases of good innovation practice to be replicated by others. In most instances, such practices imply changes in the behaviour of the actors who adopt the new practices, including their interactions with other actors. Similarly to the above, this C29 outcome can have an extensive systemic effect in the case when the number of followers is considerable.

Some EIPs formulated, as part of their objectives, goals and tasks directly seeking systemic change in the innovation ecosystems. Thus EIP AHA identified, as part of its scale-up strategy, four areas with priority actions supporting systemic changes (European Commission, 2017a): 1) creating conditions that maximise the capacity for innovative ideas to scale across the public sector; 2) ensuring that the public sector has the organisational culture, leadership, and people conducive to supporting the scaling-up of innovative ideas; 3) establishing networks that facilitate the dissemination of innovative ideas that could be scaled, supporting the spread of knowledge; 4) using appraisal and evaluation of innovative ideas to

provide the business case for scaling and to ensure that the right ideas are implemented and driven forward.

EIP AHA also established a Task Force on Synergies as a consortium of stakeholders from different EU countries with the mission to measure the impact of several ongoing community-based interventions initiated by the EIP. The range of such interventions includes the implementation of new professional models of care which encompass the collaboration among formal and informal AHA actors and create new opportunities for business.

In accordance with its monitoring and evaluation framework, EIP Water observes and records the EIP contribution to the development and introduction of new regulation and standards as well as the dissemination of good innovation practice in the EIP domain. The latest monitoring and evaluation report of EIP Water quotes eight examples of new standards and four soft regulations developed with the EIP participation (European Commission, 2017b). EIP RM also reports a number of outputs in this category: a recent monitoring report quotes 10 industry standards, 12 guidelines and 3 methodologies (European Commission, 2016). EIP-Agri set for itself well-defined systemic objectives related to the wider knowledge flows and dissemination of results. To this effect its activities seek the broadening and strengthening of interconnections in the national and regional agricultural knowledge and innovation systems and complementarities with other EU programmes, initiatives and instruments.

One specific systemic effect of C29 is the promotion and support to trans-border collaboration among innovation actors within the EU and even beyond. In view of their nature, all EIPs have directly contributed to the establishment and strengthening of international connectivity and linkages within the European innovation ecosystem and the innovation cooperation and co-creation across EU internal borders.

The EIPs supported the exchange of innovative practice between innovation actors in different regions and countries which provides additional EU added value. This weighs on the overall effectiveness of the EIPs, particularly regarding systemic changes desirable in the medium and long term (European Commission, 2016). In this regard, the EIPs' networks provide efficient means and mechanisms for establishing cross-border linkages and collaborative relations that may also create synergies. Some EIPs (RM, in particular) set for themselves international cooperation as a Priority Area and trace regularly in the monitoring and evaluation reports their achievements and success in meeting the established targets.

All EIPs engaged in cross-border international innovation projects related to the spreading and scaling-up of good practices. To this effect, some partnerships also invested collaborative effort into analysing the international applicability of such practices. These cover different transferability assessments investigating cross-border interoperability and scalability, the means to effectuate the cross-border knowledge transfer and the ways to eliminate or reduce context-specific obstacles and bottlenecks.

Table 2 contains a summary of the C29 international dimension: outreach, achievements and results broken down by individual EU Member States.

Table 2 / Synopsis of C29 international outreach, achievements and results by EU Member States

Partnership	EIP AHA		EIP Water		EIP-Agri	EIP Raw Materials		EIP SCC
Country	No of reference sites	No of innovative practices	Member States representation in Action Groups [1)]	Visits to Marketplace by countries	Number of Operational Groups	EIP budget (EUR million)	Number of commitments	Participation/ commitments
Belgium	3	3	41	3711	33	0.4	30-70	Medium
Bulgaria	1	2	3.5		20	20.0	5-10	Low
Czech Republic	1	1	3		20	9.7	5-10	Low
Denmark	2	6	21	642			10-30	Low
Germany	6	8	48	3516	203	60.6	>70	High
Estonia							5-10	Medium
Ireland	1	5	3	780	10	n.a.	10-30	Low
Greece	2		21	1049	436	80.0	10-30	High
Spain	12	50	86	8488	849	52.1	120	High
France	5	15	45	2512	305	29.3	>70	Medium
Croatia	1	2	3		33	9.7	5-10	Low
Italy	12	40	62	4883	625	81.1	>70	High
Cyprus	1				40	1.6		Low
Latvia			3		7	n.a.	5-10	Low
Lithuania							5-10	Low
Luxembourg								
Hungary			14	608	70	11.0	5-10	Low
Malta			14		15	n.a.		
Netherlands	5	16	76	5051	60	n.a.	30-70	High
Austria	1	6	10	2652	50	20.0	10-30	Medium
Poland	2	5	17	775	90	24.6	30-70	Low
Portugal	2	9	38	1666	72	n.a.	30-70	Medium
Romania			14	1463	24	12.5	10-30	Low
Slovenia			17	450	9	25.6	5-10	Low
Slovakia					25	n.a.	10-30	Medium
Finland	3	10	21	546	10	3.0	30-70	Medium
Sweden	2	4	24	849	80	47.0	30-70	Medium
United Kingdom	7	25	45	3992	120	22.8	30-70	High

[1)] Percentage of Action Groups that include a partner from the respective country.
Source: Author's compilation based on EIPs' monitoring and evaluation reports.

However, there are also visible absentees in the list of C29 systemic and synergetic objectives and outcomes, in particular, those associated with possible links with activities and programmes under EC DG Internal Market, Industry, Entrepreneurship and SMEs. C29 documents do not contain references to funding sources earmarked for the support of entrepreneurship and SMEs either. This lacuna reflects a flaw in the C29 design and implementation, namely, the lack of focus on innovative entrepreneurship. Furthermore, while EIPs did revert to Horizon 2020 for funding some of their activities, there is no evidence of EIPs even targeting to address the opportunities for funding innovative entrepreneurship contained in Horizon 2020.

In the same vein, rather paradoxically, C29 implementation as a whole did not draw on or share experiences and good practices already accumulated in other similar EU initiatives such as the highly successful Future Internet Public-Private Partnership (FI-PPP) Programme.[6] FI-PPP had an explicit focus on the promotion and market uptake of future Internet applications in various spheres by mobilising different stakeholders from the public and the private sectors into the different phases of the process of bringing innovative ideas to the market. In its spirit and sectoral delineation FI-PPP is very close to the nature of the EIPs. FI-PPP went through several implementation phases including development, market uptake and scaling-up of innovation. In particular, its third phase, the FIWARE Accelerator Programme which is focused on the actual market uptake of innovative Internet services and applications based on technological developments and trials that took place in earlier phases, has been highly successful.[7] Moreover, it has been successful exactly in an area which constitutes one of the weak aspects of C29: the support to innovative entrepreneurs on the whole way from innovative ideas to the market.

4.2. STRENGTHS AND WEAKNESSES OF THE EIPS AS A POLICY INTERVENTION

One of the key objectives in launching C29 was to boost innovation activity and achieve innovation breakthroughs that would, on the one hand, address major societal challenges and, on the other hand, boost EU competitiveness, enabling European companies to lead in the development of new technologies, to grow and assume global leadership in new growth markets. However, the comparison of the core rationale of C29 and its envisaged objectives with the self-proclaimed objectives and targets of the EIPs (Table 1) reveals a deviation from the prescribed course. The core C29 rationale notably weighs towards the 'innovation component' of the EIPs and stresses that partnerships are conceived as a novel mechanism for promoting innovation activities including frontier innovation. Many of the other definitional characteristics of the EIPs in the inception documents are presented either as framework conditions for achieving such innovation goals or expected outcomes of the targeted breakthrough innovations.

By contrast, aspects related to the generation of genuinely novel products and services were largely watered down in the self-proclaimed objectives and targets of the EIPs (Table 1). Quite strikingly, the term 'innovative breakthroughs' is all but missing in these documents. Even in the cases when the notion of 'innovation' is present in the EIPs' documents, a closer look into the essence of the context reveals that in many cases the genuinely innovative component of the respective target, task or activity is just marginal. At the same time, the EIPs' self-declared goals (as interpreted by the communities that implemented the concept), weigh heavily towards sector-specific objectives and targets, which apparently reflected the interests of these communities. Thus, de facto, already with the formulation of their implementation plans, the EIPs took their own course, which deviated considerably from the course envisaged at the start.

Another distorting factor was the lack of a clear and targeted C29 focus on innovators proper. The stakeholder segment that is most visibly missing in EIP implementation is that of innovative entrepreneurs. Innovative entrepreneurs are missing already in the EIP inception documents which do

6 https://www.fi-ppp.eu/

7 https://ec.europa.eu/digital-single-market/en/fiware-accelerator-programme

not even mention the terms entrepreneur or entrepreneurship. Innovative entrepreneurs are also largely missing in the key EIP guiding documents (such as the strategic implementation plans) and in the activities of the lower level operational structures.

Furthermore, the absence of funds specifically targeted to support the development of innovative products by the EIPs amounted to the lack of an important driver of innovation activity. In the absence of such funds, the EIPs' activities tended to concentrate on activities that did mobilise funding from other sources but were not necessarily focused on innovation. Thus the EIPs gradually lost their focus as mechanisms targeting innovation proper.

Yet another reason why EIPs deviated from the envisaged course was that the top-down pressures coming from the EC were probably not sufficiently articulated towards the direction of innovation. Indeed, EC guidance was coming mostly from the respective EC sectoral directorates but not from those tasked with research and innovation. Quite strikingly, the key such directorates – DG Research and Innovation and DG Connect were all but missing in all C29 stages: both at the launch of the EIPs, at the stage of SIP design and implementation and during the rounds of monitoring and evaluation.

Effectively, over the course of implementation the EIPs were partly captured by sectoral industry/stakeholder interests. The stakeholder groups emerging bottom-up tended to refocus the centre of EIP activities towards sector-specific issues and interests but not necessarily related to innovation. Consequently, there was a general lack of innovation drive in the activities of all EIPs.

The combined effect of the above factors caused a drift in the nature of EIP activities away from what should have been at their centre – genuine innovation actions and outputs. This can be traced in the reported EIP outcomes as reflected in the EIPs' monitoring and evaluation reports. While all EIPs do report some outputs that are classified by them as 'R&D' and/or 'innovation' (including research and innovation projects supported by Horizon 2020 and other EC programmes), these account for a relatively small share of outputs. Outputs that could be classified as 'frontier innovation' are difficult to trace in the EIPs' reports, if at all; most of the EIPs' reported innovation outputs refer to the categories 'adaptation' or 'diffusion'. Furthermore, many of the innovation-related deliverables as reported by EIPs (such as inventories, reviews, studies, reports, good practices, repositories, toolkits, training/capacity building, university programmes, events – workshops, seminars, conferences, etc.), while contributing to establishing a conducive environment and beneficial to society, have little to do with innovation proper.

The periodic monitoring and evaluation reports (e.g. European Commission, 2016, 2017b, 2017c) do provide evidence of a deviation of the implementation course from what was envisaged at the outset: away from innovation proper and towards other activities agreed and decided by the respective EIPs' constituencies. However, and quite strikingly, none of the reports published so far even noted that such outcomes amount to divergence from the initial C29 objectives.

On the other hand, the 'partnership component' of the EIP concept seems to have been implemented successfully. EIP implementation practices in the period 2011-2018 indicate that all EIPs managed to bring together communities of relevant actors (stakeholders at regional, national and EU level) and were successful in mobilising them to work together on joint projects. The key success factor in this aspect has been the EIPs' reliance on the convening power of the engaged public authority (the EC), and the direct involvement of EC officials (at both high and expert levels) in the implementation process. Thanks

to this, the EIPs did and do perform efficient systemic coordination and information brokerage; they facilitate linkages, knowledge and risk sharing among stakeholders, and promote collaborative models among them.

The main partnering success of the EIPs has been their ability to mobilise cross-sections of stakeholders representing different segments of the respective sector: policy makers, businesses, academia and research, civil society, etc. for common purposes with shared interest. This has helped to identify priority areas and activities that enjoy support from wide stakeholder communities. Stakeholder dialogue has been instrumental for the systemic coordination, reducing information asymmetries and helping to overcome existing systemic and network failures. Related to that, the EIPs have been also relatively successful in pursuing objectives and targets related to the improvement of the framework conditions for collaborative activity, an outcome which in principle is also essential for successful R&D and innovation-related activities.

There are many examples of successful implementation in this area such as:

› All EIPs mobilised engaged communities of stakeholders from countries across the EU

› All EIPs mobilised an ongoing stream of bottom-up commitments by their communities

› Most EIPs support and maintain active online ‘marketplaces’ which support networking and stakeholder collaboration

› All EIPs developed tools facilitating collaborative models of joint work

› Some EIPs actively engaged in the development or new standards in their sectors

› The EIPs produced policy recommendations aimed at improving framework conditions, etc. and disseminate widely best practice

› Most EIPs have examples of successful pilot actions and their scaling-up.

Thanks to the relatively efficient functioning of the EIPs as partnerships engaged in common objectives, they have also been quite successful in pursuing the objectives they set for themselves. The topical orientation of the EIPs was and is being defined very much based on a bottom-up approach and likely reflects important, topical issues, challenges and problems that need to be addressed.

The EIPs proved to be efficient in addressing the issues and problems they identified by developing collaborative solutions that engaged different stakeholders. Their operational mechanisms of bottom-up stakeholder ‘commitments’ and the online marketplaces amount to policy implementation novelties that embody shared interest by the respective stakeholder groups in the pursuit of common goals when addressing societal problems and challenges. This approach of C29 implementation was thus an instrumental innovation which delivered both relevance and efficiency in implementation. The broad dissemination and scaling-up of EIP pilot actions and good practices should propagate these positive effects, provided the scaling-up process maintains the core driving forces of shared interest in the pursuit of common goals when addressing societal problems and challenges.

Admittedly many of the good practices that were disseminated and scaled up contained innovative elements for the recipient parties and from this perspective the EIPs did contribute successfully to the

diffusion of innovation within the EU. The successful functioning of the EIPs as partnerships was also key for the positive systemic effects of C29 as described above. One could argue that over time these systemic effects would be generating an increasingly positive impetus to genuine innovation activity both within the EIPs' indigenous ecosystems and outside them. However, it is difficult to trace and measure these indirect effects; moreover, they involve processes which are slow in nature so it will take time before such effects may materialise.

As regards the relevance of the EIPs vis-à-vis the needs and problems in society and the objectives of the intervention, the available information and data on EIP implementation in general suggests that the EIPs' activities have indeed been focused on concrete societal problems and needs as identified by their constituencies and communities. Furthermore, C29 did contribute EU value added in the sense that: 1) it is possible to identify results, outcomes and outputs that would not have been delivered in the absence of this policy intervention; and 2) there is no apparent overlap between C29's focus, activities, results, outcomes and outputs and what is being covered and delivered by other EU programmes.

Summing up, the EIPs did produce a range of valuable and useful outputs that were beneficial both for their own constituencies and for the societies as a whole. However, the nature of most of these outputs deviated to a large extent from what should have been the EIPs' main purpose. The failure of the EIPs to produce innovation outcomes that would match the initially formulated objectives (namely, frontier innovation contributing to new leading technologies) can be considered as a weakness of C29 as a policy intervention. On the other hand, the EIPs established vibrant new ecosystems of engaged actors and stakeholders and developed efficient implementation mechanisms that enabled these constituencies to address successfully important societal challenges. The EIPs' indigenous ecosystems did and do breed an environment conducive to collaborative innovation activity. Some research projects engineered by the EIPs are still under way. So it may be a matter of time or more focused external drive and support in the future in order to generate such outcomes. The 'partnership' component of the EIPs has been a key success of C29 as an EU-wide policy intervention.

5. Concluding remarks

The EU undertook the 'European Innovation Partnerships' initiative as part of its Innovation Union commitments. When designing this initiative, it sought to stress the novelty of the approach to EU research and innovation, namely, pooling resources to achieve breakthroughs. This approach also establishes new mechanisms for collaboration among the key stakeholders in the innovation process and stresses the EIPs' focus on major, Europe-wide societal challenges. Within the Innovation Union Commitments, C29 is a genuine systemic policy intervention with traceable effects on the European innovation ecosystem and a Europe-wide impact.

At this stage it is possible to assert that C29 has been pursuing successfully some of its objectives and goals. The EIPs have been especially successful, effective and efficient in their 'partnership' aspect and component. In the first place this was thanks to the EC's continued direct involvement in implementation at both high (Commissioner) level and at the level of EC experts and civil service. This has contributed to the credibility of the effort and has boosted the convening power of the partnerships, enabling them to mobilise large communities of engaged stakeholders.

Moreover, the EIPs proved themselves to be efficient in addressing the issues and problems they identified by developing collaborative solutions that engaged different stakeholders. The EIPs' operational mechanisms of bottom-up stakeholder commitments and the established online marketplaces were in themselves policy implementation novelties which embody shared interest by the respective stakeholder group in the pursuit of common goals when addressing societal problems and challenges. The dissemination and scaling-up of EIP pilot actions and good practices have contributed to propagating these positive effects and the diffusion of innovation in the EU. These C29 achievements can be considered as good practice worth disseminating in other EU areas and programmes.

At the same time, there is sufficient evidence to suggest that so far C29 does not serve sufficiently well one of its main objectives, namely to boost innovation activity in a way that would enable European companies to lead in the development of new technologies, to grow and assume global leadership in new growth markets. The successful mobilisation of large partnerships engaged in collaborative efforts was a necessary but not a sufficient condition for generating new innovation activity on a large scale, especially of frontier innovation and the generation of genuinely novel products and services that would produce 'innovative breakthroughs'. The reasons for this failure are complex and include a combination of factors that surfaced in the course of EIP implementation such as:

- The EIPs did not set for themselves explicit objectives and targets related to innovation breakthroughs. Innovation proper and the generation of innovation outputs were not assigned the needed priority in the EIP objectives and headline targets.
- The EIPs did not set for themselves clear-cut objectives and targets related to the establishing of a conducive environment for the breeding of innovative ideas in their respective sectors and for the smooth and efficient transformation of the innovative idea into the new product or service and bringing them to the market.

› One key innovation stakeholder community that is clearly missing in the objectives, implementation plans and activities of all EIPs are the innovative entrepreneurs. The lack of focus on the main driver of the innovation process is probably one of the main causes for the relatively poor innovation results.

› The non-existence of own funds earmarked to support innovative activity within the EIPs amounted to the absence of another support pillar.

› The key EC directorates responsible for research and innovation were not involved in the process of C29 launch and implementation.

In reality, the EIPs were partly transfigured into efficient and relevant problem-solving mechanisms and structures that do address important societal challenges and add EU value but do not necessarily generate innovation of the expected and desired scale and scope. To the extent that research and innovation actions are present in the EIP activities, these are mostly of diffusive and incremental type, rather than frontier innovation. Given the recent EIP implementation and performance trends, it is unlikely that C29 will produce much frontier innovation within the time horizon the EIPs set for themselves.

In view of the above, one could argue that there were missing elements both in the policy design and in the implementation phase. As regards the conceptual design of the EIPs, they seem to lack effective built-in mechanisms to direct their implementation mainly towards genuine innovation activity and, in particular, towards frontier innovation. In consequence, the EIPs did not set for themselves explicit objectives and targets related to innovation, the breeding of genuinely innovative ideas and bringing them to the market. In the absence of top-down guidance and funds targeting innovation, the EIP activities tended to concentrate on activities that did mobilise funding from other sources but were not necessarily focused on innovation. Thus, the EIPs gradually lost their focus as mechanisms targeting innovation proper.

If the EIPs are to continue pursuing the objectives set for them at their inception, in particular, those related to the generation of genuinely innovative products and services, there is a need to introduce corrections in their governance structures and mechanisms and, possibly, complement C29 with instruments that have been missing so far. To this effect, C29 could build on its successful outcomes but change somewhat its implementation directions in order to correct for its weaknesses. All EIPs have established vibrant ecosystems engaged in collaborative efforts in addressing societal challenges; however, with a relatively low innovation content. Therefore, C29 would better serve its purpose if these collaborative efforts were partly redirected towards activities predominantly targeting genuine frontier innovation. There can be two complementary new elements that can help in engineering such a change:

1. Direct ‘moral suasion’ engagement by the EC with the EIPs’ top governance level (the Steering Groups) to seek a redirection of the EIPs’ Strategic Implementation Plans towards innovation proper. On the part of the EC, one essential and necessary change may be the direct involvement of the EC structures responsible for R&D and innovation (in particular, DG Research and Innovation and DG Connect) in the governance of the EIPs. At the same time, implementing such a change may also necessitate certain changes in the composition of the SGs which at present are dominated by sectoral interests but are poorly represented by the R&D and innovation communities. Such changes at both ends would support the transmission of top-down pressure needed for the gradual redirection of EIPs’ activities towards R&D and innovation proper, including the targeting of innovative

entrepreneurs. This soft mechanism which requires limited incremental resources worked successfully in the past and should also be effective in prompting the above change in direction.

2. Complementing C29 with own financial instruments specifically earmarked to support innovative entrepreneurs and facilitate innovation activities. As argued in the paper, the absence of such instruments was an important reason for the drift of EIPs' activities away from innovation proper. If this situation is not amended, there is a risk that a similar drift may occur again in the future even if the moral suasion element is introduced. The presence of such an additional instrument therefore seems to be an essential ingredient of a possible new effort targeting a sustained refocusing of EIPs activities predominantly towards R&D and innovation.

6. References

Arnold, E. and B. Thuriaux (2003), 'Introduction', in: European Commission, *Future directions of innovation policy in Europe*, *Innovation Papers* No. 31, pp. 1-9.

Autio, E. and L. Thomas (2014), 'Innovation Ecosystems: Implications for Innovation Management', in: M. Dodgson, D. Gann and N. Phillips (eds), *Oxford Handbook of Innovation Management*, Oxford University Press, Oxford, pp. 204-228.

Boland, W., P. Phillips and C. Ryan (2011), 'Public-private partnerships and public policy: a comparative social network analysis and policy analysis on competing national systems of innovation', Triple Helix IX International Conference on 'Silicon Valley: Global Model or Unique Anomaly?', Stanford University, Palo Alto, California, 11-14 July.

Borrás, S and C. Edquis (2013), 'The Choice of Innovation Policy Instruments', *Technological Forecasting and Social Change*, 80(8), pp. 1513-1522.

Dobrinsky, R. (2009), 'The Paradigm of Knowledge-Oriented Industrial Policy,' *Journal of Industry, Competition and Trade*, 9(4), pp. 273-305.

EIP AHA (2016), Blueprint Digital Transformation of Health and Care for the Ageing Society. Strategic Vision Developed by Stakeholders, European Summit on Innovation for Active and Healthy Ageing, 5-8 December.

European Commission (2011), Europe 2020 Flagship Initiative Innovation Union, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.

European Commission (2014), Outriders for European Competitiveness. European Innovation Partnerships (EIPs) as a Tool for Systemic Change, Report of the Independent Expert Group, European Commission, Directorate-General for Research and Innovation.

European Commission (2016), Evaluation Study of the Implementation of the European Innovation Partnership for Agricultural Productivity and Sustainability.

European Commission (2017a), Study on Support to Scaling-up of Innovations in Active and Healthy Ageing, Final Report.

European Commission (2017b), Monitoring and Evaluation of the EIP Water for the Year 2016.

European Commission (2017c), European Innovation Partnership on Raw Materials, Annual Monitoring Report 2016.

Freeman, C. (1987), *Technology Policy and Economic Performance – Lessons from Japan*, Pinter Publishers, London.

Hall, A. (2006), 'Public private sector partnerships in an agricultural system of innovation: concepts and challenges', *UNU-MERIT Working Paper Series* #2006-002, January.

Hartwich, F., C. González and L.-F. Vieira (2004), 'Public-Private Partnerships for Innovation-led Growth in Agrichains: A Useful Tool for Development in Latin America?', Paper contribution to the 14th Annual World Food and Agribusiness Symposium, Montreux, Switzerland, 12-13 June.

Hausmann, R. and D. Rodrik (2003), 'Economic development as self-discovery', *Journal of Development Economics*, 72(2), pp. 603-633.

Moore, J. (1996), *The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems*, Harper Business, New York, NY.

National Research Council (2007), *Innovation Policies for the 21st Century*, Report of a Symposium, The National Academies Press, Washington DC.

OECD (1990), Partnerships for Rural Development, OECD, Paris.

Rodrik, D. (2004), 'Industrial Policy for the Twenty-First Century', *CEPR Discussion Papers* No. 4767, Centre for Economic Policy Research, London.

Sakakibara, M. and M. Dodgson (2003), 'Strategic Research Partnerships: Empirical Evidence from Asia', *Technology Analysis & Strategic Management*, 15(2).

Smorodinskaya, N., M. Russell, D. Katukov and K. Still (2017), 'Innovation Ecosystems vs. Innovation Systems in Terms of Collaboration and Co-creation of Value', Proceedings of the 50th Hawaii International Conference on System Sciences | 2017.

Wessner, C. (ed.) (2003), *Government-Industry Partnerships for the Development of New Technologies*, The National Academies Press, Washington DC.

Zuffada, R. (2015), Delivering Market-Uptake on Active and Healthy Ageing. Overview of the last 3 years and preparation of the new call for commitments 2016-2018, presented at the 4th Annual Conference of Partners of the European Innovation Partnership on Active & Healthy Ageing (EIP on AHA), Brussels, 9 December.

SHORT LIST OF THE MOST RECENT WIIW PUBLICATIONS

(AS OF JANUARY 2019)

For current updates and summaries see also wiiw's website at www.wiiw.ac.at

---

EUROPEAN INNOVATION PARTNERSHIPS: HOW SUCCESSFUL HAVE THEY BEEN IN PROMOTING INNOVATION IN THE EU?
by Rumen Dobrinsky

wiiw Research Reports, No. 438, January 2019
33 pages including 2 Tables and 1 Figure
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

DYING LIGHT: WAR AND TRADE OF THE SEPARATIST-CONTROLLED AREAS OF UKRAINE
by Artem Kochnev

wiiw Working Papers, No. 161, January 2019
54 pages including 10 Tables and 8 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

wiiw Working Papers – Online Appendix to No. 161, January 2019
26 pages including 14 Tables and 7 Figures
PDF only (free download from wiiw's website)

HOW DO TECHNICAL BARRIERS TO TRADE AFFECT FOREIGN DIRECT INVESTMENT? EVIDENCE FROM CENTRAL, EAST AND SOUTHEAST EUROPE
by Mahdi Ghodsi

wiiw Working Papers, No. 160, January 2019
25 pages including 5 Tables
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

RESEARCH FOR REGI COMMITTEE – EXTERNALITIES OF COHESION POLICY
by Andrea Naldini (coordinator), Alessandro Daraio, Gessica Vella, Enrico Wolleb and Roman Römisch

wiiw Research Reports, No. 437, January 2019
133 pages including 20 Tables and 21 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

ECO-INNOVATION: DRIVERS, BARRIERS AND EFFECTS – A EUROPEAN PERSPECTIVE
by Sandra M. Leitner

wiiw Working Papers, No. 159, December 2018
39 pages including 10 Tables and 1 Figure
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

WHICH STRUCTURAL REFORMS DOES E(M)U NEED TO FUNCTION PROPERLY?
by Kurt Bayer

wiiw Policy Notes and Reports, No. 28, December 2018
17 pages including 1 Figure and 1 Box
PDF only: free download from wiiw's website

WIIW MONTHLY REPORT 2018/12
ed. by Vasily Astrov and Sándor Richter

- Graph of the month: Openness of CESEE economies, 2017
- Opinion Corner: What can be expected from the Strategy for the adoption of the euro in Croatia?
- European financial markets ten years after the global crisis
- The process of financialisation in Central, East and Southeast Europe
- Deleveraging in CESEE continues
- Monthly and quarterly statistics for Central, East and Southeast Europe

wiiw Monthly Reports, No. 12, December 2018
49 pages including 16 Figures
exclusively for wiiw Members

IMMIGRATION AND INNOVATION: DO HIGH-SKILLED THIRD COUNTRY (I.E. NON-EU) MIGRANTS CONTRIBUTE TO PRODUCTIVITY GROWTH?
by Michael Landesmann and Sandra M. Leitner

wiiw Working Papers, No. 158, December 2018
31 pages including 13 Tables and 5 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

MEASURING ECONOMIC OPENNESS: A REVIEW OF EXISTING MEASURES AND EMPIRICAL PRACTICES
by Claudius Gräbner, Philipp Heimberger, Jakob Kapeller and Florian Springholz

wiiw Working Papers, No. 157, December 2018
27 pages including 9 Tables and 5 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

wiiw Working Papers – Online Appendix to No. 157, December 2018
33 pages including 8 Tables and 6 Figures
PDF only (free download from wiiw's website)

ASIAN EXPERIENCES WITH GLOBAL AND REGIONAL VALUE CHAIN INTEGRATION AND STRUCTURAL CHANGE
by Roman Stöllinger

wiiw Research Reports, No. 436, December 2018
61 pages including 26 Tables and 10 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

INVESTMENT IN THE WESTERN BALKANS: NEW DIRECTIONS AND FINANCIAL CONSTRAINTS IN INFRASTRUCTURE INVESTMENT
by Mario Holzner (coordinator) and Richard Grieveson

wiiw Policy Notes and Reports, No. 27, November 2018
41 pages including 3 Tables and 37 Figures
PDF only: free download from wiiw's website

IMMIGRATION AND OFFSHORING: TWO FORCES OF 'GLOBALISATION' AND THEIR IMPACT ON LABOUR MARKETS IN WESTERN EUROPE: 2005-2014
by Michael Landesmann and Sandra M. Leitner

wiiw Working Papers, No. 156, November 2018
39 pages including 11 Tables and 5 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

WIIW MONTHLY REPORT 2018/11
ed. by Vasily Astrov and Sándor Richter

- Graph of the month: Immigration into the EU: Top five destination countries, 2008-2017
- Opinion corner: Global Compact for Migration: 'Eppur si muove'
- The Luddite rebellion: Past and present
- Internet *avant la lettre*: the Telegraph Revolution and its impact on economic growth in 1870-1913
- Can economic factors explain why Central Europe became so good at football in the 1930s?
- Monthly and quarterly statistics for Central, East and Southeast Europe

wiiw Monthly Reports, No. 11, November 2018
49 pages including 16 Figures
exclusively for wiiw Members

IMPRESSUM

Herausgeber, Verleger, Eigentümer und Hersteller:
Verein „Wiener Institut für Internationale Wirtschaftsvergleiche“ (wiiw),
Wien 6, Rahlgasse 3

ZVR-Zahl: 329995655

Postanschrift: A 1060 Wien, Rahlgasse 3, Tel: [+431] 533 66 10, Telefax: [+431] 533 66 10 50
Internet Homepage: www.wiiw.ac.at

Offenlegung nach § 25 Mediengesetz: Medieninhaber (Verleger): Verein "Wiener Institut für Internationale Wirtschaftsvergleiche", A 1060 Wien, Rahlgasse 3. Vereinszweck: Analyse der wirtschaftlichen Entwicklung der zentral- und osteuropäischen Länder sowie anderer Transformationswirtschaften sowohl mittels empirischer als auch theoretischer Studien und ihre Veröffentlichung; Erbringung von Beratungsleistungen für Regierungs- und Verwaltungsstellen, Firmen und Institutionen.

wiiw

wiiw.ac.at