Ensuring non-toxic, diverse, nutritious and adequate food for all Indians

We consume food to sustain ourselves in a healthy manner and if the very food that we consume to survive becomes toxic, it becomes a matter of urgent concern. The availability of non-toxic, diverse, nutritious and adequate food for all Indians is closely linked to the agricultural technologies and practices adopted as well as land use and cropping patterns, in addition to regulation in the sphere of food and farming systems. Hunger and malnourishment are linked to this too, in addition to control over and access to resources and opportunities. The right to safe and sufficient food and the right of informed choice for consumers are getting subverted due to lack of appropriate attention paid by policy makers to this important aspect of every citizen's life.

The Context

A faulty notion of food security, based on two grains, that too in a centralized PDS paradigm, wherein a few resource-rich pockets of the country were invested upon for production of wheat and rice in an intensive yield-centric paradigm resulted in a disastrous situation for those Green Revolution pockets as well as tremendous neglect of large tracts of rainfed land in the country. This paradigm ignored the important fact that a majority of food consumers are food producers too in this country. Indian consumers had to put up with erosion of food diversity, lack of food safety and good nutrition.

In response to the shameful position of India being 63rd out of 120 countries on the Global Hunger Index and having 25% of its population categorized as hungry, India enacted the National Food Security Act. However the interpretation of "food security" to only mean specific quantities of a handful of grains will secure neither food and nutrition security nor safe food for most Indians.

In the policy discourse, there is lack of appreciation of safety and nutrition that diverse millet-based cropping systems can bring in, and also a lack of appreciation of a whole realm of uncultivated foods, wherein forests play an important role as food producing habitats. Further, corporate-friendly regulation of unsafe agricultural technologies, coupled with current westernized notions of food safety regulation that favour large players but not small scale food producers and vendors, have compounded the problem.

Two major contributors to unsafe food are agri-chemical residues at present and Genetically Modified (GM) foods if these are approved.

Pesticides: It is well established by now that pesticide residues in Indian food and water are all-pervasive (across all categories of foods) and excessive, and even scientific and regular monitoring of such residues is lacking. Several studies have also exposed the 'body burden' carried by Indians, in terms of pesticides present in our blood and body organs. A large part of the problem is related to the fact that food production is taken up with indiscriminate recommendations and marketing of pesticides, supported by lax regulation that ends up promoting use of toxic chemicals in agriculture, starting from registration of pesticides even when alternatives are available. The adverse health impacts are also well recognized – while producers are exposed to pesticides in a variety of ways including direct inhalation of toxic fumes during pesticide spraying (which has claimed thousands of lives due to acute poisoning) there are chronic impacts of long term low dose exposure to residues in our food, air and water. Such chronic poisoning manifests itself in various adverse health impacts like cancer, organ damage (kidneys, liver

etc.), congenital defects, reproductive health problems, adverse growth and development, impaired immunity and so on. Inter-generational effects are also well-established.

GM Foods: In recent years the right to safe food and the right to informed choices for consumers are being constantly threatened by repeated attempts to push genetically modified (GM) foods in India, despite these foods being rejected in most countries in the world. The World Health Organisation defines GMOs as "Organisms in which the genetic material (DNA) has been altered in a way that does not occur naturally". Adverse impacts of GMOs have been well-documented in scientific studies and the evidence is enough to adopt a precautionary approach towards these unnatural foods. (A compilation of such studies can be accessed at: http://indiagminfo.org/?p=657).

GM lobbyists often claim that "millions of people in the US have eaten GM food for more than a decade, with no adverse health effects". The truth is that GM foods were cleared in the US as "substantially equivalent" to their non-GM counterparts at a time when Michael Taylor, Monsanto's former attorney and future Vice President was head of the US Food and Drug Administration in a blatant case of 'revolving doors' in regulation. As a result, industry has avoided long term independent and rigorous testing of GM foods, nor do they require to be labeled, nor can their impact be tracked. By this one decision biotech corporates ensured that no conclusive epidemiological studies are possible in the US, main consumer of GM. However, there is no study that has conclusively shown that GM foods have not left any adverse health impacts in the USA. On the contrary, there are studies that indicate correlations between adverse health conditions like obesity and GM foods. Sufficient adverse effects have emerged to prompt the American Academy of Environmental Medicine to state that 'There is more than a casual association between GM foods and adverse health effects...Multiple animal studies show significant immune dysregulation, including upregulation of cytokines (protein molecules involved in immune responses) associated with asthma, allergy and inflammation'.

Independent research on health effects of GM is thwarted as far as possible. As reported in a Scientific American editorial of 2009 "…agritech companies have given themselves veto powers over the work of independent researchers". It is found that 100% of industry-sponsored studies find GM to be safe whereas there are dozens of studies by independent researchers that cast serious doubts on the safety of GM food. According to David Shubert of the Salk Institute, USA, 'Contrary to industry claims, there are serious concerns about the direct human toxicity of Bt toxins within the scientific community. Bt toxins function by binding to the surface cells in the guts of insects and killing them. There is increasing evidence that Bt toxins can also bind to mammalian cells in the stomach and intestine and cause inflammation that will certainly lead to cancer in people'.

Apart from intrinsic risks to health due to the unpredictability of current genetic interventions in seed, the countervailing claims of reduction in pesticide use are also highly questionable. In Bt cotton in India for instance, though the pesticide spraying for bollworm has decreased, there has been an equally dramatic increase in pesticide spraying for sucking pests which were minor pests or non existent prior to Bt cotton. In USA, increased herbicide usage on Herbicide Tolerant GM crops has resulted in a net increase in pesticide use, with Maximum Residue Limits revised upwards by upto 400% to accommodate the increase.

Coming to Labeling of foods to enable informed choices by consumers, food in India is sold largely unpackaged. It is also known that millions are still illiterate, making labeling non-functional for them. There is a clear admission by Ministry of Agriculture that "it will not be possible to segregate GM from non-GM material during the overall process of collection, handling and storage in India" making labeling

further impossible. Regulation of GMOs in terms of safety assessment has also been found to be riddled with serious lacunae in India, and currently a Supreme Court Bench is hearing a PIL on the subject.

Lack of recognition of Uncultivated Foods, and Forests as Food Producing Habitats: Uncultivated foods, both in agricultural fields that use agro-ecological approaches with eco-system integrity maintained well, as well as forests, have been an ignored subject in India's food and nutrition security discourse. Ironically, most malnutrition and hunger is reported from adivasi rural areas where forests have been neglected for their role as food producing habitats. Uncultivated forest foods, in the form of fruits, mushrooms, tubers, leaves, fish etc., are safe, free, nutritious and a biodiverse-rich forest, available all through the year and most importantly, available during critical hunger periods. However, the approaches being adopted towards forestry (plantations replacing rich forests, to cater to the raw material requirement of industry) including ownership and management models of such forests, are rapidly eroding the food and nutrition security link that forest-dependent communities have with their forests. These communities have unfortunately not seen proper implementation of progressive legislations that uphold their rights to forest resources like PESA or FRA.

Shifts in Land Use and Cropping Patterns: Large scale land use shifts - where land put to non-agricultural use is increasing, even as nature of land classified as "forests" is changing, common lands (pastures, grazing lands etc.) are decreasing – have their own impacts on food production and consumption, in terms of diversity, nutrition and safety. Cropping patterns have also seen massive shifts over the years with mixed cropping replaced by monocultures and millet-based cropping systems nearly disappearing even though much evidence exists to show the nutritional advantage of millets, especially "minor" millets. Newer programmes like INSIMP or Nutri-Farms lack of any appreciation of holistic and integrated approaches that used to exist in traditional millet based farming systems and therefore, cannot provide any solutions to food safety or diversity or nutrition through these programmes.

Regulatory approach to Food Safety: The Food Safety and Standards Act, in its one-size-fits-all regulatory approach, does not appear to have any solutions in its narrow interpretation and implementation of 'food safety'. It has no proactive positive discrimination towards particular kinds of foods and no enabling environment for localized organic food production and consumption models. The FSSAI approach to food safety regulation ignores the fact that very often, the organic production system has already put into place segregation and traceability systems, in addition to certification systems too. There are many reports available that show that eco-friendly packaging or small scale vending has no place in the standardization drive taken up by the Food Safety and Standards Authority.

Solutions

In order to ensure that non-toxic/safe, nutritious and diverse foods are available for all citizens, the following steps are necessary:

- **Release of any GMO into the environment should be halted immediately**, along with imports of GM foods into the country.

- **Steps should be taken urgently to recast all food security schemes including the PDS** into universal and decentralized systems of local production, procurement, storage and distribution, by including nutritious crops such as millets, pulses and oilseeds as an integral part of such schemes. Organic

food, produced locally especially through millet-based farming systems, should be used in the case of food schemes meant for children in Aanganwadis and Schools.

- **Policy approaches on food security should also cover uncultivated foods**, which are critical for forest-dependent and other communities, which in turn can be addressed through appropriate land use patterns and forestry models.

- **Government should ensure that all Indians have access to non-toxic, diverse, nutritious and adequate food by promoting ecological farming** based on agro-diversity, especially from the drylands of the country. Specific measures should be taken for the promotion of crops grown on drylands like millets and pulses.

- **Measures should be taken to ensure conservation and promotion of traditional seed varieties with special traits** such as positive nutritional qualities.

- **Crop diversity is essential for nutrition and food security and farmers must have access** to the seed required for this. The Convention on Biological Diversity (CBD) recognizes biodiversity as a key to sustainable, efficient, resilient and nutritious food production. Genetic diversity in crop varieties is a fundamental resource needed for the continued improvement of crop varieties so as to adapt to ongoing changes. Due to the loss of traditional varieties and use of externally-controlled seed (that too, proprietary seed mostly, with Seed Replacement Rate being the mantra), a number of varieties containing important traits have been lost or are limited to seed banks. Adequate policies need to be implemented so as to ensure free access to seeds by farmers, and to restore traditional varieties. Farmers must be incentivized to save, exchange and improve upon such seed.

- **Emphasis should be shifted from non-food/cash crop cultivation to food crop cultivation.** Special incentives and schemes need to be put into place to incentivize food crops and export and price related policies should support this.

- **To protect a consumer's right to informed choice,** there needs to be an appropriate labeling system enforced for all hazardous technologies and products used in food production, including with regard to pesticide residues and GMOs.

- **FSSAI's approach to food safety regulation should have a special enabling framework when it comes to organic produce** given the systems of segregation, traceability and certification that usually accompany organic produce**.**