

Ecological Reflections on the corona virus

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One Planet , One Health – Connected through
Biodiversity :

From the forests ,to our farms , to our gut microbiome

By Dr Vandana Shiva

We are one Earth Family on one planet , healthy in our diversity and interconnectedness .

The planet's health and our health is non separable .

As Dr King reminded us

“We are caught in an inescapable network of mutuality, tied in a single garment of destiny. Whatever affects one directly, affects all indirectly.”

We can be linked world wide through the spread of disease like the corona virus when we invade the homes of other species , manipulate plants and animals for commercial profits and greed , and spread monocultures .

Or we can be connected through health and well being for all by protecting diversity of ecosystems and protecting the biodiversity, integrity , self organization (autopoiesis) of all living beings , including humans.

New diseases are being created because a globalized ,industrialised ,inefficient food and agriculture model is invading into the ecological habitat of other species and manipulating animals and plants with no respect for their integrity and their health . The illusion of the earth and her beings as raw material to be exploited for profits is creating one world connected through disease.

The health emergency that the corona virus is waking us up to is connected to the emergency of extinction and disappearance of species, and it is connected to the climate emergency .All emergencies are rooted in a mechanistic , militaristic , anthropocentric world view of humans as separate from, and superior to other beings who we can own ,manipulate and control . It is also rooted in an economic model based on the illusion of limitless growth and limitless greed which systematically violates planetary boundaries and ecosystem and species integrity .

As forests are destroyed, as our farms become industrial monocultures to produce toxic, nutritionally empty commodities, and our diets become degraded through industrial processing with synthetic chemicals and genetic engineering in labs , we get connected through disease .

Instead of being connected through biodiversity within ,and outside us ,through a continuum of health through and in biodiversity .

The Health Emergency calls for a systems approach based on interconnectedness

With the health emergency engendered by the corona virus we need to look at systems that spread disease and systems that create health in a holistic , systems approach.

A systems approach to health care in times of the corona crisis would address not just the virus, but also how new epidemics are spreading as we invade into the homes of other beings .It also needs to address the co morbidity conditions related non communicable chronic diseases which are spreading due to non sustainable , anti nature ,unhealthy industrial food systems

As we wrote in the manifesto Food For Health of the International Commission on the Future of Food ,we need to discard “policies and practices that lead to the physical and moral degradation of the food system while destroying our health and endangering the planet's ecological stability, and endangering the biogenetic survival of life on the planet.”

We must now deglobalize the food system which is driving climate change , disappearance of species and a systemic health emergency .

Globalised, industrialised food systems spread disease. Monocultures spread disease. Deforestation is spreading disease .

The health emergency is forcing us to deglobalize .We can do it when there is a political will .Let us make this deglobalization permanent .Let us make a transition to localization .

Localisation of biodiverse agriculture and food systems grow health and reduce the ecological footprint.Localisation leaves space for diverse species ,diverse cultures and diverse local living economies to thrive .

Biodiversity richness in our forests ,our farms , our food , our gut microbiome makes the planet ,her diverse species ,including humans, healthier and more resilient to pests and diseases .

The Earth is for all beings ,Protecting the Rights of Mother Earth is a Health Imperative:

Invasion into forests and violating the integrity of species is spreading new diseases

Over the past 50 years , 300 new pathogens have emerged as we destroy the habitat of species and manipulate them for profits .

According to the WHO , the Ebola virus moved from wild animals to humans “The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission.

As the New Internationalist reports ,

“From 2014-16, an unprecedented Ebola epidemic killed more than 11,000 people across West Africa. Now scientists have linked the outbreak to rapid deforestation.”

<https://newint.org/features/web-exclusive/2018/04/10/deforestation-ebola-outbreak>

As Professor John E. Fa of Manchester Metropolitan University, a senior research associate with the Center for International Forestry Research (CIFOR). Says ‘Emerging diseases are linked to environmental alterations caused by humans. Humans are in much more contact with animals when you open up a forest... You have a balance of animals, viruses and bacteria and you alter that when you open up a forest.’

The Kyasanur Forest Disease (KFD) is a highly pathogenic virus that spread from monkeys to humans through virus infected ticks as deforestation shrunk the forest habitat of monkeys.

“The KFD virus is a pathogen that has long existed as part of an established ecosystem in South Kanara. Human modification of that ecosystem through deforestation caused the epidemic occurrence of the disease.”

<https://www.deccanherald.com/state/deforestation-behind-kfd-713955.html>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3513490/>

The Coronavirus too has come from bats . As Sonia Shah says “When we cut down the forests that the bats live in, they don’t just go away-they come and live in the trees in our backyards and farms”.

Prof Dennis Carroll of Cornell acknowledge that as we penetrate deeper into ecozones we did not occupy before , we create the potential for spread of infection .

<http://nautil.us/issue/83/intelligence/the-man-who-saw-the-pandemic-coming>

“Mad cow” disease or bovine spongiform encephalopathy (BSE), is an infectious disease caused by deformed proteins called “prions” that affect the brains of cattle.

Cows were infected by the Mad Cow Disease when they were fed rendered meat of dead infected cows . When beef from infected cows was fed to humans , they were infected with the CJD .The prion is a self infective agent , not a virus or bacteria .It illustrates that when animals are manipulated and their integrity and right to health is violated , new diseases can emerge .

https://www.emedicinehealth.com/mad_cow_disease_and_variant_creutzfeldt-jakob/article_em.htm

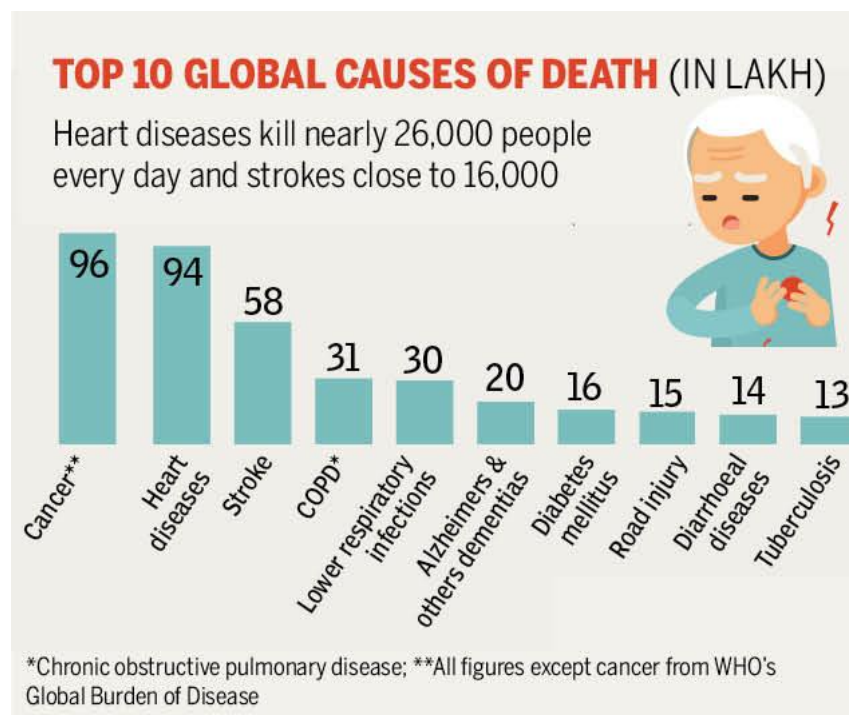
Anti biotic resistance is growing in humans because of the intensive use of chemicals in factory farms .Anti biotic resistance markers in GMOs could also be contributing to anti biotic resistance . Horizontal gene transfer across species is a scientifically known phenomena. .This is why we have Biosafety science and Biosafety regulations like the Cartagena protocol to the Convention on Biodiversity and national laws for Biosafety .

Diseases are moving from non human animals to the human animal as we destroy the habitat and homes of wild species ,we violate the integrity of species as we manipulate animals in factory farms and genetically manipulate plants through genetic engineering with viral promoters and anti biotic resistance markers.

The illusion that plants and animals are machines for manufacturing raw materials which become fuels for our bodies which are also machines has created the industrial agriculture and food paradigm which is at the root of the explosion of chronic diseases is in our times .

A toxic , industrialised ,globalized food system is leading to an explosion of non communicable chronic diseases

In the last few decades , non communicable chronic disease are spreading exponentially and killing people in millions .Toxics and industrial food systems are a major contributor to chronic diseases .



https://timesofindia.indiatimes.com/india/these-diseases-kill-many-more-than-coronavirus/articleshow/74670863.cms?utm_source=facebook.com&utm_medium=social&utm_campaign=TOI&utm_content=om-bm

Almost 10 Million people die from cancer annually. Every sixth death in the world is due to cancer

<https://ourworldindata.org/cancer>

Cancer is the second leading cause of death

<https://www.who.int/news-room/fact-sheets/detail/cancer>

Diabetes a metabolic disorder linked to diet is the 7 th leading cause of death. 1.7 million people die annually because of diabetes complications which lead to blindness, kidney failure, heart attacks, stroke and lower limb amputation.

<https://www.who.int/news-room/fact-sheets/detail/diabetes>

The risks from infectious diseases like the corona virus increase many fold when combined with the co morbidity of chronic diseases.

The mortality rate of the Corona virus is 1.6 %

If one has cardiac problems ,it increases to 13.2 %

With diabetes it increases to 9.2 %

With cancer it is 7.6%

Governments need to take WHO as seriously on cancer as they have done in the corona epidemic .

The IARC of the WHO has identified glyphosate made by Bayer /Monsanto as being a probable carcinogen. This advise needs to be taken seriously . The corporate attack on IARC is contributing to the health emergency . It must be stopped .

Thousands of cancer cases linked to glyphosate have been filed in US courts .In the cases of Johnson Edwin Hardeman , Alva and Alberta Pilliod the courts have ruled in favour of the cancer victims .

Governments need to ban chemicals which are leading to harm. And they need to hold the Poison Cartel accountable and liable for the harm they have done .

My agriculture journey began with the Bhopal genocide which killed thousand when a pesticide plant owned by Union Carbide leaked. Union Carbide is now Dow which has merged with Dupont.

The Poison Cartel which has created toxic diseases by pushing globalized industrialised agriculture is also Big Pharma. They spread disease and gain from it .

Bayer is a pharmaceutical company and an agrichemical chemical selling toxic pesticides .

Syngenta is a toxics company and as Novartis sells pharmaceuticals .

Big pharma is using the health emergency to expand its markets and profits

<https://readersupportednews.org/news-section2/318-66/61876-big-pharma-prepares-to-profit-from-the-coronavirus>

The protection that governments give to the Poison Cartel must go. Instead governments at all levels must work with citizens and communities to create Poison Free and Farming that promotes people's health with the same force with which they have taken action on Corona.

We need to get chemicals that have created a health disaster out of the food system.

Govts need to follow the advice of the UN and the WHO on all issues related to health with the same enthusiasm they have shown on the corona virus.

The Food for Health Manifesto synthesises the high costs on new chronic diseases which have grown exponentially in the last two decades of the spread of industrial food and farming through globalization.

“Already in 2012, a study quantified the impact on health and costs related to the damage resulting from exposure to 133 pesticides applied in 24 European countries in 2003, equivalent to almost 50% of the total mass of pesticides applied in that year. Only 13 substances, applied to 3 classes of crops (grapes / vines, fruit trees, vegetables) contributed, according to this survey, to 90% of the overall health impacts due to a loss of about 2000 years of life (corrected for disability) in Europe every year, corresponding to an annual economic cost of 78 million euros. In 2012, a survey was published that assessed the costs of acute pesticide poisoning in the state of Parana, Brazil, concluding that the total cost of acute pesticide poisoning amounts to \$ 149 million each year. That is to say for every dollar spent on the purchase of pesticides in this state, about \$ 1.28 is spent due to the costs externalised by poisoning²⁷².

It has been calculated that in the 1990s in the United States the environmental and public health costs resulting from the use of pesticides amounted to 8.1 billion dollars each year. Therefore, 4 billion dollars are being spent every year for pesticide consumption in this country, it means that for 1 dollar spent on the purchase of these substances they spend 2 for outsourced costs. Another study published in 2005 estimated that in the USA the costs for chronic diseases through pesticide poisonings amounted to 1.1 billion dollars, of which about 80% for cancer. It has been calculated that in the Philippines the transition from one to two treatments for rice cultivation resulted in a further profit of 492 pesos, but additional health costs of 765 pesos, with a net loss of 273 pesos. In Thailand it has been estimated that externalised costs of pesticides can vary annually from 18 to 241 million dollars²⁷⁶. In Brazil the only costs for damage to the health of workers employed in bean and maize crops amount to 25% of the profits²⁷⁷.

To come up with more recent data and closer to the European reality, we can recall a recent work conducted to assess the burden of diseases and costs related to exposure to endocrine disruptors in Europe: a panel of experts evaluated with “strong probability” that every year in Europe 13 million points of IQ (IQ) are lost for prenatal exposure to organophosphates and that there are an additional 59,300 cases of intellectual disability²⁷⁸. Since it has been estimated that each point of IQ lost for prenatal exposure to mercury is worth about 17,000 euros, the accounts can be similarly soon made also for exposure to organophosphorus.

The health consequences of maladapted modernity, driven by commercial food systems are currently being experienced in epidemic proportions across the world. Apart from premature death and prolonged disability, diseases resulting from nutritionally poor diets are forcing people to seek expensive health care, which is often financially unaffordable. Commercial health care systems are beneficiaries of these modern epidemics, by offering technology intensive and high cost tests and treatments for health disorders that could and should have been easily prevented through good nutrition and a healthy environment. The merger of Bayer and Monsanto, implies that the same

corporations who sell the chemicals that are causing diseases also sell pharmaceuticals as cures for the diseases they have caused.

The global costs of health care due to food system related illness are

– Obesity \$ 1.2 trillion by 2025

- The global cost of just diabetes in 2015 was estimated at US\$ 1.31 trillion. In Italy, every patient suffering from diabetes today costs 2589 euros a year to the National Health System, and the diabetes-related therapies cost the Italian National Health System about 9% of the budget, or about 8.26 billion euros²⁸¹. In Africa, 35 million people – twice the number at present – will be affected by diabetes in the next 20 years. By 2030 diabetes will cost \$ 1.5 trillion ²⁸²

– AMR infections \$ 1 trillion by 2050

– Cancer \$ 2.5 trillion

– Costs of exposure to endocrine disruptors in Europe alone are \$ 209 billion annually; the costs of exposure to endocrine disruptors in the US are \$ 340 billion

– New research finds annual cost of autism has more than tripled to \$126 billion in the U.S. Autism reached £34 billion in the UK and is the most costly health problem²⁸⁶

– Rising infertility has led to a new fertility industry which will cost US \$ 21 billion by 2020 “

And it is the planet and people who bear the burden of disease.

Health is a Right ,Regulation is a Life and Death Matter : Strengthening Biosafety and Health regulation , upholding the Precautionary Principle , and ensuring corporate accountability is the duty of government

As the current crisis shows , regulation is a life and death matter . And the precautionary principle is more vital than ever before . It should not be abandoned with the false claim that “time is our biggest enemy” and any manipulation of living organisms should be rushed to introduction in the environment with little or no testing .

<http://www.navdanya.org/site/latest-news-at-navdanya/703-ag-one-recolonisation-of-agriculture>

There is an attempt to undermine the precautionary principle through free trade agreements like the United States and European Union’s so-called “mini-deal” on trade According to U.S. trade negotiators, Agriculture Secretary Sonny Perdue and American farm interests the precautionary principle must go, and now is the time to finally axe it through the US EU trade deal

Governments need to ensure Biosafety and Food Safety assessments are not influenced by the industry that benefits from manipulating living organisms and suppresses scientific evidence of harm. The evidence of such manipulation of research and attack on scientists and science by the industry was presented at the Monsanto Tribunal and People’s Assembly in the Hague in 2016

<https://peoplesassembly.net>

The harm caused to people’s health by corporate manipulation of research is now proven .

<https://www.theguardian.com/environment/2017/sep/15/eu-report-on-weedkiller-safety-copied-text-from-monsanto-study>

We need to strengthen independent research on Biosafety , Food Safety,Healthy Safety ,epidemiology and the ecology of health .

Governments need to immediately strengthen biosafety and health regulation.The global attempt at deregulation of food safety and biosafety regulations must be stopped .Gene editing has unpredictable impacts and new GMOs based on gene editing needs to be regulated as a genetically modified organism (GMO) because the genome has been modified , and we need to assess and know the impact on health of the manipulation at the genetic level .

New attempts at gene drives to genetically manipulate organisms to drive them to extinction must be stopped to prevent crimes against nature and create new unknown diseases through unintended impacts .

With the corona virus , the Govts are showing they can take action to protect the health of people when they have the will.

It is now time for them to take all the steps necessary to stop that all activities which are the compromising our health by compromising the metabolic processes which regulate our health . The same systems also cause harm to the planet's biodiversity , the Earth's self regulating capacity leading to climate havoc.

The corona crisis and the response to the crisis needs to become the ground for stopping processes that degenerate our health and the planet's health and starting process that regenerate both .

We know that industrial agriculture and industrialised, globalised food systems based on fossil fuels and toxic chemicals derived from fossil fuels are contributing to species extinction , climate change , and the chronic disease catastrophe .

We know that biodiversity based regenerative organic farming can address all three crisis .

It is time for governments to stop using our tax money to subsidise and promote a food system that is making the planet and people sick .

Corporations should be held liable for the harm they have done and prevented from continuing to be free to do more harm by undermining independent science and research which is the only source of real knowledge of harm to health .

The crisis also gives people an opportunity to see how corporations have undermined our health .Corporate accountability is a health imperative and growing corporate free democratic ,biodiverse ,healthy food systems , and allow a flourishing of biodiversity of knowledge systems has become a survival imperative .

The health emergency has shown that right to health is a fundamental right, health is a commons and a public good ,and the government has a duty to protect public health. That is why the privatization and corporatization of health should stop , and public health care systems should be protected and strengthened where they exist , and created where they don't .

Rejuvenating the Science of life and healthy living: Decolonizing our knowledge systems and health systems :

The path to a healthy planet and healthy people is clear .

The economy based on limitless growth is leading to a limitless appetite to colonise the land and forests, destroying the homes of other species and indigenous people .The Amazon is being burnt

for GMO for animal feed . The Indonesian rainforests are being destroyed for palm oil in Indonesia

Disease is being created by the unlimited demand for resources for a globalized economy based on unlimited growth .An economy of greed is violating of the Rights of Mother Earth, and the integrity of her diverse being which are the basis of One Health .

Health for all begins is based on protecting the earth, her ecological processes , and the ecological space and ecological integrity of life on earth, including humans .

We need to shift from a mechanistic , militaristic paradigm of agriculture based on war chemicals to Regenerative Agroecology , an agriculture for life based Biodiversity and on working with a living nature , not engaging in war against the earth and her diverse species .Central to a living agriculture is care and gratitude , of giving back to the earth , law of return or the law of giving , creating circular economies which heal the earth and our bodies .

Indigenous systems of health care have been criminalised by colonisation and the pharmaceutical industry .

We need to shift from a reductionist ,mechanistic , militaristic paradigm based on separation from and colonization of the Earth , other species and our bodies ,that have contributed to the health crisis to systems like Ayurveda , the science of life ,which recognize that we are part of the earth's living web of life , our bodies are complex self organised living systems ,that we have a potential to be healthy or sick depending on our environment and the food we grow and eat . Health depends on healthy food (Annam Sarva Aushadhi – Good food is the medicine for all diseases).A healthy gut is an ecosystem and is the basis of health. Health is harmony and balance.

(Annam:Food and Health , Navdanya)

Indigenous health systems and knowledge systems that are based on interconnectedness need to be recognized and rejuvenated in times of the health emergency we face .

Health is a continuum, from the Soil ,to the Plants , to our gut microbiome .

While industrial globalised agriculture which is destroying the forests and the biodiversity of our farms is justified as Feeding the World , 80% of the Food we eat comes from small farms . Monoculture farms produce commodities, not food .

Industrial globalized agriculture is a hunger and disease creating system . It has spread diseases related to toxics and is destroying the small farms that feed us by trapping farmers in debt and driving them to suicide .

This disease creating unhealthy food system is subsidized by our tax money , first by providing subsidies for production and distribution , and then making people pay for the high costs of health care .

If we add the subsidies and health externalities of industrial, globalised food systems ,we realise that neither the planet nor people can continue to bear the burden of this disease creating industrial , globalized food system .

Ecological agriculture free of chemicals needs to be part of the rejuvenation of public health.

Unlike industrial farms small take care of people's health , specially when they are chemical free ,organic and biodiversity . We should direct all public funding to support agroecological farms and local economies as a health systems .

Through Biodiversity and organic matter in the soil , we grow more nutrition per acre , our plants are healthier and more resistant to diseases and pests . Returning organic matter to the soil also heals the broken carbon and nitrogen cycle which are driving climate change .Healing the planet and healing our bodies are interconnected processes.

We need biodiversity intensification and rewilding of our farms , not chemical and capital intensification . Biodiversity creates cultures and economies of care , including care for the health of the earth and people . The more the biodiversity we conserve on the planet , the more we protect the ecological space for diverse species to sustain themselves and we protect their integrity to evolve in freedom and resilience . All species have their right to ecological space and freedom to evolve , and all humans as part of the Earth have a right to access to chemical free biodiverse food.

We need to protect the Biodiversity of our forests , farms , our food to increase the biodiversity of our gut which is the true source of health .Plantations are not forests , and growing monoculture commercial plantations of trees or GMO soya is a threat to diverse species, diverse cultures and our own health .

Biodiverse organic systems need to become central to the public health solutions to the health emergency we are witnessing .

Biodiversity of the Mind must replace the monocultures of the mechanistic mind which see life's diversity as the enemy to be exterminated .

India's greeting "Namaste" has gone global in times of the corona virus . The significance of Namaste is not separation but a deeper unity that connects us all .Namaste means "I bow to the divine in you" . It signifies an interconnectedness that we are part of a sacred universe where everything is permeated by the divine for the benefit of all, the exclusion of none .

This is consciousness of oneness and unity we need to cultivate in these times where a small virus has connected us across the globe through disease and panic.

Let not the social isolation required in a health emergency become a permanent pattern of separation ,destroying community and social cohesion .Let not closure of local markets and farmers markets become a permanent closure to create a future of farming without farmers in the Bayer /Monsanto vision , and fake food which destroys our health while billionaires extract profits from the currency of life .

<https://theecologist.org/2020/jan/24/rewilding-food-rewilding-farming>

The future depends on our oneness as humanity on one planet connected through biodiversity and health. Let not the cautions of today be cemented into a permanent climate of fear and isolation .We need each other and the earth in our rich diversity and self organization to create resilience in times of the emergency , and to regenerate health and well being in the post carona world .

The Corona crisis creates a new opportunity to make a paradigm shift from the mechanistic ,industrial age of separation, domination , greed and disease ,to the age of Gaia , of a planetary civilisation based on planetary conciousness that we are one earth family. That our health is One Health rooted in ecological interconnectedness , diversity , regeneration , harmony .

<https://www.amazon.in/Oneness-VS-Kartikey-Shiva-Vandana/dp/9385606182>