



Sense, Science and Sustainability

Can genome editing and agroecology exist within the sustainable food and farming mix?

Webinar

22 July 2020

10.30am – 12 noon

QUESTIONS SUBMITTED IN ADVANCE

- Please can I ask the panel if they are aware of the interesting project, "Set Limits to Biotech", organised by the German NGO, Testbiotech. Corporate Europe Observatory have also done work on bringing balance to corporate influence on science in the European Union. I believe the work of both these organisations is important to bring balance and insight to the current UK Parliamentary "innovation" Inquiry; "A new UK research funding agency". Apologies for the late submission of my question. Thank you to the panel.
- There are those who claim that outdoor use of gene drive is the "magic silver bullet" to kill/eradicate all possums and mustelids (weasles/stoats/ ferrets) in NZ (they are a feral pest species that preys on native birds etc). What is the panel's opinion of the risks and ethics of proposed controversial outdoor use of gene drive to hypothetically eradicate a species? Our farming family (organic farming) is aware that possums are indigenous just across the ditch (in Australia) and are concerned that sterility technology could make it back to Australia. Thank you.
- Can genome editing and agroecology co-exist in the sustainable food and farming mix?
- The word 'sustainable' has become too elastic, referring to environmental, social, economic AND health issues: this results in muddled and confused discussions and decisions. Do you agree that the term should be 'protected' to refer only to environmental sustainability eg GHGe's, contamination eg pesticides, nitrogen, and biodiversity scores.
- Has sustainability become problematic? Is it now a word stripped of its useful meaning, one that can be (and is) bent and twisted to justify almost any kind of behaviours – from the best to the worst.
- I'm interested in the idea that gene-edited animals might improve animal welfare on farms, for example, to make disease-resistant pigs or hornless cattle. However, the only feasible approach to generating gene-edited animals involves cloning. Cloning in animals is opposed by many people because of its well-known tendency to produce deformed, and non-viable animals. There is evidence to suggest that even the viable cloned animals display signs of ill health, such as premature ageing. So I'd like to ask the panel how they believe the dangers

of cloning can be reconciled with the aim to improve animal welfare, in the gene editing of livestock animals.

- I am a biotechnologist who has contributed to the use of bioreactors for the manufacture of therapeutic proteins for medical use. I'd be interested to know what the panel think about claims that lab-based meats and bacteria-generated proteins are more sustainable. Given that bioreactors of the scale that would be required – 20,000 litres or more – require huge amounts of materials and energy to run them, including concentrated nutrients for the cells or bacteria to feed on (some of which are produced at scale in other bioreactors), it seems that lab-based meats and bacteria-generated proteins would be much more energy intensive, create large amounts of waste that would need to be safely disposed of, and require more land to produce per unit of mass than meat and dairy produced on traditional farms. Does anyone have any figures that say otherwise?
- Most new technologies can be used for good or bad purposes. The first wave of GMO research has primarily been applied to produce herbicide-resistant crop, so Monsanto could make farmers dependent on their seeds as well as chemicals. How can we assure that gene editing will be used to benefit farmers and consumers rather than giant agrochemical corporations?
- What kind of genome editing is there that can be done on food or seeds?
- Hi, I am sorry to ask a question before having heard all of speakers. I do bet all of the speakers will make the error to discuss techniques as if they were neutral. Let me argue. They will try to explain how the techniques could be managed so as to let the other techniques be used nonetheless (it is the tolerance of moderns). This assumes techniques are _neutral_ since only their downstream effects are discussed. I do claim (with Illich, Anders, Arendt, Mumford, Ellul and others) that techniques are not neutral. They carry with them the imaginary that led to their elaboration: the upstream effects. A wood carver will not see the world as a stone carver. For instance it is not by chance that in our industrialized societies, most people try to make life a building game. So GMO are (only) the downstream consequence of the way we _all of us_ see life. And this conception is society-made. Another society would make a different research and different techniques ... and a different society. Provided (all) speakers will not question the very _techniques_ used (whatever their risks!), they will make the same error as Marx who considered only the property of machines was relevant. The very machines/techniques were not relevant for him. All the same, provided we only discuss the risks of techniques, we do not see the longer-term use: eugenism and totalitarianism are around the corner (I can argue). My question: why never arguing in a philosophical manner? Arguing more widely and questioning even the place of death that is considered as a shame by transhumanists? If you want to be cured of any disease, the price may not be infinite in a _finite_ world (see the organ market!). So the fear of death will enable (like COVID did) a lot of major errors. Other example: the future of gene drive (genetic forcing) is mass weapons that the Nazis would not have dreamt of. Is this the world we want? No. If you reply that we will not prevent ourselves from having it, then consider that some people might reject "Science" (one of the gods of moderns as Arendt states). It could have drawbacks also in politics. I will not surrender. So let us not argue on the risks and on the details, while the overall plan is advancing. Other argument should be put forward. The very motivation of organic is a good helper. Best wishes of disagreement and mutual hearing!

- When will the human race understand that nature will always do things better than we ever can, no matter how smart we think we are?
- What will be the impact of gene editing on organics; and how might this affect consumer and citizen choice?
- More a point for discussion - Global solutions to the numerous challenges facing humanity are only seriously pursued if 'someone' can make money from them. In the longer term, has this been good for anyone?
- Do you think we will be able to feed a world population forecast to grow to 10-11 billion without making appropriate use of technologies such as genetic engineering?
- 'Unintended consequences' are presented as a reason for not pursuing Genome Editing (GE); Biotechnologists counter-argue that 'Unintended consequences' are happening in nature all the time anyway. Is this reasonable or is it flawed thinking? Does nature have 'intentions', and if it does can its intentions be equated with 'human intentions' and shouldn't we humans with intentions be equally responsible for the unintended as well as the intended consequences of our deliberate actions? Is there not a moral obligation on biotechnologists and the companies they work for to identify the consequences (intended and unintended), of their GE species before their release?