

# Aiming high, but investing little

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Synthetic biology is one of the most rapidly growing fields in the biological sciences and is attracting an increasing amount of public and private funding. France has also seen a slow but steady development of this field: the establishment of a national network of synthetic biologists in 2005, the first participation of a French team at the International Genetically Engineered Machine competition in 2007, the creation of a Master's curriculum, an institute dedicated to synthetic and systems biology at the University of Évry-Val-d'Essonne-CNRS-Genopole in 2009–2010, and an increasing number of conferences and debates. However, scientists have driven the field with little dedicated financial support from the government.

Yet the French government has a strong self-perception of its strengths and has set ambitious goals for synthetic biology. The public are told about a “new generation of products, industries and markets” that will derive from synthetic biology, and that research in the field will result in “a substantial jump for biotechnology” and an “industrial revolution” [1,2]. Indeed, France wants to compete with the USA, the UK, Germany and the rest of Europe and aims “for a world position of second or third” [1]. However, in contrast with the activities of its competitors, the French government has no specific scheme for funding or otherwise supporting synthetic biology [3]. Although we read that “France disposes of strong competences” and “all the assets needed” [2], one wonders how France will achieve its ambitious goals without dedicated budgets or detailed roadmaps to set up such institutions.

In fact, France has been a straggler: whereas the UK and the USA have published several reports on synthetic biology since 2007, and have set up dedicated governing networks and research institutions, the governance of synthetic biology in France has only recently become an

official matter. The National Research and Innovation Strategy (SNRI) only defined synthetic biology as a “priority” challenge in 2009 and created a working group in 2010 to assess the field's developments, potentialities and challenges; the report was published in 2011 [1].

At the same time, the French Parliamentary Office for the Evaluation of Scientific and Technological Choices (OPECST) began a review of the field “to establish a worldwide state of the art and the position of our country in terms of training, research and technology transfer”. Its 2012 report entitled *The Challenges of Synthetic Biology* [2] assessed the main ethical, legal, economic and social challenges of the field. It made several recommendations for a “controlled” and “transparent” development of synthetic biology. This is not a surprise given that the development of genetically modified organisms and nuclear power in France has been heavily criticized for lack of transparency, and that the government prefers to avoid similar future controversies. Indeed, the French government seems more cautious today: making efforts to assess potential dangers and public opinion before actually supporting the science itself.

Both reports stress the necessity of a “real” and “transparent” dialogue between science and society and call for “serene [...] peaceful and constructive” public discussion. The proposed strategy has three aims: to establish an observatory, to create a permanent forum for discussion and to broaden the debate to include citizens [4]. An Observatory for Synthetic Biology was set up in January 2012 to collect information, mobilize actors, follow debates, analyse the various positions and organize a public forum. Let us hope that this observatory—unlike so many other structures—will have a tangible and durable influence on policy-making, public opinion and scientific practice.

Many structural and organizational challenges persist, as neither the National Agency

for Research nor the National Centre for Scientific Research have defined the field as a funding priority and public–private partnerships are rare in France. Moreover, strict boundaries between academic disciplines impede interdisciplinary work, and synthetic biology is often included in larger research programmes rather than supported as a research field in itself. Although both the SNRI and the OPECST reports make recommendations for future developments—including setting up funding policies and platforms—it is not clear whether these will materialize, or when, where and what size of investments will be made.

France has ambitious goals for synthetic biology, but it remains to be seen whether the government is willing to put ‘meat to the bones’ in terms of financial and institutional support. If not, these goals might come to be seen as unrealistic and downgraded or they will be replaced with another vision that sees synthetic biology as something that only needs discussion and deliberation but no further investment. One thing is already certain: the future development of synthetic biology in France is a political issue.

#### CONFLICT OF INTEREST

The author declares that he has no conflict of interest.

#### REFERENCES

1. SNRI (2011) *Biologie de Synthèse: Développements, Potentialités et Défis*. Paris, France: SNRI
2. OPECST (2012) *Les Enjeux de la Biologie de Synthèse*. Paris, France: OPECST
3. Pei L, Gaisser S, Schmidt M (2012) *Public Underst Sci* **21**: 149–162
4. IFRIS (2011) *Biologie de Synthèse: Conditions d'un Dialogue avec la Société*. Paris, France: IFRIS

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