**To: The Regulations Review**
**Office of the Gene Technology Regulator (MDP 54)**
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**Submission re the Technical Review of the Gene Technology Regulations 2001**

**From: The Sustainable Agriculture & Communities Alliance**

**Address: SACA Secretary, 649 Warrumyea Rd, Panmure, Vic. 3265.**

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The members of the Sustainable Agriculture & Communities Alliance (SACA) thank the Office of the Gene Regulator for the opportunity to submit their comments and concerns regarding aspects of the above review.

SACA members agree with the statement by Dietmar Vybiral of the Austrian Federal Ministry of Health, who said on public radio in September 2016 that the new genetic engineering techniques such as CRISPR-Cas must be classified as GMOs. (1). Mr. Vybiral said (in translation):

*"All these new techniques such as CRISPR-Cas etc should be considered to be GMOs, at least according to Austrian law."*

*"These processes are definitely genetic engineering processes. They result in a GMO because they are not natural processes." (ibid)*

SACA members share the concerns of the Austrian government, and contend that there is no guarantee of safety regarding the new techniques.

We are concerned that the technology of genetic engineering is still an incomplete science, with much unknown about functions and interactions of genetic components.

SACA members are aware that up to 2016 there have been instances of damage to the genome from genetic engineering processes, as well as incidences of traces of genetically engineered substances in foods.

In some cases, despite the assurances of the genetic engineering companies, there have been instances of potential health impacts from unforeseen results of the processes involved. An example of this was reported in the New York Times in September 2000 at the time of the contamination of the human food chain with Starlink corn, which contained an allergen and because of this contamination huge amounts of food had to be withdrawn from sale. Another example was sterility in laboratory rats by the third generation as a result of the eating of GM animal feed. (2) There are many other examples that could be given of these unintended consequences.

The biotechnology companies are claiming that the new techniques, such as ZFN, TALENs, CRISPR and ODM are not GM. It is apparent that attempts of the biotechnology companies to make this claim are an effort to circumvent the regulations enacted to protect consumers from the possible accidental and unintended production of toxins, and/or unique and new characteristics that may have untoward effects on people or the biosphere.

There is the additional concern that if the new techniques are deregulated for use in Australia, not only school children or hobbyists, but perhaps eventually terrorists may experiment using the new techniques and that damage may result to untold numbers of people and ecosystems; in fact, if the new techniques were used by unscrupulous people and organizations, they could be used as a means of biological warfare.

Of course, not only intentionally, but also by accident, genetic engineering can result in serious ill effects. An example of this is the discovery in 2001 by Dr. Elaine Ingham and one of her students that a normally harmless soil microbe (Klebsiella planticola) that had been genetically engineered with the purpose of dealing with waste had evolved into a microbe that damaged the soil ecosystem and the roots of plants. Given that microbes can travel around the world in a matter of days, it was fortunate that Dr. Ingham and her student discovered the problem before this microbe was released. If the microbe had been released and had contaminated soils around the world, there could have been a food famine, or destruction of many of the trees and plants growing on the planet. There would have been no method of retrieving the GM organisms had it been released.

If an accidental release of a possible harmful organism were to happen as a result of the licensing of the new techniques without the controls that are in place on other forms of genetically engineered organisms, then the consequences could be disastrous.

Once a genetically engineered organism is out of the laboratory, it is not possible to contain it or even its characteristics: This has been proven by the spread of genes from one plant to another in the USA, and the resultant resistance of some weeds to herbicides.

SACA members are of the opinion that for reasons of public safety, all resultant organisms from the new GM techniques should have to be scrupulously assessed to prevent any unintended negative modifications.

SACA members also strongly believe that all genetically modified organisms including those made with the new techniques should be labelled so that the public can have a choice.

However, labelling will not prevent all possibility of harm, especially in the case of insects and bacteria, and we reiterate our concerns that the new techniques may be used with harmful intent, or may cause unintended damage that may be *ongoing into perpetuity*.

*It is therefore a matter of social responsibility on the part of the Office of the Gene Regulator to decide against the deregulation of the new techniques.*

As a group that is concerned about the sustainability of food production in Australia and world-wide, SACA members are also concerned that the deregulation of the new GM techniques could have serious negative effects on food and other exports from Australia. We are concerned that the new techniques have the same potential risks as older techniques of genetic engineering, and that there are even more risks inherent in these new techniques. As the new techniques are able to be applied to all organisms, including soil microbes, there are substantial grounds for concern. For example, it has already been shown that exudate from GE Bt cotton can kill soil microbes (3), and exudate from GE soy crops has been shown to kill beneficial soil microbes.

Albert Einstein said that if the honey bees were to die out, then civilization would also die out. Though many people do not realise it, we are just as dependent upon soil microbes for our food production and survival.

**SACA members therefore submit that Option 2 is the best option to prevent potential damage to people and ecosytems, including agriculture and production of pharmaceuticals.**

Gillian Blair, SACA Secretary 16th December, 2016.

1. http://www.gmwatch.org/news/latest-news/17230-new-gmo-techniques-do-give-rise-to-gmos-austrian-govt-official

2. New Study Finds **GMO** Corn Makes Rats Infertile | Natural Society
*http://naturalsociety.com/new-study-finds-gmo-corn-makes-rats-infertile/* Jul 1, 2015 **...** Animals who **ate GM** soy were **sterile** by the third generation

3. ISIS press release, 23rd February, 2009.