

# World view



By Alison Abbott

## The world's biggest research programme got a lot right

**Farewell to Horizon 2020. Although imperfect, the European funding scheme finally managed to streamline bureaucracy.**

**L**ike national presidencies, European Union framework research programmes have a fixed term in which they can execute their agenda – bolstering the economy, improving sustainability and so on. How well they do is best assessed in retrospect.

The current scheme, Horizon 2020, is the world's biggest multinational research programme, having distributed €74 billion (US\$90 billion) to more than 150,000 scientists participating in 31,000 projects or grants. When it ends this year, how will it be judged?

I think history will look kindly on it. Stripped of much of the legendary bureaucracy that has plagued these framework programmes in the past, it has become fit for purpose.

As a journalist, I have followed successive EU framework research programmes since the early 1990s. The scientific community had a love–hate relationship with them. But the mood changed for the better with the launch of Horizon 2020, the eighth in the series. Outrage became the exception, and my stories less colourful.

How did these programmes evolve into something scientists no longer loved to hate? One key was the expansion in Horizon 2020 of the European Research Council (ERC), which gives large grants to individual researchers. That was an instant, rocketing success. But there is more to it.

The programmes are executed by the European Commission, whose job is to serve the political agendas of the EU member states and the European Parliament. The programmes differ from their national counterparts in that they mostly require scientists from different countries to collaborate in projects that fit into economic and social policies.

A central, unchanging aspiration is for borderless research so that scientists across the continent can work in any country without disadvantage and can freely exchange research materials and data. But the commission is often pressed by its political masters to address issues that are indirectly related to research – for example, supporting gender equality, raising the economic prospects of poorer countries or recreating the innovative spirit of California's Silicon Valley.

Those aims produced application procedures of bewildering complexity. What's more, with politicians keen to stamp out fraudulent use of any funds, the commission added requirements for burdensome progress reports on research projects. It also added some of its own unforced, and unnecessary, complications.

Serious efforts to reduce complexity became visible during Framework Programme 7 (FP7, 2007–13) and paid off in

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Horizon 2020, with simplified application and reporting procedures. This resulted in the average time from application to contract shrinking from around 18 to 6 months.

Critical to the turnaround, Horizon 2020 created a dedicated funding stream for excellence-driven fundamental research. Brussels had long ignored calls for such a stream because basic research was considered a matter of culture, like art, for which the commission had no competence. Such concerns were eventually trumped by arguments that basic research is fuel for economic innovation and is a bulwark against brain drain. Politicians were appeased by another dedicated funding stream to promote innovation.

The ERC is the major component of the fundamental research stream. After a limited test run in FP7, it was embedded in Horizon 2020. An independent evaluation earlier this year concluded that around 80% of ERC-funded projects make scientific breakthroughs or major advances.

The funding stream also included the flamboyant Flagship competitions – billion-euro, ten-year projects exploiting digital technologies. Their pilot phase in FP7 was rocky, but they blossomed amid intense competition in Horizon 2020 to spawn some splendid ideas, such as digitizing health data or the history of European cities. To my regret, they will not be continued in Horizon 2020's successor. Horizon Europe, which launches next month, will instead support smaller, safer versions called missions.

In parallel with Horizon 2020, the EU made a political decision to allow research facilities to be eligible for EU infrastructure subsidies. This raises the potential of research communities in poorer regions to become more competitive for research funds. Happily, this concept is, like the ERC, now embedded in the commission's psyche; it will continue in Horizon Europe and probably beyond.

Despite the massive simplification and rule relaxations, application procedures for Horizon 2020 were still heavy, and applicants had low success rates. Just 13% of ERC applications are approved, and rates are even worse for thematic collaborations such as health (10%) and climate (11%). This may be somewhat improved in Horizon Europe, with its higher budget of €95 billion.

Still, there is no research programme in the world like Horizon 2020. Twenty years ago, I would not have predicted that an EU framework research programme would become an object of envy. It achieved this because the political mood was accommodating. That can shift. Already, early commission hopes that Horizon Europe would open more widely to the world have been dashed as the global political mood becomes more nationalistic.

But mostly, the spirit of Horizon 2020 will live on in its successor.