

Seed – The contamination issues

Background

Seed is central to life in the field and life around the field. If one has control over one's seed, one can determine the innumerable activities organised around it. Today the importance of seed sovereignty cannot be overemphasised. The further away seed production is from the soil in which the seed is sown, the more distant it is from the life of those using the field. And the risks involved are proportionally increased. A seed produced on or near the farm is more likely to be appropriate – ecologically, culturally, nutritionally – than a seed produced in laboratory conditions by a corporation that is forever experimenting with untested technologies and is driven by the desire to make money from a new product. These “new” products are then “protected” by Intellectual Property Rights (IPR) laws that grant ownership and other commercial rights over the planting material to the company marketing it.

Transgenic seeds, constructed through genetic engineering (GE) that introduces genetic material that would not occur naturally in the seeds, are sold on the market as techno-fixes for farming problems. However, neither the scientist nor the corporation can control natural processes that occur as a result either in the genetically modified plant itself or in the interactions that such an unnatural plant will have with the natural environment; and the consequences of both are unknown and potentially hazardous. So the “ever-green revolution” – biotechnology in agriculture – is not such a green idea after all. In spite of that, governments in the region are increasingly adopting -- or being pressured to adopt -- pro-GE policies. While countries in Asia witness a biotech boom, there is an increase in the number of laws and policies, both “scientific” and economic (such as tax holidays for biotech entrepreneurs), which pave the way for the entry of GE products. This has not, however, been accompanied by concomitant regulation in the name of “biosafety” for corporate liability and genetic pollution. Such a situation creates a threat for small-farm agriculture – both through the contamination of seed and soil with transgenic material and through dependence on corporate products that disrupt community practices around seeds.

The Indonesian government, like its neighbours, has a pro-GE policy. There is large infrastructural provision for GE research and development (R&D) in the country. The R&D Centre of Biotechnology (Indonesian Institute of Science), universities and the private sector are developing transgenic products. Biotech IPR has been taken forward by the Ministry of State for Research and Technology. Over 70 IPR Centres have been launched in various research institutes and universities. The Intellectual Property and Technology Transfer Office of the Agency for Agricultural Research and Development (AARD), an operating arm of the Indonesian Agricultural Research Foundation, was set up in 1999 to serve the AARD's 7 agricultural research institutes and 26 agricultural assessment technology institutes, in order to transfer technology to the private sector.

In 1998 Monsanto, a US multinational company, submitted a proposal to the Government of Indonesia to release Bt cotton (DP 5690 B), commonly known by its trademark Bollgard. Bt cotton was grown commercially in South Sulawesi in 2001 and 2002 by farmers who were told by Monsanto and local government officials that they would achieve much higher yields than they did with non-GE varieties. But Bt cotton proved to be a failure and has since been withdrawn. Research on the development of other GE crops continues, however, and transgenic corn, rice, cotton and sugar cane are all in the pipeline.

International Pressures

Following the US model, Technology Transfer Offices have been set up in universities and government research laboratories in Indonesia, Thailand and the Philippines. The US Agency for International Development-sponsored Agricultural Biotechnology Support Project also gave an impetus to GE R& D in Indonesia. For example, from 1995 to 1998, ICI Seeds, a US seed company (later Zeneca, and now Syngenta), joined in a partnership with Indonesia's Central Research Institute for Food Crops to develop insect-resistant tropical corn. Meanwhile, there is an ongoing Regional Project on Capacity Building in Biosafety on GE Crops in Asia by the UN Food and Agriculture Organisation's Regional Office for Asia and the Pacific. The project was formulated to assist countries in the safe introduction of biotechnology in accordance with relevant global agreements. Indonesia ratified the Cartagena Protocol on Biosafety in December 2004 and the treaty entered into force in the country in March 2005. The Environment Ministry is dealing with the development of the National Biosafety Framework for the country.

Constitutional Reference

According to Article 31(5) of the Indonesian Constitution, the government shall advance science and technology with the highest respect for religious values and national unity for the advancement of civilisation and prosperity of humankind.

Specific Law/Order

The Ministry of Agriculture's Agency for Agricultural Research and Development is the nodal agency for biosafety in Indonesia. The Biosafety and Food Safety Committee and the Biosafety and Food Safety Technical Team are both to be restructured. The several government rules and regulations relevant to biosafety are:

- Government Regulation on Biosafety for Genetically Engineered Products (2005)
- Food Safety Decree (1999)
- Provisions on Biosafety of Genetically Engineered Agricultural Biotechnology (1997)
- Law on Food (1996)

The following drafts are in the pipeline:

- DRAFT Safety of Living Organisms of Biotechnological Products Produced through Genetic Engineering (2001)
- DRAFT Safety of Living Organisms and Foods of Biotechnological Products Produced through Genetic Engineering (2001)
- Laboratory Guidelines for Genetic Engineering Research (1993)

Genetic engineering (non-biological) technologies are patentable under the Patent Law. The Law on Systems for Plant Cultivation states that the overall principle of Indonesian agriculture is to be beneficial, environmentally friendly and sustainable. However, despite all these rules and regulations, the interests of small farmers are not guaranteed. Meanwhile, research on transgenic varieties of food and other crops including corn, rice, tomato and sugar cane continues. There is, however, no order for the segregation or isolation of plants and produce of genetically engineered crops, something that is required if the government is to cash in on organic exports. Concern for biosafety may simply be reduced to labelling.

Legal Actions, Court Judgments

In August 2001, the NGO Coalition for Biosafety and Food Safety (representing six NGOs (ICEL, Konphalindo, PAN Indonesia, YLKI, and two others), supported by another 72 organisations, sued the government and PT Monagro Kimia in 2001 for allowing cultivation of Bt cotton without proper assessment and public consultation. They claimed that it violated Indonesia's Environmental Law,

since no environmental impact assessment was conducted, and that the decree was issued by the minister as a way of legitimising past violations by the seed distributors, PT Monagro Kimia. In September 2001, however, the environment ministry issued a decree demanding prior environmental impact studies.

Though the NGO Coalition was unsuccessful, even at appeal, it created much public debate on the issue and it came to light that during the period 1997-2002, Monsanto was bribing Indonesian government decision-makers. In 2005, Monsanto (USA) was fined US\$ 1.5 million for bribing government officials in Indonesia to avoid a decree that demanded an environmental risk assessment for the Bt cotton Bollgard. The employees were sacked, and in a press release Monsanto announced a new programme to comply with anti-bribery regulations. In Indonesia, the Corruption Eradication Commission announced that it would also investigate the matter. There is, however, little evidence of any governmental measure for corporate accountability or biosafety transparency as a result of this case.

Farmer Responses

There are several aspects of the farmers' struggle against transgenics in agriculture in Indonesia, as in other Asian countries. Most farmers are still struggling to retain control of their land when it is threatened by large companies and other "development" activities. They may have heard little about the controversy of Bt cotton, or they may not have perceived its urgency, compared with other problems they were facing. Although some information came from NGOs, farmers were not told about the sites with Bt cotton. Nevertheless, some farmers who practise sustainable agriculture held protest rallies in several cities to highlight the issue.

It is clear that much more local-level organising is needed on this issue, though the fact that many farmers did not know about the nature of transgenics or the whole package that comes with them may in itself militate against any attempt to force such seeds on to them. Also, farmers do not fully fathom the implications of property rights (through IPRs) being asserted not only on GE seeds and GE crops but also on the agrichemicals sold as part of the package. Yet a consistent demand for a ban on GE crops, particularly GE rice, continues to be made. There is also growing concern that GE products may find their way into the country either through food aid or seed packages. This has become an urgent issue since the tsunami and earthquakes in the Indonesian islands increased food and farming vulnerability.

Customary Practices

Indonesia's history of on-farm seed-saving emphasises the point that local seed is safe and reliable. Most small farmers vouch for other good qualities of their local crop varieties, including taste, staying quality and multiple uses. Though the "Green Revolution" model maintained that only certified seeds were of good quality, and though the changes introduced into today's seed law may further erode customary practices by allowing registration and sale of GE varieties, confidence in locally exchanged seeds with known source and history has yet to wane. The experience of other Asian farmers, who have found the performance of GE seeds disastrous, makes a case for Indonesian farmers to consider measures that can strengthen their seed sovereignty. First-hand observation and on-farm adaptation is vital for keeping control not only over local seeds but also over local knowledge and local-level experimentation. This is important, because something that comes out of the laboratory and not from their lived experience on the land is easier to reject. Farmers have diverse cultural and social practices, depending on their social network. Seeds may come from far away or from adjacent areas: some farmers may exchange seeds or purchase them from harvest labourers, who earned the harvest-

share or collected the left-over seeds; others may purchase seeds from middlemen or other farmers who come from other areas; and yet others may acquire seeds from parents or relatives living in another district. All these practices are evidence, of how "traditional" varieties of paddy are re-adopted in the farmers' rice fields called *sawah*.

The point is that farmers' varieties are still being grown and, more importantly, farmers' selection of seeds, choice of variety and cultivation practices are themselves a form of research. The Indonesian government, however, makes little effort to support grassroots innovation, in which local farmers themselves improve local plant varieties. Foreign "science" and foreign genes may destroy all this and put an end to the life known, close to the earth, by the Indonesian communities. It is only local cultures that respect the sanctity of life.

Testimonies from traditional communities' representatives are replete with examples of how harmony, ecology, diversity and sustainability have been degraded by so-called development. "*Biar anak mati asal jangan mati adat*" ("customary law has a life beyond that of my children who may die in the struggle"), said a representative of the ethnic group *Talang Mamak* in Bukit Duabelas, Jambi province. He meant that land and the life on it should be defended by him and his community in the name of agriculture, settlement, and the *hutan lindung* (reserve forest). The natural reserve forest is the source of their livelihoods and their daily life. "The forest is our soul," said a member of the community.

There are many indigenous groups who, in their vision of the world and in their cultures, hold the key to keeping GE out. All-important is their holistic point of view, regarding not only the health of the agro-ecological system, including all its inherent parts such as the pollinators, but also the collection and use of uncultivated foods from the living world, which forms part of the life of traditional communities. A step towards community-level vigilance against GE crops could be to explore the possibility of farmers putting pressure on the village government (*pemerintah desa*) to issue an order against GMOs. The role of *hukum adat* in dealing with contamination must be explored.

THE WAY FORWARD begins with saying "NO" to GE! Small farmers have traditionally sourced their seeds from within their own farm or farming community. Seed saving at the household level and at the community level is a sure way of retaining ecological and economic security. Such an assertion of autonomy could guarantee both biosanctity and biosafety. Not using GE crops is the best way of keeping communities safe. Respect for life and diversity – both of which are threatened by "new" age agricultural technologies – is enshrined in people's cultures. This is the most important thing to remember.

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