

The Future of Nutrition - in Women's Hands or Corporate Control?



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Diverse Women for Diversity, Mahila Anna Swaraj, Initiative for Health, Equity and Society, Navdanya, Moms Across the World.

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Women have been the primary growers of food and nutrition throughout history, but today, food is being taken out of our hands and substituted for toxic commodities controlled by global corporations. Monoculture industrial farming has taken the quality, taste and nutrition out of our food. As a result, India is facing a nutritional crisis: every fourth Indian goes hungry, and in 2011 alone, diabetes took the lives of 1 million Indians.

Now, the same companies who created the crisis are promising a miracle solution: GMOs (genetically modified organisms). Genetically engineered Golden Rice and GMO Bananas are being falsely promoted by corporations hiding behind the cloak of academia as a solution to hunger and malnutrition in the Global South. Indigenous biodiverse varieties of food grown by women provide far more nutrition than the commodities produced by industrial agriculture. Golden Rice is 350% less efficient in providing vitamin A than the biodiversity alternatives that women grow. GMO 'iron-rich' Bananas have 3000% less iron than turmeric and 2000 % less iron than amchur (mango powder). Apart from being nutritionally empty, GMOs are part of an industrial system of agriculture that is destroying the planet, depleting our water sources, increasing greenhouse gases, and driving farmers into debt and suicide through a greater dependence on chemical inputs. Moreover, these corporate-led industrial monocultures are destroying biodiversity, and we are losing access to the food systems that have sustained us for millennia. When we consider the number of patents involved in these initiatives, it becomes all too clear that the only beneficiaries of these supposedly 'people-led' ventures are large companies operating for profit, not for people.

On this international women's day, we call on all women – the world's primary food-growers and food-givers – to stand together and reclaim our knowledge, our farming, and our food; to expose the lies of the GMO industry, to reject the false promises of Golden Rice and GMO Bananas, and to reclaim the planet for all living beings.

India is facing a nutritional emergency. We are the capital of hunger and malnutrition. Every fourth Indian is hungry. Every second child wasted and stunted. India is the diabetes

capital of the world with 50.8 million patients ^[1].

In 2011, the diabetes epidemic in the country took 1 million people's lives. Diabetes, a metabolic disorder, is a result of an imbalanced diet. The Green Revolution's focus on rice monocultures has been at the cost of greens, lentils, and more nutritious millets – and diabetes has crept into rural areas. Contrary to popular belief, diabetes affects more people in rural India (34 million) than affluent urban Indians (28 million)^[2].

An imbalanced agriculture based on monocultures and an imbalanced diet based on white polished rice has become a killer. Nearly 50% of Indian women suffer from iron deficiency anaemia.

What should be our response to this nutritional emergency? Bringing biodiversity into our agriculture and food, or intensifying chemical monocultures of rice through the introduction of GMO Golden Rice? Empowering women by keeping food and nutritional security in their hands, or allowing corporations to take control of our food?

Nutritional deficiencies are a direct result of the destruction of biodiverse sources of nutrition by industrial monocultures. Proponents of industrial agriculture - most significantly implemented in India through the Green Revolution - did not value nutrition. Instead, they focused on increasing inputs of imported chemicals, fossil fuels, and local water resources to grow chemical monocultures that reduce food to an empty, toxic commodity. It lost its quality, taste, aroma, and most importantly its nutrition.

How industrial farming robs food of its nutrition

First, industrial breeding is based on uniformity, long distance transport, and industrial processing. By comparison, food grown by women – who have been the primary seed breeders and producers of food – is based on diversity, taste, nutrition, quality and resilience. Traditional Indian wheats are full of taste and nutrition. Industrially-



bred wheats, on the other hand, are low in nutrients and have contributed to the epidemic of gluten intolerance.

Second, by replacing biodiversity with monocultures, industrial agriculture reduces the amount of nutrition per acre. With diversity we can grow enough iron for 20 Indias, and enough vitamin A for all of India today.

Third, by substituting the sophisticated ecological processes of renewing fertility with chemical inputs of synthetic fertilisers, the health of the soil is destroyed, nutrition in soils is reduced, and plants, which provide our food become nutritionally empty (see Table 1).

Table 1 Decline in mineral content (%) in US and British crops as the result of industrial monoculture

Mineral	US 1963-1992 (13 fruits & vegetables)	Britain 1936-1987 (20 fruits & 20 vegetables)
Calcium	-29	-19
Magnesium	-21	-35
Sodium	N/A	-43
Potassium	-6	-14
Phosphorus	-11	-6
Iron	-32	-22
Copper	N/A	-81

N/A, not analysed, * U.S. [3] and British [4] data

A meta-analysis done by Professor Carlo Leifert of Newcastle University and 15 other scientists from around the world^[5] found significant differences in the nutritional content of organic and non-organic crops (fruit, vegetables, cereals and pulses). Organic crops and crop-based food products have significantly higher concentrations (by 18 % to 69 %) of antioxidants (including phenolic acids, flavanones, stilbenes, flavones, flavonols and anthocyanines) compared with their conventionally produced counterparts. Smaller, but still statistically significant, composition differences were also detected for a number of carotenoids and vitamins.

A switch to eating organic fruit, vegetables and cereals would lead to a 20-40 % (and for some compounds up to a 60 %) increase in crop-based antioxidant/phenolic consumption without any increase in calories. This is important as there is strong scientific evidence of the health benefits of increased consumption of phenolics and other plant secondary metabolites with antioxidant activity, most notably protection against chronic diseases, including

cardiovascular and neurodegenerative diseases and some cancers.

Fourth, GMOs are also leading to a decline in nutritional availability, because the biotechnology industry is growing commodities, not food. Some 90% of the GMO corn and soya goes to biofuel and animal food, not human food. This is not a viable food system.

Fifth, herbicide tolerant crops account for most of the GMOs cultivated. The use of Roundup (glyphosate formulation) with Roundup Ready crops removes essential minerals like manganese through 'chelation' or binding. Manganese is essential to the gut-brain connection. The depletion of this nutrient could be contributing to the autism epidemic in the USA. According the Centre of Disease Control, in the 1970s, 1 in 10,000 children were autistic. In 2007, it rose to 1 in 150. Today it is 1 in 68. At current rates of increase, 1 in 2 children in the USA could be born autistic by 2025 [6].

Sixth, just as there is an ecology of biodiversity in our fields, there is an ecology of biodiversity in our nutrition. Nutrients need each other. Fats are needed for bioavailability of vitamin A, and vitamin C is needed for absorption of iron. That is why we use mustard seeds for seasoning greens, and have chutneys with our meals. Mechanistic reductionism in agriculture combined with mechanistic reductionism in nutrition, undermines the ecological processes through which our farms grow nutrition and our bodies are nourished through a balanced diet.

We need to grow nutritious food; and all the evidence indicates that we can do so by increasing biodiversity and promoting ecological processes in our food and farming systems. This is the path Navdanya* has followed over more than two decades. We have increased production of nutrition (Health per Acre) as well as farmers' incomes (Wealth per Acre) through agroecology and biodiversity. 🌱

* The author's biodiversity conservation programme to rescue and conserve crops and plants being pushed to extinction, and make them available to local farmers through direct marketing.

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