5 Articles by Fr. Seán McDonagh SSC on Genetically Modified Organisms (GMOs) as part of his response to a study week on "Transgenic Plants for Food Security in the Context of Development" to be held from 15 -19 May 2009 in Rome.

1.

Are GM crop necessary to Feed the Poor?

The introductory page for the Pontifical Academy of Sciences Study Week on GM crops states that "poverty in developing countries is usually linked with low agricultural productivity. Inadequate quantity and quality of food impacts human development potential, physically and mentally." The author. Ingo Potrukus, goes on to claim that "plant biotechnology has a great potential to improve the lives of the poor."

Anyone submitting a paper or thesis in any graduate institute worth its salt, would be expected to begin with a review of recent literature on the particular subject. No where in the above documentation have I seen any reference to two recent, independent studies on sustainable agriculture and providing food for a growing population world population. In 2008, the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Environment Programme (UNEP) produced a document entitled "Organic Agriculture and Food Security in Africa. The researchers found that, contrary to conventional wisdom which claims that the only way to increase agricultural output is through modernising agriculture, organic farming holds the key to food security in Africa. An exhaustive report from the International Assessment of Agricultural Science and Technology for Development (IAASTD) published in April 2008, came to the same conclusion. [1]

These documents admits that modern agricultural methods have increased output in spectacular ways. It has resulted in more cereals and animals per hectare and more output per person of those involved in agriculture. Therefore, it is easy to see how anyone wishing to increase food production would immediately opt to further modernise agriculture, especially in the majority world. However such technological progress in the past half-century, has not led to a major reduction in hunger and poverty in the majority world. This has led the authors to conclude that the "most sustainable choice for agricultural development and food security is therefore to increase total farm productivity *in situ* in developing countries. . Incidentally, I came to the same conclusion myself during the 10 years I spent working with the T'boli in the Southern Philippines in the 1980s.

Whereas the biotechnologists would have us believe that there is a single, silver bullet solution to world hunger, namely their GM crops, both these studies and my own experience, point out that food production is a much more complex process. In reality hunger, malnutrition and starvation around the world has much more to do with the absence of land reform, social inequality, lack of access to cheap credit and basic technology, rather than the lack of agribusiness super seeds. Banishing hunger is also about distributing food to those who need it. The authors state that: "Increased food supply does not automatically mean increased food security for all." [2]

According to "Organic Agriculture and Food Security in Africa, organic farming builds up five crucial sets of capital assets in communities where it is practiced. While I have reservations about using economic language to describe human skills or

[1] "Organic Agriculture and Food Security in Africa," United Nations Conference on Trade and Development (UNCTAD), United Nations Environment Programme (UNEP), United Nations, New York and Geneva, page vii, 2008.
[2] Ibid, page viii

environmental well-being, the claim that organic farming builds up five crucial sets of capital is accurate. Over time organic agriculture builds up stocks of natural, social, human, physical and financial capital which reduces many of the factors that lead to food insecurity in the first place.

The research found that agricultural yields in organic farming do not fall, and during the period when the farmer is moving from convention, petrochemical driven agriculture to organic practices. The authors found that organic farming increases access to food on several levels. Firstly, the increase in the quantity of food per farm means that everyone in the household has access to enough food throughout the year. Secondly, the production and marketing of food surpluses means that farmers benefit from high incomes and have money to spend in the local economy. Finally, organic agriculture creates niches for other members of the community to get involved other aspects of agriculture or horticultural production. This might involve growing fruit or coffee or any other cash crop.

Organic agriculture is based on the fact that individuals and family must be embedded in vibrant, functioning human communities. The study found that this leads to improvement in social capital with stronger social organisations and many co-operative ventures. Organic agriculture also improves the environment. In 93% of the case studies there was improvement in soil fertility, water supply, flood control and biodiversity. All of this underpins local food security. The Pontifical Academy of Sciences would be better employed disseminating these initiatives, which are in line with Catholic Social Teaching, than on giving a platform for biotech corporations to make more money on the backs of the poor.

2.

Further reflections on the GMO Conference in the Gregorian University in September 2004

In this column last week I recalled the presentations by three pro-GMOs at a conference entitled, "Feeding the World: The Moral Imperative of Biotechnology" organized jointly by the U.S. Embassy to the Holy See and the Pontifical Academy of Sciences in Rome in September 2004. I will continue these reflections on that conference this week because I have just learned that the Pontifical Academy of Sciences is organizing another pro-GMO Study Week, in Rome from 15 -19 May 2009. The title of the 2009 Study Week is "Transgenic Plants for Food Security in the Context of Development." Both Dr.C.S. Prakash and Dr. Peter Ravan will be speaking at the Study Week. On May 16th Dr. Peter Raven's topic is "Does the Use of Transgenetic Plants Diminish or Promote Biodiversity." On the following Monday, May 18th Dr. C.S. Prakash will speak on "Lessons from 25 Years of Experience." These are more or less the same topics they discussed at the September 2004 Conference.

At the conference in the Gregorian University in 2004, Dr. Peter Raven tried to persuade his audience that raising questions about the terminator gene technology was both "emotional and irrational." A company which is owned by the giant Agribusiness Corporation Monsanto developed what is benignly called Plant Technology Protection System. What Dr. Raven did not mention was that critics of the technology say that it could have a profoundly negative impact on subsistence farmers. This is why in many countries the technology was aptly dubbed "the terminator gene." The terminator technology exposes the spurious claims of the pro-GMO lobby, that "feeding the world", rather than making astronomical profits is the primary goal of Biotech corporations. [3]

If the terminator technology were to become widespread, then the added costs would strike the death knell for almost 2 billion small farmers living mainly in the Majority World. Sharing seeds among farmers has been at the very heart of subsistence farming since the domestication of plants and animals ten thousand years ago. Terminator seeds will negate all this Farmers will be unable to save the seeds and will be forced to return to the agribusiness corporation each year. Hope Shand, the research director with the Canadian Civil Society Organisation, ECT, is alarmed by the potentially disastrous consequences of terminator technology. "Half the world's farmers are poor. They provide food for more than a billion people, but cannot afford to buy seeds every growing season. Seed collection is vital for them. [4] The obvious intent of terminator technology is to enable agribusiness corporations, such as Monsanto, to control and profit from famers in every corner of the globe. If put into practice, terminator

[3] Brittenden, Wayne, "Terminator seeds threaten a barren future for farmers,"
[4] Quoted in John Vidal, "Mr. Terminator Ploughs in," *The Guardian*, 14 April 1998. page 14.

technology will lock farmers into a regime of buying genetically-engineered seeds that are herbicide-tolerant and insect-resistant, copper-fastening them on to the treadmill of chemically-dependent agriculture.

This is probably what Cardinal Renato Martino had in mind in his interview published in the L'Osservatore Romano on 1 January 2009 when he said that, "the responsibility for the food crisis is "in the hands of unscrupulous people who focus only on profit and certainly not on the well-being of all people." He went on to say that a more just system of distribution and not the manufacturing of genetically modified foods is the key to addressing the problem. "If one wants to pursue GMOs (genetically modified organisms) one can freely do so, but without hiding (the fact) that it's a way to make more profits."

At the ethical level I suggest that a technology which, according to Professor Richard Lewontin of Harvard University, "introduces a 'killer' transgene that prevents the germ of the harvested grain from developing," must be considered a grossly immoral act. [5] This technology is a sin against the poor and against previous generations of farmers who, from the beginning of agriculture freely shared their knowledge of plant life with their contemporaries, and with us. It is a sin against the life spontaneities of nature itself and against the God of life and all creativity. To deliberately set out to create seeds that self-destruct is an abomination that no society which calls itself civilized should tolerate. If anything went wrong the terminator gene could spread to other plants and jeopardize food security. No wonder many people look on terminator seeds as a form of biological warfare on subsistence farmers. Terminator technology has not yet been incorporated into commercial seeds, but each year the biotech corporations try to get it accepted by regulators.

3.

'Light Touch Regulation' of GM will not help the Poor, but will make billions of dollars for Biotech Corporations.

Initially I was astonished to read in the document, "Constraints to Biotechnology for Poverty Alleviation." that one of the aims of the Pontifical Academy's Study Week is to greatly reduce regulations on GM crops. Since the current regulations are totally inadequate, how could they be reduced further? Then I was reminded of Winston Smith, the principal character in George Orwell's novel, *1984*, on human behaviour in a society which is totally controlled by Big Brother, Smith's job was to completely rewrite history. If someone had been deemed to have insulted Big Brother, whether there was any truth or not to the allegation, that person had to be removed from history. I am sure that Smith, who worked in the Ministry of Truth, which spent all its time spinning lies, would have been impressed with the second last paragraph of the Introduction. It read, "We also need to develop ideas for what 'science-based' regulation would mean and to develop strategies to inform the media, the public, the regulatory authorities and governments that it is unjustified, even immoral, to continue with current attitudes and processes." Not a word about the billions of dollars that Biotech companies would make from 'light touch' regulation!

Nearer to our own time, I was reminded of bright, young, neo-liberal economists who, until a year or so ago, waxed eloquently about the need to reduce financial regulations which were stifling the creativity of budding entrepreneurs. Light touch regulation was all the fashion, not, of course, for any base motive! It was all altruism, helping to create money, to create jobs so that people could find work, pay their mortgages, educate their children and live the good life. They assured us that the market, through some strange calculus, only known to the true-believers, would sort out everything. If some one raised awkward questions about whether these practices might lead to a spectacular economic collapse, they are met with two responses. Firstly, a demand to know whether the questioner had a Ph.D. in economics from one of the 'better' universities. Secondly, a reassurance that the highly qualified people working in the Stock Market had clever risk-management computer tools that have allowed them to gear hedge-funds and other derivatives as high as the moon. They had also discovered the 'holy grail' of some esoteric science and mathematics which allowed them to manage risk and at the same time break the boom/ burst nature of economic cycles.

In hind sight, with 20/20 vision, we know this was a total charade. Though the tools of the traders such as computers and the internet were modern, they were used to promote old fashion vices such as greed and deception. This reckless gambling made fortunes for a minority of people, while at the same time it impoverishing many people who have watched the value of their pension funds dwindle as banks, financial institutions and other corporations collapsed. Now, even conservative politicians, in North America and Britain, are talking about the need to regulate and police financial institutions.

[5] Jean-Pierre Berlan and Richard C.Lewontin, "It's business as usual", *The Guardian*," 22 February 1999, page 14.

Given the current healthy climate of suspicion against so-called experts, I do not think that this primary aim of the Pontifical Academy's Study Week is going to be achieved. Those who believe that they can dismantle the paltry regulation of GM foods, much of which was actually written by the Biotech industry especially in the U.S, are extremely naïve if they think they can fool the people in the current political climate.

Like in Orwell's *1984*, the truth is almost always the opposite of what is being claimed. Dan Glickman, the former U.S. Secretary of Agriculture, told Bill Lambrecht of the St. Louis Post on leaving office in 2001 that, "What I saw generically on the pro-biotech side was the attitude that the technology was good and that it was almost immoral to say that it wasn't good because it was going to solve the problems of the human race and feed the hungry…. And that there was a lot of money that had been invested in this, and if you're against it, you're a Luddite, you're stupid… You felt you were almost an alien, disloyal, by trying to present an open-minded view on some of the issues being raised. I pretty much spouted the rhetoric what everyone else spouted; it was written into my speeches."[6] Once again, why the Pontifical Academy of Sciences is giving this deregulation agenda a platform, is difficult to understand.

4.

Using the plight of the Poor to sell the Biotech Package

Last week I wrote about the United Nations Report on organic farming and food security in Africa. The data uncovered by the Study showed that organic agriculture can increase agricultural yields and can raise incomes by employing low-cost, locally available appropriate technologies. This demolishes the popular myth that organic agriculture cannot raise farm productivity. In opposition to claims made in the Abstracts of more than one of the presenters scheduled to speak at the Pontifical Academy's Study Week, the research found that "organic agriculture is not directly and specifically supported by agricultural policy in most African countries; indeed, it is sometimes actively hindered by policies advocating the use of high-input farming management practices…. If organic agriculture and its associated positive side-effects are to be scaled up, any enabling policy environment is critical."[7]

The Study makes a point which I became very aware of when working with the T'boli people in the 1980s that much more is known about intensive, high-input farming systems, than is known about sustainable organic systems. Agricultural professionals who worked with us had to unlearn many of the things they had been told at the Agriculture Department in the University and relearn the fact that organic agriculture is knowledge-intensive. Support for organic farming must include both formal education centres in which it is taught and better linkages between farmers, scientists and agricultural workers. In the Philippines such a coalition of interests between scientists and farmers called MASIPAG has existed since 1987. It has assisted farmers in developing of new rice and corn varieties that produce better yields with minimum pest infestation. The practical work of MASIPAG proves that even without the use of GMOs, farmers can produce safe, clean and nutritious food in a profitable manner.

The centrality of organic farming in meeting the food security needs of Africa and other countries as well was also confirmed in the second study published by the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) in April 2008.

Unlike the heavy North American bias of the Pontifical Academy's speakers, this study drew on the expertise of over 4000 agricultural and development experts drawn from the UN Food and Agriculture Organisation (FAO), Global Environment Facility (GEF), United Nations Development Programme (UNDP), United Nations Educational Scientific and Cultural Organisation (UNESCO), the World Bank (WB) and the World Health Organisation (WHO). Experts from government ministries, universities and civil society organizations (CSOs) were also involved in this multidisciplinary approach to agriculture. In this study farming is not seen merely as a

[6] Bill Lambrecht, "Out-going Secretary Says Agency' Top Issue is Genetically Modified Food,"
St. Louis Post-Dispatch, 25 January 2001.
[7] "Organic Agriculture and Food Security in Africa," United Nations Conference on Trade and Development, United Nations Environmental Programme, New York, Geneva, 2008, page x.

way to produce food. It has multiple functions such as providing food and fodder, social security and ecosystem services while also having a landscape value. Furthermore, the study attempted to recognize the rights and needs of small, subsistence farmers and women farmers. Both groups are often overlooked in the agricultural policies and programmes of governments, universities and agribusiness corporations. It recommended that food producers ought to try to use "natural processes" such as crop rotation and organic fertilizers, rather than synthetic processes.

The Study found that progress in agriculture, especially in the petro-chemically intensive phase, had delivered unequal benefits and come at high social and environmental costs. There is little support for GM crops in the IAASTD report. Robert Watson, the director of the IAASTD, and chief scientist at the UK Department of Environment, Food, Rural Affairs, was asked a question from a *Daily Mail* reporter– Are GM crops the simple answer to hunger and poverty? His reply was, *I would argue, no.* [8] The report concludes that; *Assessment of the technology lags behind its development, information is anecdotal and contradictory, and uncertainty about possible benefits and damage is unavoidable.*[9]

Initially biotech companies such as Syngenta and Monsanto took part in this study. However, they resigned before it was published. Many commentators believe that the reason they resigned is because they were not getting their way on GM crops. These crops would make billions of dollars for them if they were an essential ingredient in tackling world hunger. This was bad news for the Corporations' bottom line. Since the publication of the IAASTD Report the publicity machines of the corporations have been attempting to undermine the document's conclusions and recommendations. Once again, the Pontifical Academy of Sciences would be better employed promoting the ideas contained in this seminal document rather than furthering the interests of big business.. If the IAASTD findings on small scale, low-input agriculture were implemented it would change current agricultural policies which favour chemically-intensive agriculture and provide food and food security for the poor.

5.

Why is the Pontifical Academy of Sciences Promoting GMOs?

The website of the Holy See, under the section on The Pontifical Academy of Sciences, carries information about a Study Week on "Transgenic Plants for Food Security in the Context of Development" to be held from 15 -19 May 2009 in Rome. This might seem quite laudable, except for the fact that what follows is a totally one-side campaign to promote genetically modified crops. The misrepresentation begins on page 2, which features a photograph of Pope Benedict XVI with arms outstretched ready to embrace the world and, presumably, this new technology. Once you read the text, it is obvious that, while the Pope is concerned about the effects of the financial crisis on the price of food for the poor, he is not embracing GMOs.

When you move on to look at the topics and presenters, 18 out of 39 contributors are from the United States. The agricultural model promoted by the U.S. is hardly fit for countries of the Majority World, such as India or the Philippines. As far as I know, there are more people in U.S. goals than working on farms.. If the U.S. model of faming was replicated in India and China, where would the hundreds of millions of people who now work on the land go? Furthermore, the direction which U.S. agriculture has taken in recent decades has been dictated by giant agribusiness corporations who have made fortunes selling their seeds and agrochemicals to farmers.

As far as I can ascertain, every single one of the speakers is a proponent of GM crops, sometimes militantly, as in the case of Dr. Peter Raven and Dr. C.S. Prakash. It seems extraordinary, bordering on the bizarre, that an institution which claims to be an Academy of Sciences would host an event on an issue as contentious as genetically engineered food without having representative from both sides the argument. Challenging so-called accepted positions in pursuit of the truth has been part of the intellectual tradition of Europe, at least since Plato's Socratic dialogues in Athens in the 4th century B.C. Since the 17th century the scientific tradition has built on such a culture of vigorous debate with the added insight that everything in science is revisable in the light of new evidence.

[8] Ibid.

[9] John Vidal, "Change in Farming Can Feed the World", *The Guardian,* April 16th 2008.

It is by this self-corrective criticism methodology that empirical science has made such strides in the past few centuries.

Marketing, advertising and propaganda operate in very different way. Here there is no space or opportunity for raising thorny questions about theories or particular claims about facts. Everything must be accepted on the world of the so-called 'expert'. I believe that the Pontifical Academy of Sciences should not have given a platform to one side, in a debate which is crucially important for the well-being of humans and the earth.

The constant mantra of the Study Week, as presented in the abstracts from the various presenters, is that GM crops will feed the hungry and alleviate poverty and that the current regulatory regime for GM crops is much too restrictive.

Despite the fact that GM crops are being forced on many countries in the Majority World by powerful agribusiness corporations such as Monsanto and successive U.S. governments, the presenters would have us believe that they are somehow victims of some great conspiracy. They portray themselves as 'David' in the struggle against 'Goliath', instead of the other way round. In this Orwellian world, the biotech industry is portrayed as a knight in shinning arm, a kind of secular Society of St. Vincent de Paul, totally focused on feeding the poor. Anyone who might be tempted to believe such nonsense should read the article in *Vanity Fair* (May 2008) by Pulitzer prise winner, Donald L.Barlett and James B. Steele, on the real Monsanto. The title and subtitle says it all. "Monsanto's "Harvest of Fear:… ruthless legal battles against small farmers." With Monsanto and other agribusinesses, profits come before everything else.

The Pontifical Academy has an obligation to be properly informed about such a vital issue as the future of food. One of the strengths of the Catholic Church is its universality and involvement in so many enterprises and activities in every part of the globe. Surely, the Chancellor, Bishop Marcelo Sanchez Sorondo should have asked someone at Caritas Internationalis or any of the Catholic Development Agencies such as CAFOD in Britain or NASSA the Social arm of the Catholic Bishops' Conference in the Philippines whether GM crops were a help or a hindrance in terms of alleviating poverty or helping feed hungry people?

Fr Sean McDonagh SSC January 2009