https://ec.europa.eu/futurium/en/content/online-consultation-mathematics-excellence-science-horizon2020

Online consultation on mathematics for H2020 next work organised by the European Commission from January to May 2016

Post of Marie Farge, May 1st 2016

Reinforce peer to peer exchanges by funding infrastructures

Research is a collaborative endeavour between peers. It should not develop as a competition for ever larger and more selective grants, as already denounced by Tim Gowers, Albert Cohen and others in previous posts. Since our research topics are highly specialised and are we are very few on a given problem, we could not afford competing between us. Indeed, to improve our ideas we share them with our peers, through discussions, seminars, workshops, long-term programs and peer-reviewed papers. The European Commission should help us to maintain such a high-level of collaboration by supporting infrastructures where we meet and discuss new ideas (e.g., Newton Institute in Cambridge, MFO in Oberwolfach, IHP in Paris…). For instance the CIRM in Marseille has played an essential role for the emergence of wavelets in the mid-80s, by offering us the possibility to organise, on short notice and without administrative burden, informal meetings between researchers from different disciplines and countries. Today, thanks to publicly-funded electronic infrastructures scientists collaborate through the Web, but they still need to meet and intensively work together for one or two weeks. I think the more international research teams will develop, the more intensive meetings in dedicated places will become necessary.

We also need another kind of infrastructures to develop open access to publications. We appreciate the ‘green open access’ policy of the European Commission, asking us to deposit our papers in an open repository (e.g., arXiv). In contrast, most of us refuse the ‘gold open access’ model, where we (or our institution) pay APCs (Article Processing Charges) to publishers, because they will thus keep their control of the publication system, by still owning the journals and fixing the price of APCs (as they are doing for subscriptions). In 2012 our group 'The Cost of Knowledge' proposed an alternative model, called ‘Diamond Open Access’, where neither readers nor authors have to pay. It is based on three principles:
– authors keep their copyrights and publish papers under the Creative Commons license CC-BY,
– editorial boards own the journal (title, peer-reviewing reports and other assets) for which they are responsible of the peer-reviewing task, they can then choose the publisher or publishing platform they prefer (publishers are service providers but not journal owners),
– if a journal is recognised to be useful to the scientific community and as long as its editorial board can prove good peer-reviewing practices, it could be published for free using editorial and publishing platforms, which are publicly-owned and publicly-funded infrastructures using open source software designed to service a very large number of journals from different

disciplines (as the major publishers do, e.g., Elsevier Editorial System).
For many years publishers have already asked us to use their platforms and thus all our exchanged for peer-reviewing belong to them. We think that our research papers, our scientific journals and our peer-reviewing exchanges should no more be privately-owned by publishers. The Open Science Cloud proposed by the European Commission should provide us such editorial and publishing platforms, but publicly-owned and written in open source, with commercial publishers as service providers.

Concerning the funding of researchers I fully agree with Tim's remark: 'Instead of forcing mathematicians to fit their projects artificially into a larger whole, you should trust us to judge for ourselves what we need and support that.' You should a priori trust us and only a posteriori check if we have adequately used what we asked for. You should also avoid supporting someone who has already several grants and who might hire more PhDs and postdocs than s/he has time to work with. Last point, you should not forget that research requires concentration and time to understand abstract ideas and produce new ones. Unfortunately the present situation is counter-productive since we are overwhelmed by financial and administrative tasks, for which most of us have no special talent. We are asked to respect strict deadlines to apply for research grants or to send reports when we peer-review them. The perverse effect is that the system imposes on us to give priority to fund raising, peer-reviewing and administration, while there are no deadlines to do research, discuss with students and colleagues, write papers and books… This situation, which is the same worldwide, is becoming critical.