

The Sacred Gift of Food

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1 Food and Health in the Indian Civilisational Perspective: The Gifts of Agroecology and Ayurveda

Indian Civilisation has evolved and sustained itself over thousands of years by putting the Health, Happiness and Wellbeing of the Earth, all her beings and all people, at the centre of its Agriculture and Health Systems.

Sarve Bhavantu Sukhinah has been our philosophy and the objective which guides all science, technology and knowledge. Our sciences have been based on the recognition of the interconnections and interrelatedness between humans and nature, between diverse organisms, and within all living systems, including the human body. We have thus evolved as an ecological and a systems science, not a fragmented and reductionist one. Technologies are tools. Tools need to be assessed on ethical, social and ecological criteria. Tools/ technologies have not been viewed as self referential in Indian Civilisation. They have been assessed in the context of contributing to the wellbeing of all.

The ecological sciences of agriculture, food and health in India have evolved as sophisticated systems of knowledge to enhance the wellbeing of all.

The 2 gifts of health that India has given the world are the systems science of Ecological Agriculture/ Organic Farming and Ayurveda-the Science (Veda) of Life (Ayur), the most sophisticated science of nutrition and diet, guided by the 5000 years of time tested food traditions that give health.

We are the land of agroecology, also called organic farming (*The Vedic Roots of Agroecology*, Navdanya). Sir Albert Howard (Imperial Economic Botanist to the Government of India) was sent to India in 1905 to set up the Pusa Institute based on Western reductionist concepts of agriculture. As he writes, he found fertile

soils, no pests in the field, and decided to make the Indian peasant his Professor. Practices which have spread around the world as contemporary organic farming, through Sir Albert Howard's classic *An Agricultural Testament* were based on Howard's learning from Indian agriculture traditions.

The Indian peasant was practising ecological agriculture for 10,000 years based on care for the soil, growing biodiversity, and the Law of Return. The Law of Return has both ecological and socio-economic implications. At the ecological level, it translates into sustainability, and at the social level it translates into dignity, justice and prosperity for our farmers, our Annadatas.

These practices were sustained over thousands of years because they were based on the most sophisticated, scientific, ecological principles upholding the laws of nature and social wellbeing. These scientific principles are today recognised as the principles of Agroecology.

Ayurveda, the second great gift of India to humanity, is in my view the most sophisticated science of health. And the Ayurvedic science of health is centred on food. Food is recognised as central to the wellbeing of the planet and people, health and healing.

Today, the cutting edge sciences of biology are understanding that the body is not a machine, it is a complex self organised, self regulated ecosystem. The principles of self organisation are what Ayurveda identified thousands of years ago.

The ecology and dharma of food

The ecology, science and dharma of food, in India, shaped our ancient agricultural practices and the Ayurvedic principles of eating right.

The Indian philosophy and science of Food contained in the citations from ancient texts resonate with the latest in the science of Agroecology and new biology, the best thinking on principles of food justice and food ethics, and the relationship between food and health.

The connections between ecology, agriculture, food and health,

which guided our traditional scientific knowledge, were ignored by mechanistic science. They are now being recognised as new sciences based on interconnectedness emerge.

There is no separation in our teachings between the sciences of wellbeing and the Dharma of food, life and living.

These principles of interconnectedness are given in our ancient Upanishads and Vedas, and reflect the latest scientific understanding of the web of life as a food web

- **The growing and giving of good food in abundance is the highest Dharma (ethical duty)** [SEP]“Annam bahu kurvita: Multiply anna (Food) many-fold” (ibid. p.167). [SEP]The dharma of growing and serving good food relies on the knowledge, intelligence and capacity to know the difference between good food and bad, between the systems of growing food that hold the web of life together and sustain the earth, and ensure health and wellbeing, and those that push species to extinction and ecosystems to collapse by transgressing planetary boundaries due to ignorant greed that knows no limits, while also creating disease through imbalance and toxics. It means knowing which farming system will improve the wellbeing of farmers, and which system will disintegrate agrarian societies, pushing our farmers into debt, distress and suicides. It means knowing and assessing which food culture will improve our health and wellbeing and which culture will spread hunger, malnutrition and disease epidemics. [SEP]The Dharma of Food guides all these plural and diverse assessments of food, health, agriculture, seeds and biodiversity. It defines our relationship with the soil and the land through the food that we eat and grow. And it shapes our relationship with food, and its central role in contributing to our health. [SEP]
- **Food is Sacred** : [SEP]Since food sustains life, it is sacred. We must have reverence for food. [SEP]“Do not look down upon anna, food. That is the inviolable discipline for the one who knows. Prana, the winds of life, are indeed anna, and sarira, the body,

is the partaker of anna. Sharira is secured in prana, and prana is enshrined in sharira. Being dependent on each other, the two are anna for each other, and thus indeed anna itself that is secured and enshrined in anna” ((Jatindar Bajaj and M.D Srinivas, *Annam Bahu Kurvita*, p.165). [SEP]

- **The web of life is a Food web**

“For it is of anna (food) that indeed all beings are born, it is from anna that they obtain the necessary sustenance for living, and having lived, it is into anna that they merge at the end” (ibid. p.161).

In our ancient scriptures it is clear that we must give to the earth for her to give us abundance and health .

“Out of the contented Earth grow the food crops, which sustain all life. Flesh, fat, bone and marrow are formed of these alone” (ibid. p.6).

- **Good food is medicine, sarvausadha** [SEP]“ anna is called sarvausadha, the medicine that relieves the bodily discomforts of all” (ibid. p.152). [SEP]Hippocrates too had said, “Let food be thy medicine

2. The Threats to the Health of the Planet and Our Health from Industrial, Chemical Agriculture and Food Systems

In the last few decades our food, agriculture and health traditions have been destroyed and forgotten, under the assault of reductionist science, industrial systems of agriculture, food and health, combined with globalisation and free trade.

Industrialisation and globalisation of food systems, the promotion of fast food and junk food, are driven by chemical and industrial food corporations, leading to an agrarian crisis, erosion of biodiversity in

agriculture, increase in toxics in our food, and a disease epidemic. The agrochemical industry and agribusiness, the junk food industry and the pharmaceutical industry profit while nature and the nation get sicker and poorer.

There is a great Mahabharata taking place in our times, between reductionist science and industrial tools that are violent to the planet and our bodies, and the ecological paradigm of our ancient sciences as also the new science of ecology and biology which promote nonviolence, harmony, and balance.

The reductionist paradigm goes hand in hand with the corporate control of our food, health and agriculture. The powerful chemical corporations, controlling industrial agriculture and medicine, have tried to displace the ecological discourse of interrelatedness and interconnectedness with the reductionist paradigm they have shaped. By ignoring the guidance of Dharma, violent, toxic tools of industrial agriculture, industrial processing and industrial medicine have been elevated as human ends, and been made the measure of human progress. Instead of humans assessing tools on the basis of Dharma and in terms of impact of technologies on the wellbeing of the planet and people, tools are used to assess the status of humanity. This has led to the imposition of a mechanistic paradigm on nature, our minds and our bodies. The toxic tools of Industrial Agriculture have destroyed soil, water, biodiversity, climate balance and have spread a disease epidemic.

Both the health of the planet and our health have suffered. Across India there is a water crisis because the so called Green Revolution based on chemicals is extremely water intensive, and has led to the diversion of rivers and mining of ground water for intensive irrigation. More than 75% of the water resources have been destroyed and polluted due to chemical farming.

Chemicals have desertified our soils by failing to return organic matter that creates living soils.^[1]_[SEP]

As the ancient Vedas said:

“In this handful of Soil is your Future. Take care of it, and it will sustain you and provide you with food, clothing, shelter and beauty. Destroy it and it will destroy you”.

Chemical farming is based on monocultures of a few globally traded commodities. We used to eat more than 10,000 plant species. We now than depend on less than 10 crops. More than 90% of biodiversity in agriculture has disappeared because of industrial agriculture, and with it the diversity we need for a healthy and balanced diet.

The diverse ecological functions that biodiversity has performed, including renewal of soil fertility, and control of pests and weeds, have been substituted with toxic chemicals made from fossil fuels. These chemicals were made during the wars with the sole objective of killing people. Chemical fertilisers were made in the same factories that made explosive. Pesticides are derived from chemicals used in the concentration camps and war. It is no wonder that these poisons in our food and agriculture continue to kill soil organisms, pollinators and people.

They also contribute to Climate Change. As I have written in my book *Soil Not Oil*, nearly 50% of the green house gases come from industrial, globalised agriculture.

Agricultural Production 11-15%

Landuse Change and Deforestation 15-20%

Processing, Transport, Packaging, Retail 15-20%

Waste 2-4%

<https://www.zedbooks.net/shop/book/soil-not-oil/>

Food is the currency of life, the connection between us the earth ,between us and other species . Food is the connection between diverse species that weave the web of life in cooperation and mutuality.

The industrial food system is at the heart of the planetary crisis and the human crisis .

All three crises are interconnected, even though they are seen as separate. And the most significant contribution to all three crises comes from a fossil fuel intensive, chemical intensive, capital intensive system of non sustainable industrial agriculture which is degrading the environment, public health, and farmers livelihoods.

75% of the planetary destruction of soil, water, biodiversity, and 50% of greenhouse gas emissions comes from industrial agriculture which also contributes to 75% of food related chronic diseases. Chemical agriculture does not return organic matter and fertility to the soil. It also demands more water and destroys the soil's water-holding capacity. Biodiversity intensive poison free agriculture produces more nutrition per acre while rejuvenating the planet. It shows the path to "Zero Hunger" in times of climate change.

<https://www.penguinrandomhouse.com/books/536677/who-really-feeds-the-world-by-vandana-shiva/9781623170622/>

The industrial agriculture and toxic food model has been promoted as the only answer to economic and food security. However, globally, more than 1 billion people are hungry. More than 3 billion suffer from food-related chronic diseases. In India, every fourth Indian is hungry, every second child is malnourished.

While using 75% of the land, industrial agriculture based on fossil fuel intensive, chemical intensive monocultures produce only 30 % of the food we eat, while small, biodiverse farms using 25% of the land provide 70% of the food. At this rate, if the share of industrial agriculture and industrial food in our diet

is increased to 45%, we will have a dead planet with no life and no food. India That is why rejuvenating and regenerating the planet through ecological processes has become a survival imperative for the human species and all beings. Central to the transition is a shift from fossil fuels and dead carbon, to living processes based on growing and recycling living carbon.

The sophisticated understanding of nutrition in Ayurveda, which has shaped the diversity and healthy basis of India's traditional food cultures, is today being threatened with the invasion of junk food, industrially processed food, and food grown with toxic chemicals as well as fake food.

In spite of its rich scientific and intellectual heritage based on food as health, India is rapidly emerging as the epicentre of chronic diseases including cancer, obesity and diabetes and cardiovascular diseases, largely related to food.

The foodstyle disease epidemic is now a national emergency. It needs to be addressed urgently, by citizens, scientists and experts, and policy and decision makers.

Health and disease begin in food, and food begins in agriculture and the soil.

Our civilisation has understood the intimate connection between agriculture, food, nutrition and health. Our indigenous systems of sciences, agroecology and Ayurveda, have evolved as sciences of life for healthy living.

We need to turn to them to address the disease epidemic. We need to make a paradigm shift from reductionism inherent to industrial agriculture, industrial food and industrial medicine to the biodiversity centred, ecological paradigms of agriculture, food, nutrition and health if we have to make a transition from being a sick

nation to a healthy nation.

<https://navdanyainternational.org/publications/manifesto-food-for-health/>

As the system of industrial agriculture and industrial food processing starts to dominate, epidemics of chronic diet related diseases start to spread.

The Hopi describe this phenomenon as Powaqqatsi – “an entity, a way of life, that consumes the life forces of beings in order to further its own life”.

The Powaqqatsi phenomenon of the Hopi is clearly in evidence today - we are dealing with a destructive force that is taking out life forces wherever it can. If the corporations have their way our fragile web of life will be poisoned and broken, the diversity of species will be driven to extinction, people will lose all freedoms to their seed, to their food, to their knowledge and decisions.

We are at a watershed in terms of our agriculture, our food systems, our diets.

When food is produced with toxic chemicals, preserved with toxic chemicals as food additives, it becomes a source of disease.

Industrial monocultures using intensive chemical inputs produce nutritionally empty toxic commodities. These contribute to diseases of malnutrition and nutritional deficiencies.

The same industrial system that is destroying the health of the planet is also destroying our health. And the same ecological systems of food and farming which have the potential to rejuvenate the planet also hold the potential for rejuvenating human health.

When food is fresh, diverse, and free of toxics, it gives us health. Food is life. Food is nourishment.

3 Through Biodiverse Ecological Agriculture we can heal the Planet and People , and contribute to the SDG's

Navdanya's work based on Earth Democracy connects people and planet, justice and sustainability. By increasing the consciousness that we are earth citizens and part of the web of life, we become more aware of our potential and possibilities of how to address apparently unsurmountable problems such as biodiversity erosion and climate change.

Climate chaos, climate instability, climate change are the most dramatic expressions of the human impact on planet earth. While the earth's own climate has gone through various stages of warming and cooling, the present trend towards warming, and the related destabilization of climate systems and weather patterns is human induced and it is both the nature and human beings who are now suffering the impact of intensification of drought, floods, cyclones and hurricanes, the melting of snow and ice and the aggravation of the water crisis. Tragically it is those who have contributed the least to greenhouse gas emissions who are most bearing the brunt - communities in the high Himalayas who have lost their water resources as glaciers melt and disappear, peasants in the Ganges basin whose crops have failed because of drought, coastal and island communities who face new threats of sea level rise and intensified cyclones.

Navdanya was the first to make connections between industrial agriculture and climate change. At the Copenhagen Climate Summit we released our manifesto on Agriculture and Climate Change. The book Soil not Oil was also released in the lead up to Copenhagen.

40% of all greenhouse gas emissions responsible for Climate Change come from a fossil fuel, chemical intensive industrial globalised system of agriculture.

Navdanya's practice and research over the past 3 decades has shown, by conserving and intensifying biodiversity in agro-ecosystems we produce more food and nutrition, we increase farmers' incomes, we regenerate the soil, the water, the biodiversity, and we reverse climate change by reversing the buildup of carbon and nitrogen in the atmosphere and absorbing them in the soil where they enhance the ecological functions of soil biodiversity. Through plants and organic soils we heal the broken carbon and nitrogen cycles which are contributing to climate change.

The linear extractive agriculture system based on fossil fuels is rupturing ecological processes and planetary boundaries. The three boundaries where we have already crossed safe limits are Biodiversity Integrity and Genetic Diversity, and the biochemical nitrogen and phosphorous cycles. All three overshoots are rooted in the chemical intensive, fossil fuel intensive industrial model of agriculture.

Erosion of genetic diversity and the transgression of the nitrogen boundary have already crossed catastrophic levels. Again, industrial agriculture has largely contributed to both.

Industrial chemical agriculture is based on external inputs of nitrogen, phosphorous and potassium, and on industrial monocultures of globally traded commodities. The latter is destroying biodiversity, the former are disrupting the nitrogen and phosphorous cycles.

By intensifying Biodiversity and following nature's law of return we have regenerated the soil food web which is the source of recycling of nutrients, including the nutrient cycles that connect soils and plants to the atmosphere.

Soil,Not Oil :Ecological Regeneration to repair broken cycles

On the Navdanya farm, organic matter has increased up to 99%, Nitrogen has increased upto 100% ,Zinc has increased 14 % , Magnesium has increased 14%..They have been produced by the billions and millions of soil microorganisms that are in living soils. Healthy soils produce healthy plants. Healthy plants are then able to nourish humans with no external inputs.

On the other hand, chemical farming has led to a decline in soil nutrients, which translate into a decline in the nutritional content of our food and a further disruption of the carbon and nitrogen cycle

Showing effect of continuous farming on Soil under Organic and Chemical mode

Nutrient	Change under Chemical Farming	Change under Organic Farming
Organic Matter	-14%	+29-99%
Total Nitrogen (N2)	-7-22%	+21-100%
Available Phosphorous (P)	0%	63%
Available Potassium (K)	-22%	+14-84%
Zinc (Z)	-15.9-37.8%	+1.3-14.3%
Copper (Cu)	-4.2-21.3%	9.4%
Manganese (Mn)	-4.2-17.6%	14.5%
Iron (Fe)	-4.3-12%	1%

Climate vulnerability

The Indian subcontinent is the most vulnerable . The Himalaya, the Third Pole ,is losing its glaciers and snows, leading to formation of glacial lakes and flooding .The 2013 Uttarakhand disaster, caused by heavy rain and bursting of the Chorabari glacial lake led to floods which caused over Rs.3000 crore loss. Floods in India in 2013 - 14 in 4 states led to economic losses of over Rs. 19,000 crore and affected 19.3 million people.

The coast of Bay of Bengal is an extremely vulnerable region to disaster risk of all forms e.g. cyclones, floods, tsunamis and tidal surges. The coast has experienced some of the deadliest disasters in recent past.

Cyclones, coastal flooding and high tides not only kill people but also destroy food production on a regular basis. With climate change, frequency of cyclones during November and May over the North Indian Ocean has increased twofold in the past 122 years. The World Bank estimates that cyclone exposed areas in Bangladesh will increase by 26% and the affected population will grow as high as 122% by 2050. These cyclones have serious implications on the food security and livelihood of farmers. For example, the 1999 Orissa super cyclone destroyed 1.35 million hectares of paddy crop and 0.28 million hectares of non- paddy crop.30,000 people were killed. The 2019 Cyclone Fani has caused extensive damage , but due to disaster preparedness , the number of deaths have dramatically reduced.

Navdanya saves, conserves, multiplies and distributes seeds of resilience and climate resilient crops that our farmers have bred such as *Bhundi*, *Kalambank*, *Lunabakada*. These helped rejuvenate agriculture after the Orissa Super cyclone, the Bay of Bengal Tsunami, cyclone Phailin and the Nepal Earthquake. In 2013 when Uttarakhand had unexpected flash floods and people lost their lives and homes, Navdanya was able not only help rebuild their villages and homes but able also to provide seeds to the villagers from the seeds saved by farmers and seed producers, helping farmers recover from the disaster and rebuild their means of livelihood.

<https://www.navdanya.org/site/latest-news-at-navdanya/617-seeds-of-hope-report>

We have changed the metric from “yield per acre” (which measures the weight of nutritionally empty commodities leaving the farm, not the state of the farm, the soil, the water, the farmer, not the true cost of production , nor the nutrition and quality of food. We measure Health per Acre and Nutrition per Acre and can feed two times the population with healthy, nutritious food while conserving biodiversity and rejuvenating the soil . We can achieve Zero Hunger (SDG goal 2) and Good Health and well being (SDG goal 3) by being stewards of creation , not parasites and predators.

<https://www.amazon.in/BIODIVERSITY-AGROECOLOGY-REGENERATIVE-ORGANIC-AGRICULTURE/dp/8193887204>

True cost accounting and our measure of Wealth per Acre shows that through Seed Sovereignty, Food Sovereignty and Agroecology , small farmers can earn higher incomes, instead of growing commodities at high costs and getting trapped in debt and being driven to suicide. More than 300,000 farmers have committed suicide in India since 1995. The violence to farmers and the Earth is one violence .Peace with the Earth, Peace with people is one peace. The SDG goal 1 on No Poverty can be achieved by making a transition from extractive economies which leave the Earth and Farmers poorer , to circular economies based on the “law of Return” ,of gratitude for the sacred gift of food .