

# STOP OGM PACIFIQUE

GMOs threaten traditional agriculture biodiversity and food sovereignty.

# Say no to GMO

By MOFFAT MAMU

A MISSION to educate pacific islanders and discourage them from using genetic modified organism (GMO) seeds to grow on their farms for food and sales is currently underway.

A Noumea based non-government organisation (NGO) in New Caledonia called 'Stop MGO Pacifique' is visiting parts of the pacific to collect data and information on GMO in relation to seeds and regulations.

So far the organisation's reps have visited Fiji, Vanuatu, Wallis&Futuna and now in Solomon Islands.

Since last week two representatives from the organisation have been in the country to collect data, information and share their concerns on GMO with a number of government ministries such as agriculture, environment, health and non-government organisations such as Kastom Gaden Association (KGA) and an organic farm operating out of Burns Creek, East Honiara.

Speaking to the Solomon Star yesterday in an interview Chairman of the organisation Frederic Guerin and secretary Claire Chauvet said the threat posed by imported genetically modified seeds to the region is very alarming.

They shared examples of how Hawaii has been infiltrated with more than 5000 GMO seeds and contaminated papaya.

Therefore its important to keep and protect traditional seeds in order to maintain food security and food sovereignty.

Mr Guerin who is a consultant in agrobiolgy said our ancestors have been farmers for many years and using their knowledge and seeds to farm.

"Therefore its important to continue use the traditional seeds to grow food rather than relying on the imported seeds from outside because these imported seeds poses danger to our traditional seeds and health," he said.

He added that the sales of imported seeds in our shops and at the central market in Honiara should be taken with much precaution and consideration.

"This is because who knows, it may be GMO seeds," he added.

"Only tests can confirm if the seeds are genetically modified," added Ms Chauvet yesterday.

The duo also suggested the need to have GMO regulations in place in order to control the import and export of GMO products in and out of the country.

"Its time to control GMO products in the region in collaboration with other stakeholders."

In the world, about 65 countries have GMO regulations. For the pacific island countries, only Tonga has a regulation in place.

While in the country the organisation had proposed to established link

with Kastom Gaden Association as their focal point as part of the network to address the issue of GMO seeds in the pacific.

"We are working on establishing the links as part of our network to address GMO in the region," Ms Chauvet said.

The duo explained that by creating a database they can be able to know the status of the region when it comes to GMO in the region and work in collaboration with organisations like Secretariat of the Pacific Community and South Pacific Regional Environment Program (SPREP).

Speaking on the overall trip, the duo said it had been successfully because they have been able to share with government officials and other stakeholders while listening to the status of GMO in Solomon Islands and how it had gone about formulating its regulation.

## What are GMOs?

GMOs, or "genetically modified organisms," are plants or animals that have been genetically engineered with DNA from bacteria, viruses or other plants and animals. These experimental combinations of genes from different species cannot occur in nature or in traditional crossbreeding.

Virtually all commercial GMOs are engineered to withstand direct application of herbicide and/or to produce an insecticide. Despite biotech industry promises, none of the GMO traits currently on the market offer increased yield, drought tolerance, enhanced nutrition, or any other consumer benefit.

Meanwhile, a growing body of evidence connects GMOs with health problems, environmental damage and violation of farmers' and consumers' rights.

## Are GMOs safe?

Most developed nations do not consider GMOs to be safe. In more than 60 countries around the world, including Australia, Japan, and all of the countries in the European Union, there are significant restrictions or outright bans on the production and sale of GMOs. In the U.S., the government has approved GMOs based on studies conducted by the same corporations that created them and profit from their sale. Increasingly, Americans are taking matters into their own hands and choosing to opt out of the GMO experiment.

## Are GMOs labeled?

Unfortunately, even though polls consistently show that a significant majority of Americans want to know if the food they're purchasing contains GMOs, the powerful biotech lobby has succeeded in keeping this information from the public. In the absence of mandatory labeling, the Non-GMO Project was created to give consumers the informed choice they deserve.

## GMO used in agriculture

Throughout human history farmers have used selective breeding to improve crops and stock by

breeding from the plants or animals that had qualities they wanted to strengthen. The deliberate retention of the best of the agricultural production for future use as seed for sowing, or animals for breeding, has meant that quality has been continuously enhanced over the ages. In this way, farmers have for centuries developed animals and crops for desired characteristics, such as resistance to disease, or ability to cope better with specific climatic and environmental conditions, and for increased production.

The selective breeding techniques used by farmers rely on the genetic variation already present in the population, which includes mutations that occur spontaneously in nature. These techniques have been responsible for the development of all the major crops and animals used in farming today.

Genetic modification, which is also referred to as 'genetic engineering', uses a variety of methods to isolate single genes from one or more micro-organisms, plants or animals and insert them into the genetic material of the cells of another. These methods are collectively termed 'in vitro nucleic acid techniques', and have been developed since the 1970s. Through genetic modification, genes are transferred and modified in ways that are not possible in nature, i.e. Between different species and between animals and plants and micro-organisms. Once inserted, these genes may be transferred to offspring of the modified individual through normal reproductive processes.

## Principle of GMO construction

Genetic modification and selective breeding differ in important ways

Selective breeding selects for combinations of genes from within the natural pool of genetic variation in the crops or animals concerned, and therefore enables selection and breeding for traits that may be influenced by several or many separate genes, as well as traits under the control of single genes.

Breeding normally takes place between individuals of the same species, or in some cases, between closely related species, and if necessary, may apply techniques to overcome some barriers to breeding between the individuals concerned. No modifications are made to the genetic material of the individuals concerned.

In genetic modification, scientists isolate single genes that control particular characteristics, copy them with modifications and splice them with other control elements from genes to form a 'gene construct' so that they work well within the target organism, then insert them, usually in a random position, within that organism.

The techniques used for gene modification involve steps that take place in vitro, that is they take place outside of any organism. The use of ge-



[www.stopogmpacifique.org](http://www.stopogmpacifique.org)



Frederic Guerin (with hat) during a visit to an organic farm at Burns Creek.



# in the pacific

netic modification techniques allows very large evolutionary barriers to be crossed, and for one or a few genes to be moved between organisms, including organisms which have not been known to have genetic contact.

Transgenesis is not the only technique: mutagenesis and cell fusion processes are also used to create transgenic plants, but GMO produced with these techniques are not submitted to the same regulation. In Europe, and in many other countries, they do not need special labeling, monitoring or authorizations. Moreover there are very difficult to identify even with genetic examinations. 80% of cabbages come from cell fusion and so do most of canola.

Commercial crop production;

-The main commercial GM crops are: soy, maize, cotton and rapeseed (canola).

-The main crops are in: USA, Argentina, Canada and China.

-About 70% of GMO are herbicide resistant, 20% produce pesticides, and some combine both characteristics.

-Soy accounts for 60% of GMO crops, while corn accounts for around 20%, cotton 10% and canola 5%. More than 80% of GMO cultivated are intended to feed livestock.

-Transgenic salmon is about to be commercialized in USA. Commercial GM tree crops and GM grass also exist.

-Transgenic papaya is grown for commercial purpose in Hawaii and in several asiatic countries (Ringspot virus resistance).

-Hundreds of GM varieties are tested for many different species (fruits, vegetables, root crops, cereals...) for experiments and commercial agreements.

Problems with GMO cultivation in open fields:

-there is currently little evidence to support the claim of increased agricultural yield;

-many widely promoted examples of GM applications have failed due to the limitations inherent in the technology and the com-

plexity of the problems tackled;

-from a health point of view, there is currently insufficient information regarding toxicity and allergenicity of food products derived from GMOs;

-the environmental consequences of the release of GMOs into the environment are likely to be significant, in particular the effects on biological diversity;

-deleterious changes to agricultural and industrial practices, including an increase in environmental pollution, may be so severe that they should not be permitted;

-the socio-economic consequences are potentially severe, e.g. through displacement of cash crops or traditional crops and disruption of small scale farming systems that are prevalent in developing countries;

-the small number of companies involved in agricultural biotechnology, and the grouping of seedstock and chemical control agents in these companies is unacceptable; and

-patents on living organisms, genes and/or genetic resources are unacceptable, in particular:

-it is important that farmers are able to keep seed from one season to the next;

-intellectual property claims on gene or nucleic acid sequences without a true invention being.

**Genetic modification and biological diversity**

At a general level, it has been suggested that GMOs released into the environment may pose similar types of risks to those presented by invasive alien species. In relation to deliberate release, concerns about the effects of GMOs on biological diversity include, for example:

-the potential dispersal of the organism in the environment - for example through invasiveness or enhanced competitiveness;

-the potential transfer of the inserted genetic material (and related characteristics) to other organisms - for example through cross-pollination;

-potential impacts on non-target species - for

example some studies have suggested that crops modified to be resistant to insect pests may also have adverse effects on beneficial insects and birds;

-potential impacts on soil bacteria and the nitrogen cycle; and

-indirect effects on the environment - for example where the impacts arise from changed agricultural practices associated with the management of a GM crop rather than from the GM crop itself.

In addition, socio-economic considerations related to biological diversity conservation are a subject of concern.

The lifestyles, livelihoods and cultures of traditional and indigenous communities, rural communities, and others may be directly or indirectly affected.

The development of GMOs throughout the Pacific region is contrasted. According to current knowledge, four situations can be described:

French Overseas Territories (New Caledonia and French Polynesia)

The competence to regulate on economic and agricultural matters was transferred to the local authorities of New Caledonia and French Polynesia from the previous control of France. Therefore, French and European regulations have not been extended to these territories. The Cartagena Protocol, ratified by France, does not apply in New Caledonia and French Polynesia either. However, despite their ability to put forth such an initiative, neither territory passed any regulations regarding GMOs. In terms of trade, many products are imported from Europe, Australia, New Zealand, Asia and the USA. For example, New Caledonia imports 99 % of its wheat from Australia, a country that plans to export genetically modified wheat in 2015 (which is being tested outdoors). Additionally, very few seeds are produced locally, most of them come from Australia, Asia and Europe. New Caledonia imports its papaya seeds from Hawaii.

In both French Polynesia and New Caledonia, like in the other islands of Melanesia, Micronesia and Polynesia, traditional agriculture has a strong cultural dimension: the roots (Yams, Taro) take part in the rituals of trade and cultural exchanges between tribes.

**Australia and New Zealand**

Australia and New Zealand have common regulations on GMOs regarding product marketing and labeling. Growth of GMOs is regulated. To date, there are no commercial harvesting of GMO products in New Zealand but tests are taking place (including in forestry). GMOs are cultivated in Australia (mainly rapeseed and cotton) and many tests are conducted, some of them outdoors.

Australia and New Zealand represent very



Frederic Guerin, center, and Claire Chauvet, far right, with an officer from the ministry of agriculture.

strong economic partners for many island nations in the Pacific Region. Several associations and foundations are conducting evaluations and campaigns against the spread of GMOs in both countries.

**Pacific Island States**

Cook Islands, Kiribati, Micronesia, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu ... all these island states have participated in a project funded by the United Nations Environment Programme (UNEP) for the development of National Biosafety Frameworks (NBFs), and ratified the Cartagena Protocol. According to current knowledge, only Tonga has implemented biosafety regulations. The spread of

genetically modified organisms has never been included in the General Secretariat of the Pacific Community program.

**Hawaii**

As a U.S. state, Hawaii is an open field for experiments.

There have been over 5000 experiments undertaken in the region. The University of Hawaii has developed several varieties of transgenic papaya (resistant to a specific virus), and filed a patent on a genetically modified taro. GM papaya is grown for commercial purposes. It is currently being sold. Its fruits and seeds are exported as well. Anti-GMO activists and organizations are very active in Hawaii.

More information visit: <http://www.stopogm-pacifique.org>



Frederic Guerin, right, meets with the Kastom Gaden Association officials.