

ON KNOWLEDGE DIVIDE IN EUROPE

HOW TO IMPROVE HORIZON 2020?

Zbigniew Błocki

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Ladies and Gentlemen,

Let me first thank the organizers for giving me the opportunity to speak here, in front of such a distinguished forum, on an important subject that is also of big interest to me personally. The issue of knowledge divide in Europe is of course not new, has been around for many years, but the real problem is the lack of any sign of improvement in recent years. Poland and other new member states have clearly benefited economically from joining the EU in 2004, mostly thanks to the access to the joint market. Unfortunately, the same cannot be said about our performance in science, if anything, the knowledge divide has probably worsened since then. Let me share with you the Polish perspective on this, and especially that of the National Science Centre (NCN), the government agency created in 2011 to support basic research.

Polish performance so far in Horizon 2020, as well as that of other new member states (with possible exception of Hungary), is unsatisfactory at best. Let me briefly go through some statistics. Up till now the EU 13 countries have obtained 4.37% of all the funding in Horizon 2020 although their total nominal GDP amounts to about 7% of all countries taking part. Polish participation in this funding is about 0.9%, compared to about 2.5% of nominal GDP, so we in fact do much worse than even the EU 13 average. These general figures on the Horizon 2020 participation are perhaps not completely tragic: they are in line with the fact that the R&D spending, as a portion of GDP, is about two times lower in the EU 13 than in the EU 15 countries. The ERC grants however are a total disaster: so far the EU 13 countries have won only 1.9% of those (126 out of 6687), whereas Poland only 0.3% (22). Among the EU 13 countries only Hungary has higher share of the ERC grants than the nominal GDP, but only slightly (0.71% to 0.65%). To put things in perspective, the combined GDP of EU 15 countries is about 79% of the total and they have won 85% of all ERC grants so far.

Personally I believe that despite all that, and despite all the criticism, our participation in the framework programmes in general and in the ERC in particular

has been very useful for us. Most importantly it has finally given a clear evidence of something that only some have seen 15 or 20 years ago: that the Polish science does not perform up to its potential and traditions, that our progress in this area (unlike in most other areas of our life) is much slower than that of the countries we would like to compete with. That some major changes are necessary.

And some things have indeed been done. One the main strategic decisions was the creation of NCN 5 years ago. Both the structure of the Centre as well as its grant evaluation system are mostly based on the experiences of ERC. The proposals have to be written in English and almost all of them are sent abroad for external evaluations. The system is highly competitive, our success rate ranges from 10% to 30%, depending on a scheme and a call. We are also widely praised for being very transparent, all of those standards have been relatively new in our environment. We are also quite active internationally, let me mention the joint programme with the DFG called BEETHOVEN as well as two Cofund initiatives from Horizon 2020. One is called QUANTERA and is devoted to quantum technologies. There are 32 organizations from 26 countries led by NCN, in fact it is the first ERA-NET ever coordinated by a new member state. Another programme from Horizon 2020 is called POLONEZ and is aimed at researchers visiting Poland for up to 24 months who are paid according to the Marie Skłodowska-Curie Actions rules, which means very generous salaries by Polish standards.

What are the effects after 5 years? It is probably too early to say decisively but I think that some signs are very promising. On one hand, I think overall we have been quite well received in the Polish scientific community, despite some criticism which was probably unavoidable. One of the results of this have been big budget increases recently: by 12% in 2016 and 15% in 2017. There is also an indication that the Polish science is slowly getting more competitive. For example, the most recent report Nature Index Rising Stars mentioned Poland among the most improved countries between 2012 and 2015: their ranking for us based on publications in 68 leading scientific journals increased by 34%.

We are aware that this is only the beginning of necessary changes. In my opinion there are two priorities right now: one is substantial increase of funding, the other should be a deep reform of Polish universities and the institutes of the Polish Academy of Sciences. And both steps have to be done at the same time. The current Polish government seems to be aware of this, the work on new regulations is in progress. I am aware however that any reasonable changes of the system unfortunately will have to be painful for some and there will be resistance.

This brings me back to the problem of knowledge divide and the Horizon 2020 midterm evaluation. I am aware of the fact that the problem lies mostly with us and eventually it will be up to us to fix it. It cannot however be done overnight and there are European regulations that make it harder. The main one is the remuneration rule in Horizon 2020 which essentially allows only local average salaries to be covered. The reality is that especially at Polish universities the salary structure is not particularly flexible, salaries do not differ much from each other and are relatively low. Taking this into account, to support the best Polish scientists, the funding organizations like NCN or the Foundation for Polish Science in fact allow much higher salaries to be paid from our projects. Another important goal is to attract foreign researchers to Poland and for that you need internationally competitive salaries.

But all this means that a PI from Poland winning an ERC grant can be paid much less than by an NCN grant which is of course incomparably easier to get. It is also very difficult to pay for internationally competitive postdocs from an ERC grant in Poland. I recently spoke with computer scientists Mikołaj Bojańczyk, the only Polish winner of both ERC Starting and Consolidator Grants. At the Warsaw University, which in fact has won the majority of Polish ERC grants (12 out of 22), the regulations allowed him to pay his postdocs only about 1,000 euro per month. At the same time, the postdocs paid using Marie Curie-Skłodowska Actions rules, including NCN's POLONEZ, are getting over 4,000 euro per month! Even the standard NCN postdocs offer 1,500 euro per month, and we will soon raise them substantially. I know that some smaller institutes are very inventive in their efforts to play the system to get around this remuneration problem with Horizon 2020 projects but this is certainly not the case at the biggest Polish universities.

This rule simply does not make sense and is deeply unfair. It means that exactly the same excellence is paid much less in one European country than in the other, and the funding is coming from the same source. A very simple fix to this would be to allow Marie Curie-Skłodowska Actions rules, with their correction coefficient depending on the cost of living, to be applied in all Horizon 2020 programmes, including ERC grants. I want to be clear: I do not think that this unfair remuneration rule is the reason behind our poor performance in Horizon 2020. The main problem lies with us, we have to increase spending on R&D and deeply reform our system. The rule however does not help, is an unnecessary hurdle, and should be quite easy to correct. And the midterm evaluation of Horizon 2020 on one hand and Slovak presidency on the other seem like a golden opportunity to do it now.

Thank you very much for your attention.