



**COUNCIL OF
THE EUROPEAN UNION**

Brussels, 28 September 2011

14728/11

RECH 316

NOTE

From: General Secretariat of the Council
To: Delegations
Subject: Analysis on low participation in FP 7
- Information from the Commission

Delegations will find, in annex, a note from the Commission on the above-mentioned topic.

**Analysis on low participation in FP 7
information note from the commission**

**“Widening participation in the European Framework Programme:
challenges and opportunities”**

The Framework Programmes for research and technology development have a long history. They provide a vital contribution to the development of European competitiveness, growth and knowledge generation. For this reason, it is understandable that the Member States' entities are eager to see that their participation is maximised to the fullest extent, and that excellence and research results are spread.

There appears however to be a wide variation between the Member States in terms of their participation, a fact which was discussed at the Gödöllő and Sopot Competitiveness Councils.

Drawing on a range of inputs, this note sets out a series of observations on the facts and figures, possible causes and possible remedies for such variations in participation rates. This is in line with Council Conclusions of 9 March, which stated, *‘The Commission, in consultation with the Member States, is invited to analyse the reasons of low participation rates from certain Member States and report back to the Council as soon as possible but before the end of 2011, and put forward appropriate actions in this regard, aiming at spreading scientific excellence.’*

Facts and figures

The statistical analysis of FP participation on a per country basis typically uses a range of indicators including the actual numbers of project participants and participations by country, often correlated against factors such as the size of GDP, population and national investment in research, including the number of researchers. Additional analyses look at other measures of performance such as numbers of project coordinators, financial returns and success rates in the different calls.

No single indicator can provide a complete picture of participation under FP7, or for that matter any other research programme. Whichever indicator is chosen tends to highlight different aspects of performance. For instance, analysis of the total volume of funding received under FP7 against the size of GDP shows that Estonia is in first position, followed by Finland then Cyprus. Luxembourg, Slovakia and Poland are at the other end of the ranking. By contrast, on the basis of the total number of participations per capita, Cyprus, Finland and Malta are in the top three positions. Looking at funding per capita, it is Finland, Sweden and the Netherlands which are, respectively, in the leading positions.

Another way of looking at participation is through the measure of regional concentration. One of the striking features of this analysis is that in some countries, France is often mentioned as an example, there appears to be a significant concentration of research activity in a few major centres. In some areas, within Europe as a whole and within countries, the network of links is very dense while in others it is relatively sparse.

It should also be remembered that financial returns are only a part of the story. The strongest added value of participating in the FP comes from non-financial aspects such as sharing of knowledge, networking and jointly undertaking risks.

Despite the difficulties of drawing generalised conclusions, it is possible to set out some broad positions. First, it is apparent that the broad groupings of countries according to their time involved in the Framework Programme, notably the EU12 category, do not provide a good basis for analysis. In other words there is a wide variation in performance across these groups and the choice of participation statistics tends to show very different pictures. Second, the large countries, in general terms those with the largest research resources and capacity, tend to fall in the middle position on many indicators. Third, the Nordic countries tend to be ranked in the leading group on many of the indicators of participation.

Analysis of the statistics on Framework Programme participation rates suggest three broad conclusions:

- **the picture is multi-level and complex and does not support simple conclusions;**
- **both national and regional variations should be addressed within the same analysis;**
- **participation analysis should not focus solely on financial returns but also needs to take into account non-financial benefits, such as knowledge, technologies and networks.**

Possible causes

The causes for variation in participation are complex and in many cases interrelated. Each of the main points which has been identified is set out below.

FP participation is correlated with national research investments and national R&D personnel –

The reasons behind this strong correlation are obvious and include factors such as the availability of better infrastructure which allows working on leading-edge research, and the wider availability of qualified staff to be engaged with the preparation of research proposals. Further analysis is necessary for a more detailed understanding, with several directions offering potential insights including: multivariate and factor analysis; participation rates against distribution by country of EU researchers; participation rates in relation to GBAORD; and the link between research capacities and excellence.

Lack of synergies between certain countries national research systems and EU research - This point concerns especially the unclear articulation between priorities, instruments, themes and approaches. Other ideas which are often mentioned in this context include the existence or otherwise of 'complementarities' between the national and EU levels as well as the 'structural compatibility' between the different systems. Of course all of these ideas to some extent overlap but the key issue is that experience gained at the national level, for example through application or contractual procedures and themes of work which are similar to those of the FP, significantly helps when it comes to applying for FP funding.

System learning effects – There is a clear perception that it takes time for new actors to adapt to the FP after joining, even though the effect probably interacts with other factors such as the structural set-up of national systems (see above) and the complexity of FP rules (see below). This 'rookie effect' was significant for countries such as Ireland and Spain. And it also applies to the time needed for adaptation of newcomers to the culture of competing for FP funding.

Related to this question of learning is the phenomenon in which countries with open competition for research funding at the national level develop the competitive edge and skills necessary for FP funding applications. Greece is often cited as having benefitted from this effect.

Differential wage levels between countries - Variation in wages, even taking into account the variations in purchasing power, is a major reason why the level of EU research funding per country varies, and according to some analysis accounts for up to 80% of the total variation in financial returns under the FP.

Existing networks constituting barriers to entry – Networks and the clustering of countries within such networks which tend to be dominated by the large research performing countries, can constitute significant barriers to entry for some. It is even sometimes argued that this constitutes a kind of 'closed shop', which newcomers can find difficult to enter.

One of the key aspects of this discussion and possible explanation for the continuance of such networks is the role played by coordinators, especially since certain countries provide relatively few project coordinators and, as studies have shown, coordinators tend to have the most influence on the selection of the other project members. Another explanation is linked to the fact that large countries enjoy much higher levels of inter-country participation under the FP, which also serves to reinforce their position in networks.

Large projects can be problematic for small countries and new actors - To some extent this is common sense, with some of the reasons for this including the lack of appropriate research facilities; lack of experienced support for research management; the problem of being at the 'edge' of research networks; and the difficulty of raising matching funds for large projects. Large projects are often associated with higher risk which the coordinators avoid to take with new and yet unknown but possibly excellent partners.

However it is important to keep in mind the wider picture and the observation in some cases that large number of small projects can overload the supporting and administrative structures in the national research systems. Also important in the analysis of the impact of project size is the link with the relative strength of the private research sector, since it is large firms which are more typically involved in such large projects.

Problems with information, communication advice and training – One of the key problems here is that in some countries the information and communication systems are not working as well as they should, notably the NCPs. This is a major problem since there is ample evidence to show that countries with strong support systems have been very effective in building their participation. Such systems not only provide information on funding opportunities in the Framework Programme, but also support potential applicants in the search for partners as well as helping with the preparation of proposals.

Variations in the participation by countries in the Framework Programme are explained according to a series of factors, which include issues such as: national research investment; articulation between the FP and the national research system; experience with FP procedures; wage levels; access to networks; the size of projects; and information, communication, training and the availability of advice.

Possible remedies

The possible remedies involve solutions which can be implemented through the Framework Programme, in future Horizon 2020, or through a better combination of instruments including notably the Structural Funds. The main points are as follows.

Strengthen national R&D investments towards the 3% target and develop national research and innovation strategies – These approaches are of crucial importance to ensure there is both the appropriate capacity in the research system and compatibility of structures to enable successful applications for EU funding. In effect this should be the number one target for all Member States on the basis that the more that is invested at the national level also generates better rates of participation through the Framework Programme.

Deploy Structural Funds (SF) to build a 'Staircase of Excellence' - This should include encouraging and incentivising regions and Member States in the use of Structural Funds to build research capacity and implementing "smart specialization strategies". Uses for SF could include development of research infrastructures, in particular in areas of European interest; modernisation of universities and research centres; promotion of business R&I investment with adequate support to technology transfer, start-ups and spin-offs. It would be also important to improve regional links between public authorities, businesses (notably SMEs), tertiary education institutions and research, technology and innovation centres and institutions and develop clusters and networks, based on triple helix and knowledge triangle approaches. SF could be used also for establishment or improvement of the infrastructure for information, communication, training and advice for FP participation, such as NCP national systems.

It would be also beneficial to provide adequate remuneration for highly skilled human resources to prevent brain-drain from less-developed regions as well as to support the deployment of science parks and research driven clusters to create more foci for knowledge-driven regional development. Synergies with the research and innovation Framework Programme need to be developed and in this context, a crucial step for real progress could come with a progressive harmonisation of the rules governing research and innovation spending under the SF with those for Horizon 2020.

For these efforts to flourish, new innovative concepts need to be developed in order to provide better connection between regional, national and EU governance levels. One possible suggested approach could separate these into three areas. 'Plug-In' would mean that MS and regions' initiatives would use common management standards and structures. 'Topping-up' would mean that national and regional programmes could receive Horizon 2020 funds, following the interesting experiment with the Marie Curie scheme COFUND. And 'Excellent Uptake', would enable excellent proposals which cannot be funded under Horizon 2020 to be supported at national level.

An idea has been put forward that under the SF, a 'smart growth initiative' could be developed. The objective of this initiative would be to help all European regions progress towards standards that enhance the framework conditions for research and innovation.

Finally, another approach could involve linking emerging institutions, centres of excellence and innovative clusters in less developed regions to international leading counterparts elsewhere in Europe. This will involve twinning, staff exchanges, expert advice and assistance, and the development of joint strategies and actions as well as support for cases where international leading institutions seek to establish facilities in less developed regions. Where appropriate, it will be linked to significant investments from the Cohesion Policy funds, including in research infrastructures, in order to increase the levels of excellence achieved through these investments.

Measures to improve information and communication – There is a need to optimise existing systems and networks, specifically support to the NCP network.

For the NCPs any possible solutions should be developed in a flexible manner. One option, and one which appears generally to be favoured by smaller countries, is for the Commission to directly fund the NCPs. This would involve features such as accreditation, deliverables, monitoring, etc. by the Commission and would help to ensure quality of service and uniform standards within the NCP network. The other option is to continue with those national NCP systems which are already perceived to be strong and address the weaker networks through a specific approach. An example of a highly successful model from which others might learn is the Austrian NCP network.

Specific training mechanisms, possibly through the NCP system, need to be developed. These could include training on how to prepare and write research proposals perhaps by sharing the experience of 'successful' or 'failed' project participants. Another means to strengthen the NCPs could involve better exploiting the expertise of Commission staff.

Addressing the lack of funds available in some countries for travel and networking is another crucial issue. Separate funds set aside to support travel to allow potential project partners to meet and attend brokerage events could prove very valuable for smaller countries.

Simplification measures – Such simplification measures planned for Horizon 2020 will provide a major boost, especially for countries either new to the FP or with smaller administrative capacities, to improve rates of participation.

Mobility schemes and support to returning scientists under Marie Curie – Measures in support of returning scientists could provide potentially a major impact not only to the visibility of research systems, but also through individuals playing a mentoring role. A possibility being explored is that future schemes could support the higher salaries which might be necessary.

At the other end of the spectrum, more attention should be given to the young newly qualified PhDs, thereby addressing what is perceived to be a gap between Marie Curie Actions and the ERASMUS scheme.

Room for smaller projects and less prescriptive projects – An increase in the proportion of STREP-style smaller projects driven by SMEs and small research teams could have a beneficial effect for smaller countries especially. With regard to SMEs in particular, the excellent cooperation between the Commission and EUREKA with EUROSTARS could provide a showcase for what can be achieved.

Measures to open networks – How to 'open up' what might be perceived as 'closed shops' in some areas of research is undoubtedly a key concern, even if the precise remedies are not immediately clear. One of the options to be considered is further use of ERA-Nets to provide the bridge between existing networks. Clearly there is also a wealth of experience in the Member States such as the successful efforts to integrate the German Länder into the national research system.

Mapping and indicators – Improvements to the quantitative and qualitative indicators used for monitoring the FP and Horizon 2020, and the position of certain groups of countries, would support management and policy making. ERAWATCH might be used to map areas of excellence within the EU.

Learning from the experience of other countries which have improved participation rates – The Spanish EUROINGENIO programme provides a useful model for what can be achieved in building FP participation at regional level. The effectiveness of combining strategy/setting of targets (pushing), and funding according to the achievement of these objectives (pulling) is a key attribute of such a programme.

Overall, there are a number of key lessons which apply equally to all countries seeking to build their participation. These are usefully separated in a series of *Do's* and *Don'ts*: do not foster participation at any price, or be obsessed with just return, or address all research areas simultaneously, or expect immediate results. As for the *Do's*, these include, do have a selective and strategic approach to participation; a robust NCP system, a clear national strategic plan; incentives based on achievements; alignment of EU and national objectives and intelligent use of SF to build advantage.

The possible remedies which could address the variations in Framework Programme participation include boosting national investments in research and innovation; information, communication and training measures; simplification measures; schemes for mobility and supporting returning scientists; increasing the number and share of small projects; measures for opening of existing networks for newcomers; better mapping and quantitative and qualitative indicators; and learning from the experiences of other Member States.

Conclusion

This paper has examined the current statistical picture, some causes and remedies for variations in participation rates.

A number of ideas are being proposed. It is now up to the regions, Member States and the Commission (in the context of Structural Funds and Horizon 2020) to examine these and take them into consideration. The Commission's Multiannual Financial framework proposals for the period from 2014 onwards will be tabled in the coming months.

This paper will be presented by the Commission to the Competitiveness Council on 30 September for consideration under the AOB point
