(1) The use of pesticides has had detrimental effects not only on the environment but also on human health, both from direct and indirect exposure.

What are the successful and unsuccessful measures taken by Governments and businesses to prohibit, ban, restrict and phase out pesticides that are harmful to human health?

International Level

PAN AP defines highly hazardous pesticides as those that have high potential to cause illness, injury or death to humans and animals or damage to the environment. These include pesticides that are acutely toxic or for which there is evidence of carcinogenicity, mutagenicity, reproductive toxicity, immunotoxicity, endocrine disruption, neurological or developmental, and toxicity to the environment. The list of HHPs developed by PAN and the criteria used are available here >> [http://pan-international.org/wp-content/uploads/PAN_HHP_List.pdf](http://pan-international.org/wp-content/uploads/PAN_HHP_List.pdf)

States in the Asia and the Pacific region have taken measures to regulate some highly hazardous pesticides by participating, adopting and ratifying several international instruments. Most countries in Asia and the Pacific are parties to the Stockholm Convention on Persistent Organic Pollutants and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, and participate in the Strategic Approach to International Chemical Management (SAICM).

Through these conventions many pesticides (such as most of the dirty dozen) have been banned or are regulated in many countries. Many of the pesticides in WHO Class 1 have been banned worldwide due to ongoing pesticide campaigns and lobbying of CSOs and other agencies/organisations.

However, international management of pesticides is weakened due to:

1. **Vested interests**, for example, India blocked discussion of endosulfan at the Stockholm Convention’s technical review committee (POPRC) stages of discussion although eventually under enormous pressure from its own populace consented to allow it to be listed under the Convention. The Indian Government was the manufacturer of endosulfan. With the Rotterdam Convention (2013) an industry representative from Guatemala deceived delegates by claiming to speak on behalf of Guatemalan government. Guatemala blocked the listing of paraquat under the Convention as it was concerned about the implication listing would have on its exports of the herbicide.

2. **Failure of some countries to ratified the conventions even though they are signatories**. For example, Malaysia, Malta, Brunei and the United States. The US is one of the world’s biggest...
producers and users of pesticides and is the home to large pesticides corporations like Monsanto, Dow and Du Pont.

3. **No international convention or framework that regulates highly hazardous pesticides.** The Fourth International Conference on Chemicals Management (ICCM4)- [which implements the Strategic Approach to International Chemicals Management (SAICM)] formally recognised HHPs as an ‘issue of concern’. ICCM4, recognizing that HHPs “cause adverse human health and environmental effects in many countries, particularly in low-income and middle-income countries”, encouraged stakeholders to undertake concerted efforts to implement the strategy developed by FAO, UNEP and WHO to address HHPs at the local, national, regional and international levels “with emphasis on promoting agroecologically-based alternatives and strengthening national regulatory capacity to conduct risk assessment and risk management”. It welcomed the offer of FAO, UNEP and WHO to develop modalities to implement the strategy. However, FAO/UNEP/WHO, have not developed the modalities.

While the African region and other stakeholders suggested a global alliance for the phase-out of HHPs but this was blocked by certain countries and some of the UN agencies. Nothing has been put in its place. So, there is no framework for progressing the phase out of HHPs and their replacement by safer methods of pest management.

**At the national level**

Over the years, many countries have tried to improve their regulation of pesticides used in agriculture. However, the regulation of pesticides used in other sectors varies greatly from country to country and is often in the hands of different authorities. While many new regulations are in place, many of them are based on the FAO/WHO code of conduct’s life cycle approach, which is still has many limitations.

1. **The existence of double standards in the international trade of pesticides from developed countries to developing countries, especially in Asia and the Pacific,** is still prevalent and involves both the exports of hazardous pesticides and the transfer of production facilities. This situation is intensified with the lack of resources for prevention and control of pesticides in developing countries and lack of legislation and inspection by governments. Overall, this factor further contributes to the continued impact of pesticides on human health, especially women and children’s health and well-being. For example, paraquat manufactures by Syngenta is banned it is home country but widely available and used in the Philippines, Malaysia, Thailand, India, China and many Asian countries. In the case of Malaysia in 2002, the Pesticide Board announced the ban of paraquat i.e. no new registration of paraquat would be allowed and the ban would have been in place in 2 years (Public Eye. 2002.) However, the massive lobbying of Syngenta and the palm oil industry at the highest level ensured the repeal of the ban and the use of paraquat continues to poison plantation workers and farmers. In this case, for the Malaysian government economic interests are more important than the rights of workers for a safe working environment.

Asian countries would have to bear the economic burden of pesticides due to these double standards. For example, UNEP’s 2013 “Cost of Inaction” report estimated that the accumulated health costs of acute injury alone to smallholder pesticide users in sub-Saharan Africa will be approximately US $97 B by 2020. It is not known what the costs of inaction on pesticides are in the Asia Pacific region.

2. **Pesticide do not know borders and contaminate lands, soils, water, air and fog.** The UN’s Economic and Social Commission for Asia and the Pacific (2002) report entitled Organic Agriculture
and Rural Poverty Alleviation: Potential and Best Practices in Asia reported that in Thailand, “an estimated 70% of applied pesticides is washed away and leaches into the soil and water, resulting in excessive pesticide residue contamination in the local ecology and food chain.” Considering the global use, pesticides now contaminate all parts of the world. Therefore, the inherent nature of pesticides is difficult to regulate and control.

3. **Inherently toxic nature of pesticides are especially hazardous to women and children.** Intake of and exposure to pesticide contaminated food, water and air have taken, and continues to take, a heavy toll on society. Teratogenic pesticides in the environment cause congenital abnormalities in newly borns e.g. abnormally placed urinary opening on penis, absence of one or both testes (Rocheleau et al 2009), micropenis (Gaspari et al 2011), missing or reduced limbs (Schwartz & LoGerfo 1988); anencephaly (Lacasana et al 2006); spina bifida (Brender et al. 2010); and heart disease (Yu et al. 2008). Stillbirths (Medina-Carrilo et al. 2002), ADHD (Marks et al, 2010), and autism (Landrigan et al. 2012) have been linked to pesticide exposure. Research (see review by Watts, 2013) give sufficient evidence to indict low level exposures to pesticides as a serious threat to health and well-being of children, and the subsequent generations. Many pesticides can be readily transferred from the mother across the placenta to the developing foetus during pregnancy (Daston et al. 2004), and so children are born already carrying a significant load of pesticides.

**Pesticides impact women differently;** especially since the pesticides women farmers and agricultural workers spray are potentially toxic to the foetus, while pregnant and during breastfeeding. Women are particularly susceptible to the effects of pesticides, due to physiological characteristics, and socio-cultural and economic circumstances—they are often the poorest of the poor in their communities.

Women can be exposed even if they do not directly apply the pesticides as they often work and raise their children in a toxic environment mixing the pesticides, harvesting the pesticide-drenched crops, weeding whilst the insecticides are being applied, thinning sprayed crops, washing out the pesticide containers or washing pesticide-contaminated clothing. And yet, women are less likely to receive formal training in reduced risk handling practices. For example, women plantation workers in oil palm plantations in Malaysia and Indonesia were often not aware of the impacts of paraquat on their reproductive health. Women in these plantations often spray pesticides even when they are pregnant. Women in Vietnam, have been documented to spray when they are pregnant, are often less educated and are not able read or understand pesticides labels.

4. **Many countries in Asia are poor which further puts them at risk to pesticides.** The use of pesticides and exposure to these chemicals are aggravated by poverty. Pesticides, poverty, food, and health are inextricably linked in a vicious cycle. The greater the level of poverty, the greater is the tendency is that people will be exposed to the worst pesticides, and the worse the adverse effects are likely to be. And with this kind of poverty, there is less ability to take action e.g. to seeking treatment for health effects, or switching to safer methods. The cycle of poverty and ill-health spirals intensifies, as the already malnourished become even less able, through pesticide poisoning, to provide food for themselves.

This is made worse with racial and ethnic discrimination and even casteism that are interlinked with increased inequality and ensures that these communities are kept disempowered and poor. This discrimination makes them unable to be heard and to address the problems if they arise. Poverty intensifies the exposure to the worst pesticides particularly malnutrition can worsen the effects of pesticides and children are the most affected. Due to poverty there is often malnutrition, and being
malnourished can worsen the effects of pesticides: for example low levels of protein, resulting in low enzyme levels, enhance vulnerability to organophosphate insecticides

**Business**

Agrochemical corporations profit from the production and sale of pesticides that are inherently poisonous while the world’s rural populations and children face the daily hazard of pesticide poisoning. Corporations have used their political, economic and other influences to promote and protect their vested interests. The agrochemical market is dominated by a few companies that produce pesticides and own their proprietary seeds.” They have immense influence and lobbying power. The industry is consolidating as they merge and take over other corporations. Hence they are able to control and manipulate the food system to maximise their profits instead of maximising food security for all people. Recently, Bayer (Germany) announced that it will take over Monsanto (U.S.). At the same time, Syngenta (Switzerland) is being bought by ChemChina (China), and Dow Chemical (U.S.) is merging with Du Pont (U.S.). Another key company in this arena is BASF (Germany).

These corporations have the obligation to ensure that chemicals are used in such a manner that they are not a threat to human health and the environment. Moreover, the realisation of the right to health requires proactive action to eliminate risks to health (and health risks from their presence in the environment) posed by chemicals and pesticides in their production, use, release, and incorporation into products. This realisation requires the elimination of pesticides that are known to cause cancer and other chronic, irreversible effects and the distribution of information about these to the general public.

This is further emphasised in the International Code of Conduct on Pesticide Management which states that corporations have the responsibility to ensure pesticides are handled safely during their life cycle and disposed of in such a way that they do not constitute a threat to human health or communities living in their proximity. For example, the International Code of Pesticide Management (FAO/WHO), article 5.2.5, calls upon pesticides industry to halt sale and recall products as soon as possible when handling or use pose an unacceptable risk under any use directions or restrictions and notify the government. However, in parts of Asia workers have less control on the types of pesticides they are using or even to stop applying these pesticides. Lack of protective equipment, which is anyway ill-adapted to local weather conditions especially in hot climates such as India and South East Asia, contributes to pesticide poisonings.

The right to life, to health, and to a healthy environment must take precedence over corporate and proprietary rights. The right to engage in a profit-making venture (selling a chemical) is a derogable, conditional right, while the right to health is a non-derogable, fundamental human right. States must protect children’s rights within their territory and jurisdiction, including protection from abuse by business enterprises that produce, import, trade/sell and use pesticides.

Under the UN Guiding Principles on Business and Human Rights, this requires taking appropriate steps to prevent, investigate, punish and redress such abuse through effective policies, legislation, regulations and adjudication. States should set out clearly the expectation that all business enterprises domiciled in their territory and/or jurisdiction respect human rights throughout their operations. To this end, businesses must have policies in place to conduct human rights due diligence and address adverse human rights impacts with which they are involved (Ban Toxics et al. 2015).
Corporations should respect and uphold human rights, the welfare of the populations and the protection of biodiversity and ecosystems and thus must:

1. continually monitor the impacts of their product and remove them from the market when there are indications of acute or chronic effects;

2. properly label their products and use language that the users can understand and ensure that their products are used properly by giving comprehensive training to the users;

3. stop maligning/harassing individuals who alert the State and the Public to the harmful effects of their products; instead provide funding through third party organizations to enable independent investigation/research on the products’ impacts and hazardous properties;

4. indemnify victims whenever their products prove to have caused an irreversible harm; clean-up their wastes and restore/rehabilitate areas laid barren and polluted because of their products;

5. discontinue the production and sale of highly hazardous pesticides and

6. begin implementing a real process of transition from toxic pesticide manufacture to development of ecologically sustainable pest management technologies; this can include manufacture of bio pesticides and breeding of biological control organisms.

(2) Do you believe that is possible to shift from industrial agriculture systems to agro-ecological methods?

Yes.

In 2010, the UN Special Rapporteur on the Right to Food, Olivier De Schutter reported to the UN Human Rights Council that, in order to combat hunger and malnutrition,

“States should implement public policies supporting the adoption of agroecological practices.” His report found that agroecology raises productivity at the field level, reduces rural poverty, contributes to improving nutrition, and contributes to adapting to climate change, concluding that “States can and must achieve a reorientation of their agricultural systems towards modes of production that are highly productive, highly sustainable and that contribute to the progressive realization of the human right to adequate food.” (De Schutter 2011).

Modern agroecological approaches to food production, together with many of the ecological practices that have evolved with farmers working alongside nature through hundreds of years, are proving to be sustainable, economically advantageous and good for food security. Successful cases of agroecological farming in Asia, Africa, Latin America, Europe and USA, presented in the book “Replacing Chemicals with Biology, phasing out highly hazardous pesticides with agroecology” (Watts & Williamson 2015) substantiating the long-standing claim that ecological principles applied to agriculture are effective tools in the management of pests, including weeds, and provide sustainable livelihoods to farmers and rural communities.
**Examples: Agroecology leads to economic growth**

The adoption of agroecology has been suggested to lead to food insecurity. Yet, a considerable body of evidence shows that this is not true.

An analysis of 133 comparisons of yields of organic and conventional farming systems in low income countries revealed that agroecological organic systems were producing 80% more than conventional farms. In high income countries, 160 comparisons showed organic yields averaged 92% of conventional farms (Badgley et al, 2006)

In 2004, the German Institute for Technical Cooperation (GTZ) undertook an evaluation of an organic rice-growing programme in Cambodia, based on the practices of Sustainable Rice Intensification (SRI). They found that farmers practicing SRI techniques recorded 41% higher yields than those that did not. Such increase was recorded across all five provinces over four years and a range of different agroecosystems. These yield increases were accompanied by a 75% increase in profit. GTZ concluded that “if just 10% of Cambodian rice farmers would convert just 42% of their rice area to SRI, the economic benefit to the nation would be $36M, more than enough to justify an extensive program for SRI within the agricultural extension system” (Markandya & Setboonsarng, 2008).

A study (Pretty et al., 2006) of 286 sustainable agriculture projects in 57 countries, involving 12.6 M farmers on 37 M hectares in the process of transitioning to sustainable agriculture demonstrated an average yield increase of 79% across a wide variety of systems and crop types, ranging from 18% to over 100%. Of the projects for which there was data on pesticide use, 77% reported an average decline in pesticide use of 71%, with an average yield increase of 42%. Average yield increases of over 200% were gained in Madagascar (rice), China (cotton, wheat, maize), Ethiopia and Lesotho (sorghum, teff, sweet potato).

In China, the agroecological rice-fish-frog system increased rice yield by 10.1%, with an additional yield of fish and frogs of 1,775 kg/ha. Organic rice in the Philippines had similar yields to conventional rice but overall farm output was increased. In Kenya, the push-pull system of weed management has resulted in dramatic yield increases, 350% for maize, 250% for sorghum, and more than 100% for finger millet. The introduction of a tiny parasitic wasp in the West Sahel resulted in millet yield increases of 40%.

There is a wealth of scientific and evidential data showing that crops can be grown perfectly well without using pesticides. The case studies show that agroecological farming can improve food security and strengthen food sovereignty, while providing better adaptation to climate change and reducing harmful environmental impacts.

In our view it is entirely feasibly for all production to move to agroecological methods, but this should be done in a staged approach with sufficient support for farmers making the transition including expended research and extension efforts. In order for this transition to succeed it must include women at all levels (UNEP,2016).

(3) Some particularly exposed or vulnerable groups such as children, pregnant women, farmers, farm workers, indigenous peoples and migrant workers, are at greater risk to the effects of pesticides due to higher exposure or increased sensitivity.

Please explain the efforts undertaken by Governments and businesses to prevent and mitigate detrimental impacts of pesticides on the health of these vulnerable groups.
Some effort has been taken to mitigate pesticides by banning certain pesticides. See full list here >> http://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/

However, industry has strongly lobbing power in overthrowing or reversing bans of certain pesticides for example, Malaysia banned paraquat it in 2002 and then reversed the ban in 2006 due to industry pressure, especially Syngenta. In Davao, Philippines, the local authorities banned aerial spraying due to community protest but the Supreme Court of the Philippines reversed the banned, stating that is unconstitutional due to pressure by banana corporations.

While there are, some efforts made to ratified the International Labor Organization (ILO) by states, there are still many gap and future challenges. Read report here >> http://www.panap.net/sites/default/files/TurningPoint_ILO_conventions_and_gaps.pdf

Agricultural work is considered one of the most dangerous occupations in the world. Data from the International Labor Organization (ILO) and the Food and Agriculture Organization (FAO) show that 170,000 out of the estimated 335,000 fatal work-related accidents every year occur in agriculture.

A snapshot of recent field surveys of pesticide poisoning in Asia:

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>2014</td>
<td>85% of applicators reported suffering gastrointestinal problems during and after spraying, 63% eye problems, 61% skin problems, and 47% physical weakness. Most commonly used pesticides: OPs and synthetic pyrethroids.</td>
</tr>
<tr>
<td>India</td>
<td>2014</td>
<td>a survey by the Calcutta School of Tropical Medicine and the NRS Medical College found that 30% of farmers using pesticides in a district in West Bengal were experiencing neurological symptoms. In 2012 a survey of pesticide-exposed farmers in Punjab, India, reported 94.4% exhibited some symptoms of poisoning.</td>
</tr>
<tr>
<td>Pakistan</td>
<td>2012</td>
<td>in a small study of female workers picking cotton 3-15 days after pesticides were last used, 100% of them experienced headache, nausea and vomiting.</td>
</tr>
<tr>
<td>South Korea</td>
<td>2012</td>
<td>acute occupational pesticide poisoning amongst young male Korean farmers was reported to be 24.7%.</td>
</tr>
<tr>
<td>Iran</td>
<td>2012</td>
<td>12% of pesticide applicators involved in rice growing suffer acute pesticide poisoning.</td>
</tr>
</tbody>
</table>

Paraquat, a highly hazardous pesticide is still widely used in Asia. Farm workers, indigenous peoples and migrant workers, are at greater risk to the effects of pesticides due poverty and are not fully made aware of the impacts of paraquat by the management. For example, workers in oil palm plantations in Malaysia, Indonesia and Philippines.

According to the ILO, about 60 percent of the estimated 215 million child labourers worldwide work in agriculture. Also, some effort by national governments to regulate and ban children working in farms and agriculture, while in reality children still work in farms and plantation sectors due to poverty. Worldwide, children are involved in pesticide application, but the exact number is unknown due to the absence of comprehensive monitoring by the State. Article 3(d) of the ILO Convention on the Worst Forms of Child Labor specifies such labor as “work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children”.

For example children help their parents in oil palm plantations in Philippines, help pluck tobacco leaves laced in pesticides in Indonesia and suffer health impacts after being are exposed to
pesticides from their parents and indirectly from their environment (Human Rights Watch, 2016; Sutris et al, 2016; Hashim & Baguma, 2015).

(4) Is there any study that has been done conducted by your organization using disaggregated data to differentiate and detect impacts on above mentioned vulnerable groups?

Following interviews on pesticide use with over 1,300 peasant farmers and agricultural workers from eight Asian countries, Pesticide Action Network Asia and the Pacific released its report ‘Communities in Peril: Asian Regional Report on Community Monitoring of Highly Hazardous Pesticide Use’ in 2010. The study, which was conducted in collaboration with local partner organizations, revealed that 66% of pesticide active ingredients used on vegetables, cotton, paddy rice, and other crops are highly hazardous according to PAN International classification criteria. The interviews, which were conducted in 2008, gathered a substantial amount of data from one-on-one interviews in local languages in Cambodia, Sri Lanka, China, Philippines, Vietnam, India, Indonesia, and Malaysia. Report available here >> library.ipamglobal.orgjspui/handle/ipamlibrary/544

In 2015, 400 children were poisoned by pesticides in Cambodia, after initial investigations it also difficult to pin point the exact source of contamination in the supply chain, the results of the type of pesticides that were in the children blood was also not made public. In many parts of Asia, government labs are also ill equipped due to insufficient resources, this makes it further to document the toxicity and impacts of certain pesticides.

Full details of food contamination involving children are also not disclosed by public authorities in various countries in such as India, Malaysia and Philippines, despite cases being reported to the media. In addition, countries often lack access to laboratory facilities to fully test for pesticide active ingredients and concentrations.

(5) States have an obligation and businesses a responsibility to implement the right to information on hazardous substances.

How are Governments and businesses ensuring that pesticide users and consumers are informed of the hazards and risks of pesticides used in food production?

In Asia, to some extend there are ongoing trainings and information available of the products online or via pesticides sellers or on government websites. However, this mostly extends to agricultural use and not on pesticide residues found in food.

However in reality:

1) Many labels are too small to read or not translated into local languages, vulnerable groups in Asia often lack proper education to full understand the basic labels. Due to porous borders in the Mekong Region, pesticides are shipped or are transported in illegally to Laos, Cambodia and labels are in Chinese, Vietnamese or Thai. See full report here >> http://www.panap.net/sites/default/files/Illegal-pesticide-trade-in-Lao-and-Cambodia.pdf

Similarly, in India, paraquat is sold illegally and is widely available and in some places paraquat is sold in plastic carrying bags; many users can’t read the label; it is mixed with other ingredients that are not recommended; it is sprayed with leaking knapsack sprayers; and it is applied on crops for which its use has not been approved. Full report >> http://www.panap.net/sites/default/files/Paraquat-use-India_EN_WEB.pdf

2) Environmental defenders and independent scientists that help regulators and the public in keeping an eye on the use of hazardous pesticides are targeted and publicly shamed. In the
Philippines, for instance, Dr. Romeo Quijano has been persistently harassed by banana plantation owners after uncovering and exposing the impacts of aerial spraying of pesticide. A court case (a form of a Strategic Lawsuit against Public Participation or SLAPP) that was filed against him more than one and a half decade ago over his research on banana plantations and pesticides has been recently revived in an attempt to revoke his license as a doctor.

3) In Malaysia in 2015, the National University or University Kebangsaan Malaysia (UKM) published a study on the pesticide residues in river and drinking water in Cameron Highlands, the Malaysian government (Department of Agriculture, Environment and Health and Water Works) responded to the study which was highlighted by PAN Asia and the Pacific by saying that they would look into it but so far nothing has been done.

(6) Please provide your views on good practices by Governments and business to assess, monitor, prevent and mitigate the risks of exposure to hazardous pesticides, and what further steps could be taken.

Answers may focus on systems present at the national, regional and/or the global level.

Countries have made some efforts to mitigate pesticides by banning certain pesticides mentioned in question 1.

Governments and relevant others should take further steps to:

1. Change agricultural policy and practice to remove the assumption that pesticides are necessary; and encourage farmers to change to agroecology, biodiversity-based ecological agriculture, or organic agriculture; and ensure that pest, weeds, and diseases are managed by the methods that cause the least harm to humans and the environment (Principles of Precautionary and Minimum Harm);

2. In pesticide registration, replace risk assessment with alternatives assessment and hazard assessment, using the precautionary principle as the framework, such that pesticides are only registered if there is no effective less harmful alternative, including non-chemical methods of management; in pesticide registration, institute cut-off criteria such that pesticides that are carcinogenic, mutagenic, developmental neurotoxins or immunotoxins, or endocrine disruptors are not registered or used; ensure the registration process is based on studies from independent scientists not industry science, but require industry to reveal all it knows about the toxic effects;

3. require buffer zones for plantations or farms that use pesticides, and to regularly monitor these; ban aerial spraying of pesticides; ban the use of genetically modified crops that promote massive use of pesticides/herbicides.

4. ensure that pregnant women and children are not exposed to highly hazardous pesticides, or pesticides that have the potential for developmental toxicity or endocrine disruption, including through residues in food and environmental contamination.

5. build individual and community awareness of the pathways of exposure for children, and the potential effects on their health.

(7) Gaps and weaknesses in international and national regulatory systems allow the use of pesticides that are unsafe, even when used legally and per instruction, on the market.

Please provide examples of regulatory gaps (e.g. flaws in the registration process of pesticide products, lack of rigorous testing and safety standards, and lack of full disclosure to the public)
and good practices in building effective protection frameworks governing the production and use of pesticides.

Suggestions and analysis have been provided in questions 1 to 6

**Lack of full public disclosure**

Residues found in food - The nature of pesticides that are highly hazardous are unsafe, they often find their way to food, the environment. Studies from Scandinavia and EU have found pesticides residues in numerous samples of vegetables from Asia, that exceed the minimum residue limit (MRLs). Information on residues is often hard to get publicly, especially in Asia due to limitations on the right to information. Governments also lack the capacity to test for residues.

**Using the precautionary principle**

The States have an obligation to prevent exposure of children to toxics including pesticides and safeguard the child’s right to a healthy and safe environment. State Parties should adopt the precautionary principle and the principle of minimum harm. Registration processes must move from an industry supportive model of risk assessment to a more public health supportive model of hazard assessment, with cut-off criteria that prevent the registration of pesticides that are carcinogenic, mutagenic, developmental neurotoxins, immunotoxins and endocrine disruptors.

**Opt for alternative assessments**

Registration must include alternatives assessment and opt for the least harmful method of managing pests, weeds and diseases. Where effective non-chemical methods or less toxic chemicals exist, a toxic pesticide should not be registered or used. If there are none, then the next step is to determine whether the pesticide meets cut-off criteria for hazardous properties, such as the EU and Brazil have. (Watts & Williamson 2015). This is an improved version of the substitution principle which first came into operation in Swedish pesticide policy in 1985. “According to the Swedish Act on Chemical properties (SFS 1985, p 426) section 5 ‘anyone handling or importing a chemical product must take such steps and otherwise observe such precautions as are needed to prevent or minimize harm to human beings or to the environment. This includes avoiding chemical products for which less hazardous substitutes are available.” | Bergkvist et al 1996. Sweden’s National Board of Agriculture did recognise the need to assess nonchemical methods: “If equally effective, non-chemical methods are available for a certain control a pesticide will be banned for that control.” Liden 1989

**Global transformation towards ecosystem-based agriculture**

Robust policy and practice options to enable a global transformation towards ecosystem-based farming – best exemplified by agroecology – already exist (Watts & Williamson 2015). However, powerful commercial interests, weak or captured public sector actors and lack of political will continue to hamper the establishment and meaningful implementation of these progressive options. Highly targeted and strategic interventions are needed that tackle the core of the problem and thereby rebalance power in the agricultural food system.

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The principle of minimum harm in pest management: Choose the method that causes the minimum harm to humans and the environment whilst still being sufficiently effective.

(8) Please provide examples of successful efforts (supported and incentivized by Governments) to reduce the use of pesticides in agricultural food production, including ecological methods of pest control and agro-ecology.

- Several countries have already taken the first steps, including Brazil, France and some states in India to move towards agroecology. For example,
  - **France**: France has the top to bottom approach. The French farm minister, Stéphane Le Foll, revived the national pesticide reduction plan which steered a landmark agricultural reform act in 2014. The Law for the Future of Agriculture, Food and the Forest promotes agroecological approaches and targeted 200,000 French farms by 2025. It incorporates agroecology to the curriculum of agricultural colleges across the country. The policy recommendations include: (1) Establishing a way of taxing environmental impact of agrochemicals; (2) Trebling the proportion of organic farmland from 1.8% to 6%; (3) More public research to evaluate the environmental impacts, economic value and agronomic effectiveness of genetically modified crops, via an independent high level authority. The farm minister, Michel Barnier, set up committees to draft policy actions to be implemented and relevant targets among which are the twin targets to promote organic farming: 20% of food served in public sector canteens by 2012 would be organic and organic production would occupy 20% of French farmland by 2020 and a target of 50% reduction in pesticide use by 2018. The set of measures aimed at pesticide reduction over the next ten years became known as the Ecophyto 2018 plan. Ecophyto managed to keep the French rate of growth in agricultural pesticide use below that of its European neighbours. The next stage, the move from a 25 percent reduction to a 50 percent reduction is based on a more enlightened view of the nature of agricultural competitiveness. No fewer than 1,500 pesticide products were taken off the French market as of 2016.

  - **Brazil**: Brazil launches the Agroecology Plan and Organic Production and passed the law entitled Law No. 14.486 creating the State Policy on Organic Production and Agroecology. The Plan aims to coordinate policies and actions for an environmental-friendly agriculture and the organic food production, with an initial investment of 8.8 billion allocated to 125 initiatives all over the country (FAO Lex Database, 2014).

  - **Sikkim, India**, this is the first state in India that was declared organic by India’s Prime Minister in 2016. The state brought about a gradual process of training and transitioning their farmers for change, which took about 12 years. The state had extensive laws and bans on pesticides and synthetic fertilizers, and even jail time for offender. Now there are more than 75,000 hectares of agricultural land that are organic. So far, at least three other states In India such as Kerala, Mizoram, and Arunachal Pradesh — have started to transition towards agroecology.

  - **Cuba** adopted decentralized agrarian policies that encouraged individual and cooperative forms of production beginning in the 1990s. Overly bureaucratic state-run farms were replaced with thousands of small urban/suburban organoponicos, parcelas, and patio gardens, and millions of acres of unused state lands were given out to small farmers. Agricultural cooperatives were encouraged and flourished due to the relaxation of the Cuban government’s policy of free access to land for anyone growing food for local consumption. Farmers are allowed to remain on the land as long as they meet minimum requirements with respect to overall production and commitments to sell to public institutions and the state. Farmers practice seed banking and kept tracked by scientist to ensure that these crops are planted annually to provide resources in case of
calamities. The government established institutions to support the agroecology policy. The Tropical Agriculture Research Institute (INIFAT) facilitated the production of vegetables in raised beds enriched with organic matter. The Foundation for Nature and Humanity trained hundreds of permaculture “promoters,” who in turn teach others. It also hosts workshops, conferences, and symposiums. The Association of Forestry and Agriculture Technicians (ACTAF) publishes a variety of technical manuals targeted to members of the agricultural community and others interested in building a sustainable food system based on agroecological principles and provides technical advice to farmers. Throughout the 1990s the government set up a chain of national vegetarian restaurants to promote health and nutrition.

(9) Please share any information regarding court decisions or on-going litigation in relation to the detrimental effects of pesticides, in particular in relation to the right to food.

Many litigation cases in Asia are not made public and are very expensive and tedious for effected communities to bring forward.

So, five years ago, called the Permanent People’s Tribunal (PPT) found Monsanto and five other giant agrochemical companies guilty of “gross, widespread and systematic violations of the right to health and life, economic, social and cultural rights, as well as of civil and political rights, and women and children's rights.”

On 6 December 2011, the PPT, an opinion tribunal that looks into complaints of human rights violations, issued a landmark verdict upholding the charges made by affected communities against Monsanto, Syngenta, Bayer, Dow Chemical, DuPont and BASF.

Convened in Bangalore, India and organized by Pesticide Action Network (PAN) International the PPT said that the world’s then six largest agrochemical transnational corporations (TNCs) are responsible for violation of indigenous peoples’ human rights, and further found that “their systematic acts of corporate governance have caused avoidable catastrophic risks, increasing the prospects of extinction of biodiversity, including species whose continued existence is necessary for reproduction of human life.”

Similarly, the Monsanto Tribunal, an international civil society initiative to hold Monsanto accountable for human rights violations, for crimes against humanity, and for ecocide. Eminent judges will hear testimonies from victims, and deliver an advisory opinion following procedures of the International Court of Justice took place from 14 to 16 October 2016 in The Hague, Netherlands.

(10) Please provide any additional information you believe would be useful to understand challenges confronting Governments and businesses in their efforts to prevent and mitigate adverse impact of pesticides on human health, right to food and the environment.

**National Policy Changes towards Agroecology**

One of the biggest challenges is the bias of many national governments to chemical-intensive large corporate agriculture and marginalization of agroecology. A growing body of literature and experience has been unmasking the dangers of corporate agriculture. In contrast, numerous studies and practices back agroecology as the sustainable alternative to feed the world. Related to this is the continuing trend of land and resource grabbing especially in poor countries that further monopolize land and other productive resources in the hands of giant firms in agribusiness, mining, infrastructure development and others. Such trend further undermines efforts of small food producers to advance agroecology as corporations take over farmlands. (An important dimension of
this phenomenon is how it impacts on the collective rights of the people and their individual human rights. Land and resource grabbing violates the social, economic and cultural rights of communities over their land. In most cases, their civil and political rights are violated as well when they fight back to defend their communities against the land grabbers.

There is much that national governments can and should do to assist the uptake of agroecology by farmers. The first big step is to challenge assumptions that current levels of dependency on synthetic chemical pesticides are necessary, and that large-scale, specialized farms highly reliant on agrochemical and fossil fuel inputs are the best way to provide food for all. On the contrary, there is clear evidence that small, diversified, agroecologically-managed farms can be just as productive overall – or more so – than input intensive and monocultural systems. Countries need to change their policies to put agroecology at the centre of their approach to agriculture.

Several countries have already taken the first steps, including Brazil, Ecuador and France. National policies need to protect small farmers, their ownership of and their access to water and seeds. They need to ensure equal rights for women in every sphere. An FAO report found that ensuring women farmers are adequately resourced could increase agricultural output in low-income countries between 2.5 and 4 percent, and reduce the number of undernourished people by 100-150 million. Governments need to invest in agricultural knowledge by supporting research based on farmer needs and experiences, including farmer participatory research, as well as extension services and farmer networks.

National economic policies must strengthen local food systems, re-localise markets to reduce wastage during transport and storage and improve farmers’ ability to sell, and improve access to credit. Policies are needed to prevent global food retail chain domination of domestic markets.

Such domination allows these chains to determine prices that result in farmers being underpaid and left struggling to survive. Full-cost accounting for agriculture would ensure the external costs of chemical-based production are taken into account. Replacing subsidies on agrochemicals with financial credits for agroecology (such as soil carbon sequestration) would level the playing field.

Changes to pesticide regulatory systems are also needed. The presumption that a pesticide should be registered if it meets certain hazard or risk criteria, regardless of whether it is needed, should be replaced by the presumption that pests, weeds and diseases should be managed by the least hazardous method – and chemicals registered only if need can be demonstrated.

Existing registrations should cease when nonchemical methods or less hazardous pesticides can be substituted.

**International actions to support agroecology**

International policy action is also needed. Steps must be taken to reverse the harmful impacts of unregulated trade and redirect misguided international development policies and initiatives that
hinder local, national and regional transformation towards agroecological food and farming systems. There is a need to reform, and in some cases dismantle, institutions such as regional and global trade arrangements and ownership laws that hinder the scaling up and out of agroecology.

There is a need to include and recognize women’s roles, expertise, skills and knowledge, in food production and national policies.

Re-structuring and re-alignment of these institutions is needed to support state and non-state actors’ obligations to respect, protect, and fulfil universal human rights to food, health and a safe working environment, and to advance equitable and sustainable development goals.

Intellectual property regimes that privatized seed resources – transferring ownership to commercial interests and criminalizing farmers for seed saving – need to be reoriented to protect farmers.

Corporate influence over public policy and agrifood systems must be curtailed. UN agencies, bi- and multi- lateral development institutions, international research institutes, private and public donor agencies need to prioritize participatory community-based farmer-led agroecological research, extension and education. There needs to be an FAO and a UN-wide adoption of agroecology as the central direction of agriculture.

All UN agencies can contribute in important ways in assisting governments to bring their focus to agroecology. The World Bank and international financial institutions should redirect the focus of their agricultural and poverty-reduction programs to assist countries in transitioning towards equitable and sustainable agroecological systems.

International and regional research institutional arrangements should prioritize agroecological research, extension and education. Multilateral and bilateral funding agencies as well as private foundations have an essential role to play in supporting the scaling up and scaling out of agroecology.

International actors must firmly commit themselves to overcoming the political, institutional and market constraints that stand in the way of widespread adoption of agroecology. It is time to restrain corporate power and influence over public agencies and democratize the agri-food system at all levels and across all relevant institutions.
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