**The response reproduced below was submitted further to an invitation to comment on the draft Discussion Paper by the Nuffield Council on Bioethics: *The use of genetically modified crops in developing countries,* during June to August 2003. The views expressed are solely those of the respondent(s) and not those of the Council.**

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*Vudal Forum On Use Of Genetically Modified Crops In Developing Countries*

The Department of Agriculture at Vudal University held a Special Forum on the **Use of Genetically Modified Crops in Developing Countries** on Friday 1 August. The Forum was attended by students and staff from the University's ENB Campus as well as scientists from NARI Keravat and the PNG Cocoa and Coconut Institute. The Forum was held to discuss and respond to the recent Discussion Paper on this subject produced by the Nuffield Council of Bioethics (UK).

In his opening remarks Professor Price, who facilitated the Forum reminded the audience that Genetic Modified Crops arose from the insertion of foreign genes from non- related organisms including viruses and bacteria and insects into plants, and these were called Transgenic Plants. He further added that to date the main thrust for GM Crops was development of better methods of Pest and Disease Management. Areas of relevance to developing countries included the following: Herbicide tolerance; Insect /pest resistance; Bacterial , fungal and viral resistance; Abiotic Stress Resistance, and Micronutrient enrichment. Of the commercial use of GM crops, three quarters (3/4) of GM crops are grown in developed countries and are mostly non-staples. The crops are grown primarily for commercial purposes. Herbicide tolerant soybean is most widely grown.
The Forum was asked to debate and discuss the following questions relating to the use of GM crops in developing countries.

i. In view of the amount of food available worldwide , are GM crops really necessary?

ii. Why should alternative forms of agriculture such as organic farming, not be sufficient to provide crops for household consumption and sale?

iii. Will GM crops be of benefit only to large scale farmers and what would their role be in relation to the reduction of poverty?

iv. Can GM crops be introduced in such a way that local customs and practices are respected?

v. Can GM crops make a relevant contribution to solving health problems in developing countries?

vi. Will GM technology be controlled in ways that are compatible with self -governance and economic security?

vii. Is the introduction of GM crops in developing countries consistent with the precautionary principle with regard to safeguarding biodiversity and human health?

The main resolutions arising from the Forum was:

1. There needs to be greater awareness at all levels of government and Society of what Genetic Modified Crops are.
2. There was some concern of what would happen if there is hybridization with local varieties. (This is a justified comment in the light of the recent news from the BBC of 2 August 2003 in which a Canadian farmer is suing one of the multinational companies ‘ Dupont’ whose pollen from GM crops contaminated his canola ( oilseed rape plots. )
3. There is a need for research into this area under PNG conditions.
4. Labeling of GM foods differ from country to country.
5. Decisions should be made on a case by case approach.
6. GM crops may provide a threat to local crops.
7. There could be erosion of national germplasm
8. There was ample discussion on plant Variety Rights, ownership and Intellectual property rights.
9. What is the environmental impact of introducing Gm crops?
10. Who will be the main beneficiaries- the companies or the people?

Therefore, promoting the use of biotechnology will call for some important changes in the policy framework and also general public attitude which could be possible through general public awareness

concerning technological, health, environmental and socio-economic considerations. Major challenges associated with these technologies are that these are often patented and are under the domain of private sector mainly. The multi- dimensional issues of biotechnology are scientific and ethical, and those concerning biosafety and environmental safety, partnerships, economics, intellectual property and trade. The challenge is for the public and private sector, to work together in new and creative partnership towards common goals of food security, poverty alleviation and a better quality of life.

The lack of trained human and financial resources coupled with poor infrastructure and congenial research environment are other major impediments in the application of biotechnology.

In order to address the issues of biotechnology in the country or even in the region, there needs to be a multi-lateral partnership arrangements, among the Private and the Public Sectors or the countries of the Asia-Pacific region to work towards the development and popularization of agricultural biotechnologies in the region. Formation of a body by relevant stakeholders that can provide a common platform to facilitate identification of policy issues and guidelines, problems and opportunities, strategic planning and implementation of programs is therefore timely.

## OPINION ON BIOTECHNOLOGY ISSUES

**Points:**

- The population of Papua New Guinea (PNG) is about 4 million (2002 census) with a growth rate of 2.7 %. The annual agricultural growth rate is only 1.0 % which is much below the population growth rate; hence, the need to increase food production to feed the growing population. Nearly 85 % of its population lives in rural areas and derives its livelihood from agriculture.

- The predominant farming systems in PNG are smallholdings that are heavily dependent on family labour using simple hand tools. Rural families engage in multiple activities, meeting household needs and cash income. Access to cash and credit is limited and thus there is a need for greater adoption of more effective technologies that can provide rural families with increased food production, returns to labour and address rural farm families ' nutritional needs.

- The limited sustainable and increased agricultural production/ productivity of farm families in PNG is the key problem biotechnology could address. Biotechnology applications integrated into traditional systems holds a greater potential to augment conventional agricultural production and productivity in a sustainable manner.

- Furthermore, women farmers undertake a significant portion of food production and marketing in PNG. New technologies in molecular biology can be a tool to significantly reduce women's workload in food production. As a result women would have more time to tend to their children and other activities.

- Recent advances in classical genetic and plant molecular biology have opened new ways for dramatic modification of crop plants for agricultural and consumer needs. However, these developments have added a new dimension of biosafety to human and animal health as well as the environment, hence, many people are at the cross roads with these technologies; often due to lack of information, or mis-information. People need to be educated and better informed to make right judgments for themselves.

- There is no regulatory systems currently in place to address the above issues. Considering the new options and opportunities that this new science offers, we really need to seriously move towards addressing **all concerns** in order for us to reap the likely benefits of biotechnology.

- Therefore, promoting the use of biotechnology will call for some important changes in the policy framework and also general public attitude which could be possible through general public awareness concerning technological, health, environmental and socio-economic considerations. Major challenges associated with these technologies are that these are often patented and are under the domain of private sector mainly. The multi- dimensional issues of biotechnology are scientific and ethical, and those concerning biosafety and environmental safety, partnerships, economics, intellectual property and trade. The challenge is for the public and private sector, to work together in new and creative partnership towards common goals of food security, poverty alleviation and a better quality of life.

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