WOMEN
RECLAIM OUR SEEDS

Pesticide Action Network Asia and the Pacific

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FOREWORD

This booklet is part of PAN AP's Campaign on Women: Reclaim our Seeds to share women's successful initiatives to revitalise local varieties and to celebrate women's resilience and knowledge systems in food and agriculture production. It is to recognise women's strengths, innovativeness and contributions in sustainable agricultural practices and in ensuring food security for her family and community.

The stories come from the diverse experiences of women-led or managed initiatives in sustainable farming practices across Asia where they play key roles as custodians of seeds. The story from Hanoi, Vietnam celebrates the revitalisation of women's traditional experiences in producing rice seeds. In India, the women farmers of Uttarakhand revive lost varieties of wheat and diversity of crops including certain crops that they say 'work like medicine'. In another part of India, the women from Karnataka have emerged as leaders of their community as seed custodians, trainers, and entrepreneur, and through seed bank activities. The struggle of rural women of Pakistan for land is fundamentally linked to their rights as food producers. The experience of one woman's success embodies the importance of this struggle to the empowerment of women and the recognition of her knowledge including the conservation and selection of seeds. In the Philippines, a federation of 14 women-led local groups organised themselves to produce food ecologically and so they shifted to organic farming. This was also a form of resistance against corporate agriculture. These stories also speak of women's challenges and struggles as they assert rights to access and control over seeds, including land and other productive resources.

This compilation of short stories is our contribution to document and give recognition to women's invaluable roles as community seed stewards, performing as selectors, keepers and propagators of seeds. Women hold "seeds as life" for the community and we celebrate their initiatives and their joy in the success of their struggles.

Women Reclaim Our Seeds!

Sarojeni V. Rengam
Executive Director, PAN AP

‘SEED’ING CHANGE

SHALINI BHUTANI
Editor

Women in food and farm systems have yet to get due recognition in Asia and the world over. At the village, commune and household levels, they remain key to a family and community’s health, nourishment and well being. Just as seed is central in agricultures, so are women central as seed keepers, knowledge holders and small farmers in their own right. Yet they are not generally kept centre-stage in agricultural planning at the micro-level or policy-making for it at the macro level.

This does not necessarily imply that women should be ‘locked into’ traditional roles, nor that for their own sake they need to be ‘freed’ from what traditional agricultural societies have prescribed them to do. They must have real and active choices. But in the name of choices (that the global market supposedly offers) neoliberal solutions would rather do away with all residues of custom that are seen in these societies. As witnessed not only in Asia, but also elsewhere in the world, with the rules of the market there has been a de-culturing of agriculture itself. When it comes to customary planting materials, traditional farming practices, local cashless exchanges and any social safety nets that come from the inter-personal relationships in such seed communities, the customs of local groups have been systematically eroded. But the need of the hour is to encourage women’s inherent capabilities in agriculture while keeping alive the broader environment in which these capacities are developed and nurtured, just as they develop and nurture seeds.

This has unfortunately not been so as the experience in Asia teaches us. In the region, the discussions on agriculture invariably bring mention of the (first) ‘Green Revolution’ of the 1960s and the second Green Revolution (GR II) that is slowly but surely unfolding now. A revolution implies total and radical change. These so-called ‘revolutions’, which radically impact seed practices and totally change the seeds being used by small farm communities, also drastically alter the lives of women farmers. Devaluing their seed knowledge and skills, also means rendering them redundant in the

farming communities. This is not only disrespectful but also dis-empowering. This seed injustice and gender bias has to stop. The discrimination against women's own seeds and with it the practiced prejudice for seeds from either the public plant breeding system or the large private seed companies. Both the latter are now partnering more and more with each other. Through this partnership the GR II is to be unleashed in South Asia.

Much has been written and said about the violence of the GR. Meanwhile, much more violence is yet to be seen through the 'Gene Revolution'. Just as acute as the violence against women's bodies and minds, is the use of proprietary technologies that do not respect the very sanctity of life itself. With the genetic manipulation (GM) of living forms including seeds, planting material and animal breeds, the sites of innovation are fast shifting from the fields to the laboratories. Yes women do work in both. But a vast majority of women are living in conditions of poverty in otherwise regions of biodiversity wealth. For them the field and their seeds are often their last resort to a decent life and livelihood. This points to gaps that new agricultural technologies and the politics that propagates them are unable to address and the violence that they can inflict. Injury is done where and to that which is entitled to respect.

While there have been assaults on the physical level on seeds, at the intellectual level too the cultures of sharing have taken a hit. In recent decades Asia has seen a significant shift from non-regulation to government rule-making over seeds. While seed trade is being encouraged as a global business, global rules have meant lesser rules for protecting local seeds. On the contrary, local knowledge of women and the seed varieties they have bred and saved have been used as raw material to 'develop' new products to be sold back to farming communities. This is being made possible by rules of intellectual property (IP) in national legal systems being re-written to suit the large seed industry rather than favour the small seed producers. Small farmers, particularly women are however challenging the corporate model of agriculture, which brings in anti-farmer seed and IP laws. Their call for seed sovereignty is as much a call for women's dignity.

Sovereignty in agriculture means having the freedom to decide the seed and food issues. And agriculture is not simply an economic activity, but has an ecological dimension, performs a cultural role and is a social phenomenon.

Women's contributions in all these need to be acknowledged. They must come to play an equal part in decision-making, both at the public level and in their private lives. This is also what the 20-year old international peasant movement La Via Campesina reiterates. Its World Congress of Women of La Via Campesina in 2006 emphasised the need to further strengthen the articulation of both agricultural and women issues by peasant women themselves. The Asian Rural Women's Coalition (ARWC), which was formed in 2008 also organises women in and around agriculture.It engages in local and international policy and advocacy work to reclaim rural women's knowledge and skills and with their rightful place in agriculture. It also serves as a platform for rural women to collectively raise their voice against all forms of discrimination and violence against women.

Other international bodies are still to be fully supportive at a practical level other than in theory. In July 2010, the United Nations General Assembly created UN Women, the United Nations Entity for Gender Equality, and the Empowerment of Women. This became operational in India since January 2011 as United Nations' Women South Asia. In fact, one of the priority theme of the United Nations' Commission on the Status of Women is the empowerment of rural women and their role in poverty and hunger eradication, development, and current challenges.

Yet a caveat needs to be sounded against decontextualising 'gender equality'. Simply giving women equal seed, land, money or power as men doesn't mean that their plight as farmers will improve. The crises in global agriculture affect men and women as much, if not more. The far-reaching change in agriculture world over forecloses choices for farming communities, irrespective of their gender. Societies truly progress when both women and men can work together. Patriarchal societies can't be blamed for everything that is wrong with agriculture today; agriculture itself has to be corrected. The right beginnings can be made by beginning with women farmers themselves. Through them the multiplier effect is manifold. And through such an approach even the social and cultural aspects of agriculture can take root.

The stories of women farmers shared below are from different settings in Asia – India, Pakistan, the Philippines and Vietnam. Though the settings might be diverse from South Asia to South East Asia, yet many of the challenges faced by women therein are shared. And what is common is that women have endeavoured to organise themselves. Even if it may be at individual level, they have chosen to take active control of their seeds and in doing so been able in some part to regain control over their lives.

The stark contrasts between what women in these stories in their local contexts are doing and what is happening at a large-scale level through mainstream agricultural policies and their implementation is striking. Many of the stories refer back to happenings in the year 2007-2008. That is a time remembered for the global food crisis. It was also a time when world food prices increased dramatically. But the women in these stories were in their spaces continually working at resurrecting their food systems.

The story from Vietnam comes from an area north of the capital Hanoi, from the Communes of Bac Kan Province. This is a province whose economy runs on mining. But the story celebrates the revitalisation of women's traditional experience in producing rice seeds. Vietnam became a member of the World Trade Organisation (WTO) in

2007. Thereafter, 2008 onwards the government began to give subsidies for hybrid-rice seeds to foreign companies, particularly from China. Vietnam has come to be one of the world's largest rice exporters. Obsessed with yields to maintain that position, the government lays particular emphasis on hybrid seeds. Yet the story tells us how women concentrate on production of rice to free themselves from the market and also cater to domestic consumption. Far from the Mekong Delta region in the southernmost part of Vietnam, which has acquired the name of 'rice bowl', the women in the story are in their province growing rice to rehabilitate varieties, while also gathering themselves in women associations. Slowly but surely the work of (re)building food sovereignty is underway.

From the mountainous terrains of North Vietnam, the reader will next be transported to the hills of North India with the story from the state of Uttarakhand. This state is now known for being the birthplace of the 'Green Revolution' in India. It is here that India's first agriculture university - Govind Ballabh Pant University of Agriculture and Technology, was set up with US support in the 1960s. With USAID support, the first so-called high-yielding varieties (HYVs) were brought from Mexico to the newly-founded College of Agriculture, Pantnagar in Uttarakhand. From its campus over 230 locally adapted variants have been released as 'Pantnagar seeds' to farmers in India. The women in this story are instead about keeping their independence through: "hamar beej, hamar gyan" (in Hindi meaning our seeds, our knowledge). They warn against the cash crop culture that eroded their agricultures. More recently, the Uttarakhand State Agriculture Minister may have been the first among Indian states to ban the use of GM brinjals developed under a USAID project with the US TNC Monsanto in India. But there remain several threats to the organic status of the State, which the women in the hills will continually need to contend with. Weaning off chemical agriculture has for them been a huge task in the post-GR era. With a new phase of public-private partnerships, the second GR is being put in place. Nonetheless, vital lessons have been learnt on the ground. The loss of seed diversity has also driven the women farmers to revive lost varieties such as the Chardhan rice or the Daulatkhani wheat. Yet reverting to their traditional crops – which they claim 'work like medicine', they have slowly started the healing of their farms and their families.

From another part of India, in the southern state of Karnataka, another story speaks of how with a little 'training' – whether for making fertilisers or monitoring crops, women have emerged as natural leaders of their community. At the individual level through the kitchen and the kitchen garden small changes are now seeding big impacts. At the community level the seed bank activities are sprouting new efforts at collectivism. Sharing is being brought back into fashion. The hand-holding by a local NGO has facilitated the re-emergence of women's own knowledge. Yet the challenges remain. For the state of Karnataka is one of the epi-centres of all that is going wrong in agriculture today in India. So the women will have to confront the emerging challenges. For instance, what if one of their neighbours begin to grow GM crops or do intensive chemical agriculture? Yet perhaps the answer lies in their very seeds that they now save, use and sow. Their quest for 'good' seeds, and most importantly their own seeds will hopefully see them through.

Intrinsically linked with the act of sowing seeds, is the question of having land to sow them on. Pakistan's story herein is that of the struggle for land itself. It is rooted in the experience of Sindh Province of that country, under the Sindh Rural Support Programme (SRSP) consortium of the Government. The Sindh Government's 'Landless Harees Programme' (LHP) was launched in 2008-2009 to grant land title to poor landless tillers and agricultural workers. But the bigger fight is yet to be. For Pakistan is also at the receiving end of what is now recognised as the global phenomenon of 'land grab'. Rich foreign investors from the Middle East have been encouraged to acquire land on long term leases to be able to grow food for export back to their own countries. And the women who may have received land under the Government Programme will have to find a way to resist the seed-fertiliser-weedicide-pesticide package and cash grants offered on easy terms for their land. Though the LHP comes with the condition that the land grant will be non-transferable for 15 years. But women's activism to both keep the land and also keep with them the decision of what to do on it will be needed much more. It will need a different 'occupy' movement, to re-occupy the land with their very own agriculture.

The story does leave us with an open question – should individual land rights for women farmers be encouraged as a way forward? 'Rights' themselves more often than not coloured by the dominant political economy very easily get translated into a property relationship with a resource. And individual title holders particularly if women remain vulnerable. Also the inherent individualism of rights can go against the collectivism of communities. Experiences in other parts of the world have shown that a fundamental means to take land away from local communities had often commenced with the process of grant of property titles. Indeed lack of access to land is a key issue confronting women farmers today. But current day laws and policies are proving incapable of either nurturing communities (that guaranteed the right to use land if not own it) around land or protecting commonly-held land. Nonetheless, the issue of land has to be placed in context of a country's history and present situation.

A story which began a decade ago and continues till the present in Philippines, comes from the rural villages of Davao. It is narrated in the words of a woman who is herself key in MASIPAG – Farmer-Scientist Partnership for Development. Under a MASIPAG programme, women of Kababaihang Nagtataglay ng Bihirang Lakas (KNBL that translates into 'Women of Unique Power'), a federation of 14 local organisations organised themselves and made a conscious shift to organic farming. This was and is their statement against corporate agriculture and urbanisation itself. They have also taken the

word 'collective' seriously, reviving the old Filipino practice of bayanihan, lending group labour on each other's farms and also collectivising their produce for the local market. With their collective bargaining power, KNBL has also been successful in lobbying for an Organic Agricultural Ordinance.

While the stories point to women's own hard work to improve their farms and with it their families and communities, nonetheless, these stories also reiterate how external help will stay a pending need. As the paper on Asia's seed laws emphasises local laws, national policies and government programmes will be continually needed to play an enabling role. The stories show how help came in diverse forms; whether through non-governmental organisations, developmental agencies or agricultural scientists. For sowing seeds is not only about planting crops, it is about growing diversity and with it growing relationships. Sowing the seeds of change will require many hands to come together. May they be those of women and may they be filled with their seeds. Seeds of change.

About the Editor

SHALINI BHUTANI *is trained in law and works on trade, agriculture and biodiversity related issues from her base in Delhi, India. She has worked in several national and international NGOs in the last 15 years including the Centre for Environmental Law at WWF-India and Navdanya. In the latter, she also handled the secretariat of the global network Diverse Women for Diversity. Thereafter she opened and ran the GRAIN desk in India for over nine years as Regional Programme Officer for Asia Pacific. Currently along with others, she coordinates the Campaign for Conservation and Community Control over Biodiversity in her home country. She is also associated with networks that are looking critically at free trade agreements in the Asia region. Shalini has also looked very closely at both law and policy issues on food and farm. In this context, her expertise lies in seed legislation, issues around agricultural research and the impacts of intellectual property on genetic resources, people's knowledge and local cultures. In her writings, she does not hesitate to voice concerns amongst other things on community control and resource conservation.*

WOMEN AND RICE SEEDS IN BAC KAN PROVINCE OF NORTH VIETNAM

NGUYEN THI HOA
Centre for Sustainable Rural Development
Vietnam

Vietnamese farmers in general and farmers of Bac Kan Province in particular, have maintained their traditional experience in producing rice seeds to provide for their households for many years. However, booming population and out-of-date technique in rice seed storage and farming practices, among other factors, resulted in the degradation of rice seeds, which poses a threat to the food security. The government issued the policy of subsidy (20% - 50%) in high-productivity hybrid rice seeds, usually imported from China to some provinces, especially remote areas such as Bac Kan Province as its solution to food security besides maintaining the rice export target such as reinvestment to agriculture. However, this policy prevents farmers from keeping indigenous knowledge of preserving and developing the diversification of rice plant genetic resources. Moreover, farmers become heavily dependent on the external rice seed subsidy in terms of time, quality and price, especially that they cannot preserve hybrid rice seeds like purebred rice varieties. Furthermore, the increase in the use of hybrid rice seed will lead to the increase in chemical fertilisers and pesticides, which makes farmers poorer due to high investment in the number of rice seeds while failure in the diversification of rice plant genetic resources. As a result, a region, even a nation can lose its control over its food sovereignty.

From 2005, with the aim of supporting farmers, especially low-income women farmers in the rural area to escape from poverty and to be able to supply themselves, the Centre for Sustainable Rural Development (SRD) - a Vietnamese development agency supporting poor rural communities to sustainably manage their livelihoods through capacity building and supporting pro-poor advocacy, has run many intervention programs in order to improve people's livelihoods. One of this intervention programmes is the project "Building Farmer Groups' Capacity in Sustainable Rice Varieties in Bac Kan Province", which is implemented at 20 of 122 Communes of Bac Kan Province. The project's three main objectives are the following:

- Improve capacity in producing rice seed for more farmers, especially poor farmers and women within new communes in order to improve households' income, develop sustainable agriculture and reduce poverty;
- Farmers are able to adapt to new changes, as Vietnam became a member of the World Trade Organization (WTO), especially as the government stopped subsiding rice seeds, farmers have to control their rice seeds management under the pressure of globalisation.
- Advocate in order for the government to recognise and appreciate the important roles of farmers in producing and developing households' rice seeds to support the local people's demands; and certify some rice seeds appropriate to local conditions that farmers select.

One of the women farmers' groups taking part in the project and being direct beneficiaries of the project is the women farmers' group in Xuat Hoa Commune, Bac Kan town, Bac Kan Province. They shared that they have successfully rehabilitated and selected many varieties appropriate to local conditions such as Bao Thai, DV 108, Khang Dan 18, and Te Do, etc. These rice seeds not only meet the criteria of high productivity, high quality, high pesticide resistance but also require less investment than hybrid ones. Bao Thai, especially, is recognised as Bac Kan's specialty, which provides higher income for local farmers.

Before joining the project, like many other communes in Bac Kan Province, women farmers' groups of Xuat Hoa Commune shared, "*Due to subsidy in hybrid rice seeds and higher yield of hybrid rice in the early years in comparison with varieties, local farmers seemed to lose some local rice and corn seeds such as Bao Thai Hong, Chiem Den, local sticky rice, and local sticky corn.*" This phenomenon led to the fact that local farmers not only lost the diversification of plant genetic resources but also their control over issues closely relevant to their lives.

The interventions of the project therefore focus on providing technical knowledge and skills for local farmers' know-how to rehabilitate local varieties, compare, evaluate and select the appropriate rice varieties contributing to the diversification of rice genetic resource and adapting to the negative effects of climate change. Preservation and development of rice seed varieties have helped farmers enhance their decision-making capacity in selecting the most appropriate rice varieties to households' capacity as well as local ecosystem. Moreover, exchanging rice seeds within the community helps reduce the proportion of using hybrid rice seeds. The result of the evaluation showed that the proportion of hybrid rice varieties has been reduced from 60% to 20% at project communes.

Farmers on the preservation field of Khang Dan rice (local seed) (SRD)

The project focuses on supporting women to improve their technical, as well as decision-making capacity in production in general, and in preservation and development of rice genetic resources in particular, with the following reasons:

- In rural area, there is a belief that women will take responsibility for almost every task from transplanting to harvesting, which means they have to take care of all the periods of the harvest. While the men will be in charge of hard tasks like ploughing, it does not last during the whole harvest. As a result, women play an important role in learning new knowledge and technique and sharing them with others within the commune through monthly meetings of the Commune Women Association and community meetings.
- Both the husbands and the wives will be in charge of deciding which rice varieties they will use for each crop. However, women often take responsibility for technical tasks like transplanting seedlings. They will attend to the whole period of the harvest.
- Because mainly taking responsibility for the crop, the women are often active in applying new techniques such as compost production and System of Rice Intensification in rice production.

Women on training course of local seed rehabilitation (Nguyen Thi Hoa, SRD)

The results show that the farmers' capacity in Bac Kan Province, especially women, improve significantly. They are better at managing rice seeds and rice production, especially rehabilitating and selecting good rice seeds as well as appropriate farming practices. As a result, the yield of rice increased up to 15 – 20%, while decreased the number of rice seeds by 50%.

In the sixth year of operation of the project, exchanging rice seeds has been encouraged within and outside the project locations to help local farmers be able to control their rice seeds supply and increase the diversification of local rice seeds. Up to now, nearly 100% of the project communes and other communes use pure rice seeds, which can be used for the next crop.

The roles of women have improved significantly in their families and community due to their understanding of the techniques and skills. Local authorities has recognised the great contribution of women and encouraged them to participate in community management activities. Besides, farmers groups in project communes cooperated with the Plant Protection Sub-Department to implement communication activities and hold some rice seeds fairs to disseminate the use of pure varieties.

Farmers within and outside the project have applied the knowledge they learnt in producing rice seeds as well as rice. This change has helped farmers become more independent from external sources of rice seeds. The farmers shared, *"The price of hybrid rice varieties, even subsided, is much more expensive than our incomes, especially of the poor and ethnic minority people (15,000 đ/kg to 42,000 đ/kg, three to eight times than local varieties). As a result, we tend to produce and keep our rice seeds or exchange these for others within the community."*

Preservation and development of households' purebred rice varieties not only ensure the control over food security but also improve the roles of farmers in rice seeds production. In 2008, the Ministry of Agriculture and Rural Development issued the Decision No. 35/2008/QĐ – BNN on managing households' plant seed production. The decision is to i) encourage farmers, especially farmer women participating in maintaining, development and management of their own rice seed resources; ii) create good conditions and environment for farmers to be independent in producing their own rice varieties to fit with local conditions and farmers' capital. Moreover, the project's results also helped Bac Kan People's Committee bring two rice seeds DV 108 and Khang Dan, which Bac Kan farmers selected, into its rice seed resource of the province.

In the current situation, Vietnam paddy consumption market requires high-quality and special types of rice. Xuat Hoa Commune women farmers group is building a plan to develop Bao Thai brand and bring it to the market in Bac Kan province and other provinces in the North of Vietnam based on each group: 1/ Help them improve their families' income; 2/ Build a strong financial situation by themselves to invest, with the aim of developing rice genetic resources, especially valuable ones to meet not only Bac Kan province market, but also domestic market; 3/ Advocate to gain local authorities' support in recognising the important roles of farmers in producing and developing rice seeds in support of local people's demands.

NGUYEN THI HOA *is a Deputy Director of the Centre for Sustainable Rural Development – SRD, a Vietnamese Development Agency supporting poor rural communities to sustainably manage their own livelihoods through capacity building and supporting pro-poor policy advocacy. At present, she is in charge of the Sustainable Agriculture Team in SRD and managing different livelihood projects to improve farmers' capacity in sustainable agriculture and livelihood to ensure that farmers, female farmers and vulnerable people are able to manage their own livelihood and decision making relating to their life.*

As an agronomist, Hoa worked for CIDSE Vietnam (Coopération Internationale pourle Développement et la Solidarité – an international NGO) from 1997 to 2006 as Project

Officer in charge of Integrated Pest Management projects on rice, peanut and tea. In 2006, CIDSE Vietnam transformed itself from an International NGO to a local NGO - Centre for Sustainable Rural Development.

Hoa has a long experience on aspects of sustainable agriculture, livelihood, community development working with community based organisations, local people's participation and local governance, especially in the aspect of local women's empowerment.

HAMAR BEEJ, HAMAR GYAN (OUR SEEDS, OUR KNOWLEDGE)

REETU SOGANI
Uttarakhand, India

Parvati, 65, the first woman headperson of the Van Panchayat, a local forest council, lives in a small remote village in Bheerpani area, in Nainital district of the hilly state of Uttarakhand (located in Northern part of India). She has been working in the fields like the rest of the women in her area since childhood. She is the one who cultivates crops, rears animals, gathers biomass from forests, and fetches water for her family needs and for livestock keeping. Reflecting on women's lives in the hills, she says, "*Women are engaged in work the whole day (round). We grow crops, look after them, harvest them, store them, and then process them for preparing food. We are the ones who get wood, twigs, and grass from the forest, feed our cattle and look after them, but have hardly any time for ourselves. In 'asauj' (month of September-October) we get up*

Agriculture in the hills (Beej Bachao Aandolan)

Diversity in view: diverse variety of kidney beans.
(Reetu Sogani)

at four in the morning, work non-stop till late hours in the evening. Women's lives are very hard, in the hills".

Interestingly, women's contribution in various agricultural activities right from field bed preparation to preparation of seed bed, harvesting and post harvesting activities, not just with respect to a number of tasks performed but also in terms of time spent, is much higher compared to men. She contributes a big share of the total labour in farm production in the hill agriculture.

Not surprisingly, she is the "farmer" in a real sense. Except for ploughing and harrowing which are predominantly male activities, she does everything else. But sadly, she is not recognised as a farmer by neither administration nor society. This is the view echoed by most of the women comprising local women's groups in Bheerapani area, with respect to women's life in the hills. Women came together in 2001 to constitute these groups with the help of a rural-based organisation, Community Awareness Centre (CAC). This organisation helped form 4-5 local women's groups, representing different villages in the area.

Rural women, particularly living on the hills, have been the custodians of traditional knowledge systems which has helped them cope with difficult conditions to survive in environmentally fragile areas. They have applied this unique knowledge of local species, ecosystems, and their use and skill to secure sustainable livelihoods and fulfill their needs for centuries. But unfortunately, their immense contribution to rural subsistence economy continues to remain veiled.

Just like all the other mountain ecosystems all over the world, fragility, inaccessibility, marginality and diversity mark the lives of people living in the Himalaya as well. To survive in these difficult and unique bio-physical conditions, people here gradually came up with 'human adaptation mechanisms' or the knowledge systems. Continuous observations, experiences and experiments, and adaptation by the local people, resulted in this rich base of local knowledge. The region boasts of a tremendous variety of different grains, pulses, spices and many unique agricultural practices.

Shift to cash crop, introduction to 'Green Revolution' techniques, and degradation of forests as well as replacement of broad-leaved species with pine forests, government interventions, and market economy has had a great impact on the lives of women, her role, work patterns and participation in hill farming systems. This has not just added to their workload but has also made a dent in their status and power, and made them loose control over their labour and knowledge.

According to Hemanti, a woman group leader from one of the groups, from Dalit (socially discriminated) community, "*Earlier we would do everything, including the decision to choose crops for different patches of land, the seeds to be used, method of selection, storage and their protection.*" Adds Parvati, "*But now men get the seeds, fertilisers from the market, they decide the crops to be grown especially those which could be sold back in the market. We continue to toil in the field, our labour input has not gone down in any way but most of the transactions are now being done by men.*"

In the Bheerapani area, continuous discussions with local people resulted in the implementation of an elaborate plan pioneered mainly by women's groups, with the support of a local organisation called Community Awareness Centre or CAC. (CAC is a grassroot organisation dedicated to the preservation, strengthening and promotion of people's knowledge. Apart from working at the grass roots level in Nainital district of the hilly state of Uttarakhand, it strives to work at the organisational and advocacy level for integration of people's knowledge in the development process.) Gradually others, including men followed suit in these initiatives. For the first time women became part of the development processes involving agriculture, forestry, and *panchayats* (local self-governance bodies) at the local level. The plan involved freeing their lands of chemicals over a period of time and bringing back sustainable ways of farming. This included discontinuing the use of chemical fertilisers, pesticides, herbicides, and hybrid variety of seeds and monocropping. They decided to revive mixed cropping system, bring back traditional seeds and crops, and environment friendly methods of crop cultivation. Sustainable

Workshop session with women's group
(Reetu Sogani)

Workshop session with women's group (Reetu Sogani)

methods of forest utilisation and its management were also taken up by women through increased participation in local forest council and small forest protection groups.

Women strongly felt that the introduction of so-called 'high yielding' seed varieties and agri-chemicals has been one key factor behind the erosion of rich and diverse base of traditional seeds. Having always supported and believed in diversity, they became the main driving force behind this revival.

Women in the Uttarkashi district, which is thousands of kilometres away from Bheerapani area, are echoing the same feeling. According to Sumitra, living in the Uttarkashi district, "*Our 'chardhan' (a variety of rice) is unparalleled. People come even from Himachal (Pradesh) to buy it. New varieties have come and gone but chardhan is here to stay. It is good not just for eating but also in growing. Chardhan's 20 cans are equivalent to 80 cans of new variety (bauna variety) of paddy.*"

The women (in both areas) shared that, "*When we started growing only cash crops (in the 1990's) we gradually became dependent on the market for seeds, fertilisers and other inputs. We would grow only vegetables like cauliflower, cabbage, peas and so on, primarily for the market. For our own food, we would again depend on the market. Gradually we lost our seeds and also the practice of saving and exchanging seeds with our neighbours, relatives and nearby villages.*"

Women would even get seeds from their maternal home. This is a practice still seen in many villages. Says Anandi, "*Our ancestors would grow several crops and varieties as an insurance against fluctuations in weather, pest attack and other diseases and disasters. We would grow different crops in the same plot of land especially during May-October/November season.*" Even if one crop would get damaged, at least others would continue to survive. This diversity ensured continuous food supply and takes care of the food and nutrition security of the family. The North Indian hill state of Uttarakhand alone had 3,000 varieties of rice till a few decades back.

Their importance from the human health point of view was substantiated very well by Kalawati of Almora district. According to her, "*Our traditional crops work like medicine such as Kauni (fox tail millet). This is given at the time of measles. Likewise, Madira (barnyard millet) is very helpful when one has jaundice and Mandua keeps us healthy. Brown rice is good for our digestive system.*"

In fact, women in the Almora district area also made efforts to start a seed bank a few years back. This continued for some time with excellent results. Women collected and cultivated different varieties of at least 40 crops including grains, vegetables, lentils, spices, among others. Many of these had disappeared. Besides making traditional seeds easily available, it had other advantages for Dalit women. Says Munni devi, "*I had to forego agricultural season several times in the past as we were dependent on higher caste people for seeds. Around sowing season, we worked in their fields primarily for seeds but on few occasions failed to get them on time. We kept waiting and had to let go of the season and our field remained 'banjar' (fallow) for 6 months. I used to feel miserable on such occasions.*" But with seeds easily available in the seed bank, such incidents became a thing of the past.

According to Hemanti from Bheerapani area, the women farmers had sufficient knowledge of conserving seeds. They were solely responsible for seed preparation, collection, processing and their storage. Hinting upon some of the unique traditional methods, she continued, "*Seeds were either stored in 'tumri' (hollowed gourd shells) or 'bhakars' (wooden boxes made of chir/pine wood) and occasionally in covered bamboo or 'ringal' baskets plastered with cow dung from inside popularly called 'korangi' (they are not much in use now). Seeds were usually mixed with*

Chari, a plant which is used as fodder plant and also used for making broom (Reetu Sogani)

cow dung/gobar ash or walnut leaves or even smeared with oil, to ward off insects and pests. We had lots of ways to conserve and store our seeds."

She continued reflecting on the system of seed exchange which existed earlier and still exists to some extent at present. "*We would take seeds from our neighbours and give them different seeds, either of the same crops (of different varieties) or different crops. We needed different varieties as some would be used for ceremonies such as death anniversaries, few had good taste, while there were some which required less water, could stand long heat spells and so on. This is how we would address our needs through diversity and interdependence. But gradually, because of 'nakdi fasal' (cash crops) we lost out on our 'ghar ke beej' (traditional seeds).*"

Along with the seeds, this rich knowledge base slowly started getting eroded. Says Kalawati, "*Our children will have no idea of the immense wealth we had in terms of seeds. Moreover, knowledge with respect to their cultivation, nutritional value, and cultural importance would be totally gone by then.*" According to the women, discussions, workshops, exposure trips with the members of Community Awareness Centre (CAC), made them realise the great loss.

"*We tried to bring back some of the seeds which were still there in and around the villages. We decided amongst ourselves as to who will create the nursery of which crop. This was primarily to increase their number and distribute it amongst households. Now we have our choice of seeds and crops. Women love to have 'Mandua' (finger millet), Gahat (traditional lentil) but earlier nobody would listen to us and we had to grow cash crops despite our wishes.*"

Most of the women had no doubts while making a comparison, "*Our own seeds are excellent sources of nutrition. They provide a lot of fodder unlike some of the seeds we have used of block variety. We experimented with 'hybrid' variety of Mandua (finger millet) but did not like it, as the taste was not good. Moreover, it did not provide good amount of fodder for our animals. Our own varieties of Mandua and other grains and lentils are the best. They are good sources of nutrition and fodder besides being tasty. Hence, we do not take seeds from the market or government but prefer to use our own.*"

Some of the seeds and varieties which had either become extinct or were on the verge of extinction, were brought by women and men, as well as CAC from far off areas, like "Cheena" (proso millet) from Sua Khan area in the Almora district, or collected from one or two households having those extinct seeds in the Bheerapani area. Some of the traditional varieties such as "daulatkhani" variety of wheat were also revived through these combined efforts of women and the CAC. "Cheena" (proso millet), "Madira" (barnyard millet), "Bhangjira" (local spice), "Ramdana" (amaranthus) and even fodder plant like "Chary" (used for fodder and brooms), etc, being almost miniscule in quantity had to be cultivated carefully to increase their number. This responsibility was given to a few selected responsible women.

Biodiverse ecological agriculture
(Beej Bachao Aandolan)

Availability of traditional seeds was not the same in all the villages. It was also different amongst different communities. As stated proudly by Hemanti, "*We had continued growing traditional seeds despite the lure and attraction of the market. Thankfully, some of the rare seeds and quality seeds were available only in our village. People from the so-called higher caste communities came to us for the first time for these seeds, having realised their value.*"

These seeds have had an impact on the health of our animals also. Says the village ANM (auxiliary nurse midwife), "*Earlier the animals were so weak that it was not possible even to give them injection. But local seeds and easy availability of grass and other quality feed for animals has had an impact on their health. Feed prepared from local millets such as Madira, Mandua, etc. is an excellent source of nutrition for animals, too.*"

This endeavor has brought back some of the seeds which had completely disappeared from people's plates and fields. According to the women, "*Our children are also getting a taste of 'the real wealth' we had. Though it was not as easy for us as they are influenced hugely by TV, radio and also advertisements they see in the markets and shops unabashedly advocating junk food. "*

Some of the younger women shared with a tinge of surprise that traditional seeds do not rot or get affected by pests for a much longer time. Moreover, they take less time to get cooked resulting in saving fuel and time as well.

Earlier, people also felt forced to sometimes buy seeds from the market, especially vegetables, since traditional seeds were not so easily available in the area. But such incidents have also gone down. This has also resulted in replacing cash crops with food grains, millets and so on.

Availability of fodder from traditional crops has also reduced women's workload considerably. This has also made a considerable impact on the amount of walking Parvati had to do every day to collect grass and fodder for animals. "*We spent so many hours earlier just walking to the forest and coming back with loads of biomass. Now we are spending that time in attending meetings, having discussions on village-related issues,*" said Parvati with oozing confidence.

Thus, farming systems based on women's knowledge of diversity has been proven critical in this movement. Seeds are critical in the food chain and women's roles as seed savers and breeders have been largely responsible for keeping the diversity alive. This holds the key to food and livelihood security of the people especially in the wake of climatic changes and increasing non-viability of agriculture itself due to highly expensive agricultural inputs. Her knowledge and skills as seed breeder and saver need to be duly acknowledged and recognised.

REETU SOGANI *has been working with women, indigenous communities and the marginalised at the grassroots, in the remote areas of the Middle Himalayan ranges for the last 15 years on the issue of women's empowerment and people's rights over their resources and knowledge systems with the rights based approach. She is carrying out her work at the community, organisational and advocacy level with policymaking individuals. Her educational background comprises Masters in Management followed by a Doctorate in Environmental Management.*

SEED QUEST AND WOMEN

DR. VANAJA RAMPRASAD
Green Foundation
India

Seed has been the lifeline and source of sustenance ever since organised agriculture came into existence. In recent times it has also drawn the attention of the world community as a means of technological intervention in agriculture for commercial interest on one hand and on the other, the imminent need to conserve the diversity that is on the threat of extinction from the farmer's point of view though there have been attempts by the scientific community to preserve the diversity in high technology gene banks.

Technological revolution heralded the advent of miracle seed during the green revolution period when the high yielding varieties that responded to external chemical inputs replaced the indigenous diversity that were held by farmers, just after

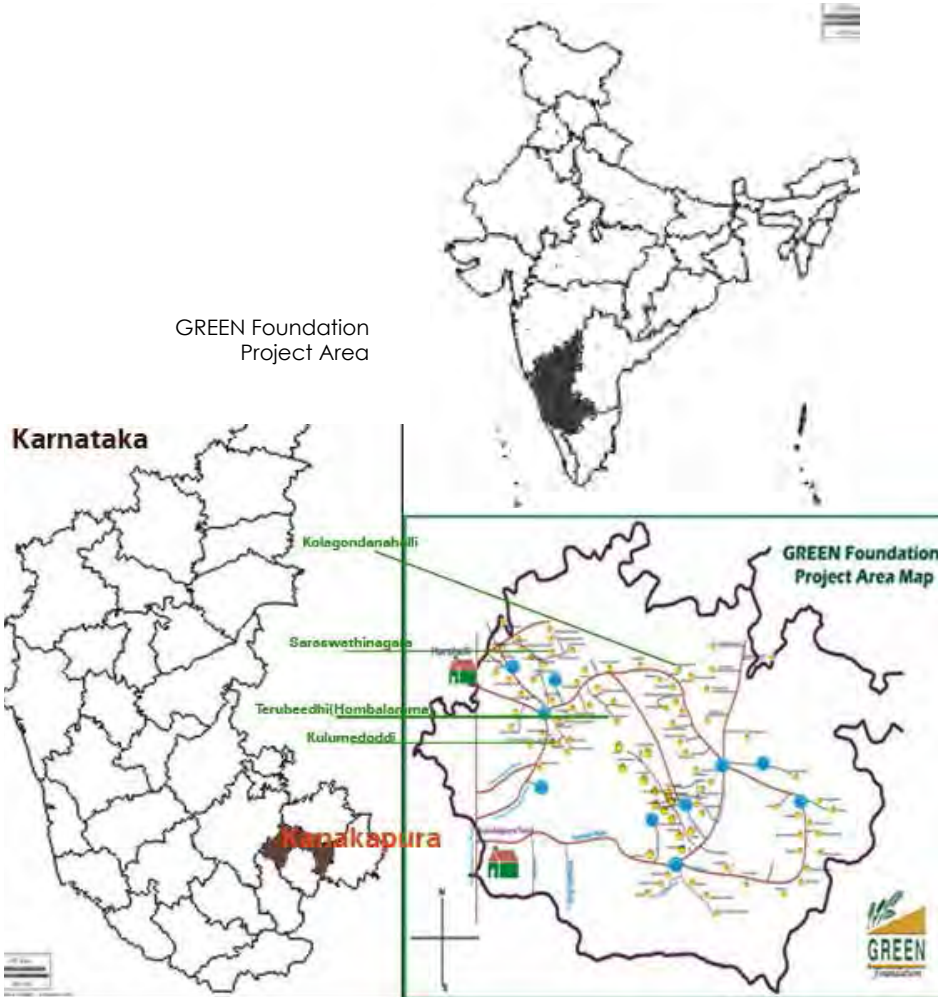
Diverse Paddy Varieties (GREEN Foundation)

Woman farmer with indigenous varieties of finger millet (GREEN Foundation)

the Second World War. The impact has been an irreversible loss in the genetic diversity for the Indian Agriculture that farmers had nurtured over the centuries. The heirloom seeds that farmers held in their possession were the living links in an unbroken relationship to the land reaching back to antiquity. Farmers' centuries ago, especially women began domesticating crops with the simple acts of selecting seeds for re-sowing. It is well known that seed selection and breeding are sophisticated skills that have evolved over generation in the hands of women. Saving seeds thus became a part of the culture and tradition that made agriculture a way of life. Today, industrialisation of farming has taken rapid strides so much so that cultural diversity and biological diversity have become major issues of concern. Despite this, rural farm women have kept seeds as commons and women's work on farms is based on indigenous knowledge. The recent trend in loss of agricultural diversity is described as a biological meltdown.

There have been many interventions by community-based organisations (CBOs) and NGOs to stall this process through initiating community seed banks which is a system in the process of community agriculture that includes village level facilities, a garden or field where traditional varieties are safeguarded. GREEN Foundation, a grassroots organisation working in Karnataka, South India with farmers since 1994, has innovated participation of farmers in saving seeds that are open pollinated and that are indigenous to agriculture. Through this system, women have played a key role in the creation, maintenance and promotion of crop genetic diversity. With the help of traditional skills which have developed over the centuries, they have been selecting crop varieties to meet specific needs such as quality, resistance to pest and pathogens, adaptation to soils, water and climate. Under this system, local farmers have established their own seed networks to facilitate seed supply to their families and local markets. Community Seed Banks is therefore a system composed of all of the above. It is among the major strategies for maintaining genetic diversity in crop/ plant species.

Travelling into the neighborhood of the metropolis Bengaluru, vestiges of the revival of farming, seed saving by women who still express their skills and keen interest are seen.



Meet some of the brightest women who lead their community to save their heritage.

Sujathamma, an individual seed saver from Kanakapura Taluk

Confident and outspoken, Sujathamma is a natural leader of her community in Kanakapura Taluk, south of Bangalore, mixing a strong sense of purpose with a cool dose of truthfulness and honesty in everything she does. But as she explains, this was not always the case, "*I used to be so shy that I could get nothing out when I wanted to say something.*"

The neat kitchen garden around her home stands as a testament to just how successfully she has implemented changes in her life, thanks to these initiatives. Her journey as an individual seed saver and community leader has been twelve years in

Permaculture method of Kitchen Garden (GREEN Foundation)

the making. And as she says, "*It all began with the kitchen garden*." GREEN initiates the setting up of kitchen gardens for small scale and marginal farming families, with an aim to strengthen their food security. Over the years, some 950 kitchen gardens have been set up through these efforts, positively impacting the lives of as many families.

GREEN makes use of the permaculture concept developed by Mollison and Holmgren to develop sustainable land use designs that minimise work and maximise productivity. (Bruce Charles Bill Mollison, born in 1928 in Tasmania Australia is a researcher, author, scientist teacher and naturalist of permaculture. He is considered to be the father of permaculture, an integrated system of design, co-developed with David Holmgren that encompasses not only agriculture, horticulture, architecture and ecology, but also economic systems, land access strategies and legal systems for business and communities. In 1978 Mollison founded the Permaculture Institute in Tasmania.)

Sujathamma has received training in various aspects of managing a garden. A vermicompost pit in the corner provides fertiliser for the kitchen. Like many farmers who undergo GREEN's intervention programmes, she makes fertiliser at home. "T*his is very good for the garden*," she explains proudly.

These kitchen gardens are also excellent sites for *in situ* conservation of indigenous vegetable seeds. Around Sujathamma's own garden, at least ten different varieties can be seen, even during the dry season. Arranged neatly in the front yard are the various indigenous seed varieties she saves each year. She conserves over forty different varieties of vegetables, two of paddy and at least ten indigenous varieties of millets and pulses. This, she maintains to this day in a room at her home. She believes very strongly in biodiversity conservation. As the seeds dry slowly in the sun, she explains how she came about converting a room at her own home into a seed bank.

Individual seed savers like Sujathamma work actively to enrich the biodiversity of their communities. "*The seed bank is like our own small baby," she says. "And it has become a routine part of our day to take care of it. I want that there will be seed banks all over the state and our country, because they help farmers so much. It is my dream to see that happen,*" she says.

On seed banks and seed conservation
Rajamma, a revolutionary farmer from Kulumedoddi

"*One year, we could not find any di-ammonium phosphate or DAP in the local market. We went in search of it everywhere, but we found nothing. It was a very poor harvest that year, even though there were good rains. We had become dependent on outside sources for our needs*," explains Rajamma, a trusted community member in Kulumedoddi, in Kanakapura Taluk, south of Bangalore.

This dependency on external sources for inputs of farming had left her and her family vulnerable to fluctuating markets, weakening their livelihood security.

Chemical fertilisers are not the only farming inputs that Rajamma acquired from external sources. Of particular concern was access to good quality seeds within her community. As she says, "*Everything in agriculture begins and ends with the seed.*"

For years, farmers in Rajamma's community would buy hybrid varieties of vegetables. "*We used to wait in long queues to buy 'packet' seeds every year during sowing season*," she recalls. "*The problem with 'packet' (hybrid) seeds*," she adds, "i*s that they cannot be saved from year to year.*" Community members in Kulumedoddi report that changing cultivation practices over the years resulted in a loss of indigenous varieties in the area. As farmers reverted to the use of hybrid varieties, seed conservation practices slowly began to disappear. This affected the food security of community members, most of whom are subsistence farmers cultivating crops for family consumption. "*In the olden days, there used to be many different seed varieties. If a six-month crop failed, we had a fast-maturing, two-month crop that we could grow for our families,*" explains Shivrudraiah, a noted community leader in the area.

GREEN's work is based on this very understanding that farm biodiversity is crucial to the food and livelihood security of small scale and marginal farmers. Its efforts aim to restore lost biodiversity through the collective efforts of farmers themselves. Rajamma explains why indigenous seed varieties and good seed management are so important to her, "*With indigenous varieties, excess seeds can be used for home consumption. This is not possible with 'packet seeds' bought from the outside.*"

Seed Bank at Saraswathi Nagar, Kanakapura, South Bangalore (GREEN Foundation)

Once a Community Seed Bank (CSB) was established in Kulumedoddi through GREEN's initiation, it provided farmers like Rajamma access to good quality seeds within their own community. CSBs give farmers free access to seeds upon the condition that they return twice the amount they borrowed. "*I've been using the CSB for seed exchange since it was started,*" says Rajamma.

As she explains, the CSB means that she no longer has to wait in long queues for seeds that may not be available; it means she saves money because she does not have to buy seeds and very importantly, it means increased food security. "*Indigenous varieties don't need much water and they are resilient to climate change*," says Rajamma. These varieties also strengthen the nutrition security of her family. "*They have many nutritional benefits which are not there in hybrid seeds*." She can now pick and chose from a variety of indigenous seeds, those cultivars that are best suited to her family's needs.

The activities of the CSB propagate good seed management practices within communities. For Rajamma, good seed management and conservation also addresses economic concerns, "O*nly when we have good seeds for good harvests can we have good savings,*" she says. Indigenous seed varieties also respond well to low-cost organic inputs, which cuts down costs of cultivation for farmers.

Rajamma now involves herself in the day-to-day management of the Devaralamma Community Seed Bank of Kulumedoddi. Each CSB has a Community Seed Bank Management Committee, which is responsible for keeping track of seed transactions, proper seed storage, disseminating knowledge of good seed management practices etc. Members are trained by GREEN in proper record keeping and maintenance of CSBs. This training has, in particular, empowered women farmers in the area to become more involved in decision-making processes in their communities, leading to more efficient resource management of their farms.

Increased cultivation of indigenous seeds through GREEN's intervention activities has lead to increased demand for these varieties in surrounding areas. So much so, in fact, that farmers are now ordering seeds from the CSB months in advance of sowing season.

One of the biggest reasons for this is also the fact that indigenous seeds respond well to low-cost organic inputs that can be prepared at home, leading to greatly reduced dependency on chemical fertilisers such as DAP. Now, whether there is DAP in the market or not, there is a very strong likelihood that the harvest will be good for Rajamma.

Hombalamma Doddi in Kanakapura Taluk
A seed mother, farmer, barefoot scientist, practitioner of organic farming all rolled into one

Hombalamma bustles about preparing fresh lime juice with limes plucked fresh from her backyard garden. Her house is buzzing with activity as the whole family is engaged in extracting oil out of castor seeds grown on her fields.

Hombalamma is an active organic farmer who has been part of the movement to save seeds initiated by Green Foundation for the last decade. The only earning member in her large family, the six acres of land she owned were the only assets she possessed and she remembers how she had to struggle to make ends meet by cultivating the land. She recalls the time she had cultivated her fields with chemical inputs and seeds. "*I used to wonder why my yields were reducing every year and why the soil on my fields was becoming hard and unproductive.*"

Though she was skeptical in the beginning, Hombalamma decided to adopt the practices recommended by GREEN Foundation. Several years down, she is beaming with pride as she looks far into the distance and sees that her fields are bursting with bountiful yields of grains, pulses, vegetables and castor seeds.

Hombalamma has been able to buy six additional acres of land out of the surplus income she has earned by sincerely adopting traditional practices, using traditional seeds and believing enough in the system to stay with it. As she says, "*It took two years before the soil responded to the different system of agriculture I had adopted.*

Hombalamma - Seed Mother toiling in her field (GREEN Foundation)

The fertility which had completely disappeared had to be built into it all over again. But I persevered and I am happy I did. I have built up enough assets for my entire family to be comfortable."

Hombalamma is the recipient of the SRISHTI* Samman Award for Conservation (*Society for Research and Initiatives for Sustainable Technologies and Institutions). She is now much in demand as a resource person and visits different parts of the state to give interested farmers know-how on traditional agriculture.

Women as custodians of biodiversity
Manjulamma from Kulumedoddi in Kanakapura Taluk

Women also work under stressful conditions and farmers like Manjulamma fight the stress in their own stride. Manjulamma knows the challenges of being a farmer: if it is not troublesome pests and diseases that cause worry, then it is the lack of proper water supply that pose a threat for her family's food security. Sometimes, even when there is plenty of water, there is no electricity supply to work the pumps.

This was the case a few years ago in her village of Kulumedoddi. Lack of electricity cut off water supply to her fields for a month and most of her crops failed. "*Everything was gone except for the indigenous varieties we had planted at GREEN's suggestion. Those crops survived. That's when we realised how important they are for us*," she says.

While every farmer may face these difficult challenges, a woman farmer also deals with the daunting chasm of the gender gap still present in the Indian agrarian world. "*A few years ago, we were not very involved in decision making*," she says. For women farmers in her village of Kulumedoddi, Kanakapura Taluk, convincing decision makers in their families to take up the cultivation of indigenous seeds proved challenging.

Capacity building initiatives by GREEN aim to raise awareness of women farmers to increase their knowledge and understanding of the importance of indigenous seeds and biodiversity conservation. Traditionally responsible for managing the seed requirements of their families, they may be considered the custodians of biodiversity. Community Seed Bank meetings, exposure visits, training sessions on sustainable agricultural practices, good seed management practices among many others have contributed to better management of farm resources as well as improved social standing of women in their communities.

In Kulumedoddi, the influence of women farmers has played a very important role in the promotion of indigenous seed varieties. The Devaralamma Community Seed Bank facilitated by GREEN in Kulumedoddi, which is in many ways at the heart of biodiversity conservation efforts within the community, is run almost entirely by women of the village. Trained in good seed storage and management practices, they are also responsible for maintaining seed transactions. Speaking from experience, Manjulamma says that indigenous varieties have many advantages, "*With indigenous seeds, you can use organic inputs to get good yields. When it comes to hybrid seeds, good yields are only possible with the use of expensive chemicals.*" She was able to cut down the cost of her farming inputs once she took up cultivation of indigenous varieties.

Experiential learning of farmers and research conducted by GREEN over the years reveal that these varieties are more drought and pest resistant as well as suited to local climatic zones, qualities which make them especially favourable to farmers. They can also be saved from year to year (a characteristic lacking in hybrid seeds) which cuts down costs of seed purchase for community members struggling to meet the expenses of farming.

For Manjulamma, conserving these seeds is very important; they have contributed to strengthening the food security of her family. "*Seed saving gives us access to good*

Crop monitoring by women farmers (GREEN Foundation)

Women participating in seed selection (GREEN Foundation)

seeds in the future that are suited to our needs," she says. "*We are more certain of good yields*," she adds.

Many community members were initially unconvinced of the benefits of these varieties, but such perceptions have changed over the years. The combined efforts of women in the village have resulted in more and more farmers taking up the cultivation of these varieties. This has resulted in increased seed and information exchange. Today, says Manjulamma, the demand for indigenous seeds is so high that farmers from surrounding villages are now requesting seeds from the CSB.

Jayarathnamma - a rural entrepreneur and an enterprising farmer

Jayarathnamma is a small-scale entrepreneur hailing from a farming family from Kolagondanahalli, Kanakpura Taluk, Ramnagara District, in Karnataka, India. She runs a hotel in the nearby village but her heart lies in farming and she helps her father and husband in farming during her spare time.

She has been growing vegetables in a small patch for many years. Interestingly after intervention of GREEN Foundation in Kolagondanahalli village, she was introduced to many aspects of kitchen garden like:

1. Health and nutrition;
2. How to use the household waste as the inputs;
3. How to grow different varieties throughout the year through permaculture;
4. How to make her own seeds.

GREEN Foundation consistently has been insisting the farmers in kitchen garden programme to grow more varieties and supplement backyard vegetables for a better health.

Jayarathnamma was trained in permaculture or permanent culture by the field staff of GREEN. Permaculture is the sustainable land use design. They use patterns to minimise work and maximise productivity. In the kitchen garden, Jayarathnamma used the wheel pattern, where different varieties of vegetables and greens were grown.

Jayarathnamma used the small patch of land in her backyard to cultivate a kitchen garden. She used the dry waste to mulch the land, dig and prepared raised bed of 3/4th feet using farmyard manure and vermicompost. A wheel pattern was drawn with borders. Different vegetable varieties were sown. The borders are used to grow greens. She also has prepared raised bed measuring 8x4 and used this bed to grow creepers, tomatoes and okra.

Jayarathnamma is a proud kitchen gardener growing more than twenty varieties of vegetables like okra, beans (five varieties), field beans, bottle gourd, bitter gourd, ash gourd, and greens. Consistent vegetable production has increased the family's nutritional status as they are consuming various vegetables throughout the year. The whole family is involved in farming.

Jayarathnamma is leading self-help groups (SHGs) in her village. There are sixteen women in her SHG. She had opened an SHG account in the nearby bank, where women are saving and have availed loans up to INR 2.5 lakhs (USD 4,800) for income generation programmes. They have received subsidy from the government towards livestock and small enterprises. Jayarathnamma is a true leader. She has motivated the members to use the loan effectively and has regularised the repayments.

Jayarathnamma is also running a small hotel in her village where she makes earnings of INR800-1000 (USD 14-16) per day. This earning has helped her economically and she is able to educate her daughters without any hindrances.
Jayarathnamma is a model for thousands of rural women who are caught in the web of poverty and social stigma. She has excelled herself as a leader, entrepreneur and more so she is an example of women's role in agriculture. It is no doubt that the women are the backbone of agriculture and play a major role in seed selection, storage and

Jayarathnamma, proud owner of her kitchen garden (GREEN Foundation)

kitchen gardens as a source of seed and food.

To conclude, the crisis that today's farming community is facing is complicated by links with agro-chemical companies, seed companies, veterinary drugs, banks, food processors, retailers, packers and other stake-holders in the food production and distribution chain. Each link in the chain is being controlled more and more by giant corporations. India in the last three to four decades has focused on chemical intensive farming and reached national level self-sufficiency but today we are importing wheat which is the staple food of millions in this country. We have farmers committing suicide. Women have resisted the onslaught by corporations and have played a major role in changing the mindset of the Green Revolution era which did not look at the regional variations. There have been similar efforts to empower women by many NGOs to remodel the system to bring together the water, soil and the flora and fauna to perceive it as the food we eat. Women have demonstrated that the most important lesson we learn is the circular loops of fertility, seeds and resilience of communities in the food web and have shown that food production is also about biology and not just economics.

DR. VANAJA RAMPRASAD *trained in the field of nutrition and biochemistry and took initiatives to study the alternatives in health care. She began her career at the Bangalore Baptist Hospital initiating the nutrition rehabilitation centre and served as a consultant to several International organisations. As a member of the medico friends circle, she was involved in issues around environment and health, population and food security, women and health. She also had the opportunity of studying at the Indian Institute of Management as part of the postgraduate fellow programme in Health Management. She travelled across India to understand the lives of the rural people and their problems. She was also involved in a study of the impact of the green revolution on the lives of small and marginal farmers. In the last two decades, Dr. Vanaja has focused on conservation of agricultural diversity and has spread the concept of community seed banks and seed saving and sustainable agriculture by farmers. She has pioneered the organic movement in the state of Karnataka. She has travelled widely, lectured and networked with several International organisations. She has documented indigenous knowledge in agricultural practices and is the founding member of the Foundation for Genetic Resources, Energy, Ecology and Nutrition. In recognition of her tireless work, she was awarded the Equator Initiative Prize by the UN for the work on "On farm conservation of agricultural diversity" in 2004, the Women in Vocation award by the Rotary in 1977, and for the Sake of Honour in 2004. She has several publications to her credit. Dr. Vanaja also served as a lead author in the IAASTD process. She was on the World Board of the International Federation Organic Agricultural Movement (IFOAM). Dr. Vanaja actively contributed to the Seed Position paper of IFOAM during her tenure.*

WOMEN RECLAIMING THEIR RIGHT TO RESOURCES

NASIRA HABIB
Khoj–Society for People's Education
Lahore, Pakistan

The story of agriculture starts with women's understanding of seeds and handing them back to mother earth for multiplication so that food security for the family can be ensured. With the initiation of organised agriculture, post harvest operations, along with numerous other agricultural activities, have remained almost the exclusive responsibility of women for centuries, which made them custodians, and experts of seeds and other genetic resources.

Then came the so-called "Green Revolution" introducing a couple of seeds changing the whole connotation of agriculture and replacing biodiversity, which had ensured food security for centuries, with monocultures. The agricultural inputs were turned into commercial commodities. The foundations of the centuries old sustainable agricultural systems were shaken. Women were sidelined and men were recognised as farmers and became the 'beneficiaries' of technology transfer, training, free or subsidised inputs, labour and time saving machinery, tube wells, loans, subsidies and market incentives. There was a total blackout on the presence and contribution of women on the farms.

Pakistani women account for about 43% of agricultural workforce with extensive participation in the production of major crops, livestock and ecological conservation activities along with household production. They produce 60% of food in the country but their control over land is almost non-existent, although there are no legal restrictions on women to own land. They have the right to acquire land under the state and the shariah laws but as regards the ownership of agricultural land, women generally get the title through inheritance which is seldom converted into actual control.

Land is the most bountiful benefactor. It provides the best security for livelihood and surest guarantee against poverty. Land ownership provides a firm foundation for social status and political power. The systematic deprivation of women of the effective ownership of land results in marginalisation and invisibility of women and

A woman holding a certificate of land ownership
(Oxfam GB Pakistan)

their contribution in agriculture. The very fact that a woman has to leave the land in favour of other men in the family after the death of her husband, no matter how active she may have been on the farm alongside her husband, shows that women are not recognised as farmers.

The invisibility of women as food producers reflects in the neglect of their nutrition and health requirements by themselves as a result of a lower self-image and by the society at large. National Nutrition Survey 2011 draft report tells us that 52% of the rural women in reproductive age are anemic, 38% of pregnant and 27% of non-pregnant women are iron deficient, 58% are calcium deficient and 67% of pregnant and 62% of rural women are vitamin D deficient. These are alarming figures.

Without recognising women as farmers, which logically entails recognition of their knowledge, skills and expertise starting from seed preservation to on-farm activities to post harvest care and maintenance, nothing can ensure their status as equal citizens, as decision makers, as co-producers and as political catalysts. And the prerequisite for a farmer is to not only have access but also control over land and resources.

Something unprecedented happened in the province of Sindh in Pakistan in 2008. The landless rural women were recognised as farmers and the Government of Pakistan People's Party announced a landmark programme of land distribution among the poor peasants in the province. The government announced to distribute about 225,000 acres of state land among landless peasants particularly in Sindh in the first phase. For the first time in the history of Pakistan, land has been distributed mainly among the landless women of Sindh.

The implementation of the programme began in September 2008. A total of 2,845 landless women were granted land in 17 districts of Sindh. Women make 70.61% of the beneficiaries of the 41,517 acres of the land distributed. The size of land granted varies from 4 acres to 24 acres.

Suhagaan showing her land to a visitor
(Oxfam GB Pakistan)

The programme seems to be cognisant of the fact that mere grant of title may not be any real help for the hitherto landless, resourceless and powerless women and their families. A support package was announced with the promise that the beneficiaries of the land distribution programme would be fully supported for at least a period of two years until the time they attain sustainable livelihoods. The support package would depend on the type of land. However, in general, it includes ensuring availability of water, provision of inputs through cooperatives of *haris* wherever possible, leveling of land where required and procurement of agricultural implements on subsidised rates.

It is not surprising that there have been many lacunae in the process of identification of available land and land grantees, in issuance of allotment orders and ownership document, in land demarcation and in ensuring support package to land grantees. In certain cases, women are facing litigation and harassment from the local landlords. Supporting women land grantees requires a practically oriented and well thought out follow up support programme.

A number of non-governmental organisations and activist groups are extending a helping hand to women to assert their fundamental rights in a ruthlessly patriarchal society.

Saun Bai's Patch of Heaven on Earth!

Thirty-four years old Saun Bai is a beneficiary of such a programme, supported by Oxfam GB. She lives in Meenhon Khan Village in Umerkot with her husband and seven children. As a landless farmer and a member of the Hindu minority group, her life has always been difficult. She worked on daily wages on the land of a local landlord alongside her husband. The village society is dominated by the local landlords – the *vaderas* – who exploited her. She had no say in fixing the payment for her labour. There was no way


Saun Bai telling her story
(Oxfam GB Pakistan)

but to accept the meager wages in cash or in kind, the rate of both depended on the discretion of the landlord. As a result, she was forced to make both ends meet managing within the very scarce resources to feed her family and to raise her children. Saun Bai talks about the exploitative and difficult conditions in the following words, *"Before we had this land, me and my husband had to work nine hours on the landlord's land for minimal daily wages in order to feed ourselves twice a day, which was sometimes even not possible due to the rising prices of food."*

The situation forces them to remain in debt all the time and there is little hope to come out of the clutches of endless poverty. As there is always shortage of cash and other resources there is no other way but to depend on the middlemen for procurement of food, agricultural inputs and other necessities. The unfavourable purchasing power makes the poor farmers be content with higher prices and substandard goods. But they had no other option.

Living in a community far away from the nearby major city – Umerkot – Saun Bai had no way to learn about the Sindh government's land distribution programme and the priority given to the women in the programme. It was during one of the awareness sessions held in her village by Oxfam GB that she came to know about the programme. It was the dawn of a new life for her; she could see the impossible dream of becoming not only a land owner but more importantly the owner of agricultural land that could open up endless possibilities for her of having food sovereignty at home, of reclaiming their custodianship of seeds and other resources and of ensuring well being for the next generations. Women were informed about the pre-requisites of being an applicant and the process to be followed. But she had so many questions bothering her; she was not literate; how could she apply for the dream land. She was jubilant when she was guided and assisted in the camp set up for the potential candidates to help with the registration process. She, along with other women also received the logistical support. Saun Bai was supported all along in the process of getting legal documents of the four acres of allotted land under the Sindh Government's Land Distribution Programme. She became a landed farmer and was a different person now.

But the struggle was still not over. Unfortunately, Saun had an appeal against her land allotment from a family in her village which are wealthier and claiming the land as theirs and declaring Saun as an illegal possessor. Saun Bai was among twenty-five such women who were facing litigation and harassment. They were supported by Oxfam through the provision of legal and technical guidance and support to attain their land rights. Finally, she won the case and became the bona fide owner of the land granted to her.

She and her family already had the required knowledge, skills and expertise, but they required support in acquiring resources in order to make the land productive. But they knew nothing about the doors they needed to knock at. Saun Bai says, *"Being a land owner for the first time has changed my life. I gained confidence. But at the same time I was in despair; we needed access to big banks and Government offices for guidance and support on obtaining loans to cultivate the land, but we were only told to stay away. It was agonising for me at that specific moment, not to be treated as a land owner and a farmer."*

She was fortunate that she got facilitation in this regard and was beneficiary of a need based agricultural package with essential agricultural inputs an Oxfam GB partner had developed to assist women farmers like Saun Bai to ensure that the land they had owned became a productive asset to bring them out of the trap of poverty. The training also focused on promoting sustainable agriculture techniques such as use of bio-fermenters instead of chemical fertilisers. She has become a member of the local producer organisation and community seed bank. A producer organisation is the community collective of farmers from over 10 villages for collective businesses, and the community grain banks are the storage houses for grains to be used as seeds for the next sowing season and also for food in case of any disaster or food crisis. With the agricultural package and additional technical skills, Saun Bai was able to get a good wheat crop. She may not have believed her eyes when she harvested 2,000 kg per acre of wheat and may have thought, did it all really belong to her.

Like a typical woman farmer, being focused on the family food needs, Saun Bai was not content with growing wheat only. She was growing vegetables also, including chillis. The chillis surplus of her famiy needs she sold to the producer organisation she has been a member of. For the first time, she received market price for the labour of her hands.

Ownership of land has opened new windows of possibilities for Saun Bai. The security of not only sufficient but surplus food has enabled her to feed her family without any worries. She was also able to pay back the debt she owed the landlord. Saun summarises the transformation in her life in the following words: *"There were times I dreaded lunch and dinner times for my own family, having none in my hands I had become irritated towards what life offered me as a landless farmer",* She continues*, "but now things are different for me, I am generous because I know Allah heard my prayers and thanks to Oxfam GB my land is a patch of heaven on earth."*

Saun Bai and other women land grantees have achieved many milestones and have seen a huge leap forward in their lives but there are issues still looming large and should not

A woman tending cotton plants (Oxfam GB Pakistan)

be left unattended. The goal of women's empowerment demand to go beyond the land ownership in the name of women and systematically addresses the questions of how far a woman owner of land has real control over her land; how much of independence she has in decision making and most importantly how positive is her self image; and is she willing to take on the leadership roles. Otherwise, the ownership can be reduced to a mere token in a harshly patriarchal society. We need to extend support to all Saun Bai's in these critical areas in order to make them role models for other women, especially for those women who have land titles as a result of inheritance laws but they shy away in the name of culture and relationships. Such role models who have not only ownership of land but effective control over resources and a powerful voice in decision making.

Despite gaps and bottlenecks, the recognition of women as farmers by the Government of Sindh provides a theoretical and legal framework for other provinces in Pakistan to recognise the critical role rural women play in ensuring food and fiber. Ownership and control over land offer a solid foundation to rural women to build on endlessly.

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FOOD SECURITY THROUGH ORGANIC FARMING AND FOOD SOVEREIGNTY THROUGH FARMERS' ADVOCACY: WOMEN LEAD ORGANIC AGRICULTURE IN DAVAO, PHILIPPINES

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The rural districts of Davao City lie in its southeastern portion, among the hills and mountains around Mt Apo. Small farms planted with coconut, corn, rice and root crops, as well as fruit trees comprise majority of the city's agriculture. However, while the area is blessed with fertile land and even rainfall giving abundant yields, small farmers suffer because of exploitative arrangements with traders who supply their seeds and chemical inputs and purchase their produce. To augment incomes, they work for other small farms during planting and harvest. However, in recent years rural unemployment has risen with the unprofitability of chemical agriculture and the rapid expansion of corporate plantations such as Dole Food Company and Sumitomo Corporation in the area. Small farmers gave up use of their lands in exchange for lump sum payments of long-term leases and unfulfilled promises of employment in the corporate farms, thus reducing opportunities for working in each other's farms. While men find odd jobs in the urban areas, more women are left to tend the farms and cope with daily necessities.

There were also farmers who did not give in to the lure of the agribusiness companies. For the women of *Kababaihang Nagtataglay ng Bihirang Lakas* (KNBL, Women of Unique Power), a federation of 14 local organisations with a total membership of around 600, they had no other option but to shift to organic farming in their small plots of land in order to struggle for the food security of their families amidst the forces of corporate agriculture and rapid urbanisation. Mastering the *Masipag* technologies of rice and corn selection and cultural management; and organic diversification and

integration of their farming systems, they have achieved their primary goal of food security for their families, have trained many farmers in and out of Davao and are now embarked on wider-scale conversion of farmers through advocating for organic agriculture in the city government.

Together with other people's organisations and NGOs in the city, they have successfully campaigned against aerial spraying by plantations and against field trials of genetically modified Bt eggplant, and for the passage of a supportive Organic Agricultural Ordinance and its implementing rules. They are now the voice of small farmers in the city's Organic Agriculture Management Council.

The women leaders of KNBL*

In 2003, a few women from the rural villages of Davao participated in a year-long series of trainings on Masipag diversified and integrated farming systems organised

Tranquilina's farm is almost a hectare and planted with rice, vegetables, root crops, banana, coconut and other trees. She also has fish, goats, ducks, and chickens. All crops and animals are grown organically (METSA Foundation)

Tranquilina's farm grows more than twenty kinds of rice in her verification plots, shown here. This diversity gives her the best varieties for her soil and farm conditions. (MASIPAG)

by METSA Foundation, an NGO member of MASIPAG engaged in rural women's reproductive health, socio-political education and livelihood development (including sustainable agriculture) in Davao City's rural districts.

Ms. Angelita Manangan of Barangay Talomo, Calinan District, Tranquilina Alibango of Barangay Wangan, Calinan District, and Virginia Remoticado of Barangay Ula,Tugbok District - KNBL's treasurer, advocacy officer and president, respectively, are three of the leaders who initiated the study of sustainable agricultural practices and organised the women of their villages. They welcomed the appropriateness of the technologies for their rain-fed farms and were thankful for the seeds and the new appreciation for biodiversity, and took to organic farming quite easily. Organising was a different matter, though. Virginia says that they really had to take time to show support for each member, as almost everyone is tied down to domestic responsibilities - never considering any matter too small for group concern. "*It is a challenge to get the attention of women focused on organic farming and on community, as they are quite busy taking care of their 4 B's: 'bata, bana, balay ug baboy' (children, husbands, households and pigs) at the same time looking for the day's money needs. Although*

women are left to take care of the farms, farming is still considered a man's job. And then after we convince and train the women, they still have to convince their husbands, who were not in our trainings and who totally grew up on chemical farming."

Tranquilina recalls how she was able to convince her husband: "*We divided our farm into two plots, one for his high yielding rice varieties, and another for my own Masipag and traditional rice varieties. He used chemical inputs and I made my own fermented plant juices and fertilisers. We recorded all our costs and incomes, and just after one harvest, he was convinced! Now, I take care of the farm more, and he does more tuba (coconut toddy) gathering.*"

"*When our women's group started, we planted 25 traditional varieties and MASIPAG selections to choose the most adaptive. Starting with one tablespoon of seeds during the trials, we really took care of the seeds, up to verification and now to mass production."*

"*A farmer should have many varieties in her farm, not only one. So I chose the best ones for my farm, and now I have five of the best in mass production, including M138, M135 (Masipag collections); Manumbalay and an adapted Jasmine. Manumbalay, a Philippine traditional rice variety, is very aromatic.*"

Members of the Bayanihan Women's Organisation (of KNBL federation) and their youth revive the old Filipino practice of 'bayanihan', lending their labour in each other's farms. (METSA Foundation)

"*With many varieties, we can choose what we want: red, white, or very aromatic rice. A farmer must have diversity to recover the traditional seeds that are now lost, those that have been replaced with the high-yielding varieties that consume a lot of fertilisers and chemicals, and which bury farmers in debt. We must plant traditional varieties, seeds that survive and flourish without chemicals.*"

Tranquilina also convinced her neighbours to go into organic farming, and set up her own training centre beside her house. The centre also holds their seeds, which are distributed freely to other farmers when she conducts Masipag trainings together with other KNBL leaders. She became quite known that men from neighbouring villages also came to be trained by her. "A*t first, people were laughing when they saw me carrying a ruler and notebook, jotting down the height of the rice plants and the presence of insects. They did not understand my homemade decoctions, the fermented plant juice made from kangkong (water spinach) and brown sugar which is sprayed during the vegetative stage of the rice. But after seeing how my rice grew stronger and more resilient, and produced delicious rice, they all wanted my seeds.*"

Guaranteed organic through Masipag Farmer Guarantee

After almost a decade of *Masipag* farming, the women of KNBL regularly produce organic vegetables, fruits, root crops, rice, corn, soybeans, fish and livestock which provide sustenance to their families and some income. They hope to earn more from their produce, though, by selling their produce collectively as organic.

Angelita, treasurer of KNBL, relates: "*While we were able to overcome our debts, we still need to earn more money for our children's education. We want to sell our products as distinctively organic and do not want to sell to traders who cheat us and mix our produce with the chemically-grown ones. Therefore, one of our major projects in KNBL is collective marketing, done through the Masipag Farmer Guarantee System (MFGS). We have a small stall every Sunday on the edge of the public market in Calinan, where we have loyal customers. Our rice produce is sold directly to teachers in a private school in Davao which also promotes organic food. All our products are organic and pass through our inspections. We trained with Masipag to set up our MFGS in 2005.*"

Lobbying the city government for organic agriculture for small farmers

For the women of KNBL, practising organic agriculture themselves is not enough. "*We believe that all farmers should refrain from using chemical inputs, as this leads to debt and more poverty. We are helping to train other women farmers, but many do not commit themselves because the Department of Agriculture (DA, of the Philippine government) itself promotes chemical farming*", says Virginia.

Women sell organic vegetables at the Calinan market every Sunday. (MASIPAG)

It was quite a welcome development, then, when the DA changed its course and started implementing Republic Act 10068, called the Organic Agriculture Act of 2010. This law provides for the development and promotion of organic agriculture in the country, with focus on policy formulation, research development and extension, the establishment of facilities and the implementation of organic agriculture programmes at the local, regional and national levels. The Act recognises and supports the central role of farmers and indigenous peoples in the development of organic agriculture, and appoints a National Organic Agriculture Board to formulate policies and guidelines at the national level and for technical bodies to oversee implementation at the local level.

"*In Davao City, we wanted to emphasise that organic agriculture should be for the benefit of poor farmers and rural communities, and not for big agri-business. It should not be undertaken just for the sake of export markets. We also wanted poor farmers to have a say in this law, considering that we have been into organic agriculture long before the government.*"

With METSA, Interface Development Interventions (IDIS) and other NGOs in the city, KNBL joined Go Organic Davao City (GoDC), to lobby for a pro-small farmer ordinance on organic agriculture at the Sangguniang Panglungsod (City Legislature), in the beginning of 2009. The coalition drafted their own version of the ordinance and sought support from city legislators. They held audiences at the legislative hall, held forums and rallies to present their case. The KNBL women presented their experiences in organic farming to the media and actively joined forums. When the Davao Organic Agriculture ordinance was passed in April 2010, it specified organic agriculture as the city's main agricultural program, not only as an additional choice. It also specified for the production and market development of small farmers, expressing that its budget allocations will solely be for them, not for large landholdings or corporate farms.

Organic farming zones were also declared, prioritising the provision of budgets and services to identified barangays. KNBL communities were understandably first on the list.

KNBL and GoDC also pushed for the recognition of first and second party certification in the ordinance's implementing rules and regulations, in addition to the third party certification that was exclusively recognised for labelling of organic products under the national Act. This was also accepted, and plans have already been made for setting up the city's PGS committee.

The city has also organised its Organic Agriculture Management Council and is conducting its initial steps towards the implementation of a 5-year strategic plan. The women leaders joined in the drafting of this strategic plan; and Virginia Remoticado, as president of KNBL, sits in this council to represent Davao's small farmers.

It is time for women farmers to be recognised in their own right – and time too, for organic farmers to be represented by a woman.

KNBL against Bt Eggplant

"Don't touch my talong!" was the shout of GoDC against the field trials of Bt (Bacillus thuringiensis) eggplant in the University of the Philippines-Mindanao in 2010. The trials were situated in the UP campus in Mintal which is a few kilometres away from the farms of KNBL women, and they feared contamination of their eggplant crops from the field trials, which were protected only by barbed wire.

The Bt talong (eggplant) field trials were part of the University of the Philippines-Los Banos' (UPLB) project on agricultural biotechnology, using technology of Mahyco on local variety eggplants. Mahyco is Maharashtra Hybrid Seed Company, which developed Bt brinjal in India. Monsanto has a 26-percent stake in Mahyco. (Bt brinjal was approved for commercialisation in 2009 but a moratorium was issued after public outcry.)

The protesters uprooting the Bt talong field trials (IDIS)

KNBL asserted that the technology was totally unnecessary, as their organic practice showed that the fruit and shoot borer (FSB) could be repelled by companion plants and out-populated by friendly insects with crop diversification and a properly balanced environment.

After several hearings on the pros and cons, the Davao city government ordered the destruction of the Bt talong field trials for violation of standards set by the Bureau of Plant Industry requiring the conduct of public consultations. The city officials were not convinced that the field trials were held in a controlled environment, as the site was only "protected" by barbed wire.

The protesters themselves, led by the women of KNBL, were the ones who uprooted the crop on December 15, 2010.

The struggle for food sovereignty goes on

The women of KNBL know that despite these gains, their struggle for food sovereignty is just beginning. They know that they can only achieve food sovereignty when their right to produce healthy food is enshrined in law and in practice: when they are able to assert their right to practice their own organic agriculture system despite the proliferation of chemical farms and large agribusiness; and when they are able to have their own viable space in the consumer market, despite the deluge of cheap imported food.

At present, the women are now working to have Davao City declared as GMO-free. Another hard battle is ahead.

**For the women of Kababaihang Nagtataglay ng Bihirang Lakas (KNBL), a Masipag group based in Davao City, sustaining food security remains their ambition, more than ten years after starting organic farming. More than having farm diversity, appropriate farm technologies, and control over their seeds, they now aspire for food sovereignty, where their organic practice can be protected from contamination by GM crops, where the government and consuming public recognizes and supports organic farming by small farmers, and where their needs and concerns are listened to.*

Sources:

1. Interviews with Ms. Anita Morales, Executive Director of METSA Foundation, January 25, 2013.
2. Interviews with Ms.Tranquilina Alibango, Ms. Angelita Manangan and Ms. Virginia Remoticado of KNBL, Los Amigos Tugbok, January 25, 2013.
3. http://www.idisphil.org/levelling-the-playing-field-davaos-small-farmers-push-for-second-party-organic-certification/
4. http://www.pia.gov.ph/news/index.php?article=1541332921082 Davao intensifies push for organic agriculture
5. http://newsinfo.inquirer.net/inquirerheadlines/regions/view/20110212-319908/Organic-farms-show-way-to-beat-GMO

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for farmer empowerment and food sovereignty through sustainable agriculture, biodiversity conservation, community cooperation, and collective marketing. MASIPAG aims for a people-led approach in rural development, where women play a crucial role not only in articulating women's needs and promoting the active involvement of half of the peasantry, but also in creating empowering and innovative models of leadership and working together.

ASIA'S SEED LAWS — CONTROL OVER FARMERS' SEEDS[1]

GRAIN

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 rulemaking 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.

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

1 Reprinted from PANAP RICE SHEET, Vol 3, 2011

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 seeds had complaints about spurious seeds, mislabelled products and nonperformance 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 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

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

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. 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.

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.

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.

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.

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.

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].

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 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].

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.

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

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 valuation stated that "larger quantities of seed of new or unknown varieties are spreading in Afghanistan ithout 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 farmsaved 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.

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. 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.

7 www.worldseedconf.org
8 www.apsaseed.org
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

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

Regional Situation: 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.

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

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 labeling 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

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[12] which sets the standards.

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 ackaged 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 on the Management of Plant Seeds, 1996.

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.

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

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 2 009-2010. http://www.bpi.da.gov.ph/NSIC/pdf/so2009.pdf

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

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 *not more three times the quantity obtained.*
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 *as long as not for commercial purposes.*
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, *except where a sale is for the purpose of reproduction under a branded marketing arrangement*
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 provided that the farmer shall not be entitled to sell seed of a variety protected under this Act on a commercial basis.*
India	No	2001	Farmers can save, use, exchange, share and sell their produce of the protected variety with the restriction that they *cannot sell branded seed of the protected variety for commercial purposes.*
Korea	Yes	2001	The Minister of Agriculture and Forestry *may* 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 *except when a sale is for the purpose of reproduction under a commercial marketing agreement.*
Malaysia	Yes	2004	Small farmers can only use seeds of a protected variety *on their own field and exchange with small farmers only in 'reasonable amount'.* 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.

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.

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 harmonization 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.

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.

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 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

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

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 fromthe 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. There is also a Thai Government directive that does not allow foreigners to buy or rent ricegrowing 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). 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 nonagricultural purposes.

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.

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 11 th 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].

- 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 lawmaking 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.

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.

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 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.

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/)

16 http://www.grain.org/seedling/?id=469
17 http://www.raitateerpu.com/

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.

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 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 Cooperative. 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 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!"

The Way Forward

Undoubtedly the battle cry remains "Food Sovereignty!". The importance of farmer seed systems and the culture of sharing cannot be overemphasized. 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 violence as 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 reasserted. 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.

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

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 agrodiversity conservation and ‘barefoot innovation’, all of which are social, ecological and political imperatives today. This demands recognition in today’s laws and policies.

REFERENCES:
[1] Special Seed Laws Seedling. http:// www.grain.org/nfg/?id=329
[2] FAO’s Draft of the Second Report on the State of the World’s Plant Genetic Resources for Food and Agriculture.ftp://ftp.fao.org/docrep/ fao/meeting/017/ak528e.pdf
[3] Collection of various texts of seed laws on the BRL section of GRAIN’s web site. http:// www.grain.org/ brl/?typeid=50

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.

ABOUT PAN AP

Pesticide Action Network Asia and the Pacific (PAN AP) is one of the five regional centres of PAN, a global network dedicated to eliminating the harm caused to humans and the environment by pesticides and promoting biodiversity-based ecological agriculture.

PAN AP's vision is a society that is truly democratic, equal, just, and culturally diverse; based on the principles of food sovereignty, gender justice and environmental sustainability. It has developed strong partnerships with peasants, agricultural workers and rural women movements in the Asia Pacific region and guided by the strong leadership of these grassroots groups, has grown into a reputable advocacy network with a firm Asian perspective.

PAN AP's mission lies in strengthening people's movements to advance and assert food sovereignty, biodiversity-based ecological agriculture, and the empowerment of rural women; protect people and the environment from highly hazardous pesticides; defend the rice heritage of Asia; and resist the threats of corporate agriculture and neo-liberal globalisation.

Currently, PAN AP comprises 108 network partner organisations in the Asia Pacific region and links with about 400 other CSOs and grassroots organizations regionally and globally.

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