

ASIA'S SEED LAWS – CONTROL OVER FARMERS' SEEDS

1.0 INTRODUCTION

Seeds and farmers go together; at least that is how most of us understand agriculture. Farmers select certain crops based on local considerations, exchange planting material freely amongst themselves, cross selected varieties and upon harvesting, choose the seeds to keep for the next planting season.

For centuries, these have been taken as given practices in small farm agriculture, but can no longer be taken for granted today. The situation is fast changing. For with new controls, including through seed laws, farmers' varieties are being deliberately sidelined and their traditional practices, curtailed.

Over the last three to four decades, Asia has seen a real shift in rule-making by national governments on agriculture and particularly seeds. Since seed is very much a local resource, informally there exists immense diversity in farmers' varieties; there are as many seed practices as there are farming communities across Asia.

What remains historically common through these practices are farmer-seed exchange systems; intrinsic to these is the practice of farm-saved seeds (FSS). However, as long as farmers continue to save and breed their own seeds, it is difficult for seed companies to sell the seeds they produce. So where technological controls don't work, laws are the tool of choice for corporations to either prevent farmers from saving seeds or to force them to pay for farm-saved seeds, thereby coercing them to buy corporate seeds.

2.0 THREATS TO FARMERS' SEEDS

The shift from the non-regulation of farmers' seed practices to a tightening regime in most parts of Asia spans a time frame of about 50 years. Since then, the informal seed sector has witnessed a change to a more restrictive policy environment of seeds for small farmers and a more liberal one for seed companies. The tightening of controls on farmers' seeds goes along with an increasing control over seeds; first, by the national agricultural research systems (NARS) and second, by private players, namely, large companies, research entrepreneurs and corporate breeders.

The first big assault on traditional seeds in Asia began in the 1960s with the industrialisation of agriculture through the so-called 'Green Revolution'. This involved a systematically organised introduction of so-called high yielding varieties (HYVs) termed 'improved' varieties of rice, wheat and maize. These HYVs are high-input varieties which require excessive amounts of water and chemical fertilizers to perform. Decades of chemical use has led to the destruction of organic matter in the soil, crippling the capacity of farmers to use seeds without external inputs.¹ These modern varieties (MVs) have also displaced traditional local varieties. They were used by farmers not because they were any better but because the governments made loans and technical extension services available only for these MVs. This trend has continued through the 90s and beyond. The Philippines

High-Value Crops Development Act of 1995, for instance, encourages farmers to use non-traditional crops for which it gives several incentives including low-cost credit, tax exemptions and market linkages.

The 60s to the 80s was also the time when countries, particularly those in South Asia like India, Bangladesh and Pakistan, were aided by the World Bank to strengthen their state seed systems. Governments were also given support by the United Nations Food and Agriculture Organization (FAO) to make seed laws. These laws were used, among other things, to notify varieties for use, prescribe seed certification and introduce industry standards.

The Seed Act of India passed in 1966 is a good example of this. Thailand, with support from the USAID in the mid-70s, set up a Seed Division in the government and for a decade (1976 to 1986), the USAID gave the country a loan for a Seed Development Project to establish seed centres across Thailand. Many countries with such external pressure also established state-owned seed companies, like the National Seeds Corporation in India and the Bangladesh Agricultural Development Corporation (BADC) (see box). In retrospect, seed laws actually facilitated the setting up of infrastructure that would later support the private sector.

Unsuspecting government officials saw seed laws as a good idea. New and unconventional players had made an entry into the seed sector, whether for seed production or distribution. Farmers using market

¹ Earth matters — Tackling the climate crisis from the ground up. <http://www.grain.org/seedling/?id=643>

seeds had complaints about spurious seeds, mislabelled products and non-performance so it was easy to use the “in the interest of farmers” argument to justify the need to make seed laws and regulations to oversee quality. Little could farmers foresee that seed laws would be turned against them and the country’s own public sector would begin servicing the private sector instead of farmers.

Some countries in the region which did not specifically make laws in that phase on seeds per se, instead legislated to organise farmers themselves, for example, the 1973 Malaysian law which formed the Farmers Organisation Authority (FOA) oversees peasant co-operatives. Such laws have a tendency to centralise operations. Specific authorities, in the name of farmer groups, serve to link them with governmental agencies providing ‘technical skills’. Through them, the state agricultural system can then organise the distribution of seeds and agricultural products. For instance, the FOA also subsidises fertilizers and distributed seedlings of MVs.

Meanwhile, a new generation of professional plant breeders emerged. National breeding programmes, involving scientists often trained in Western universities, were set up to replace farmer-developed varieties which were considered “primitive” and low-yielding. Formal breeding narrows the genetic base of our food crops by focusing on a few specific characteristics required by big players in the food supply business at the expense of local needs. One big focus of institutional breeders is hybrids, a cross between two inbred parent lines. Under ideal growing conditions, hybrid crops can give high yields, but only for one generation. Saving their seeds is fairly useless, which is what makes them so attractive to the private sector. Not all crops can be easily hybridized however; corn, soybeans, sorghum can be, but not wheat and initially, not rice either. It wasn’t until the 1980s that the

Chinese discovered how to produce hybrid rice.

During the 80s, another development—that of genetic engineering in agriculture—ushered in genetically engineered (GE) seeds. Large transnational corporations (TNCs) like Monsanto, Novartis and Syngenta moved into plant breeding in a big way. They began to manufacture ‘new’ varieties by changing the genetic constitution of seeds and demanding absolute commercial monopolies on their ‘innovative’ products. They lobbied for industrial patents for plants bred through genetic engineering.

This meant that GE seed companies would have total rights for all uses of their seeds. This took plant breeders rights to a higher level than those of conventional plant breeders who allowed others certain concessions over their proprietary plant varieties. This included farmers, who were given the privilege to grow the seeds freely for subsistence, and researchers who were given exemptions to breed freely for experiments.

This explains the other big attack on FSS which began to intensify in the 90s at the level of law and policy. By this time, seed companies

The Bangladeshi Seed Sector: Public to Private

The Bangladesh Agricultural Development Corporation (BADC) was set up in the 60s to work with the public sector and entrusted with the task of multiplication, production and supply of high-yielding varieties of seeds. In the 70s, key national mono-crop research institutes like the Bangladesh Rice Research Institute (BRRI) in collaboration with the International Rice Research Institute (IRRI) and the Bangladesh Jute Research Institute (BJRI) were set up for the development of new varieties and supply of ‘improved’ pedigrees of seeds. Next, the Bangladesh Agricultural Research Institute (BARI) was set up by an ordinance passed in 1976 as a massive multi-crop research institute. This was followed by a Seed Ordinance in 1977.

BADC has been rendering services to the private sector since the 90s. It slowly shared the sale of seeds, fertilizers and agricultural equipment with private companies in the 80s after deregulation by the government. One of the main objectives of the 1993 National Seed Policy was to develop seed industries in the private sector. The policy expressly states that the private seed sector will participate in seed policy-making in Bangladesh. This has paved the way for the reorientation of BADC to purely

commercial activities. The services rendered by BADC Seed Processing Centres to private entrepreneurs, growers and agencies include seed drying, cleaning, grading, storing, germination, moisture and purity testing. BADC charges for these services, so it keeps itself alive and sources its own income from the private sector.

The 1998 Seed Policy of the Government of Bangladesh made provisions for the active participation of the private sector and NGOs. In 2003, nearly 200 tonnes of hybrid rice seeds were sold in the country by BADC and the Bangladesh Rural Advancement Committee (BRAC), the two main agencies involved in hybrid rice seed production.¹

In Bangladesh, a five-year 9.5 million project from 1999 to 2004 in the name of ‘poor farmers’ called Poverty Elimination Through Rice Research Assistance (PETRRA) was funded by Britain’s Department for International Development (DFID) and managed by IRRI.¹ This was the biggest ever donor-aided rice research programme in Bangladesh. It essentially encouraged farmers to shift from growing non-hybrids to rice hybrids. BADC was one of the five companies in the project to distribute hybrid seeds. This also shows the influence of international donor finance in discouraging farmers’ varieties.

and corporate breeders had grown big enough to be able to influence rule-making by governments. They started asking governments to pass legislation that would provide better protection for their proprietary seeds rather than protect farmers' own seeds. Through the World Trade Organisation (WTO) and its Agreement on Trade-Related Intellectual Property Rights (TRIPS), the seed industry was able to internationalize this demand. So from 1995 onwards, many Asian governments which are members of the WTO have been obliged to comply with the TRIPS Agreement. This means they are required to make laws to provide intellectual property rights (IPRs) on seeds and plant varieties. The global advance of IPRs has further hastened legislative action on seeds.

3.0 INTERNATIONAL AND REGIONAL INFLUENCES

In Asia, as in other parts of the world, seed policy formulation and law-making is typically a top-down process. After all, farmers did not ask for the type of seed laws being passed today. Even though seed laws are made by domestic governments to be operative in the national arena, there are many global and regional external influences that come to bear on a country's seed rules. Some of these are discussed below.

3.1 IRRI and the CGIAR

The "Green Revolution" was first launched in Asia through the International Rice Research Institute (IRRI). IRRI is one of the 15 centres of the Consultative Group on International Agricultural Research

(CGIAR).² It was set up in Laguna, Philippines, in 1960 and is one of the oldest such institutes in Asia. It has over the last 50 years collected and amassed farmers' varieties of rice in its gene bank as "raw material" for its breeding programmes. These accessions are meant to be held by IRRI in public trust. Nonetheless, its research is more and more being directed by and towards the interests of the private sector.

In April 2008, it launched the Hybrid Rice Research and Development Consortium (HRDC) with 19 founding private sector companies in rice.³ In July 2008, IRRI and the Philippine Rice Research Institute (PhilRice) signed an agreement for the sharing and licensing of hybrid rice breeding materials, through which they will act as a single negotiating entity with the private sector on the licensing of hybrid rice varieties for commercialisation.⁴ Subsequently, IRRI has signed independent MOUs with Syngenta and Bayer Cropscience.⁵

IRRI's own IPR policy is under discussion for change to accommodate such scenarios. Given the fact that both the CGIAR centres in Asia—IRRI and International Crop Research Institute for the Semi-Arid Tropics (ICRISAT)—are getting into such partnerships with the private sector, their handling of the issue of IPRs could influence the manner in which national governments handle the issue in seed-related regulations. Their role in other regions in seed sector policy reform is not without precedent. ICRISAT, with the National Agricultural Research Stations (NARS) of the South African Development Community (SADC),⁶ has been actively involved in the

harmonisation of seed laws in Africa. The CGIAR itself is rewriting and 'updating' its own *Policy of the Alliance of CGIAR Centres on Intellectual Assets*.

3.2 FAO

The FAO plays a big role in seed laws the world over. Its legal officers and consultants provide technical assistance to governments for this very purpose. Countries like Iran and Mauritius have sought such support from it. One blatant example is how the FAO actively with another CGIAR Centre, the International Centre for Agricultural Research in Dry Areas (ICARDA), played a role in Afghanistan's seed law making (See box). The FAO is also behind the harmonisation of seed laws in other regions like Africa. It is increasingly laying emphasis on partnering with the private sector, whether through playing the middleman between the public and private sector, attempting to make farmer linkages with the formal market or seeking private sources for new investments in agriculture. At the Second World Seed Conference that it co-organised with the seed industry at its headquarters in Rome in September 2009, there was a call for more formal plant breeding and with it, more IPR regulation, both of which are to the benefit of large private players.⁷

3.3 Seed Associations

The FAO has also played a big role in helping to set up and organise regional seed associations, bringing together public and private seed players. The Asia Pacific Seed Association based in Thailand was set up by the FAO in 1994.⁸ It is one of the world's largest

² Alliance of CGIAR Centres www.cgiar.org/centers

³ <http://hrdc.irri.org/>

⁴ PhilRice www.philrice.gov.ph/

⁵ <http://www.prdomain.com/companies/B/Bayer/newsreleases/200912581279.htm>

⁶ SADC is an intergovernmental organisation based in Botswana with 15 South African countries as members. www.sadc.int/. The ICRISAT-SADC-SMIP (ICRISAT–Southern African Development Community–Sorghum and Millet Improvement Program) aims at regionally oriented crop improvement and associated development of regional seed markets in Eastern and Southern Africa.

⁷ www.worldseedconf.org

⁸ www.apsaseed.org/

Afghanistan's Experience with Seed Laws

The FAO has been implementing a Variety and Seed Industry Development Project in Afghanistan with funding from the European Union. The FAO and ICARDA, together with the Ministry of Agriculture in Afghanistan, developed a Code of Conduct for seed aid at a 2002 workshop in the Afghan capital of Kabul. The Code laid down stipulations on the nature of seeds that may be distributed, produced or imported in emergency situations.^{1,1} This was to prevent aid agencies from bringing in relief seed supplies without suitability or quality testing, an area that needed attention as pointed out in the evaluation of FAO's work in Afghanistan. The evaluation stated that "larger quantities of seed of new or unknown varieties are spreading in Afghanistan without adequate screening of the varieties for their adaptation and performance".

On the basis of the workshop's recommendations, a National Seeds Policy was put into effect by the Agriculture Ministry from 13 September, 2005.¹ The policy text however gives equal space for private seed sellers. This is

indicative of the kind of redesigning underway via legislative changes, including providing IPRs such as plant breeder rights for new varieties.

Paragraph 5.6.1 states: Farmers will maintain their right to use, exchange, share or sell their farm-saved seeds among themselves without any restriction and will have the right to continue using any varieties of their choice without being hampered by the system of compulsory registration provided they do not commercialize production emanating from proprietary varieties.¹

The Seeds Policy text also prescribed a new seed law. The final draft of the seed legislation, essentially FAO-made, prohibits seeds from being sold without registration.¹ Slowly all the basic requirements for agri-business are being put in place. In 2008, the Afghanistan National Seed Association (ANSOR) held its first general assembly in Kabul. It encouraged an early enactment of the seed law.

In June 2009, the Afghan Parliament cleared the FAO-made new seed law. Now a National Seed Board is to be set up as the highest body in the seed sector.

regional seed forums and makes recommendations on seed policy issues. It has nearly 400 members from about 38 countries. Likewise, at a meeting in Turkey in July 2008, a regional Seed Association was set up for Central Asia with FAO assistance. The Association comprises private and public sector seed producers from Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan.⁹ This too operates as a regional platform (for that part of Asia) to make recommendations on seed policy, with key priorities that include IPRs and other seed regulations. At the global level, the International Seed Federation (ISF) works to further the interests of the mainstream seed

industry; its members account for 96% of the world seed trade. The ISF has its own set of Seed Trade Rules that it enforces in contracts amongst seed merchants and between companies and contract growers.¹⁰

3.4 ITPGRFA

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), popularly called the Seed/Plant Treaty, systematizes the transfer of the germplasm of a set of listed crops for food and fodder from biodiversity-rich countries and shifts such resources to countries that are technologically more 'advanced' to do formal breeding. It does not stop the seed industry from claiming any IPRs on 'new' crop

varieties that it develops (whether through GE or other means) from the plant material received through the facilitated access under the Treaty. Therefore, by and large, the seed industry favours the ITPGRFA. The Treaty is the only international instrument that articulates "farmers' rights", but it does not make their protection a global responsibility. Instead, it subjects these rights to national legislation, leaving the protection of farmers' rights completely to governments. Given the reality that governments in the region are either coerced or voluntarily bend over to give the seed industry more rights in their national laws, the freedom of farmers vis-à-vis seeds are in peril.

3.5 UPOV

The International Union for the Protection of New Varieties of Plants (UPOV) was established in 1961 in Europe as a result of lobbying by the seed industry. UPOV as a global agreement started mostly with European and developed country members that subscribed to the idea of a special kind of IPR i.e., plant variety protection (PVP) on 'new' varieties developed through formal plant breeding. It is important to understand the nature of rights that UPOV prescribes, as most of the new restrictions on farmers in the region are now in UPOV-styled PVP laws.

Countries in Asia felt the first pressure to have IPR laws on seeds after TRIPS. UPOV membership and the PVP it provides was cleverly presented as a TRIPS acceptable half-way-to-patents solution for those governments, which for political reasons did not want to grant patents on seeds. From Asia, currently Japan, Korea, China, Singapore and Vietnam are amongst its 68 members. Through PVP rights over plant varieties, breeders can claim exclusive economic control over plant materials they develop for about 20 years. UPOV prohibits farmers from saving and exchanging seeds of

⁹ www.seedquest.com/News/releases/2008/july/23248.htm

¹⁰ ISF Rules and Usages for the Trade in Seeds for Sowing Purposes, 2009. http://www.worldseed.org/isf/trade_rules.html

protected varieties for commercial purposes. However, it does allow member states to permit some seed saving as long as farmers pay a royalty.

4.0 REGIONAL SITUATION

4.1 Country Scenarios

In the last decade, most countries in the Asian region have been veering towards more regulation over the sale of seeds. There are some countries, like Malaysia and Laos, which have had no specific seed laws in the past except for seed quarantine rules and are now adopting PVP legislation. In South Asia, countries like India, Bangladesh, Pakistan and Nepal have had first generation seed laws with certification requirements intended to apply to the formal sector (excluding farmers) and which were with respect to seeds that were 'notified', 'regulated' or 'restricted', as those coming under regulation by the government. These countries are now in the process of making changes to their existing seed laws while additionally working on PVP laws. Most seed laws also streamline procedures for the import and export of seeds. By and large, the trend is to give more support to the emerging corporate seed sector.

In addition, the new wave of IPR laws comes with much more aggressive curtailment of farmers' freedom. They possess a new feature: the express mention of what farmers can and cannot do. In conventional seed laws, more often than not, the text was silent on farmers' seeds and practices. Since the mandatory registration for seed dealing and certification of quality was only a requirement for government-approved varieties, farmer seeds did not fall under such constraints. However, now the private seed sector is not content with seed policies simply recommending farmers to

use certified seed of government-approved varieties. The industry wants an outright ban on farmer-saved seeds, which compete directly with its commercial seeds. More and more in the domestic arena, industry is the driver behind changes in seed laws. Farmer groups are seldom consulted and are thrown into the defensive mode. There is a general lack of transparency surrounding seed law-making. In Malaysia, for instance, there is little publicly available information on the upcoming National Seed Council or the proposed text of the Seed Bill. Worst of all, farmers are kept unaware of any regulatory changes.

4.2 Registration and Certification

There is much official propaganda and corporate advertising to push the idea that only government approved and certified seeds sold in the market are of 'good quality'. This quality is ascertained by value for cultivation (VCU) tests for registration. Oftentimes, the seed dealer or the seed unit also needs to be registered with the relevant government body. The certification requirements in different countries vary. Some make it compulsory. Under India's existing Seed Act (1966), seed certification is optional, therefore more seed companies have been able to come up and sell seeds. This has not been the case in Pakistan or Bangladesh. Others show leniency by way of voluntary certification — allowing uncertified seed to be sold as *truthfully labelled seed* (TLS) at one own's responsibility, or by allowing self-certification by the seed company as in the India Seed Bill of 2004. This aspect has invited much protest from farmer groups as asking the company to certify the quality of its own product is clearly a situation of conflict of interest.

There is also the push through the International Seed Testing Association (ISTA) to globally harmonise seed sampling and seed testing. This is an off-shoot of increased seed trade which requires that seed quality determination be reproducible in different continents. As per ISTA, the measurement of seed quality in large part has to be done in a seed laboratory. ISTA (2009) reports that Asia has 52 member laboratories and 15 ISTA accredited laboratories, the maximum number being in India and Japan.¹¹

Private certification and testing services to replace or complement government tasks show an upward trend. There are also instances like in the Philippines National Seed Industry Council, where a member from a large private seed company, SL Agritech Corporation which specialises in the development and commercialisation of hybrid rice, is a member of the Seed Certification and Seed Standard Technical Working Group which sets the standards.¹²

Where strict compulsory certification is insisted upon, small seed enterprises may not be able to sustain the costs. This clears the way for big players. More often than not, the cost of certification is passed on to the purchaser-farmers.

An example of seed certification legislation is given below:

All kinds of marketed seeds must be affixed with labels and have quality control certificates as required for each seed grade. Seeds sold on the market must be packaged in accordance with the packaging standard. All acts of producing and trading fake seeds, seeds of poor quality, mixed seeds, seeds with pest or disease germs or seeds which have not been certified, are strictly forbidden. – Article 13 of the Vietnamese Government Decree

¹¹ ISTA's presentation at the APSA Seed Congress 2009, Bangkok
<http://www.apsaseed.org/docs/00b9aab6/ASC2009/SC/SQ/ISTA.pdf>

¹² Dr. Noel G. Mamicpic, Vice-President for Quality Control of SL Agritech Corporation is a member of the said Technical Working Group for 2009-2010. <http://www.bpi.da.gov.ph/NSIC/pdf/so2009.pdf>

Table 1. Some seeds laws in Asia

Country	Seed Law	What It Does	What It Set Up
India	1966 Seed Act, amended in 1972 (New Seed Bill, 2004, still to clear Parliament)	Regulates the sale of seeds of notified varieties	Central Seed Committee Central Seed Laboratory and Central Seed Certification Board
Korea	1970 Major Agricultural Seed Law	Requires that seeds of eight crops be sold only with a valid seed sale license	National Seed Council
Indonesia	1971 Presidential Decree on Seed and 1992 Plant Cultivation Act and its 1995 Plant Seed Management Regulation	Says that farmers' varieties do not fall under the regulation (they are considered 'natural varieties' and as such, are not controlled by the government)	National Seed Board
Thailand	1975 Seed Act revised in 1992	Prescribes seed labelling requirements and minimum allowable germination requirements for 20 species of seed	Plant Committee
Pakistan	1976 Seed Act (Seed Amendment Bill 2010, still to clear Parliament)	Prohibits sale, offer for sale, advertising or holding in stock for sale, bartering, or 'otherwise supplying' seed of notified varieties that is not as per prescribed standards	National Seed Council, Provincial Seed Councils, National Registration Agency and Federal Seed Certification Agency
Bangladesh	1977 Seed Ordinance, followed by Seed Act of 1997 and its Seed Rules 1998	Requires that the seed dealer be registered and the seed certified prior to sale for five notified varieties	National Seed Board, Government Seed Laboratory and Seed Certification Agency
Nepal	1988 Seeds Act	Restricts the sale and distribution of seeds without conformity to prescribed standards	National Seeds Board
Philippines	1992 Seed Industry Development Act	Promotes the development of the seed industry	National Seed Industry Council replacing the Philippines Seed Board
Vietnam	1996 Decree on the Management of Plant Seeds	States that seed producers must be licensed	Seed Reserve Fund
China	2000 Act amended in 2004	Prescribes a seed operation license but allows for residual ordinary seeds that have been bred and used by farmers to be sold and exchanged on the market without any operating license	Special funds to support the selection, breeding and popularisation of "quality" seed
Sri Lanka	2003 Seed Act	Mandates that all seed dealers are registered and seed certified, though farmer-to-farmer sale or exchange is exempt	National Seed Council

on the Management of Plant Seeds, 1996

4.3 Genetically Engineered Crops

Another notable introduction in some seed legislation in Asia is the mention and treatment of genetically engineered (GE) seeds. In the proposed Seed Bill of India for example, the provisional registration of GE seeds is allowed subject to environmental clearance from the concerned authority. The Bill does not prohibit the registration of GE seeds. Similarly, in Turkey when its new seed law was under discussion, field trials of GE crop varieties were ongoing in the country.¹³ Yet the text was conspicuously silent on the treatment of GE seeds. This is in part explained by the fact that separate government agencies were involved in biosafety regulations and seed management. However, it also shows how given the chance, governments do not come forward with stricter rules on GE technologies except in case of the obvious Terminator Technology (GE crops that produce sterile seeds).

The global Cartagena Protocol on Biosafety, which most countries in Asia are members of, requires living genetically modified (GM) material that can replicate—such as seed—crossing national borders to be labelled as GM. This also partly explains why seed laws mirror the trend of the growing seed trade across the world. Their texts seem to settle for mere provisions on labelling while not stopping the trade. Typically on this subject, opposing interest groups have vastly different expectations of seed legislation. When in 2004 spurious GE cotton seeds were reportedly in the market, the All India Crop Biotechnology Association expressed concern over the same. Smetacek, Director (Government and Public Affairs) of Monsanto, the holder of the original license for Bt cotton

seed technology, supported government action under the existing seed law of India saying that “unbranded seeds have zero accountability and are a setback to the technology”.¹⁴ Given the fact that most biosafety rules are ushering in GE technology rather than actually curbing it, and that some countries in Asia do not even have an appropriate regulatory system for GE agriculture, seed laws need to be more stringent rather than simply allowing the registration of GE seeds subject to environmental clearance from national biosafety agencies. This is to safeguard local varieties from genetic contamination and guarantee seed security in the region.

4.4 Plant Breeding

Seed laws in the different Asian countries show the governments' bent towards supporting formal breeding. Agricultural research done by public and big private players tends to be driven by agronomic or economic considerations. Such research typically concentrates on crops of economic value, like hybrids, flowers, vegetables and industrial crops, for food or fuel. It thus also tends to produce uniform varieties through scientific breeding, as a typical industrial product would want to show consistency. The DUS – distinct, uniform and stable-criteria for variety registration under UPOV encourages churning out genetically identical outputs. This is contrary to the whole concept of maintaining genetic diversity. Private seed breeders cannot fulfil all the needs of farmers as the latter's criteria for variety selection is not homogenous. Varied farmer concerns and needs determine the choice of their planting material. The wide availability of planting materials is assured through the free exchange of seeds amongst farmers and their social networks. Restrictive seed laws that curtail both seed-saving and bartering can severely hamper farmer

seed exchange systems and thereby adversely impact informal breeding.

4.5 IPR and Privatisation

Granting IPRs on the results and products of their R&D is one of the main areas of support that seed companies seek from governments. IPR protection is possible only through the formal legal system; this is why current legislative changes on seeds include PVP laws.

Seeds that are IPR-protected are not freely usable in two ways. First, in terms of price, they do not come free. Royalties or 'technology user fees' as some companies like Monsanto term them, are included in the price of the seed bought. Second, it puts restrictions on what planting material and harvested produce, and how much (quantity, number of species, plot size on which) a farmer can save, use and share.

Since the setting up of the WTO in 1995, many Asian governments have either joined or are being pressured to join UPOV as a short-cut to WTO TRIPS compliancy. UPOV means IPR on seeds, i.e., privatisation of plant material. In Asia-Pacific, countries like New Zealand, Japan and Australia were already UPOV members before the WTO. Post-WTO, China, Korea, Singapore and Vietnam have become UPOV members. They may impose the UPOV standards of IPR on their neighbours as more cross-border seed trade grows, especially through bilateral free trade agreements.

At the regional level, an East Asian PVP Forum was founded in 2008 which brings together all the PVP offices of ASEAN +3 (China, Japan and Korea) countries for the implementation and harmonisation of PVP laws.¹⁵ Cambodia has become the most recent country in Asia to pass a PVP law in the form of the Seed Management and Plant Breeders' Rights Act in May 2008.

¹³ For more, read *Turkey's new seed law – New controls, old struggles*. www.grain.org/seedling/?id=469

¹⁴ www.ris.org.in/vol7no3_bionews.pdf

¹⁵ The East Asia Plant Variety Protection Forum. www.eapvp-forum.org/

Table 2. PVP laws and limits on farmers' freedom

Country	UPOV Member?	PVP Law	Impacts on Farmers
Thailand	No	1999	Cultivation or propagation from the PVP-protected seed by a farmer may be made <i>not more than three times the quantity obtained</i> .
China	Yes	1999	The use for propagating purposes by farmers, on their own holdings, of the propagating material of the protected variety harvested on their own holdings shall not require authorization from or payment of royalties to the variety rights holder. Uses other than those mentioned above will require permission.
Indonesia	No	2000	Allows farmers to use the protected variety <i>as long as not for commercial purposes</i> .
Pakistan	No	2000 Ordinance	Nothing shall affect a farmer's traditional right to save, use, exchange, share or sell his farm produce of a protected variety, <i>except where a sale is for the purpose of reproduction under a branded marketing arrangement</i>
Pakistan	No	Draft PVP law 2009	A farmer shall be deemed to be entitled to save, use, sow, re-sow, exchange, share or sell his farm produce <i>provided that the farmer shall not be entitled to sell seed of a variety protected under this Act on a commercial basis</i> .
India	No	2001	Farmers can save, use, exchange, share and sell their produce of the protected variety with the restriction that they <i>cannot sell branded seed of the protected variety for commercial purposes</i> .
Korea	Yes	2001	The Minister of Agriculture and Forestry <i>may</i> restrict the breeder's rights to a variety, if a farmer collects the seeds of the variety for himself for the purpose of self-production.
Philippines	No	2002	The traditional right of small farmers to save, use, exchange, share or sell their farm produce of a variety protected under this Act, is maintained <i>except when a sale is for the purpose of reproduction under a commercial marketing agreement</i> .
Malaysia	Yes	2004	Small farmers can only use seeds of a protected variety <i>on their own field and exchange with small farmers only in 'reasonable amount'</i> . The sale of farm-saved seeds is allowed only in situations where a small farmer cannot make use of the farm-saved seeds on his own holding due to natural disaster or emergency or any other factor beyond the control of the small farmer, and if the amount sold is not more than what is required in her/his own field.

In the national arena, one sees a mix of regulations on seed through either seed or PVP laws. The coexistence of the two kinds of laws—pure seed laws as marketing regulations and PVP laws as intellectual property rules—strengthen each other.

4.6 Farmers and Their Rights

Some seed-related laws attempt to define the term 'small farmer'. The Philippines *Magna Carta for Small Farmers* (1992) defines them

as natural persons dependent on small-scale subsistence farming as a primary source of income and whose sale, barter or exchange of agricultural products does not exceed a gross value of 180,000 pesos per annum based on 1992 constant prices. Additionally, the Philippine Agrarian Law defines smallholders as those cultivating not more than five hectares of land. The Malaysian PVP law regards those with less than or equal to a holding size of 0.2 hectares as small farmers.

Most of the seed laws are oriented towards converting the original source of seed—the farmer producer—into a seed consumer, grower or user. The most critical aspect of seed laws is not only how they regulate seeds but in doing so, what kind of 'farmers' rights' they promote. Unfortunately, in Asia most of the talk of farmers' rights is limited to reference to PVP laws. Countries like Indonesia and Malaysia that do not have specific legislation protecting farmers' rights are attempting to accommodate

these in their PVP laws. In the case of India, the concept was given space in a retro-fitted chapter on farmers' rights in its PVP legislation after demands to balance the interests of breeders and farmers. Malaysia's plant variety protection law of 2004 came into force in January 2007. The Implementing Regulations were approved in October 2008 and the Malaysian PVP Board started accepting applications from November 2008. The law attempts to introduce more flexibility in the requirements for the registration of farmers' varieties. It exempts new varieties bred or discovered and developed by farmers, local communities, and indigenous people, from the requirements of stability and uniformity; farmers' varieties only have to be distinct and identifiable. The Act also allows acts that are carried out privately on a non-commercial basis, thus allowing small farmers to continue their normal practices of using and exchanging farm-saved seed.

Notwithstanding this, the fact of the matter is that PVP is a concept that makes breeders economic rights supreme, and seeds and knowledge about them private property. With the law twisted to their side, private breeders and seed companies can use a country's legal system to prosecute local farmers! A case in point would be that of some Indonesian farmers that were ruled to have violated the company PT Bisi's breeding rights and mandatory seed certification when all they were doing was breeding corn seeds themselves using the techniques shared by the company. Some drafts of seed laws also give unusually large powers to seed inspectors to search and seize plant material from farmers' premises, which can mean a lot of harassment to small farmers.

Given the reality that there is deepening collusion among large seed players, policy-makers and state agencies, the legislation and enforcement of tighter seed laws could in real terms restrict

farmers' inherent freedom.

5.0 FUTURE TRENDS

Clearly seed laws are changing in a fast changing world. The food and farm sector in Asia and for that matter, worldwide, is undergoing metamorphosis. The rise of corporate control on seeds is unprecedented and appears that it will not stop till it overcomes its biggest competition: farmer-saved seeds! So seed regulations for small farmers in Asia are only going to tighten further, creating newer challenges for them with respect to traditional varieties and seed saving.

Future trends are expected to be as follows:

- The fact that seed and food companies continued to make obscene profits throughout the financial crisis is encouraging more seed enterprises and investments. Meanwhile, the seed industry is consolidating. The FAO estimates Monsanto went from being the 11th largest seed company in 1997 to being the largest in 2008, with a turnover equal to that in 1997 of the top six companies combined [2]. Furthermore, as per the FAO, the top five companies which include Monsanto, DuPont and Syngenta, now account for over 30% of the global commercial seed market [2].

Some Rice-Related Laws

Rice has been cultivated in Asia for over 10,000 years. This speaks of the history of traditional seed saving practices. For a region where rice is life, there is much focus on the rice seed. Rice appears in the list of several seed laws that require government-approved varieties to be of certified quality before marketing. Rice has acquired an important status in agricultural commodity trade and Asia is a hub for rice trading. Therefore, rice is given special attention particularly by some South East Asian governments.

Amongst the Asian countries, the world's top rice exporter, Thailand, was perhaps the first to have a Rice Trading Act in 1946. The government controls under that however do not apply to farmers who sell or exchange rice from the land cultivated by themselves and to a person who each time sells or exchanges rice of the following quantities; not exceeding two metric tons (kwian luang) in respect of all kinds of rice paddy, or 108 kilograms in respect of other kinds of rice.¹ There is also a Thai Government directive that does not allow foreigners to buy or rent rice-growing land plots.

Vietnam, a close competitor of Thailand in the global rice trade, is tightening government regulations on rice exporters. Vietnam law also prescribes requisite expertise for use of varieties of rice hybrids (conditions that individuals producing or trading in rice varieties must satisfy, including having a formally trained technician in plant cultivation).¹ With the emphasis on export, there is all the more attention on 'quality' seed.

Meanwhile, the movement of rice planting material continues despite regulatory hurdles. For instance, in Malaysia, the import of rice seeds for sale is legally restricted. To work around that, Yuan Longping (the father of hybrid rice), signed an agreement with the national agricultural research and development agency (MARDI) and a local foundation of the Yayasan Tuanku Syed Sirajuddin to set up a hybrid rice research centre to import Chinese hybrid parental lines to produce hybrid rice seeds locally.

In India, another big rice country, apart from the central laws, state level rules may also be found. One such law from the southern state of Kerala aims to prevent the conversion of paddy lands to non-agricultural purposes.¹

- New trade rules through bilateral free trade agreements (FTAs) and investment treaties will continue to influence domestic seed policy in the region. The US systematically requires trade partners to provide patents on seeds and to join UPOV through its FTAs. The European Union and Japan tend to demand the same (see box). Along with changed norms, FTAs bring increased IPR policing and capacity-building funding for this to happen. The enforcement by seed inspectors (*public servants technically qualified to deal with various aspects of seed handling and also given the duty to carry out the objectives of seed laws*) and the criminal justice system will then be felt by Asian farmers much more.
- The food and climate crises have given governments and corporations an excuse to market more technofixes in the form of new proprietary agricultural technologies. The threat of Terminator Technology, for instance, is far from over; it could be the next biological seed law physically making seed-saving impossible. Meanwhile, other GE products like 'zombie seeds' that are programmed to be sterile until treated with a special chemical, are in the pipeline. Asia will also attract another wave of agrofuels for all the same reasons namely, the availability of raw materials, large agri-research infrastructure, huge markets, and weak regulations on corporations.
- New interest from TNCs is bound to rise in Asia as it represents a growing market for US and European seed companies. The European seed giant, Vilmorin, has made notable forays into Asia, with the leading biotech firm Avesthagen in India in 2006 and Yuan Longping High-tech Agriculture (a leading Chinese hybrid rice and vegetable seed company) in 2007.

In November 2009, Monsanto opened its first R&D unit in China. New niche players are also emerging in the vegetable seed business. Regional seed companies have developed in the Philippines, Thailand and Taiwan, in a sector that was earlier dominated by Europe, US and Japan. They will play a major role in the seed sector driving the changes in the region.

- Apart from factors specific to the seed sector, the process of law-making itself in several parts of Asia is under question by farmers' groups and social movements. The worrisome factor is how private interests are able to influence both the content of the law and the process of its making.

In many Asian states with a federal constitution, like India, despite the fact that it is left to provincial governments to make rules on seeds, there is an increasing trend by central governments to come in the way of non-centralised decision-making on seeds. Corporate bigwigs and political elites are wielding significant power to decide over matters that are vital to the lives of rural communities.

This is more often than not backed by repression by way of clamping down on people's protests, curtailing civil society actions, use of military in land struggles, brutal police behaviour, and hostile judicial responses to community concerns. Given this trend, people on the ground need to continue to organize themselves.

6.0 THE PEOPLE'S RESPONSE

The people's response to growing controls on farmers' seeds is *food sovereignty*. Food sovereignty is the recognition and advancement of the rights of people and communities

to decide on food and agricultural policies; to adequate, culturally appropriate and safe food; to land and productive resources; to sustainable production and livelihoods; to gender justice; social justice; and environmental justice. Curtailing the 'seed freedom' of farming communities undermines their food sovereignty. Thus, there has been huge resistance by farmers, local communities and social movements against the assault on peasant time-honoured practices and to biodiversity in the fields. It takes various forms across the region. The resistance is both at the level of policy as well as at the grassroots level.

6.1 Resistance at the Policy Level

Farmers are naturally outraged at the kind of seed laws being passed and raise their voices in protest; fighting for their inherent rights, identities, cultures and survival. In India, it is the strong protests against the new Seed Bill that has kept its passage at bay since 2004 when the text was first made available. Lobbying parliamentarians and decision-makers remains one of the key strategies. In the case of Turkey in 2007, farmers and consumer groups took the battle to the Supreme Court of the country to challenge the national seed law.¹⁶ Across Asia, the first demand is for transparency in the texts of seed laws and policies under discussion, followed by consultative processes involving the people. Some groups are also organising farmers' juries to give 'verdicts' from the ground on seed-related controversies.¹⁷

Farmer groups also have to confront the critical choices they have to make. They must decide whether to use the cracks in seed laws to lobby for farmers' standards, exemption from DUS criteria, or a waiving of processing fees, but in doing so, ultimately creating farmer

¹⁶ <http://www.grain.org/seedling/?id=469>

¹⁷ <http://www.raitateerpu.com/>

Japan FTAs Digging into Farmers' Fields

The US and Europe are no longer the only ones pushing farmers in the South into a setting where huge corporations control seeds, incessant royalties have to be paid, and rural autonomy and culture are buried. Japan, host to one of the top ten seed conglomerates in the world—the Sakata Seed Corporation—is now in that league. Japan is increasingly using free trade agreements (FTAs) to tighten corporate control over seeds. One of the tactics it uses is to put pressure on its trading partners to accept patents on life and to toughen up laws that enable corporations to claim ownership over seeds and thus force farmers to pay royalties. In the FTAs Japan has signed with Malaysia (2005), Philippines (2006), Indonesia (2007), Thailand (2007), Vietnam (2008), and Chile (2007),

IPRs on seeds are among the issues that made it to the negotiating table. In the case of Malaysia, Tokyo tried to get the government to commit to the UPOV system of plant variety protection, but the Malaysians said “No”. Yet the Malaysian government has accepted some abstract wording about protecting private monopoly rights over seeds “in a manner consistent with the internationally harmonised system”. In practice, this means UPOV; the text just doesn't explicitly say so. In the Japan-Philippines Economic Partnership Agreement, which was the Philippines' first ever FTA, Chapter 10 on IPRs has a provision mandating Manila to provide some kind of system of plant variety rights and extend it to as many species as possible keeping in view the concerns of Japan. (For more on this and other FTAs, see <http://www.bilaterals.org/>)

the Philippines and many other such farmer-centred models. Small-scale BEA with farmer-led seed breeding and conservation gives local communities greater control over their resources and farming practices and is a firm rejection of corporate-friendly seed laws and policies.

Communities in countries like the Philippines and India are declaring “GE-free zones” and saying “No” to pseudo-solutions that the formal seed system offers. Lest we lose sight of history, Nammalvar, an organic pioneer and farmer activist from South India reminds us that farmers **are** using seeds produced in their own fields. Others are stepping up the seed saving activities at the household and community levels and rebuilding local seed supplies, defying laws that restrict exchange. These actions go hand in hand with demanding repatriation of farmers' seeds from international gene banks, as in the call for IRRI's closure.

On seed quality control, farmer groups are developing their own seed certification, like the community-led Participatory Guarantee Scheme of the Organic Farming Association of India or the MASIPAG farmers' guarantee system in Philippines. Japanese rice farmers are also attempting to start and run their own co-operatives after disillusionment with the National Agricultural Co-operative. Meanwhile, in parts of China, there are new urban-rural partnerships for the marketing of organic produce whereby direct linkages between producers and consumers are established. Similarly, farmers in Indonesia have set up their own Indonesian Organic Farming Network (Jaker PO).

Civil society, farmer and people's organisations in Asia and other parts of the world have consistently resisted corporate control over seeds. Many regional and international

seed industries in the same seed industry template; or as some other farmers and activists are doing, actually working on constructing real farmer-centred alternatives to farmer-controlled seed systems.

Rather than rely on the same state system that is not supporting farmers' seeds or practices by law, small farmers (like the women *sangams* (collectives) in South India) are setting up their own community seed banks with their own rules.

Farmer groups aided by NGOs and farmer-sensitive scientists, as in the case of MASIPAG (Philippines) and ADARSA (South Asia), are also fighting for the democratisation of agricultural research, where farmers' knowledge is at the centre and they have control over the research and seeds they develop.¹⁸ This goes hand-in-hand with demanding for policy space where this is possible.

6.2 Resistance at the Grassroots Level

Small farmers, particularly women farmers, are challenging the corporate model of agriculture, which brings in anti-farmer seed laws. The resistance on the ground is through practising and developing alternative biodiversity-based ecological (BEA) models. These systems emphasize community participation and innovation with women farmers playing a key role, especially as the traditional conservers of seeds. In Sub-Saharan Africa, women cultivate as many as 120 different plants in the spaces alongside men's cash crops.¹⁹ In Bolivia, Columbia, Peru and other Latin American countries, women develop and maintain seed banks.²⁰ Communities have benefited from the use of traditional local seed varieties in terms of better productivity, incomes, food security and health as evidenced by MASIPAG farmers in

¹⁸ Alliance for Democratising Agricultural Research in South Asia. <http://www.ddsindia.com/www/adarsa.html>

¹⁹ Aftab Alam Khan. n.d. Women's Role in Food Security and Threat from WTO. Microsoft PowerPoint presentation. Women and Trade - WTO symposium April 21, 2005. http://www.wto.org/english/news_e/events_e/symp05_e/alam15_e.pdf

²⁰ Ibid.

NGOs have organised anti-GE and seeds campaigns in support of farmer freedom calling for 'No Patents on Life!'

Perhaps this call by rural women farmers in Asia best sums up the people's stand: "*Sisters, keep seeds in your hands!*"

6.3 The Way Forward

Undoubtedly the battle cry remains "Food Sovereignty!". The importance of farmer seed systems and the culture of sharing cannot be over-emphasized. Despite everything, FSS still is the main source of seed for the majority of small farms in Asia. Farmer-owned seeds and their own 'soft laws' is the only long-term vision to struggle for. This is possible if the local resistance against unjust laws is kept alive and supported.

Women farmers, who are typically the community seed stewards performing as the selectors, keepers and propagators of seeds, should remain at the centre of the resistance. Since the majority of farmers in the region are women, unjust seed laws are as much a violence against women. Any new laws on agriculture should ensure that the role and

contribution of women in agriculture is first recognised, their involvement in decision-making processes ensured, and their rights to control seeds and other productive resources upheld.

Seed laws ought to control and reign in corporations, not farmers. Local norms on seeds precede any written law on the subject, a fact that needs to be reiterated. Public demand for making available legal texts in-the-making is a legitimate one.

Some countries like India have a "Right to Information" law, through which such information can be extracted from government offices. Constitutional provisions that recognise community practices and Fundamental Rights need to be re-asserted. Provisions and principles from international law that can support the struggle for self-determination like the UN Declaration on the Rights of Indigenous Peoples and the original intent of the Convention on Biological Diversity for community sovereignty need to be invoked.

At times, legal action in a court of law can also become necessary as one of many strategies to support work on the ground. Meanwhile,

the field-level work must go on. If seed laws continue making farmers practices illegal, peasant communities will have to cope with living in "illegality"!

Seed saving and seed exchange will then become the ultimate civil disobedience. Saving traditional local and farmer-bred seeds not only keeps control over them in the hands of farming communities, facilitating food security and autonomy, but supports *in situ* agro-diversity conservation and 'barefoot innovation', all of which are social, ecological and political imperatives today. This demands recognition in today's laws and policies.

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GRAIN is a small international non-profit organization that works to support small farmers and social movements in their struggle for community-controlled and biodiversity-based food systems. Most of GRAIN's work is oriented towards and is carried out in Africa, Asia and Latin America. For more information on GRAIN, please visit: www.grain.org.



Pesticide Action Network Asia and the Pacific (PAN AP) is one of the five regional centres of PAN, a global network working to eliminate the human and environmental harm caused by pesticides, and to promote biodiversity-based ecological agriculture. PAN AP while linked to the international network, has evolved with a strong Asian perspective, linked with the movements of peasants, agricultural workers and rural women and guided by the strong leadership of grassroots and advocacy groups. Our vision is a society that is truly democratic, equal, just, culturally diverse, and based on food sovereignty, gender justice and environmental sustainability.

PAN AP launched its Save Our Rice Campaign in 2003 in response to the powerful threats arising against rice, the staple food of half the world's population. The foundation of the Campaign is the "Five Pillars of Rice Wisdom": (1) Rice Culture, (2) Community Wisdom, (3) Biodiversity-based Ecological Agriculture, (4) Safe Food and (5) Food Sovereignty. The Campaign is dedicated to saving traditional local rice, small rice farmers, rice lands and the rice heritage of Asia. PAN AP Rice Sheets provide relevant information on the threats to rice and are written from the people's perspective. Enquiries may be sent to: panap@panap.net.

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