



WIDENING PARTICIPATION

Background

Statistics show that stakeholders from EU13¹ countries have benefitted less in absolute terms from their participation in FP7 than those from EU15² countries. This is not a new observation. Since the association of the former Central European Candidate Countries (all of them now regular EU member states) to the 5th European Framework Programme for RTD, it has been argued that within the competitive European Framework Programme for RTD, Central European cohesion countries are at risk of “subsidising” the more competitive, mostly Western European, countries, for various reasons to do with competitiveness (CORDIS focus, 2002; Havas, 1999; Havas 2002; Le Masne, 2001; Mickiewicz and Radosevic, 2001; Nedeva, 1999, Reid et al 2001).

Despite a few attempts at modernising the innovation systems in these countries and introducing structural changes during the 1990s, the results of the evaluation of the project proposals submitted under the first calls for proposals launched under FP5 in the year 1999 had a sobering effect on optimists who believed that research in the Central European Countries could compete on a Western European level. The reasons why these countries came off badly were manifold, but were mainly rooted in structural weaknesses (Andreff et al., 2000). Analyses have proved a strong influence of both the size and the quality of the economy and the research system on the mobilisation of research communities to engage in FP proposals, and that “quality” factors rather than “size” factors have a distinctive influence on competitiveness measured in terms of success rates (Schuch, 2005). GNP per capita as a proxy for the economic development level of a country showed the highest influence, but other factors also proved to be highly relevant: GERD in % of GDP, the proportion of researchers in the total labour force, as well as the absolute gross expenditure on R&D allocated to each individual researcher (which all are proxies for the research orientation of a country) had a distinctive influence on the competitiveness of the Central European Countries under FP5 (measured in terms of success rates) (Schuch, 2005). In general, economically more advanced countries tended to outperform their economically weaker neighbours in terms of European RTD competitiveness.

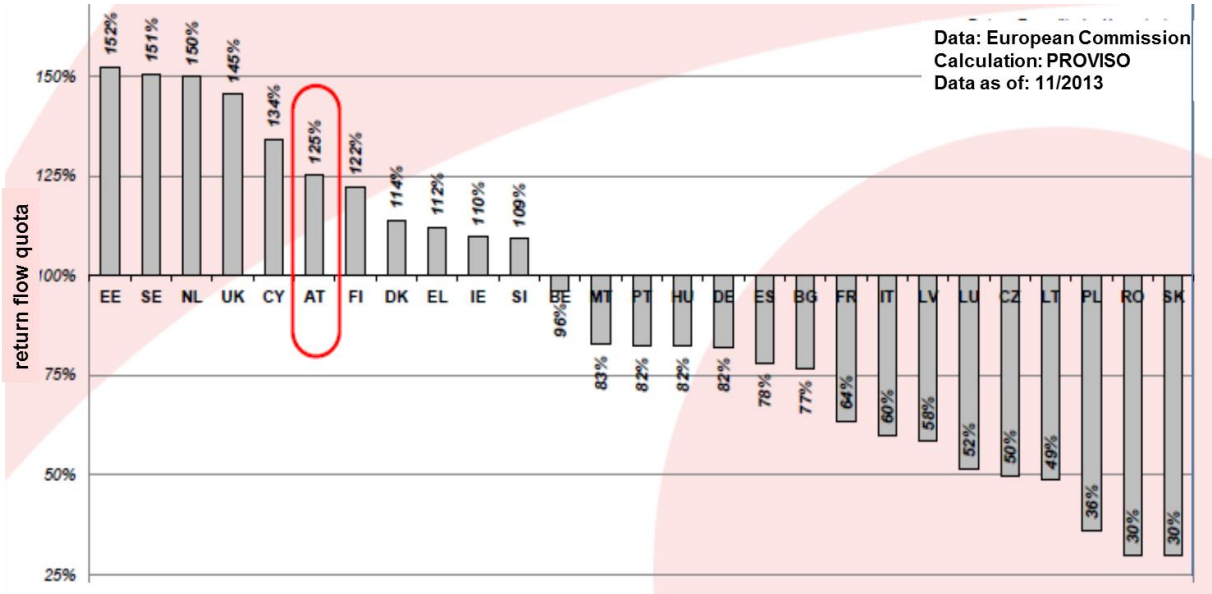
¹ EU13 abbr. = Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, and Slovenia.

² EU15 abbr. = Austria, Belgium, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the UK.

Almost 15 years later, the situation has only gradually improved. By measuring the *juste retour* share of a country in FP7 through its relative contribution to the EU budget, and assuming that this EU budget share is also the theoretical FP7 budget share of the country, only Estonia, Cyprus and Slovenia are FP7 “net recipients” (together with the high-R&D performing countries Sweden, the Netherlands, the UK, Austria, Finland, as well as the two FP7-savvy cohesion countries Greece and Ireland) (PROVISO 2014). The most affected “net contributors” (in relative terms) are Slovakia, Romania, Poland, Lithuania and the Czech Republic (see Fig. 1).

In terms of total absolute figures of successful beneficiaries, statistics also show that all EU13, except Poland – which mobilised more successful beneficiaries than Ireland and Portugal – were performing poorly in comparison with EU15 countries. But even a small country such as Austria had almost 50% more beneficiaries in FP7 than Poland, one of the largest countries in the EU. In total, ten times more EU15 organisations have been awarded FP7 funding compared to EU13 organisations. In terms of numbers of participants, the EU13 countries Poland, Hungary and the Czech Republic together have 51% of the EU13.

Fig. 1: Ranking of EU Member States according to their theoretical FP7 *juste-retour* rate



Source: Proviso (2014), p.58

Explanation: the y-axis shows the theoretical FP7 *juste-retour* (“net recipients” are above 100% and “net contributors” are below 100%). EU Member States are listed on the x-axis.

When comparing the “market share” of the EU13 – measured in terms of FP7 participation - with the four “old EU” cohesion countries (i.e. Greece, Ireland, Portugal, Spain) included in the EU15, the three countries (i.e. Austria, Finland and Sweden) last joining to form the EU15³ and the 8 remaining

³ As a reminder, the key dates of EU enlargement were
 1981 - Greece
 1986 - Spain and Portugal
 1995 - Austria, Finland and Sweden
 2004 - Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia
 2007 - Bulgaria and Romania

EU15 countries (i.e. Belgium, Denmark, France, Germany, Italy, Luxembourg, the Netherlands and the UK) across FP5 to FP7, one can see that the share of the EU13 share has increased most, but starting from a rather low level and still amounting to roughly 10% only (see Tab. 1).

Tab. 1: FP “market share” development of selected country groupings from FP5 to FP7

Country Grouping	FP5	FP6	FP7	FP7/FP5
EU13	7.61 %	14.41 %	10.25 %	1.35
4 EU15	15.59 %	15.20 %	16.70 %	1.07
3 EU15	9.48 %	10.13 %	9.67 %	1.02
8 EU15	67.31 %	60.51 %	63.36 %	0.94

Source: MIRRIS Scoping Paper (2014), p. 18

Explanation: Market share is defined as the share of participations from EU MS x of the total number of participations from all EU MS.

All EU13 countries, except Slovakia, have increased their market share from FP5 to FP7 (e.g. Poland, the country with the largest market share among the EU13, has increased its market share (measured in terms of relative participations from 1.84% in FP5 to 2.16% in FP7⁴). The share of the EU13 within the different FP7 programmes varies considerably between 5% for the health priority and 16% for SSH⁵. In relative terms, the EU13 are lagging behind the EU28 average, in particular in “Health” and “ICT”, the two most frequented and largest “thematic programmes” in FP7.

As far as coordinators are concerned, all EU13 together have a market share⁶ of only 4.74% in FP7 (compared to 4.07% in FP5) and are therefore bottom of the league in Europe. PROVISIO (2014, p. 19) data show that the smallest share of coordinators in all FP7 participations by country is to be found in the Czech Republic (3.0% share of Czech coordinators among all Czech participations in FP7), followed by Romania (3.9%), Slovenia (4.0%) and Bulgaria (4.1%). This indicates insufficient technical and managerial coordination capacities.

According to statistics published by DG Research and Innovation on 7 August 2013 (European Commission 2013)⁷, no single EU12 country⁸ was above the EU15 average of 21.91% in terms of success rate (compared to an average success rate of 18.48% of the EU12). Closest to the EU27 average, and ahead of Spain, Luxembourg, Portugal, Italy and Greece, were Latvia, Estonia, Hungary, Lithuania and the Czech Republic. Malta, Poland and Slovakia were still ahead of Italy and Greece, while Bulgaria, Slovenia, Cyprus and Romania clearly lagged behind.

2013 - Croatia

⁴ For comparison and positioning purposes: Austria increased its respective share from 2.88% in FP5 to 3.30% in FP7.

⁵ SSH abbr. = Social Sciences and Humanities

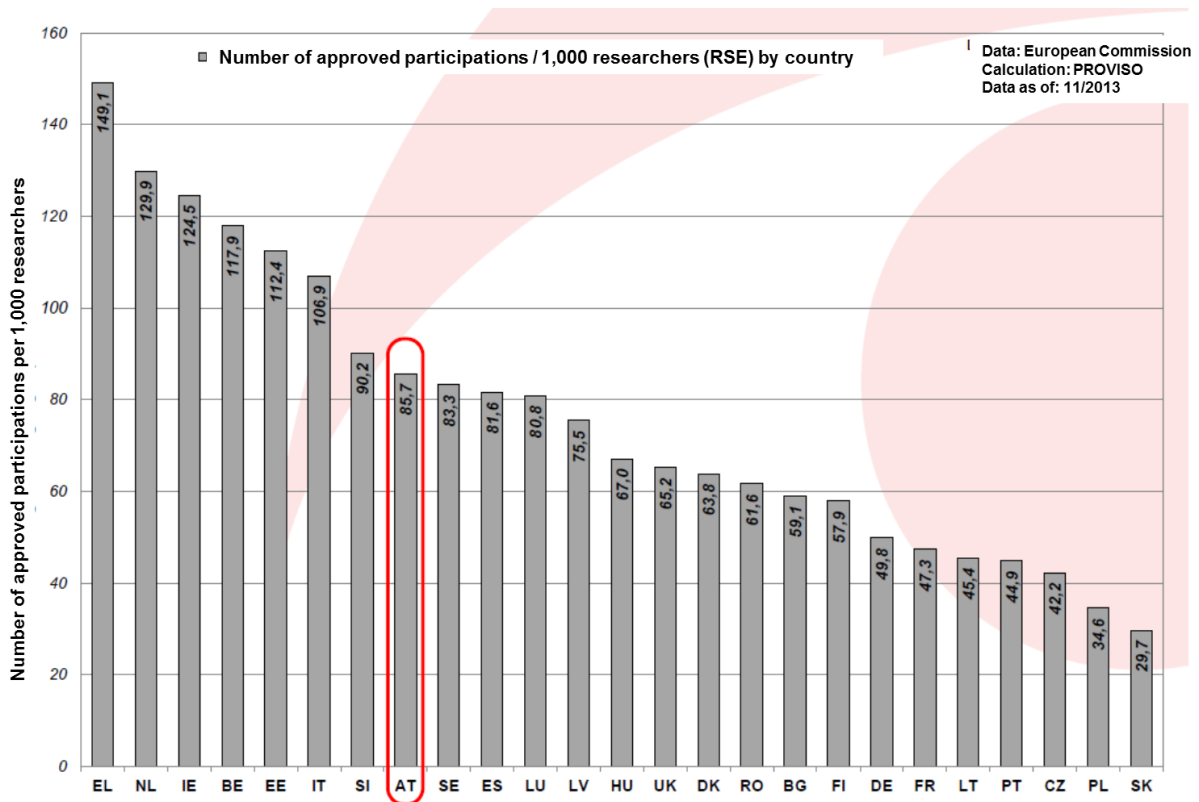
⁶ Number of coordinators from EU13 in percent of all FP7 coordinators.

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http://ec.europa.eu/research/evaluations/pdf/archive/fp7_monitoring_reports/6th_fp7_monitoring_report.pdf#view%3Dfit%26pagemode%3Dnone, accessed on 19 June 2014.

⁸ 10 Central European Member States, plus Cyprus and Malta, but without Croatia

Fig. 2: Granted FP7 participations per 1,000 researchers by country



Source: Proviso (2014), p.16

Explanation: The y-axis shows the number of approved FP7 participations per 1,000 researchers by country. EU Member States are listed on the x-axis.

By correlating the number of participations in FP7 per 1,000 researchers⁹ by country, which measures the efficiency of the national research communities in acquiring FP7 projects, a slightly different picture emerges, with a trend towards a negative correlation for the larger EU countries (size effect)¹⁰. In this respect (PROVISO, 2014)¹¹, Greece – a cohesion country - is traditionally in the lead with 149.1 participations per 1,000 researchers, followed by the Netherlands and Ireland (see Fig. 2). Estonia is ranked 4th and Slovenia 6th, just before Austria. Among the five “least efficient” research communities, however, are four EU12 countries, namely Lithuania (ranked 21st), Czech Republic (ranked 23rd), Poland (24th) and Slovakia (25th). With the exception of Poland, these are countries with limited domestic (research) market sizes. This points again towards structural problems, because the “size effect” cannot be used as a justification for these smaller countries.

The EU contribution received on an aggregated level also shows that the EU12 countries have been awarded significantly fewer funds than the EU15. Only Luxembourg – the smallest of the EU15 - did

⁹ According to the Frascati Manual 2002.

¹⁰ This negatively correlated size effect might be due to larger domestic research markets and a more differentiated national research system. It is comparable to business-based export quotas, where smaller countries also usually show higher export quotas than large countries which have more absorptive domestic markets in scope and scale.

¹¹ June 2014

worse in absolute budgetary terms than any EU12 country, with the exception of Malta. At applicant level, EU12 applicants receive euro 167k per beneficiary on average, while the average for EU15 beneficiaries was euro 340k.

EU measures to Enhance “Widening”

Despite serious efforts deployed at national and at European level during the last years (especially through the use of ERDF funding in the EU12), there are still striking internal EU disparities in terms of research and innovation performance, as also identified in the Innovation Union Scoreboard. These trends are further exacerbated by the continuing severe financial crisis, and the subsequent adverse effects on public research and innovation budgets¹².

In order to address these disparities, the EC has introduced a number of targeted, comparatively small, activities within the competitive framework of the European Framework Programme, such as the “REGPOT” approach in FP7, aiming at “unlocking and developing existing or emerging excellence in the EU's convergence and outermost regions”¹³. Horizon 2020 introduces further specific measures for spreading excellence and widening participation¹⁴. These measures are targeted at low-performing Member States in terms of research and innovation, and they will be implemented by the Member States most in need of the new cohesion policy for the 2014-2020 programming period.

- The **Teaming** action (associating advanced research institutions with other institutions, agencies or regions for the creation or upgrade of existing centres of excellence) is a new feature under Horizon 2020. It provides new growth opportunities to the parties involved, through tapping into new collaboration and development patterns, including the establishment of new scientific networks, links with local clusters and opening up access to new markets. Teaming actions offer new possibilities for exploitation and value creation to national and local research, aiming to boost the innovation potential of the countries involved¹⁵.
- **Twinning** aims to strengthen a defined field of research in a knowledge institution through linking it with at least two internationally leading counterparts in Europe¹⁶.
- The **ERA Chairs** scheme is designed to provide support for universities and other research institutions to attract and maintain high quality human resources and implement structural changes necessary to achieve excellence on a sustainable basis¹⁷.
- The **Policy Support Facility** aims to improve the design, implementation and evaluation of national/regional research and innovation policies. It offers expert advice to public authorities at national or regional level on a voluntary basis, covering the needs to access the

¹² Taken from <http://ec.europa.eu/programmes/horizon2020/en/h2020-section/spreading-excellence-and-widening-participation>, accessed on 16 June 2014.

¹³ The following paragraphs are taken from http://cordis.europa.eu/programme/acronym/FP7-REGPOT_en.html, accessed on 16 June 2014.

¹⁴ <http://ec.europa.eu/programmes/horizon2020/en/h2020-section/spreading-excellence-and-widening-participation>, accessed on 16 June 2014.

¹⁵ Ibd.

¹⁶ Ibd.

¹⁷ Ibd.

relevant body of knowledge, benefit from the insight of international experts, use state of the art methodologies and tools, and receive tailor-made advice¹⁸.

In addition, established measures from previous Framework Programmes which were not specifically designed to promote the widening agenda but which can be used for its purposes, are continued. Examples of these are **COST**, which supports access to international thematic networks, or support provided by the EC to **National Contact Points**, whose administrative and operational capacities will be further strengthened to ensure a better flow of information between researchers and Horizon 2020. An innovative example of this is the targeted COST network “**BESTPRAC**”¹⁹, which aims to advance the state of the art in excellent administration of transnational research projects by creating a network of research administrators. Several coordination and support actions are also aiming at overcoming research and innovation disparities in the EU. An example of a support project explicitly dedicated to the widening participation agenda is **MIRRIS**²⁰, which aims at mobilising institutional reforms in the research and innovation systems of the EU13 through implementing a structured policy dialogue in each EU13 country. The tangible outcome of the policy dialogue should be an action plan with a roadmap, as well as a list of prioritised interventions designed to increase the participation of researchers, research organisations and enterprises from the above-mentioned countries in HORIZON 2020 (Schuch et al., 2013).

Having said that, the potentially most significant EU support measure for modernising research and innovation in the cohesion countries which can positively impact both the widening agenda and the excellence creation agenda comes from outside the Framework Programme and covers the **ERDF** budget earmarked for R&D. Synergies between FP and ERDF funding have been on the agenda of many stakeholders for many years, but problems in strategically using or even aligning these schemes have a long tradition, too. Table 2 shows the planned²¹ ERDF budget for R&D for the EU12 countries compared to Austria.

Tab. 2: ERDF budget earmarked for R&D 2007-2013 (in euro million)

Country	BG	CY	CZ	EE	HU	LT	LV	MT	PO	RO	SL	SK	AT
In million €	386	70	3656	655	2065	1017	746	58	8580	1111	974	1189	362

Source: DG Research and DG Regional Policy – Cohesion Policy 2007-2013: Research and Innovation; quoted in MIRRIS scoping paper (2014), p. 36

It is worth noting that countries such as Denmark, Belgium, Ireland, the Netherlands, Sweden, but also Austria have received more money from FP7 than from ERDF R&D supporting activities. Not surprisingly, all these countries belong to the best-performing countries in terms of research and innovation in Europe. On the part of the EU12, the relation between FP7 funding and ERDF funding for R&D is most imbalanced in Lithuania, Latvia, Poland, Slovakia, and the Czech Republic, the latter having the greatest divide between a high ERDF budget and a low amount of FP7 funds received. Given how high ERDF spending for R&D activities in these countries is in absolute terms, substantial increases in R&D capacities can be expected in these countries in the coming years, provided that they also manage to supply (or attract) the necessary excellent human capital basis.

¹⁸ Ibd.

¹⁹ http://www.cost.eu/about_cost/strategy/targeted_networks/bestprac

²⁰ <http://www.mirris.eu/SitePages/default.aspx>

²¹ The current final data is not yet available.

However, some experts even argue that comparatively “easily” accessible national ERDF funding might – at least in the beginning – distract the attention of universities and research institutes in the cohesion countries away from the more competitive HORIZON 2020 programme.

Discussion and Recommendations

As evidenced by previous research (Schuch, 2005; Andreef et al. 2000), the “widening approach” cannot be separated from the “excellence creation approach”, because excellent organisations are needed to compete and perform successfully in HORIZON 2020. This holds not only true for the cohesion countries, but also for FP frontrunners such as Austria, especially given the assumption that competition in HORIZON 2020 will become even more severe compared to the already high level of competition in FP7. This is due to austerity policies in the EU member states which also affect public R&D spending at national level, and the increased diversion effect towards HORIZON 2020 this entails.

Excellence, however, is structurally and even culturally embedded in established local and national research and innovation systems (Loudin and Schuch, 2009; Reith et al. 2006) which change only slowly and which need critical mass. Greenfield investments, if not properly embedded in usually complex networks, transaction and support systems, will hardly pay off in the short and medium term, if at all. Additionally it seems essential to nurture and provide a high level of qualified human capital, and to provide sufficiently attractive conditions for the human capital to stay in the country; otherwise the most modern research infrastructure will generate only limited impact. According to the Times Higher Education World University Rankings 2013-2014²², there is not a single university from the EU13 among the top-listed 300 universities world-wide. Thus it is not surprising that up to now, no EU13 university ranks among the Top50 universities having participated in FP7 projects, and only one²³ EU13 research organisation appears in the Top50 list of research organisations having participated in FP7 projects. Also only one Top50-ranked large enterprise originates from the EU13²⁴.

Investments in R&D and innovation, with or without ERDF, or in the future with European Structural and Investment Funds, have to be carefully conceptualised. To put more money in “old” structures which have already underperformed in the past seems to be waste of resources. Investments have to be accompanied by structural reforms in research and innovation systems at national and local level. When analysing the National Reform Programmes, it seems, however, that EU12 countries are focussing less on the reform of their R&D activities than EU15 countries (MIRRIIS, 2014).

Another approach to prepare for advanced competition at EU level, especially in HORIZON 2020, could be participating in joint initiatives such as JPIs, JTIs and Art. 185. Participation in joint initiatives can be seen as a means for international networking and co-creation and as an important step on the “stairway to excellence”; but participation from the EU12 in such activities is low, too (see Tab. 3).

²² <http://www.timeshighereducation.co.uk/world-university-rankings/2013-14/world-ranking/region/europe>, accessed on 19 June 2014.

²³ This is the Institut Jozef Stefan in Slovenia, which was involved in 114 projects.

²⁴ This is “Ustav Jaderneho Vyzkumu Rez. A.S.” in the Czech Republic.

Tab. 3: EU12 participation in FP7 joint initiatives

EU12 participation in FP7 joint initiatives												
	BG	CZ	CY	EE	HU	LT	LV	MT	PL	RO	SK	SI
Alzheimer & other neurodegenerative diseases (JPND)		X			X				X		X	X
Agriculture, food security and climate change (FACCE)		X	X	X					X			X
Healthy diet for a healthy life												
Cultural heritage and global change		X	X			X			X	X	X	X
Connecting climate knowledge for Europe												
Anti-microbial resistance		X							X	X		
Healthy & productive seas and oceans							X		X	X		
More years, better lives												
Urban Europe			X					X				
TOTAL	0	4	3	1	1	1	1	1	5	3	2	3
Joint undertakings												
Artemis		X					X		X			X
Fuel cells and hydrogen		X				X			X	X		
Article 185 Initiative												
Ambient Assisted Living (AAL)			X		X				X	X		X
Eurostars: EUREKA/FP7	X	X	X	X	X	X	X	X	X	X	X	X

Source: MIRRIS Scoping Paper (2014), p. 24

In 9 JPIs for which data were available in mid-July 2013, only a few EU12 were represented in the governance of these JPIs. Two JPIs even had no participation from the EU12. In the two joint undertaking projects taken into account, only six EU12 countries are involved. The Czech Republic and Poland participate in both of them. As regards the Ambient Assisted Living initiative managed under Article 185, only five EU12 countries are involved, but not even each year. All EU12 are members in Eurostars, but SME participation in Eurostars is particularly low in Bulgaria and Malta compared to their SME potential (MIRRIS, 2014).

The impact of structural investments takes time, and supposed quick-fixes²⁵ are not sufficient. However, even within less structural, but simpler short-term awareness raising and information provision activities, a more systematic approach is often needed to help potential or strategic stakeholders to access HORIZON 2020 funding. The MIRRIS project identified several actions which can inspire the EU13 to mirror their own current practices, or to develop some equivalent tools, such as

- signposting pre-information regarding future potential calls
- awareness-raising, information and advice to access Horizon 2020
- creation of sectorial or cross-sectorial interest groups
- promotion of local academia-industry cooperation and their cross-border networking
- advice and quick check of project ideas
- support for international partner search
- grants for exploring project feasibility and validation of project ideas

²⁵ Such as additional remuneration (bonuses) of up to €8,000 per year to be reimbursed in HORIZON 2020 projects as part of personnel costs, if this was the normal practice of an organisation; an instrument heavily in demand by newer Member States' governments.

- grants to seek advice from specialised consultants
- provision of training to potential EU project managers
- support to ERA-Net projects on strategic topics. These projects are excellent springboards for regional actors' participation in Horizon 2020
- provision of mentoring and coaching to potential EU project partners (taken from MIRRIS, 2014).

Such activities are often performed by NCP systems. They can help to mobilise “dormant” research communities, and maybe to upgrade a proposal from one level to the next through professional advice. Nonetheless, they can neither generate excellent ideas nor write excellent research proposals which are needed to compete successfully in HORIZON 2020. They can neither balance structural deficiencies of national innovation and research systems, nor can they replace forward-looking STI policy-making.

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