Solving the problem of ‘Soil Extinction’

***“Soil extinction is the dire need of the time”***

Protein levels present in beans Dropped by 60% in INDIA in just 20 years due to soil degradation (Down To Earth, 2017)

63% of INDIA’S Soils are under severe stress with less than 0.5% organic carbon. (Department of Agriculture & Farmers Welfare, Govt. of INDIA)

By 2050, 90% of the Earth’s soils could be degraded, UNLESS WE ACT NOW (UNCCD, 2020)

***What is Soil Extinction?***  
  
When I first learned about Soil Extinction, I didn’t understand what it meant.  
I mean I understand dinosaurs have gone extinct, dodos are extinct, but what  
does soil extinction mean?  
  
  
For thousands of years, our  
soils have been rich with organic content and full of life. But in recent  
times, it is turning into sand.  
  
  
The main difference is the  
loss of Organic content.  
  
  
Organic content is the  
living part of the soil that comes from humus. Anything alive or was once alive  
turns into humus over time. In agricultural lands, it comes from the litter of  
plants, the leaves and everything else, and animal droppings.  
  
  
Soil needs to be covered  
under vegetation, whatever kind – plants, trees, shrubs, etc.  
  
  
But in today’s agricultural  
practices, most of the agricultural lands have almost no vegetation.  
  
***Causes:***  
Every time we have a  
harvest, in a way we take soil and organic content out of the land. But there’s  
nothing replenishing the soil. Even after harvest, the land is kept bare and  
exposed most of the time.  
  
  
This leads to Soil  
extinction- which means, the soil is losing its organic content and is turning  
into sand. This is not a story of any particular nation, it’s across the globe.

***Some Facts & Figures:***

How much soil have we  
already lost?  
  
Soil needs at least 3-6% organic content to be alive. But in most parts of the  
world, the situation is quite terrible.  
  
  
●       
In India, 62% of India’s soil has an organic content of less than 0.5%.  
  
  
●       
In Europe, 75% of soil has an organic content of less than 2%.  
  
  
●       
73% of cropland has been degraded in the Middle East and North Africa.  
  
  
●       
The United States has lost 50% of its topsoil.  
  
Worldwide, we have lost an  
astounding 52% of agricultural soils – that’s over half the cultivable soil on  
the planet and with the way we are going, 90% of earth’s soil could be lost in  
the next 30 years.

***Effects:***

Why should we care about  
Soil going extinct?  
  
Because it’s impacting us in more ways than we realize.  
  
  
**1) Severe Food & Nutrition  
Crisis**  
  
By 2050, our population is estimated to be over 9.2 billion but food production  
will fall by 40%.  
  
  
As you read this article,  
over 800 million people already suffer from hunger worldwide. That’s equivalent  
to two-thirds of India’s population!  
  
  
It is a well-known fact  
that 95% of our food comes from the soil, but we have soil left only for less  
than 60 years.  
  
  
Now imagine a world where  
the capacity of soil to grow food has gone down significantly while our  
population is over 9.2 billion. That is the severity of the food crisis we are  
heading towards. Not just in Africa, it can even be us – you, me, our family,  
children, friends.  
  
  
It’s not just about the  
quantity of food, but also the quality of food.  
  
  
There has been a vast  
difference in the nutritional value of the food that we eat now.  
  
  
Today, it takes 8 oranges  
to get the same amount of Vitamin A that our grandparents used to get from just  
1 orange.  
  
  
Not only this, the protein  
content in Indian vegetables has dropped by 60%. We see a similar trend in the  
US as well. The mineral content in US vegetables has dropped by 87%. And this  
phenomenon is spreading all over the world.  
  
  
Isn’t it too often that we  
hear about Vitamin D, Vitamin B, Iron deficiency in people around us??  
  
  
You may be surprised to  
know that, already almost 2 billion people suffer from nutrition deficiency  
worldwide. That’s almost one-third of our population.  
  
  
**2) Incredible Loss of Life in  
Soil**  
  
Do you know there is a whole universe of creatures under our feet?  
  
  
You may only have heard of  
earthworms,  but there are zillions of lives that thrive in soil. Just 1  
teaspoon of soil has more organisms than our entire population.  
  
  
It is this biodiversity  
that supplies so many nutrients to plants that grow our food. It is this  
biodiversity from which many of our medicines are cultured. It is this  
biodiversity that makes soil alive.  
  
  
But, the unfortunate  
reality is that every year close to 27,000 of these species are going extinct –  
entire species!  
  
  
The only way to secure food  
for everyone is by reviving this life in the soil and our food can be  
nutritious only when it is grown in healthy soil.  
  
  
**3) Overheating  
of our Planet**  
  
  
Are you aware that soil is even connected to  
climate change – the extreme weather conditions and Global warming?  
  
  
When we hear about climate  
change, we usually hear about fossil fuels –  how eliminating fossil fuels  
is the only way to minimize global warming.  
  
  
While we may need to reduce  
our dependence on fossil fuels gradually,  
  
  
But  
there is a whole other side to this story, which is little known, which no one  
is talking about.  
  
  
Do you know the soil is the largest  
carbon sink on the earth?  
  
  
Soil that is rich in  
organic content can absorb huge amounts of carbon from the atmosphere and can  
cool our planet. Wondering how?  
  
  
Through one of the most  
magnificent natural phenomena – Photosynthesis.  
  
  
Plants using sunlight and  
water naturally perform photosynthesis. They pull carbon in from the air and  
turn them into carbohydrates – sugars. Then they pump some of these sugars down  
through the roots to feed microorganisms who use that carbon to build healthy  
soil. Simply, plants pump the carbon from the atmosphere and soil stores it –  
carbon moved!  
  
  
But when soil degrades, soil carbon and nitrous  
oxide are released into the atmosphere, making land degradation one of the most  
significant contributors to climate change. Soil degradation is  
believed to have resulted in the loss of two-thirds of all terrestrial carbon  
storage from soils and plants since the 19th century.

**4) Water  
Scarcity, Droughts & Floods**  
  
For the past 100 years, the amount of rain we have  
received has been roughly the same. However, we frequently hear about floods  
and droughts nowadays. Why?  
  
  
There are many aspects to  
this but one major fundamental problem is that degraded soil can’t hold the  
rainwater because it does not have much organic content.  
  
  
As we saw earlier, soil  
that is covered with vegetation becomes rich in organic content.  
  
  
When the soil has enough  
organic content, it becomes like a sponge. So when it rains, the soil can  
absorb the water and hold it. This stored water is then released gradually into  
the rivers and lakes.  
  
  
But when there is no organic content, the soil is  
not able to absorb this water. So when it rains, floods happen; and when there  
is no rain, we see droughts.  
  
  
**5) Loss  
of Livelihoods**This  
is having an immense impact on our farmers – the people who grow our food.  
  
  
74% of the poor are  
directly affected by soil degradation globally. Farmer’s suicide is an everyday  
story now. In the last 20 years,  
over 3 lakh farmers have committed suicide in India.  
  
  
The main reason: so many farmers have become  
entrapped in a vicious cycle of debt. They have to borrow more and more money  
for chemical inputs but their crop yields and incomes are declining, year after  
year. On  
top of that, crop losses – some years due to drought, some years due to  
excessive rains.  
  
  
All this is because the  
soil is no longer as alive as it used to be. It has become dry and broken.  
  
  
If soil is rich, will any  
farmer commit suicide? If soil is rich to even grow food for his own family,  
will anyone commit suicide? Will anyone migrate, leaving their traditional land  
to unknown places, if the soil is rich?  
  
  
We must understand, for a  
farmer, if he loses all his crops, then for an entire year he and his family  
will have to struggle for food. Because for farmers, the main asset is their  
land, their soil.  
  
  
**6) Conflicts  
and Mass Migrations**By 2050, population growth  
and food and water scarcity may force more than 1 billion people to migrate to  
other areas and nations.  
  
Since 1990, land disputes have played a key part in over 90% of Africa’s major  
wars and conflicts. High food costs have been blamed for widespread protest  
movements since the French Revolution and the Arab Spring.

***The Solution –*** Policy  
actions to bring back at least 3-6% organic content in Soil  
  
There is an urgent need to bring back at least 3-6% organic content in the soil  
– by bringing the land under shade from vegetation & enriching the soil  
through plant litter and animal waste. All that needs to happen is soil must be  
covered with vegetation – whatever kind – plants, trees, shrubs, grasses, etc.

According to experts, we can reverse the soil  
condition in the next 15-20 years if we take action now. However, if we wait  
for another 20 years to act, it will take 150-200 years to regenerate it.  
  
  
**If soil is revived, if it has at  
least 3-6% organic content, we can mitigate the six major global issues that we  
are facing today:**

●       
We can secure nutritious food for all.  
  
  
●       
Biodiversity, that is life in the soil, can thrive.  
  
  
●       
Reduction in global warming which can make our planet so much cooler.  
  
  
●       
We can ensure that water cycles get back in balance and water is available to  
all.  
  
  
●       
The livelihood of our farmers can be significantly enhanced.  
  
  
Right now, the problem has reached such a place that individual action is not going to be the solution. The solution can only happen if the solution gets enshrined in the policy of every nation on the planet.  
  
  
Just to give an example of  
this, there was a time when we could build a house whichever way we wanted. But  
today, if we want to build, we have to allow some space. If we build more than  
what we should, the respective authorities will come and demolish the house.  
But such a law does not exist for agricultural lands anywhere in the world. If  
someone has, for example, 10 acres of land, he can plough every inch of it,  
turn it into a desert in 10-15 years but there is no one to question this.  
  
  
We may own the lands. But  
the soil is not our property. It’s a legacy that has come to us from previous  
generations in its living condition. It is our fundamental responsibility that  
we pass it on to the next generation in living conditions, otherwise, we will  
be taking away the basic source of life for future generations.  
  
So,  
how would you like to tell your area representative that you want them to make  
policies to revive soil?

Simply go out and start taking just a small step and you will start seeing big changes…