GMO regulations: the UK, EU and the world

To what extent is the use of GMOs regulated? What should I do if I want to release my iGEM GMO? This document compares the restrictions on GMOs within Europe and around the world.

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Insight:
After discussing with the European Union and the use of GMOs as well as with the Member of European Parliament, Neena Gill, we understood that a raging controversy on the use of Genetically Modified Organisms was going in the the EU at the moment. We lead further investigations and realized that even though the EU is strict on the safety aspect of the use of GMOs, no regulations are put in place.

The controversy of GMOs

To understand this issue, we need to first understand why GMOs are so controversial.

One first aspect is due to the versatility of use of GMOs. Indeed, even though GMOs are generally talked in the media in regards to agriculture and crops, GMOs have lots of uses such as in medicine, detergents, and much more!
It's also worth to note that the only place that the EU talks about GMOs on it's website is in the food tab...
The media coverage has also recently put emphasis on the dangers of using synthetic biology to genetically modify babies.
In all, GMOs are an integral part of the debate nature vs nurture and the controversy on the extent of the use of science to better the human condition. This explains why countries around the world can't agree on regulations and why we find different policies depending on where we are.

Where can I import GMOs?

Cultivation of GMO species banned and prohibited in all countries below.

All countries followed by red banned imports; those followed by green allow them.

Algeria		Croatia		Hungary		Madagascar	
Austria		Cyprus		Italy		Malta	
Azerbaijan		Denmark		Kenya		Molodova	
Belize		Ecuador		Kyrgystan		Netherlands	
Bhutan		France		Latvia		United kingdom	
Bosnia and Herzegovina		Germany		Lithuania		Norway	

Bulgaria		Greece		Luxembourg		Peru	
Poland		Russia		Saudia Arabia		Serbia	
Slovenia		Turkey		Venezuela			
Switzerland		Ukraine		Zimbabwe			

Important factors to take into account:

- Potential allergens
- Toxicity
- Transfer of new genes to other organisms

What if I want to release my iGEM GMO in the UK?

Do you want to market it or do further research ?

Market!

Need authorisation by the EU

You'll have to :

1. Notify your government with a technical dossier on your GMO
2. Make an evironment risk assesment
3. The impact of the transfer of the direct or indirect genre transfer of the GMO on human health and the environment

What your member state will have to do:

1. Your government should assign an authority to ensure that your GMO follows the EU
2. That authority need to make sure adequate measures a put in place for the placing of your GMO on the market and its termination
3. A report should be made for the general public

Research!

Need authorisation by the your national government

Next steps:

1. Write to the Secretary of state (and your application will be assessed by DEFRA)
2. Within ten days of submitting the application, publish in a national newspaper your contact information, the description of the GMO that will be released, and the location, date, and purpose of the release

What's the point of the EU's 2001 directive?

The objective of this directive is to approximate the laws, regulations and administrative provisions of the Member States and to protect human health and the environment.

Sources:

- https://www.loc.gov/law/help/restrictions-on-gmos/england-wales.php#_ftn34
- http://www.legislation.gov.uk/eudr/2001/18/article/4
- http://www.hse.gov.uk/biosafety/gmo/whats-new.htm

Ok..great. But what if I want to release my iGEM GMO in the UK?
The role of the European Union for European regulations

Interestingly, after discussing with N.Gill, we understood that the European Union decides to only submit directives and not regulations for their member states.

According to the European Parliament, “a "directive" is a legislative act that sets out a goal that all EU countries must achieve. However, it is up to the individual countries to devise their own laws on how to reach these goals."
Hence as each member state can understand specific words and syntax of a directive, it leaves a lot of leeway in terms of a directive’s interpretation.

The EU choose to do so as the use of GMO is heterogeneous within the member states. For example, one can think of the use of GMOs for crop productions. The semi-arid lands of South Portugal will not produce a same amount of crops than a more fertile land found in the North of Italy. So one economy would benefit the use of GMOs whilst the other would use it to outcompete the market. The lines are blurred for the motivations, consequences and limitations of GMOs used for agriculture. As this has been the most prevalent use of GMOs, we can now easily understand how there are no laws for GMOs emerging in fields such like medicine or wastewater treatment.

What next?

Because drafting laws and debating regulations within the EUropean Parliament is time-consuming and highly controversial, it’s important to focus on empowering the general public and raising awareness on the use of GMOs. The more people know about GMOs, their uses, consequences and limitations, the less we will be over worried because of the painting media makes of it. It’s important that everyone, as a consumer and citizen, takes part into shaping the future of using scientific knowledge to the advancement of humanity.