



Strategic Guidelines Toward the Establishment of Public Policies for Synthetic Biology in Developing Countries

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Introduction. Synthetic biology is going to explode a new biotechnological revolution creating a completely new level of biological engineering. Along with the scientific development of synbio, new ethical, legal and social issues (ELSI) are arising. Since synbiologists are aware of the relevance of this, there is a great interest in discussing how to face the challenges ahead.

Despite the remarkable inter-institutional effort to address these issues, just a few scientists have considered and analyzed the importance of the ELSI debate in developing countries. Scientific (and non-scientific) community in growing economies has quite different concerns about the potential risks and applications of synbio. Particularly in Mexico, there are a big concern about food sovereignty and GMO's biosafety.

The problem is that Mexican legislators and decision makers have tried to imitate public policies proposed in developed countries instead of design original frameworks, consistent to their economic reality. Mexico is experiencing a scientific awakening, there is an unprecedented interest in technological development, if Mexico (and other developing countries) wants to be competitive and take part of the global advance of synbio it is very important to open a debate towards the implementation of public policies that allow the effective growth of biotechnology in the country.

Mexican scientists, stakeholders and decision makers must consider the opinion of the global leaders and learn from experiences in order to create an appropriate strategy. This work aims to determine the key aspects to take into account to establish public policies for synbio development in Mexico.

Objective: Establish a list of recommendations for public policies in synthetic biology, directed to researchers, decision makers and stakeholders.

Methods. We made a documentary research about the applicable regulation to synthetic biology in Mexico and a compilation of papers, reviews and publications related.

We also prepared an interview for global opinion leaders in synthetic biology, researchers, stakeholders and decision makers in Mexico.

Results. We made an analysis of the applicable regulations and determine whether it is necessary to establish specific regulations for synthetic biology in the

near future. We also made a review of proposals for regulations around the world and we determined how international regulations have to be adapted to fit into our economic reality.

Conclusions. It is clear that synthetic biology is going to revolutionize biotechnology in the near future, and it is obvious that, if we want to be competitive as a country in this new field we have to establish strategies to allow the appropriate development of synthetic biology in Mexico.

It is too soon to establish a legal regulation for synbio, we do not know the real scope of synthetic biology. Despite it is an emerging technology we need to wait until it turns into a reality. However, we are in time to start the discussion about the aspects to be considered in a possible regulation.

Nowadays, the applicable regulation, added to self-regulation into the scientific community, is enough to cover the developments in synbio, nevertheless, during the next years, the technological advance is going to exceed the range of the actual regulation. Not only in synbio, but in biotechnology.

However, we have to discuss scientific, ethical, legal and social issues in the topic in order to implement strategic guidelines for public policies that allow the advance of this new discipline. We have to learn from past experiences (GMOs) to make things right this time.

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