

THIS WEEK

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Turning point

The result of next week's crucial UK referendum on whether or not to remain in the European Union will have worldwide repercussions.

The people of the United Kingdom will next week vote to either leave or remain in the European Union. At stake is not only the future of the United Kingdom and its place in the world, but also the future of Europe itself.

For science and research, the benefits that flow from being part of the EU are obvious. Free movement of people makes it easier for researchers in one EU state to live and work in others, which in turn promotes access to a plethora of multi-country collaborations. Belonging to the EU gives member states ready access to a huge pool of diverse scientific expertise and shared research facilities (see page 307).

The EU itself will spend more than €120 billion (US\$135 billion) between 2014 and 2020 on research, collaboration and innovation, including around €40 billion in beefing up scientific infrastructure in its poorer regions. Some €13 billion will go to one of the EU's greatest research successes, the highly competitive European Research Council, created in 2007 to award research grants to scientists of any nationality. Not surprisingly perhaps, a *Nature* survey in March showed that an overwhelming majority of UK researchers are in favour of remaining. Leading scientists from many disciplines have taken to the pages of newspapers and to the airwaves to plead the case for staying in the EU, making science a theme of the political campaign.

COOPERATION

The benefits of EU regulations to research and innovation in the life sciences were highlighted in a report published on 11 June by the UK House of Commons Science and Technology Committee. But it also noted shortcomings, for example in the translating of EU legislation into national laws. Some countries — Britain included — often implement national laws that go over and above that required by the EU (a practice known as gold-plating), resulting in variation between countries. The report also argued that the EU's application of the 'precautionary principle' in regulations needs to be more closely based on robust scientific evidence.

Scientists in Britain and elsewhere will have their own complaints about the way the EU works. But the UK referendum should not be a vote on whether or not the EU is perfect — how could it be? The question must be whether the unique system of cooperation that it represents does what it sets out to do.

It is *Nature's* view that when it comes to science and science-based regulation, the EU is much greater than the sum of its parts. Over time, it has replaced a maze of regulations and technical standards in its 28 member states — on everything from the life sciences to car parts — with common EU-wide regulations. Its environmental-protection laws are also widely recognized as world-leading.

Such cooperation has helped Europe to become the research and economic powerhouse that it is today. And the strength of UK science

has allowed Britain to have an outsized say in shaping EU research and regulations. Outside the EU, its influence would be greatly diminished.

Many of those who have been pushing for Britain to leave complain of diminished sovereignty. But in the modern globalized world, a willingness to pool aspects of sovereignty is the only way for a country such as the United Kingdom to have any strong say in shaping international rules, from financial regulation to air pollution. Climate change, the environment, use of natural resources, energy security and sustainable agriculture: all are examples of science-based issues on which Europe can be much more effective as a bloc than any mem-

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ber state alone — not to mention countering terrorism, or managing the potential threat of Russia on Europe's eastern flank. At a time when so many of Europe's most important challenges are increasingly regional and global, it is time to build a better, stronger EU,

not tear it down. The 'Brexit' camp insists that a split from the EU will allow Britain to make more of its own decisions. It might, but many of those decisions would carry much less weight.

It is difficult to get multiple nation states to agree to sacrifice some autonomy for what is in their collective interest. It requires hard work and, of course, often plodding negotiation and compromise. Britain undervalues that effort at its peril.

Built from the ruins of a Europe devastated by the Second World War, the EU has, despite its defects, woven together often-fractious, if not belligerent, nations into a bloc that has secured peace and democracy and has helped to build a Europe that has common values and rights. It has also managed to peacefully assimilate many former Soviet states under the democratic and societal obligations of the EU umbrella.

Continued engagement of the United Kingdom in the EU is vital, and its citizens bear a heavy responsibility on 23 June. So do the representatives on both sides of the debate, who have tended to stray into hyperbole and exaggeration. For example, a central claim of the 'Leave' campaign has been that a Brexit would free up £350 million (US\$500 million) a week that could be spent on the National Health Service and other public services. This is simply false. That figure is Britain's gross contribution to the EU; when the money Britain receives back is taken into account, it is less than £161 million a week. The reality is that the United Kingdom is in full control of the vast majority of its public spending; its net contribution to the EU budget was around £8.8 billion, or slightly more than 1% of its total public spending of £735 billion, in 2014–15. As the Confederation of British Industry concludes: "The UK's net budgetary contribution is a small net cost relative to the benefits."

We urge UK readers to critically examine the issues and to get out and vote — because every vote in this crucial election will matter. ■

CORRECTION

It costs the United Kingdom £161 million per week to be in the EU, not £250 million, as originally stated in the Editorial 'Turning point' (*Nature* **534**, 295; 2016).