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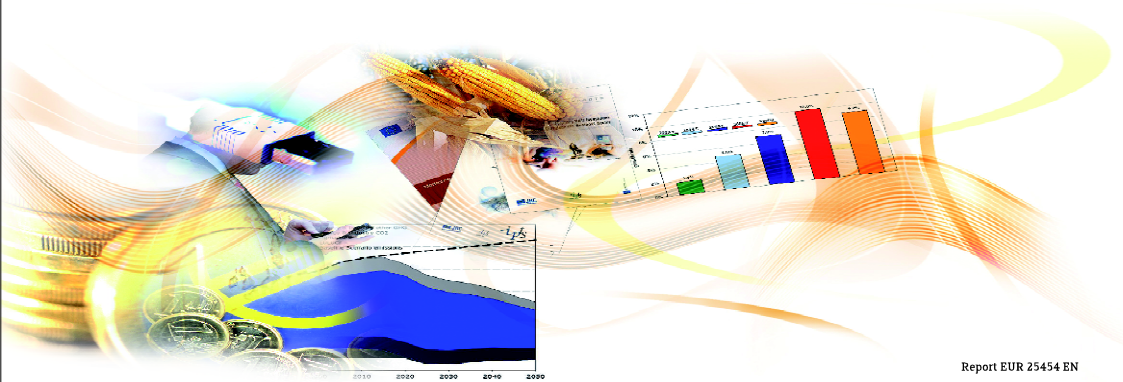
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Challenges in transnational research programming: the role of NETWATCH

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■ Summary

For Europe to meet the dual objectives of increased competitiveness and addressing societal challenges, joining efforts at all levels in Research and Innovation is high on the policy agenda. The EU can play a role in fostering and facilitating increased collaboration. The NETWATCH information platform on transnational collaboration is among the tools available to support this role. This brief explores the current use and future potential of NETWATCH and other related platforms in guiding and monitoring transnational R&I programming towards increased societal impact and competitiveness. It proposes ways to make better use of existing data, as well as avenues for future development.

Keywords: Transnational research programming, NETWATCH, ERA-LEARN, coordination tools, Europe 2020

■ 1. Introduction

The European Research Area (ERA) has been a cornerstone of EU research policy for more than a decade, receiving renewed impetus under the Innovation Union. Significant efforts have been dedicated to its realisation over this period, but challenges remain. The ongoing economic crisis and a set of pervasive societal challenges together put pressure on the effective and appropriate allocation of research and innovation (R&I) resources. Within this context, collaboration between various R&I stakeholders (programme owners, programme managers, funders, performers, evaluators, users) across borders is an activity of increasing importance for the future of research and innovation in Europe.

This brief aims to explore the potential of the NETWATCH information platform to contribute to the development and implementation of European policy

on transnational collaboration. It assesses the utility of NETWATCH information and analysis, and how further development of the platform can further enhance its contributions. In particular, it examines the scope for more targeted analysis of policy issues based on focused information collection.

The brief first looks at key issues in the current European policy context and at co-ordination challenges in transnational research programming. After a brief introduction to NETWATCH, policy support functions of the platform are considered, building on two case studies. Section four considers the potential support function for transnational R&D programming of other complementary R&I information platforms. A final section draws conclusions on the potential of NETWATCH and proposes some avenues for future development.

■ 2. Transnational research programming

2.1 Policy evolution in transnational research programming in Europe

The European research system is complex and difficult to define, partially because “Research, Technological Development and Space” is a shared responsibility between the European Union and its Member States. In this context, research policy in Europe is based on collaboration between its Member States (as well as Countries Associated to the Framework Programme and Third Countries)¹. There is a long history in research collaboration in Europe, especially at the stage of research performance. However, at the programming stage collaboration is still in its early stages, despite significant efforts.

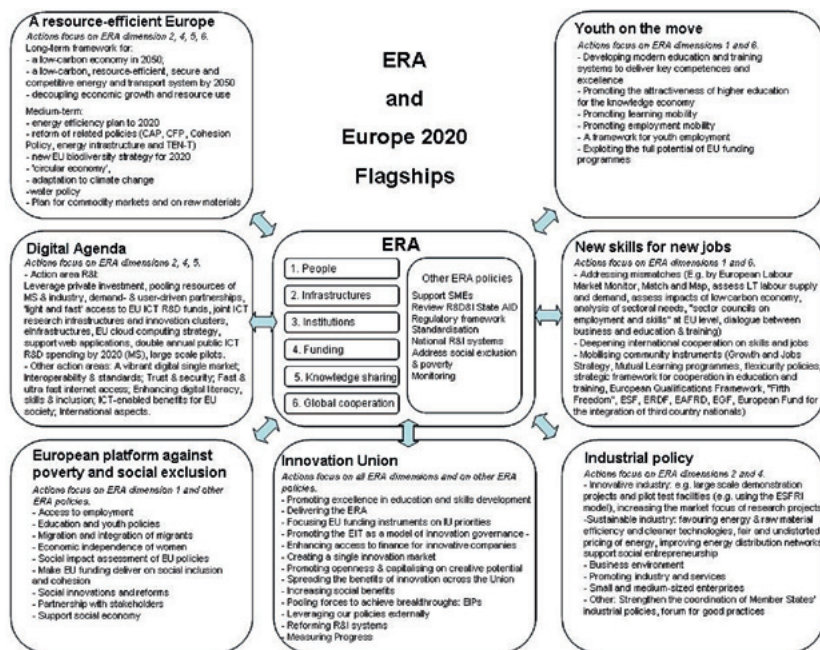
In 2000 the open method of coordination was introduced as a “means of spreading best practice and achieving greater convergence towards the main EU goals”, together with the proposal to

establish a European Area of Research and Innovation (European Commission, 2000). The 2000 Lisbon European Council also proposed to “develop appropriate mechanisms for networking national and joint research programmes on a voluntary basis around freely chosen objectives, in order to take greater advantage of the concerted resources devoted to R&D in the Member States”. ERA-NETs were created as a key instrument to implement this approach. The ERA concept was given new impetus in 2007 with the European Commission’s Green Paper on ERA (European Commission, 2007), which described six ERA dimensions, one of which focuses on well-coordinated research programmes and priorities (dimension 4: “Funding”). In 2008 the Joint Programming instrument was launched, whereby Member States, voluntarily and on a variable-geometry basis, engage in the definition, development and implementation of common strategic research agendas based on a shared vision of how to address major societal challenges (European Commission, 2008)². This focus in programming on major societal challenges has assumed further importance with the launch of the Europe 2020 Strategy (European Commission, 2010) and its seven flagship initiatives. Figure 1 positions the six ERA dimensions in this new policy context.

1 The responsibility level of “Innovation” is not defined in any Treaty, which makes the need for co-ordination mechanisms even bigger. The responsibility level of innovation is laid down in article 6 of the Treaty as innovation is part of industrial policy chapter (article 173). The European Union’s role is limited to promoting co-ordination: “The Commission may take any useful initiative to promote such coordination [between Member States], in particular initiatives aiming at the establishment of guidelines and indicators, the organisation of exchange of best practice, and the preparation of the necessary elements for periodic monitoring and evaluation. The European Parliament shall be kept fully informed” (TFEU, 2010).

2 It may involve strategic collaboration between existing national programmes or jointly planning and setting up entirely new ones.

Figure 1. The European Research Area and its links with the 7 flagships of Europe 2020



Source: Haegeman et al. (2012)

Since 2000, a number of coordination instruments for research and innovation have been introduced. Table 1 provides an overview of current instruments for coordination in R&I across EU Member States, Associated and Third Countries. Following the recent Partnering Communication (European Commission, 2011) this landscape will be further simplified. In particular, the European Commission proposes to merge existing ERA-NET and ERA-NET Plus actions, as well as combining relevant elements of Europe INNOVA and PRO INNO Europe, to form a single, more flexible ERA-NET instrument.

Aligning public and private resources will also become more important, especially in key areas where major societal challenges must be addressed and where European competitiveness is at stake. Horizon 2020, which unifies all existing Union R&I funding after 2013 - including the Framework Programme for Research, the innovation related activities of the Competitiveness and Innovation Framework Programme and the European Institute of Innovation and Technology (EIT) - will support JPIs in the development of their Strategic Research Agendas (European Commission, 2011c). Where the challenge addressed by a JPI is in line with the

Table 1. Instruments for R&I co-ordination across EU Member States, Associated Countries and Third Countries.

Type of R&I instrument	R&I Instrument	Description	Number of initiatives (2011)
Existing EU-level Public-Public Partnership (P2P) instruments	ERA-NETS ³	aim to coordinate national research programmes in a selected area	100 since 2002
	ERA-NET Plus	enhance joint funding by MS and EU in a selected area	9 since 2007
	Article 185 Initiatives	integrate national and European research programmes in a selected area	5 since 2003
	Joint Programming Initiatives	aim to coordinate/integrate national research programmes to address a societal challenge.	10 launched since 2008 ⁴
	The Strategic Energy Technology plan (SET Plan)	started in 2007 and aims to accelerate development of low carbon energy technologies and streamline national research programmes in strategic technology areas at EU level (setis.ec.europa.eu)	
	Europe INNOVA/ PRO INNO Europe	focuses on joint policy learning and development of better innovation support. targeted at Eco-innovation/ innovation in services and clusters	25 pilot projects since 2008
Existing EU-level Public-Private Partnership (PPP) instruments	Joint Technology Initiatives (JTIs)	aim to strengthen European industrial leadership in well defined areas.	5 since 2007
	European Industrial Initiatives (EIs)	EIs under the SET Plan address the demonstration/ market rollout bottleneck in the innovation chain of low carbon energy technologies.	7 EIs since 2010
	Recovery Plan PPPs	focus on maintaining and strengthening industry sectors hit by the economic crisis. Future Internet PPP (since 2011) aims to ensure future Internet development at the service of society.	3 since 2008
	COLIPA	helps industry since 2009 to comply with EU legislation	
	SESAR	aims to modernise European air traffic management.	
Other EU-level instruments	European Innovation Partnerships	aim to "act across the entire Research and Innovation cycle to ensure that ideas can be turned into successful products or services to tackle societal challenges whilst also generating growth and jobs".	3
	Knowledge and Innovation Communities (KICs)	are structured partnerships integrating education, research and business actors to address major societal challenges	3
Other instruments	Self-sustaining networks	former ERA-NETs, that continue their activity without EU support	7 active networks in 2011 ⁵
Instruments for international cooperation	INCO-NETs	aim to support bilateral dialogue with Third Countries in the context of FP7 ⁶ (European Commission, 2011a)	11

Based on European Commission (2011), Harrap & Özbolat (2011) and European Commission (2011a).

3 For an interactive map of countries participating in ERA-NETs, see <http://netwatch.jrc.ec.europa.eu/nw/index.cfm/info/Countries>.

4 For an overview of countries involved in each JPI: <http://www.era.gv.at/space/11442/directory/11767.html>.

5 Harrap and Özbolat, 2011.

6 For a list of currently active INCO-NETs, see <http://ec.europa.eu/research/iscp/index.cfm?lg=en&pg=inconet>.

priorities of Horizon 2020, the ERA-NET instrument or co-funding may be used to provide further support. New Article 185 initiatives will be considered when there is a clear commitment from the Member States and when a JPI has demonstrated its capacity for significant collaboration and the scale and scope needed to support full integration of national programmes.

2.2 Co-ordination challenges in transnational research programming

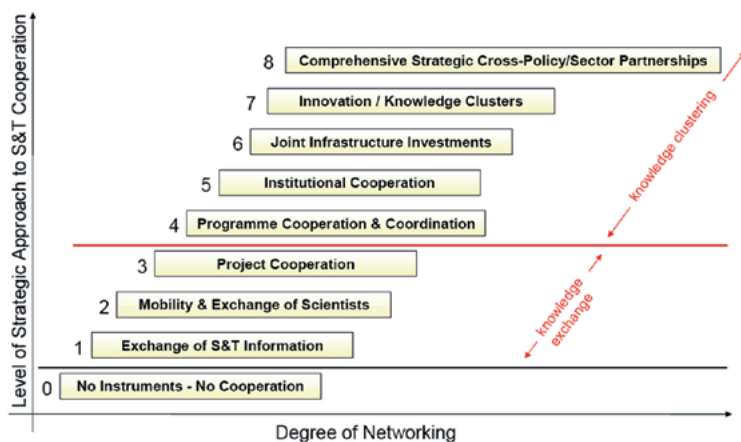
2.2.1 Co-ordination between levels of Science and Technology (S&T) co-operation

Transnational cooperation in research is in itself highly diverse and exists in many forms and with varying levels of intensity. To better capture and analyse this variety, Gnamus (2009) proposes and employs

a taxonomy distinguishing eight levels of strategic international cooperation. Each level entails an increasing degree of knowledge exchange between stakeholders (see figure 2).

However, these different levels are not mutually exclusive: activities on more than one level can co-exist within specific transnational co-operations. Within the EU, initiatives between Member States exist at all eight levels and all form part of the same research and innovation system. The ERA-NET and Joint Programming instruments can be seen to correspond to level 4 in this categorisation, ‘Programme Co-operation and Co-ordination’, which constitutes the focus of this brief. Co-ordination of research and innovation activities needs to take into account possible links between the different levels of transnational cooperation. Some programmes may, for example, require joint infrastructure investments. Innovation Clusters (such as Knowledge and Innovation

Figure 2. Development phases of international S&T co-operation



Source: Gnamus (2009).

Communities or KICs) may benefit from links with co-ordinated programmes. Positioning programme co-operation and co-ordination (level 4 in Figure 2) within a wider set of S&T co-operation approaches underlines the importance of careful alignment between different levels of S&T co-operation.

2.2.2 Co-ordination between potentially diverging interests

The co-ordination of transnational public research activities involves a set of

challenges in bridging potentially conflicting or, at least, divergent interests. There is a tension between basic, more exploratory research on one hand, and applied problem-oriented research on the other. This is particularly pertinent to research performed at universities, where there is a shift from traditional academic research to greater engagement with business and society at large, which puts more pressure on the continuation of basic research.

Problem-oriented research can also be a second source of tension, particularly

Table 2: Tensions in transnational research priority setting between science and policy-making, based on experiences with the identification of joint programming initiatives.

Drivers of transnational research priority setting from the point-of-view of science	Drivers of transnational research priority setting from the point-of-view of policy-making
Bottom-up	Top-down
More focus on scientific frontier	Feeding existing clientele
Risk taking	Risk averse
Priority setting by peers	Priority setting by diplomacy
Long-term perspective	Time pressure
Simplified yet sustainable funding	Juste retour
Institutional barriers	Institutional power play
Excellence rather than relevance	Relevance rather than excellence

Source: Based on Seiser (2010).

with regard to different viewpoints between scientists and policy-makers. Based on experiences in the identification of European Joint Programming Initiatives, Seiser (2010) identifies eight tensions in research priority setting from the point-of-view of policy-makers and scientists (Table 2).

2.2.3 Co-ordination between systems and policies

A third set of tensions relates to the inherent complexity of societal challenges. As current governance systems are often incapable

of tackling current and future interconnected global challenges (Könnölä et al, 2012), further alignment is needed between the participating systems and policies along four dimensions (Könnölä & Haegeman, 2012):

- alignment of structural and systemic differences in national research and innovation systems;
- horizontal coordination between research, innovation and other policy areas (such as competition, regional, financial, employment and education policies);

- vertical coordination between local, regional, national and transnational policy levels; and
- temporal co-ordination ensuring that policies continue to be effective over time and that short term decisions do not contradict longer-term commitments (“dynamic efficiency”).

For effective research and innovation systems and policies to be part of the solution to co-ordination challenges, they also require careful alignment along these dimensions. Examples for each dimension are given in Box 1 below.

Box 1: Examples of co-ordination challenges in transnational research programming along four dimensions

Alignment of national research and innovation systems

- Diversity of programme funding organisations and programme orientations (thematic or horizontal) (well illustrated by Optimat, 2005)
- Distribution of research across research performers (On average 23,9% of GERD in the EU is performed by HE, but with big national differences)
- Differences in cross-sector collaboration (e.g. university-industry collaboration) and in the degree of control of governments over research agendas (e.g. thematic research at Belgian universities)
- Varying interests at national level to collaborate beyond borders and openness of current programmes to other nations (Optimat, 2005; Anderson, 2010).

Vertical co-ordination

- Thematic priorities for transnational R&I cooperation not always coherent with priorities and needs of lower levels of governance. Different countries may also have different priorities.
- Transnational priorities can complement or even replace (e.g. in case of New MSs) existing national policy frameworks
- Regional (smart specialisation) and local (cities) levels play an increasingly important role

Horizontal co-ordination

- In different MSs different ministries and departments are involved in R&I
- Multidisciplinary nature of societal challenges and of R&I.
- Issues of financial resource alignment, budget disputes, organisational issues (another department dealing with international activities)

Temporal co-ordination

- Differences in start and duration of national programmes
 - Different national rules and cycles
 - Issue of time lags in transnational policy-making
- Problems of continuity of an R&D programme

Sources: based on OECD, 2003; Könnölä et al, 2011; Könnölä & Haegeman, 2012.

2.3 *Tools to deal with the changing policy context and coordination challenges*

The changing policy context, with an increasing focus on societal challenges and competitiveness, and the identification of different co-ordination dimensions show that transnational research programming in Europe is a complex multi-actor co-ordination challenge. Appropriately designed and targeted co-ordination tools, mutual learning and knowledge sharing can therefore bring clear added value. The Green Paper 'Towards a Common Strategic Framework for EU Research and Innovation funding' (European Commission, 2011b) proposes the use of common IT

tools for all EU R&I funding. Also the feasibility of aligning IT tools for funding at MS level could be explored. The Open Access Pilot⁷ launched under FP7 aims to provide researchers and the wider public with improved online access to EU-funded research results. Another potentially valuable tool, already used by some ERANETS and also embedded in the framework conditions for Joint Programming, is foresight⁸. In section three, below, the potential added value of the NETWATCH information platform as a co-ordination tool is explored in relation to the four dimensions articulated above. Section four explores how NETWATCH can be complemented by other information platforms in supporting transnational research programming.

7 The pilot aims to permit easy and free access to scientific information, in particular peer-reviewed scientific articles published in journals. Articles covered by the pilot will become accessible after an embargo period of 6 or 12 months, depending on the FP7 area (Source: <http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=1294&lang=1>).

8 Foresight is also identified as an element of cross-cutting nature for Knowledge and Innovation Communities (European Commission, 2011d). It is for instance being applied by the KIC ICT Labs.

■ 3. NETWATCH and transnational research collaboration

3.1 The NETWATCH information platform

NETWATCH is the European Commission's information platform on transnational R&D programme collaboration. Through NETWATCH⁹, the European Commission aims to support research policy makers in Member States, research programme managers, national researchers, and the Commission's own research services by providing relevant information and analysis to assess the efficiency and impact of transnational RTD programme collaboration. In addition, NETWATCH, in close collaboration with ERA-LEARN¹⁰, facilitates mutual learning among programme actors such as programme managers and/or owners.¹¹ A dedicated toolbox for mutual learning among the entire ERA-NET stakeholder community is available on the NETWATCH platform. The current focus is on ERA-NETs, but the scope is being increased to embrace a broader range of initiatives, including Joint Programming Initiatives. More specifically, NETWATCH, in collaboration with ERA-

LEARN, supports transnational R&D programme collaboration in Europe by:

- mapping networks and their actors involved;
- providing information on joint calls;
- analysing the impact of programme collaboration;
- describing the scope and results of individual networks;
- supporting mutual learning among transnational programme networks.

NETWATCH serves three main audiences:

1. policy-makers at EU, national, regional level, seeking input for the policy cycle (for policy formulation, implementation, evaluation & monitoring)
2. actors participating in transnational research programming (for now mainly ERA-NET participants): national/regional ministries, funding agencies, research managers, seeking support in design and implementation of transnational research programmes
3. researchers seeking information on programmes and calls, or studying transnational research programming

⁹ See: netwatch.jrc.ec.europa.eu/nw/.

¹⁰ ERA-LEARN was launched by the European Commission in 2008 with main emphasis on reducing the costs of cross-border programmes and increasing the efficiency of call implementation. Please also see the toolbox at: <http://netwatch.jrc.ec.europa.eu/nw/index.cfm/static/ERA-LEARN/ERA-LEARN.html>.

¹¹ NETWATCH II: "NETWATCH Operational Phase: Revised Technical Annex" (VERSION: 28/01/2011), Seville: Institute for Prospect Technological Studies (JRC-IPTS).

This brief focuses on the potential of NETWATCH to further support the second target group, taking into account the current policy context and the co-ordination challenges in transnational research programming. It also considers how it can work with other complementary platforms to further address those challenges.

3.2 Complementarities with other R&I information platforms

Beyond NETWATCH, a number of other R&I information platforms exist. While they are not explicitly designed to serve the purpose of transnational collaboration in research programming, they can play a supporting role in this context. They offer tools, good practices and information on the current, planned and possible future state of research priority setting and research and innovation systems. The following platforms are of particular relevance:

- At European level: the Innovation Union Intelligence and Information System (I3S¹²) has been developed to inform all Innovation Union stakeholders on progress in implementing the 34 commitments of the Innovation Union;
- At European and national levels: the ERAWATCH¹³/TRENDCHART¹⁴ platforms collect and analyse data on national research and innovation policies and systems; and the

European Foresight Platform¹⁵ integrates national and transnational forward looking case studies in the EU and beyond with methodological foresight support;

- At national and regional levels: the Smart Specialisation Platform (the S3-platform¹⁶) supports the process for developing multi-annual national / regional innovation strategies for smart specialisation, in view of developing a well-performing research and innovation system¹⁷.

3.3. NETWATCH support to transnational research programming

Two examples of the use of NETWATCH data to support design and implementation of transnational research programming are described below. The first focuses mainly on NETWATCH, the second combines data from different platforms.

NETWATCH and the SET-plan

As part of the Strategic Energy Technology Plan (SET-Plan), the public and private research capacities of EU Member States in specific low carbon (LC) technologies, were mapped using various data sources, including NETWATCH (see Figure 3). This analysis indicated

15 See: www.foresight-platform.eu.

16 See: <http://s3platform.jrc.ec.europa.eu/home>.

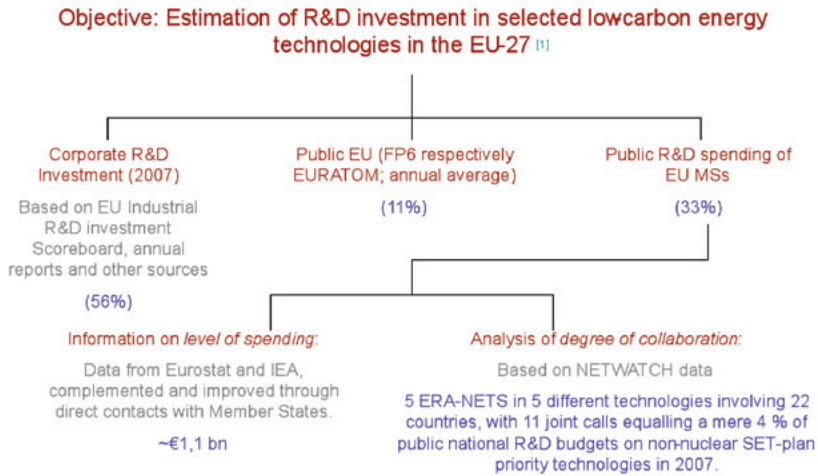
17 The strategy is built on a sound analysis of the assets of the region and technology foresight studies. It includes the analysis of potential partners in other regions and avoids unnecessary duplication and fragmentation of efforts.

12 See: <http://i3s.ec.europa.eu/>.

13 See: <http://erawatch.jrc.ec.europa.eu/>.

14 See: <http://proinno.intrasoft.be/index.cfm?fuseaction=page.display&topicID=104&parentID=52>.

Figure 3: Mapping of R&D capacities in SET-plan technologies in the EU



Source: Wiesenthal et al, 2009.

that the EU spends about as much on LC energy technology public research as US. Furthermore, looking at the mode of expenditure using NETWATCH data, a very high degree of fragmentation in spending could be identified in this area. This suggests a high potential for increased policy co-ordination, either between national research systems, or vertically between different policy levels.

This case provided the basis for a methodology for the bottom-up estimation of industrial and public R&D investment by technology in support of policy-making, based *inter alia* on data from the NETWATCH platform¹⁸.

NETWATCH, JPI FACCE and other research and innovation platforms

A second example in the area of food security brings in data from complementary platforms. Food security is a grand challenge in Europe and beyond. One of the initiatives in Europe to address this challenge is the pooling of national R&D resources in the Joint Programming Initiative Agriculture, Food Security and Climate Change (FACCE JPI¹⁹). The potential for NETWATCH to support transnational research programming was explored through analysis of existing national policy support measures and existing and potential transnational research programming activity.

¹⁸ For a detailed description of the methodology see Wiesenthal et al (2012).

¹⁹ www.faccejpi.com.

Analysis of national policy support measures reflects the extent to which all large national spenders (both Member States and Associated Countries) are part of the transnational programming initiative, and the contributions of different national funding structures. Data from NETWATCH and ERAWATCH were complemented by national policy documents, annual reports of funding organisations and other sources (such as websites of ministries and funding organisations). The various sources indicated that, across the EU, national research funding systems vary considerably, which hinders efforts to map the potential for transnational programme collaboration in food security. While some countries (such as Norway and Denmark) fund mainly through programmes or targeted support measures, others mainly fund through agencies or research councils (as is the case in the UK). Also important variations in national programme structures were detected²⁰. These differences relate to policy co-ordination between national research and innovation systems. Clear differences in orientation were also noted between the mainly thematically organised or sector-based programmes and JPI FACCE focusing mainly on challenges²¹.

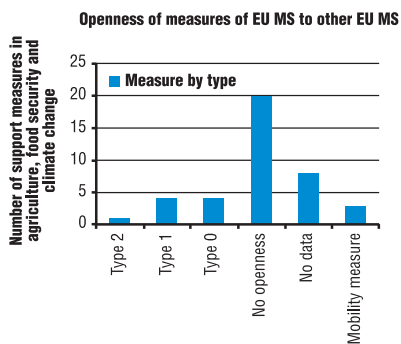
Attributing individual policy support measures to specific challenges requires a disaggregation into more detailed units of analysis (analysis of subprogrammes or of the specific objectives of the support measure). This emphasises the significance of optimising vertical policy co-ordination.

Existing transnational programme collaboration was analysed using information on related European ERA-NETS and national involvement. The potential for future collaboration was examined using analysis of funding modes (90% of support measures apply grants) and of the degree of opening-up²² of national programmes (based on ERAWATCH data). From this analysis, it was concluded that two thirds of R&D support measures of EU MSs in food security were not open to actors of other MSs (Figure 4a). Three quarters of all R&D support measures of EU MSs in agriculture, food security and climate change appeared to be closed to actors from third countries (Figure 4b).

-
- 20 In the case of food security, three types of support measures were taken into account: 1. Specific support measures related to food, food security, agriculture or the impact of climate change on these elements, with a specific budget mentioned for this specific measure; 2. Support measures where food, food security, agriculture or the impact of climate change on these elements is mentioned as part of a wider programme, where the budget is directly related to these specific areas, but only to the wider programme; 3. Support measures that do not explicitly mention food, food security or agriculture but have a focus on the impact of climate change in general.
- 21 JPI FACCE positions the challenge of food security at the intersection of climate change, agriculture and forestry, biodiversity, land use change and water, and net greenhouse gas (Source: FACCE JPI).

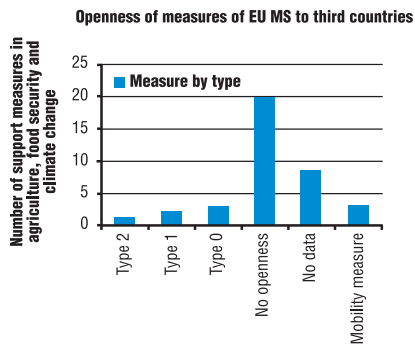
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- 22 For defining the degree of openness, the following types of measures were distinguished. Type 3: Foreign research actors can be funded and act as a participant and a consortium leader (theoretical type); Type 2: Foreign research actors can be funded and act only as a participant of a consortium; Type 1: Foreign research actors can not be funded but can act as a participant of a consortium; Type 0: Foreign research actors can act as a participant of a consortium. On the possibility of funding no data is available; NO: Not open to foreign research actors; ND: No data available; MOB: support measure mainly focusing on mobility of research actors and students. For the calculation of degree of openness, all measures with some kind of openness (type 3, 2, 1 or 0) were compared to all measures except those with no data (ND) or those relating to mobility (MOB).

Figure 4a²³. Openness of 2009 R&D support measures on agriculture, food security and climate change of EU Member States to research actors from other EU Member States



Source: based on data from ERAWATCH.

Figure 4b²⁴. Openness of 2009 R&D support measures on agriculture, food security and climate change of EU Member States to research actors from third countries



23 The different types of support measures are explained in endnote 15.

24 The different types of support measures are explained in endnote 15.

■ 4. Potential for future use and development

The examples above illustrate the utility of NETWATCH data in support of transnational programming challenges. Building on these examples, this section looks at ways to make better use of data available in NETWATCH and complementary platforms. Table 3 below illustrates how the full range of NETWATCH information offers the possibility to further support policy co-ordination in transnational research programming.

In developing a more integrated approach to the optimal use of different platforms, we examine them in terms of

the four dimensions of policy co-ordination set out in section 2.23 above (Table 4). For instance, to support temporal co-ordination, NETWATCH can be used as a tool for change management. By identifying the time horizon of existing programmes, they can be better aligned in the future. For each dimension, potential barriers to their completion are identified, and ways to use the different platforms are proposed. NETWATCH, and where appropriate, other relevant R&I information platforms (see section 3.2), can contribute substantially to addressing all four dimensions of co-ordination in transnational R&I programming. Practical use of these

■ Table 3: NETWATCH functions supporting dimensions of policy co-ordination in transnational research programming

NETWATCH function	Use in support of transnational research programming	Co-ordination challenges			
		Alignment of research systems	Vertical co-ordination	Horizontal co-ordination	Temporal co-ordination
Information on joint calls and budgets spent jointly	Identify degree of collaboration/fragmentation in national public R&D spending	x	x		
Information on national and European organisations involved in research programming	Support network building between (national, European) actors involved in transnational programming	x	x	x	
Good practices in implementation of transnational R&D programmes (ERA-LEARN)	Mutual learning on how to implement transnational R&D programmes	x	x	x	x
Mapping and monitoring of related transnational programming activity	Analyse national patterns of participation in transnational networks	x	x	x	x
	Identify potential new partners/countries active in related networks	x	x		
	Liaise with related programming networks		x		

Table 4. Functionalities of NETWATCH and complementary research and innovation platforms in tackling barriers related to the four dimensions of policy coordination

Dimension of policy coordination	Potential Barriers ²⁵	Contribution of NETWATCH (and other complementary information Platforms)
Alignment of research systems	<p>Structural differences between national research systems hamper co-ordination of programmes.</p> <p>Structural differences in national programme orientation and implementation orientation</p> <p>Differences in the distribution of research across research performers in the degree of cross-sector collaboration (e.g. university-industry collaboration), and in the degree of control of governments over research agendas</p> <p>Varying interests at national level to collaborate beyond borders</p> <p>Varying openness of current and past programmes to other nations</p>	<p>Support network building between actors involved</p> <p>Use good practices in implementation of transnational programmes (ERA-LEARN)</p> <p>Identification of differences in national programme orientation and implementation orientation (ERAWATCH/TRENDCHART)</p> <p>Analysis of the distribution of research and innovation across research and innovation performers by country (ERAWATCH/TRENDCHART)</p> <p>Analysis of degree of openness to other nations of current and past programmes (ERAWATCH/TRENDCHART)</p>
Vertical co-ordination	<p>National researchers not keen to see more budget used for transnational</p> <p>Difficulties to agree on the type of contracts at different levels for the RD&D cooperation (including currency issues)</p> <p>No European structures to coordinate cooperation in programme area</p> <p>Geographic distance</p> <p>Policy to achieve national priorities through internal capacity building / Sufficient volume of high quality applications from internal capacity</p> <p>Influential decision makers do not see the value</p> <p>Sharing activities / results would dilute international leadership - conflicting interests between competitors</p> <p>Transnational activities are focused on non-EU countries</p> <p>Administration costs of transnational projects outweigh the benefits</p> <p>No significant policy changes or explicit criteria to encourage transnational activities</p>	<p>Support networking between national and European co-ordination structures</p> <p>Mapping of current transnational programming activity: programmes and actors involved, country involvement in related initiatives</p> <p>Use good practices in implementation of transnational programmes (ERA-LEARN)</p> <p>Check EU level policies with policies at other governance levels (IPS)</p> <p>Identification of regional specialisation strategies (S³-Platform)</p> <p>Mapping of existing foresight reports at different levels (EFP)</p>
Horizontal co-ordination	<p>Another organisation deals with international activities</p> <p>Problems with aligning financial resources and budget disputes over co-funding</p> <p>National differences in type of ministries involved in research programming</p>	<p>Support networking between actors involved</p> <p>Use good practices in implementation of transnational programmes</p> <p>Map the diversity of national actors (ministries, agencies, councils) currently involved in research programmes, and of actors dealing with international activities (NETWATCH/ERAWATCH/TRENDCHART)</p>
Temporal co-ordination	<p>Ensuring the continuity of a RD&D programme</p> <p>Differences in start and duration of national programmes</p> <p>Different national rules and cycles make collaboration impractical</p>	<p>NETWATCH as a tool for change management: identify time horizon of existing programmes, for enhanced alignment in the future</p> <p>Use good practices in implementation of transnational programmes</p> <p>Mapping of national research and innovation programmes (ERAWATCH)</p> <p>Mapping of existing foresight reports at different levels (EFP)</p>

Source: based on Könnölä & Haegeman, 2012.

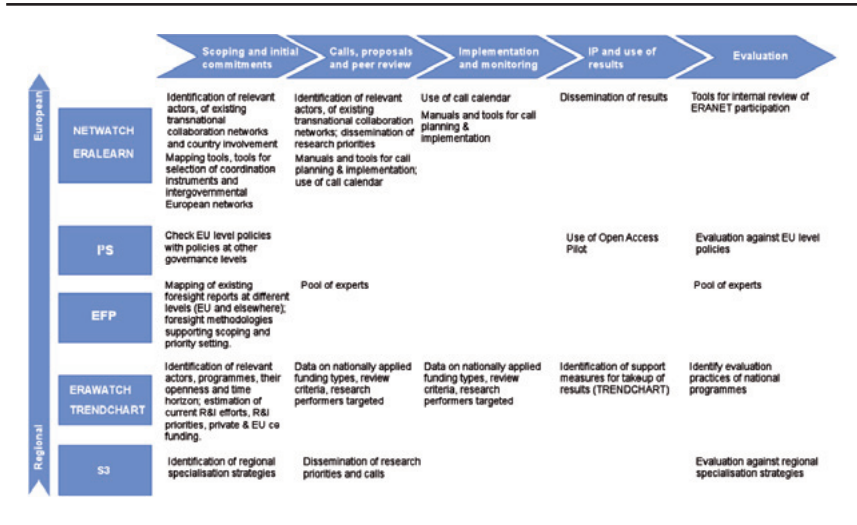
25 Based on Optimat (2005), Anderson (2010) and own expertise.

functionalities in concrete contexts has to date however been rather limited, probably because their use in this context is often not considered.

In order to support the use of these platforms in a transnational programming context, the potential contributions can be made more concrete by relating platform uses to different stages of programming.

For the implementation of transnational research programming there exist a variety of approaches depending on the nature of the instrument used. For the joint programming process six framework conditions have been defined (European Commission, 2008). In the ERA-NET scheme a four-step approach is applied²⁶ (Matrix-Rambøll, 2009). As various collaborative instruments in research and

Figure 5. Facilitation roles of R&I information platforms by programming function in transnational research collaboration.



26 The four steps used by ERA-Nets are: systematic exchange of information and good practices on existing programmes and activities; identification and analysis of common strategic issues; planning and development of joint activities between national and regional programmes; implementation of joint transnational activities, including joint calls and joint programmes. Each step also relates to a typology of activities.

innovation co-exist, and the partnering landscape is constantly evolving²⁷, general programming guidance can be highly propitious. We therefore opt to use the five key programming functions defined by Könnölä & Haegeman (2012). These can be used in a general programming context, irrespective of the instrument chosen and comprise: scoping and initial commitments; calls, proposals and peer review; implementation and monitoring; IP and use of results; and evaluation²⁸. Figure 5 analyses how each of the information platforms considered earlier can facilitate these five programming functions. It can serve as a guidance tool to support the implementation of transnational research programming in each programming stage.

Although the support functions identified in Figure 5 go well beyond the initial programming stages, the current emphasis is clearly still mainly on the scoping and initial commitments stage. On this basis, the potential for future development can be identified, including application to later stages of programme collaboration. Examples of possible future developments supporting later stages include:

- inclusion of information supporting later programming stages (such as the monitoring of framework conditions for Joint Programming);

- moving from an information platform to a knowledge sharing platform, with the inclusion of social networking features, as is taking place in NETWATCH,²⁹ adapted to the needs of different actors in transnational research collaboration³⁰;
- inclusion in NETWATCH of information on other levels of S&T Co-operation (e.g. knowledge and innovation communities could be included, as well as initiatives regarding joint infrastructure investment);
- optimising the alignment between complementary information platforms, particularly in the context of developing a central portal on European research and innovation activities; and
- enhancing quantitative data and its analysis within NETWATCH and complementary information platforms.

27 Some instruments are on their way to be simplified. See section 2 and European Commission (2011).

28 Each of those stages is also related to a set of barriers. For an overview, see Könnölä & Haegeman (2012).

29 Potential purposes of social networking on the NETWATCH platform could be: linking programme owners amongst each other and with review and evaluation experts; connecting project partners who wish to build a research consortium in reply to a joint call; dissemination of research results.

30 Social networking features will however need to take into account ethical issues in network design (e.g. avoiding conflicts of interest of experts working as project partners in one programme and as evaluators in another programme).

■ 5. Conclusions

As NETWATCH, in combination with ERA-LEARN, is the European Commission's information platform on transnational R&D programme collaboration, it makes sense to look at what the platform can contribute to the actors of such programme collaboration. This brief has suggested that there is scope for more targeted analysis of policy issues based on focused information collection. In particular, it has identified co-ordination challenges in transnational research programming along four main dimensions (horizontal, vertical, temporal and between R&I systems), as well as a set of functions that have the potential to support programming co-ordination on those dimensions. Within a policy context increasingly emphasising

societal impact, competitiveness and focus on tangible results, there is a clear need for guidance and support on how transnational research programming can contribute to meeting policy objectives. The NETWATCH platform already offers a number of key features that can enable programming activities to become more efficient and focused. In addition, its support functions can be complemented by data and features from complementary information platforms such as ERAWATCH/TRENDCHART, I³S amongst others. Finally, the brief has identified some avenues for future platform development in support of transnational research programming, especially with a focus on later programming stages.

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Abstract

For Europe to meet the dual objectives of increased competitiveness and addressing societal challenges, joining efforts at all levels in Research and Innovation is high on the policy agenda. The EU can play a role in fostering and facilitating increased collaboration. The NETWATCH information platform on transnational collaboration is among the tools available to support this role. This brief explores the current use and future potential of NETWATCH and other related platforms in guiding and monitoring transnational R&I programming towards increased societal impact and competitiveness. It proposes ways to make better use of existing data, as well as avenues for future development.

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