

World Soil Day

December 5, 2017

“The earth, the air, the land and the water are not an inheritance from our forefathers but on loan from our children. So, we have to handover to them at least as it was handed over to us.” Mahatma Gandhi

Social Action for Soil Health Management



Context

Soil is a natural resource serving the human beings since time immemorial. It takes thousands of years to make one meter depth of soil. Soil is key to eco-system services as it plays vital roles in carbon cycle, storing and filtering of water. The organic matter content, on an average, has gone down to a critical level of 0.3 to 0.5 percent and several micro-nutrient/ multi-nutrient deficiencies are emerging/ reported from various parts of the country. Furthermore, declining response ratios due to over use of fertilizers are being often reported, which lead to wasteful expenditure on fertilizer subsidy meaning loss of key national resources. This is affecting human health, apart from posing serious threats to agricultural productivity and sustainability. Another alarming factor is, nearly 120 million hectares of soils have become problematic because of the fact that they are either acidic, saline or sodic or alkaline soils. For India, which has over 17% of world population with limited land resources, the situation warrants immediate attention to take care of the soils. Unless immediate attention is paid, it will pose serious threats to agricultural sustainability and to feed the beaming billions will put our already scarce resources to severe stress. Unfortunately, the state of soils in our country is far from the satisfactory levels and calls for our urgent attention and actions.

Need for unified action:

India which has varied geology, relief, climate and vegetation and different criteria have been applied to classify Indian soils, based

on geology, relief, fertility, chemical composition and physical structure, etc. These variations in soil also mean unique and diverse biodiversity, crops, management needs and with it associated challenges. Thus, to address the diversity and complexity of challenges related to soil health in India., urgent social action is warranted to :



- ◆ Protect and conserve soil as a common resource and foundation for sustainable agriculture.
- ◆ Protect soil health through efficient planning of nutrients replenishments strictly based on the needs and avoid excesses.
- ◆ Improve essentially the organic carbon content of the soil to encourage soil biodiversity/ living organisms and enhanced microbial activity of the soil.
- ◆ Treat soil and water as mutually dependent systems and focusing on soil health in all programs of water conservation and vice-versa.
- ◆ Encourage crop rotation, biodiversity and to re-establish sensitiveness in agro-eco-system linking agriculture and livestock.
- ◆ Recognize ill effects of soil degradation and to avoid and ultimately stopping of crop residues burning.

- ◆ Encourage/incentivize practices to maintain good soil structure, texture, promoting water permeability, absorption and discourage water evaporation from soil.

Key stakeholders for Sustainable Soil Management:

Sustainable soil management is fundamental for food/nutrition as well as water security. The important role of soil in mitigating climate change is highly relevant in the changing scenario of climate. The well managed soil helps in storing/sequestering carbon and reducing global greenhouse gas emissions. The need of the hour is, to protect our soils especially in terms of their quality+. Soil should be managed in such a way that organic matter is not further deteriorated, precious top soil is not lost and water is retained. Better managed soils sustainably support agriculture, enhance efficiency of inputs and enhance quality of agricultural produce.

Extension

The extension system of the country should focus on the importance of soil health while they deliver advisory services to the farmers. The State government should encourage farming practices that contribute to soil health. Farmers who contribute to soil health also need to be incentivized. Such incentives should be built-in into various schemes implemented by the states/GOI.



Research

The Soil Health Research may be given high priority to improve nutrient use and enhance availability of native nutrients. The research should include the frontier sciences like Nano-Technology as well as simple and economically viable solutions to restore soil health which can be adapted by large number of small holder farmers.



Urban and Rural Local Bodies

The soils are continuously being polluted due to effluents released

from the urban and rural sewerage system due to untreated drainage released into agriculture fields. Pollution-loaded effluents from Industries including small scale industries is a matter of grave concern as soils and river ecosystems are polluted with metals, poisonous substances which cannot be restored for millions of years. The local bodies shall effectively treat the effluents, and release only after harmful effluents are prevented and soil contamination minimized.



Community Action

Soil being a national resource, the whole community needs to be involved in its upkeep and restoration. Community Action to be promoted to create awareness about Soil Health Management at various levels- Schools, Panchayats, Shopping complexes, Marketing yards so as to generate bare minimum plastic waste and promote use of bio-degradable items.



Farmers

Since time immemorial, farmers of India have been very innovative in protecting the soils. They have been practicing innovations like incorporating catch/cover crops, adding compost to the soils, adding green manure and green leaf manure before onset of monsoon. The need of the hour is to restore good traditional systems back so that our soils are protected and health of the soil improves. The livelihoods of the farmers will be protected only as long as soil health is good.



“Listen for a while Earth is lying naked and barren Crying for help without words , Calling so softly for carbon There is no time to bargain“ Jones (2006)

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