Tell Me How ?

Inhana Soil Health Management can be a Sustainable Tool for Organic and Sustainable Agriculture

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Soil Health

Key to Sustained Crop Productivity

- Healthy soils are the foundation of the food system. Our soils are the basis for agriculture and the medium in which nearly all food-producing plants grow. Healthy soils produce healthy crops that in turn nourish people and animals
- The benefits of healthy soil in sustaining crop production are most evident when growing conditions are less than ideal. Healthy soils increase the capacity of crops to withstand weather variability, including short term extreme precipitation events and intra-seasonal drought.

Soil Health

The Other Key Indicators of Vulnerability

- Soil Depletion has robbed our food of nutrients. Some hard facts (i) 60 % drop in protein in Indian vegetables and more than 2 billion people suffer from nutrition deficiency worldwide
- Soil has direct relation with Climate Change as Degraded soils can release 850 billion tons of CO_2 = last 30 years of emission
- Degraded lands are often less able to hold onto water, which can worsen flooding (World Wide Fund) and as per estimation, by 2040, roughly 1 in 4 children worldwide will be living in areas of extremely high water stress
- Soil is the biggest habitat of plants and with soil degradation, 27,000 species are getting extinct every year.
- Reviving Soil Quality will Increase the income of 75 % of World's poor who rely on Agriculture – World Bank.

Soil Health Our Commitments

According to Our Prime Minister, India has a **National Commitment for '**

Restoration of 26 million hectares of degraded land aimed by 2030 to achieve an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent'

– *14th Session of the Conference of Parties of United Nations Convention to Combat Desertification (UNCCD), 2021*

The **economic cost of land degradation** in India was estimated to be about Rs 3 lakh crore in 2014 or about **3% of the GDP**, and it could only have gone up now

-Deccan Herald, 2021

AGRICULTURAL SUSTAINABILITY- The CHALLENGES AHEAD

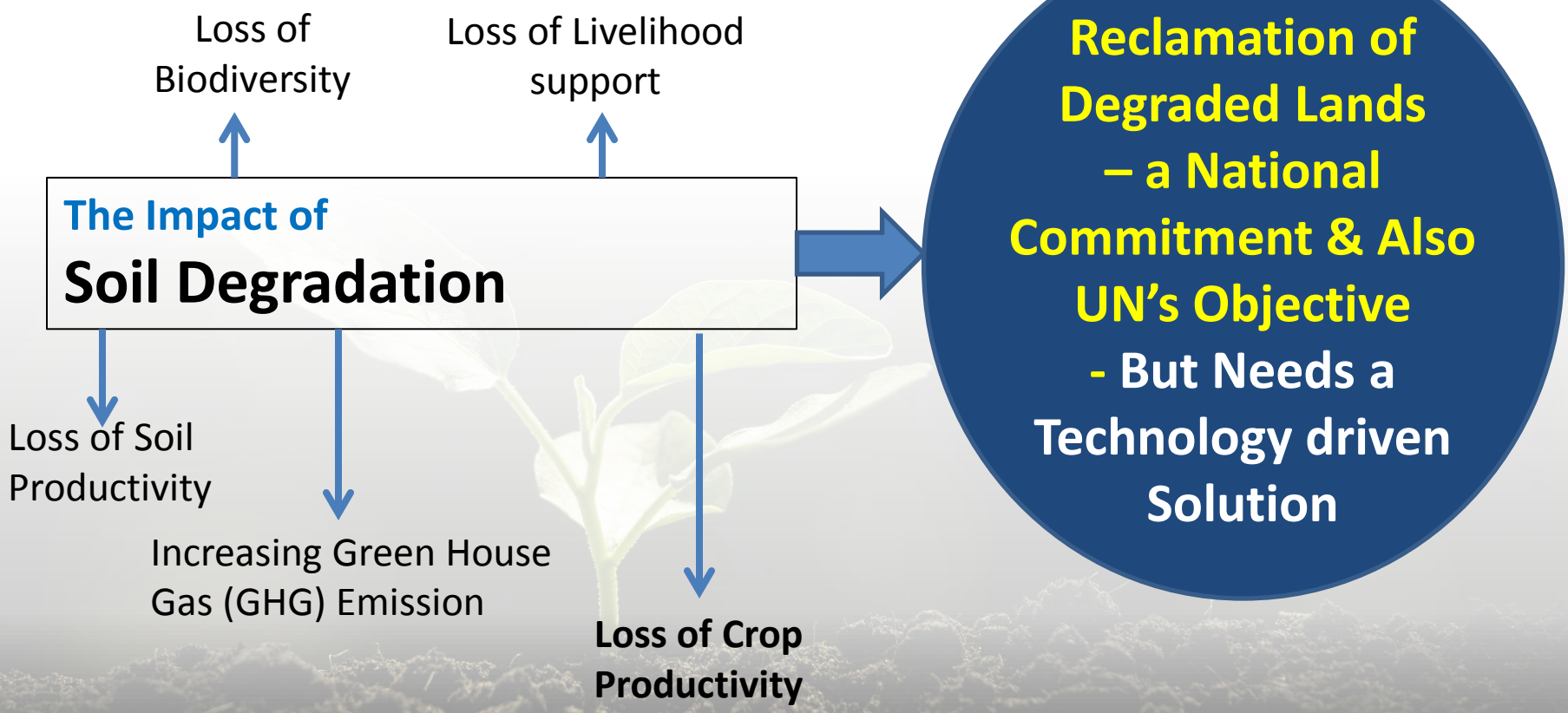
- **Population continues to increase.**
- **Available cultivable land is shrinking.**
- **Large scale production is essential.**
- **But productivity is declining progressively.**

MODERN DAY AGRICULTURE & SOIL HEALTH

- Introduction of **CHEMICAL INPUTS** started showing **LIMITATIONS** just a few decades after their inception in **MODERN DAY AGRICULTURE**.
- **DEPLETION OF SOIL NUTRIENT RESERVE**, despite application of huge amount of fertilizers, is being reflected in the current **'SOIL NUTRIENT BALANCE SHEET'** of the state.
- **CROP PRODUCTIVITY DEPLETION, ECOLOGICAL DESTRUCTION & FOOD TOXICITY** have become unresolved problems in the present times.

The Hidden Danger

The Challenges of Sustainable Agriculture increases multifold with increase in Soil degradation



One Stop Solution for All Problems ……

- Erosion of Top Soil
- Loss of Soil Productivity
- Sub - Soil Compaction
- Increase of Soil Borne Diseases
- Acquisition of Residual Toxicity

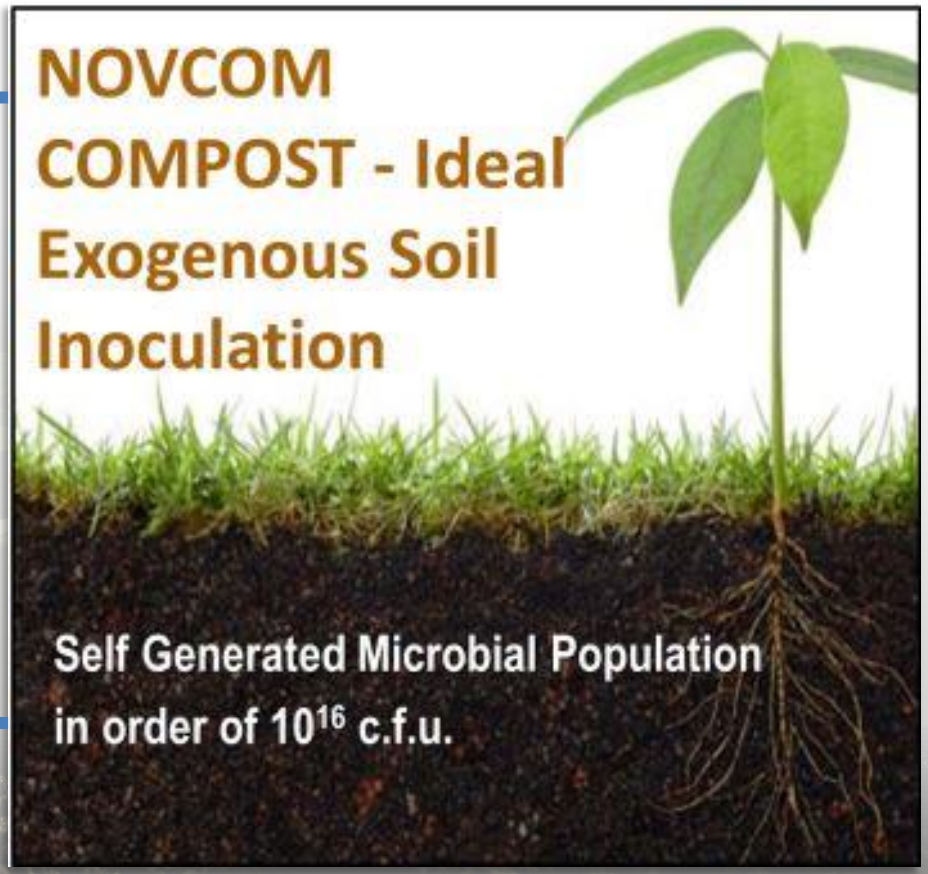
NOVCOM COMPOST

A Integral Component for

SOIL HEALTH MANAGEMENT

under any Sustainable Initiative

Ensures Elimination of Nitrate Fertilizers. Validated On- field Study indicates that . . .

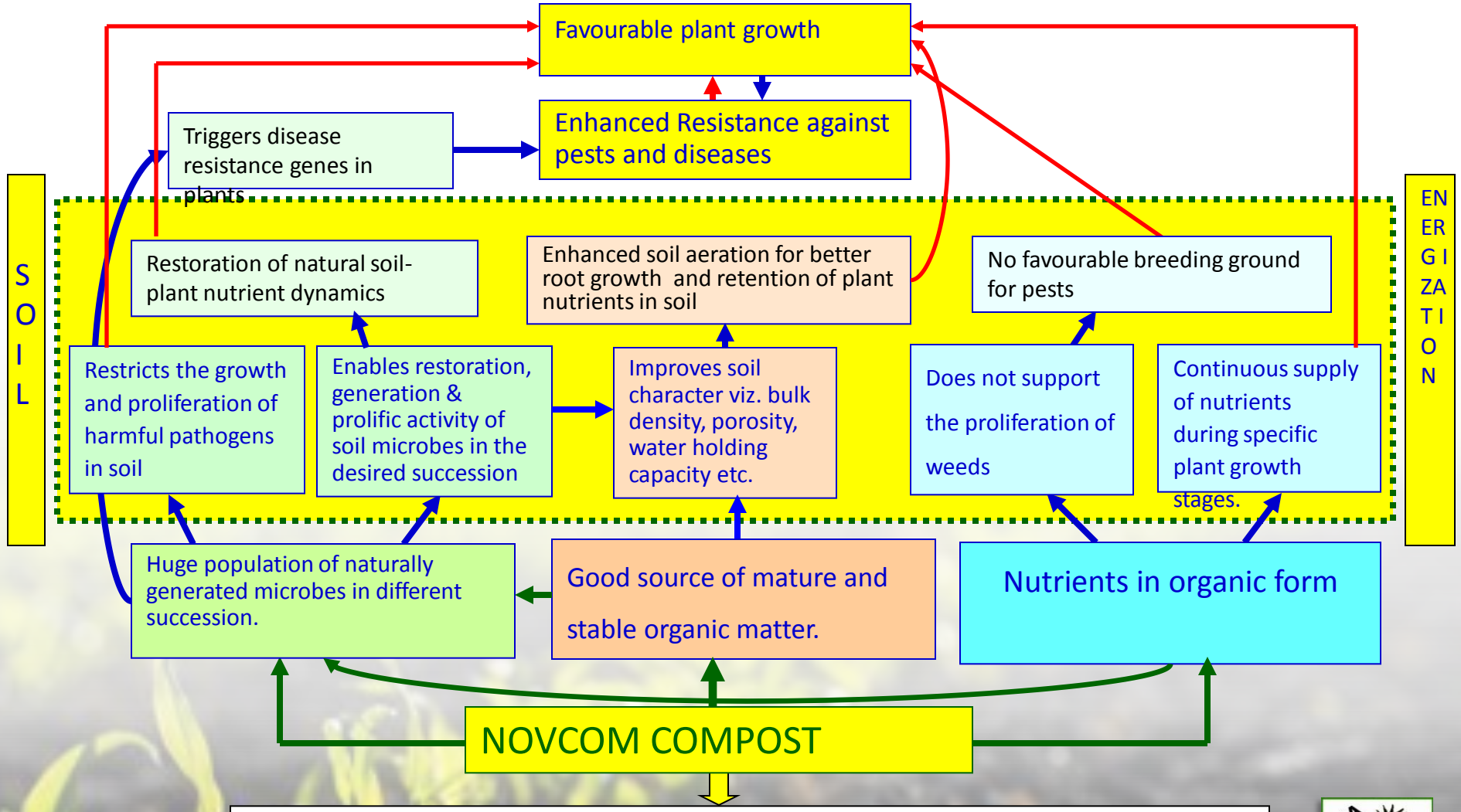


1 unit of Novcom–N can Replace 2 units of Urea-N

What is Novcom Compost ?

Novcom compost is produced through a '**NOVEL COMPOSTING**' method, which helps to develop microbially rich quality compost within shortest time period through replication of natural biodegradation method in a an intensified manner. Novcom solution, developed under Element Energy Activation principle (EEA Principle) provides the desired energy for rapid intensification of microbial activity within the compost heap to enable stable, mature and non- phytotoxic compost within 21 days period, with Lowest GHG Emission, Higher C-Preservation in changing format and Enhanced Atmospheric Nitrogen Fixation.

SOIL ENERGIZATION by NOVCOM COMPOST & Its Effect On Plant System



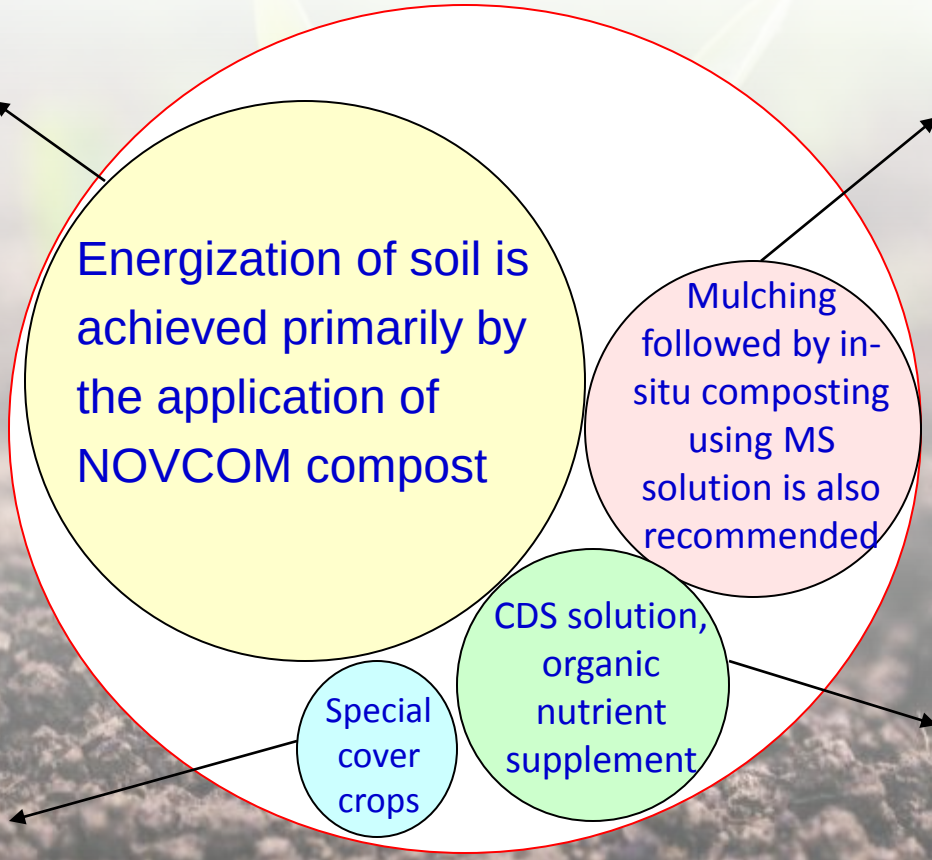

World Food Day
CLEAN FOOD


IBM-IORF SUSTAINABILITY PROJECT
CLEAN FOOD
ZERO MODEL
Net Zero Paddy Seeds
Net Zero Vegetable Seeds
Net Zero Vegetables
Net Zero Oilseeds & Pulses
Location:


INHANA
IORF

What is done to ENERGIZE the SOIL SYSTEM under RATIONAL FARMING®TECHNOLOGY

- Immediate nutrient supply to plants in the present lixiviated / deactivated soil condition
- Nutrient supply to plants at the required time, in the required quantity.
- Reinstatement of the soil nutrient dynamics and natural soil ecological processes



Mulching is a common practice in Tea plantations; however, it can cause severe depletion in soil pH (which is already low) if practiced for a long period.

In- situ composting of mulches restricts such problem. It enables immediate nutrition management of crops in case of inadequate compost application but most importantly it helps in developing the surrounding soil microflora and restricts weed growth.

Special cover crops etc. helps in conserving soil moisture, N- fixation but most importantly help in restoring the native microflora in the active area.

CDS solution, organic nutrient, supplement etc. enable site specific nutrient availability in soil by intense enhancement of the native microflora

It is important to note that mere application of different types of organic matter or any ordinary compost in soil cannot achieve soil energization.

Attending Multiple Objectivity With a Single Program

Attending the 4/1000 Initiative - Soils for Food Security and Climate by United Nations

Attending **Objective of Sustainable Development Goal -2** (SDG-2) End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

Attending **Objective of Sustainable Development Goal -13** (SDG-13) Strengthen resilience and adaptive capacity to climate-related hazards

'Inhana Soil Health' Program

Attending India's Mission of Restoration of Degraded Land

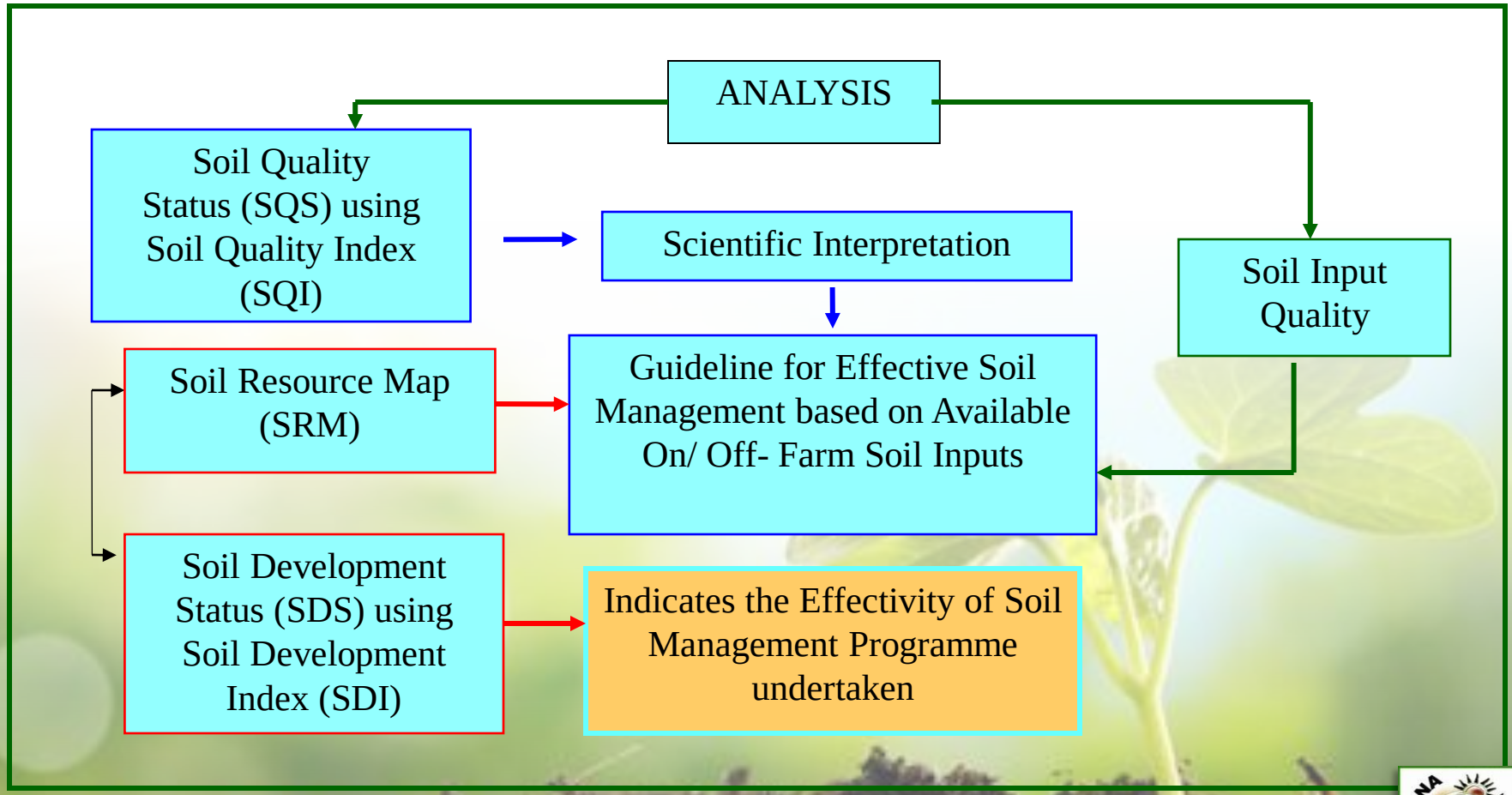
Improving Soil- C Sink

Crop Sustainability

Higher Income generation Potential

Livelihood Support to Small & Marginal Farmers

FLOW CHART DEPICTING THE ROLE OF SOIL ANALYSIS TOWARDS FORMULATION OF AN EFFECTIVE SOIL MANAGEMENT PROTOCOL



Steps to Develop Effective Soil Management Policy

Formulation of a Soil Management Protocol (on-farm/ off-farm soil inputs) and their dosage/ time/ frequency according to the Soil Quality Index (SQI)

Searching for available on-farm resource for maximizing compost production.

Sourcing balanced quantity of quality organic amendments from market.

Other organic soil management practices *viz.* mulching, in-situ composting & other practices for enhancing soil biological activity

Evaluate the required amount of organic amendments.

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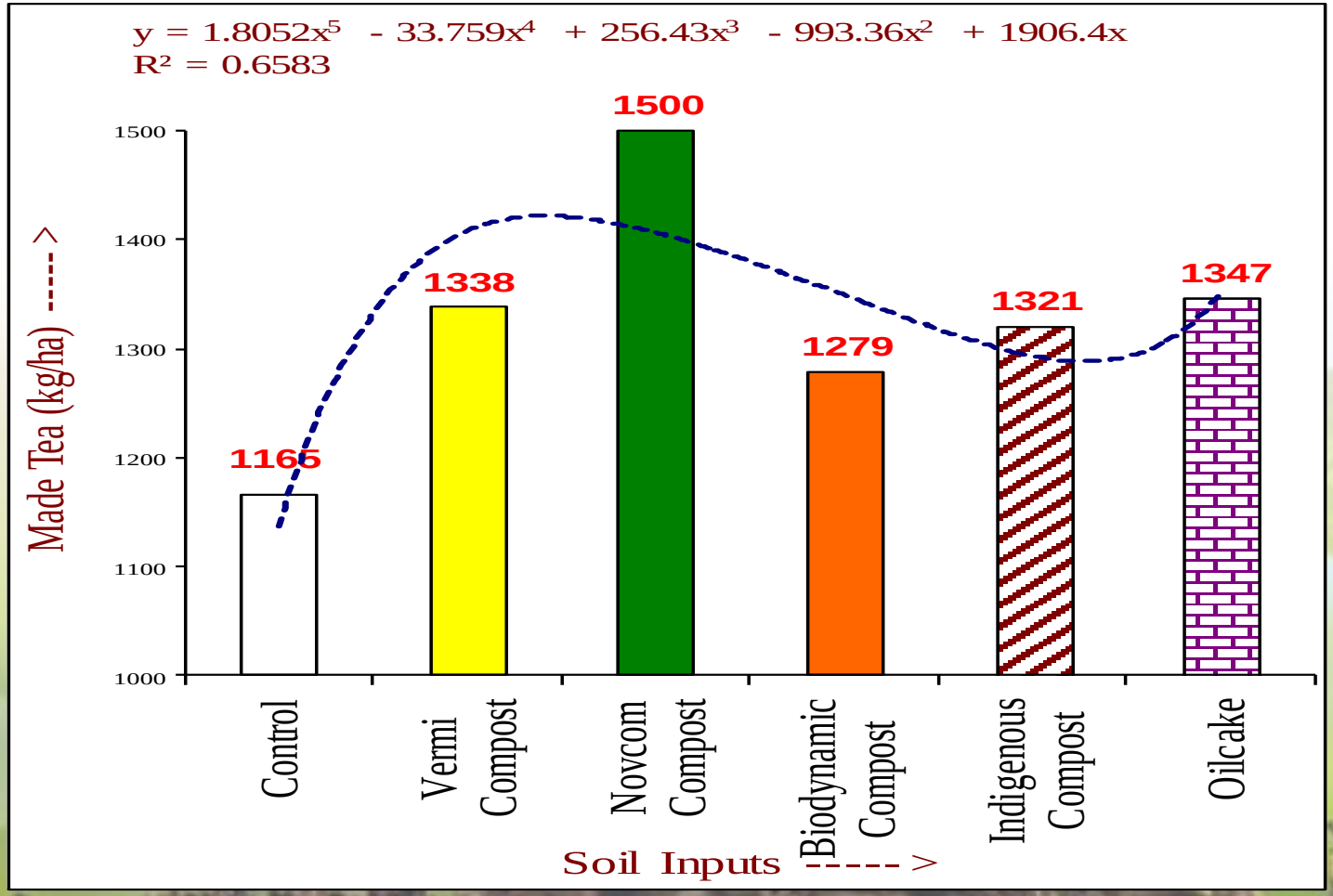
Fix up a quality standard of inputs as per International Protocol.

Identify soil quality through soil analysis and study of plant performance potential

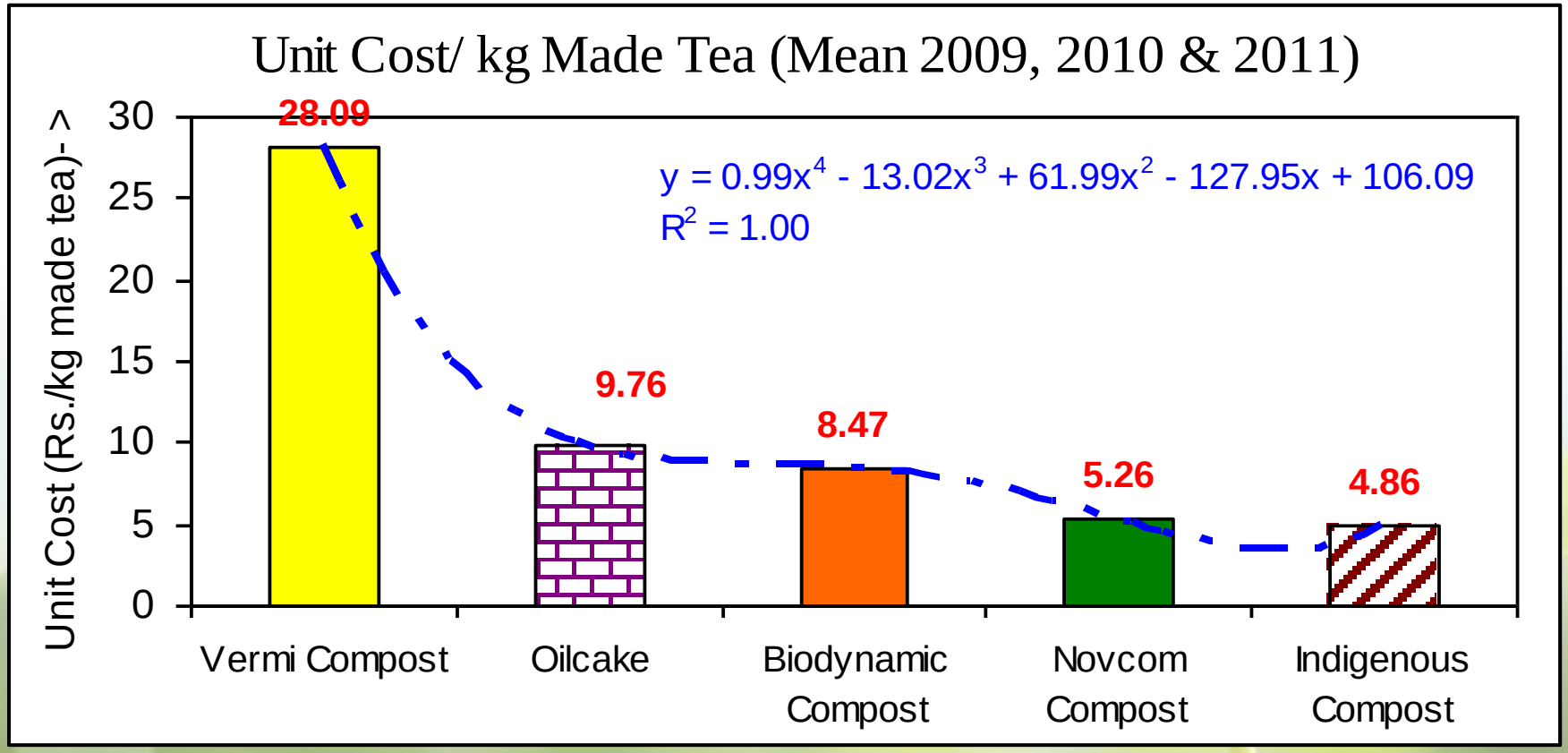
Set up a yield target

Crop Performance under application of Novcom compost in FAO-CFC TBI Project (2008 -13)



- Highest yield (28.8 % increase over control) was obtained under Novcom compost.

Cost Efficiency under application of Novcom compost in FAO-CFC TBI Project (2008 -13)



- Cost of Novcom compost was about 1/5th cost of Vermicomposti considering unit cost of produced end product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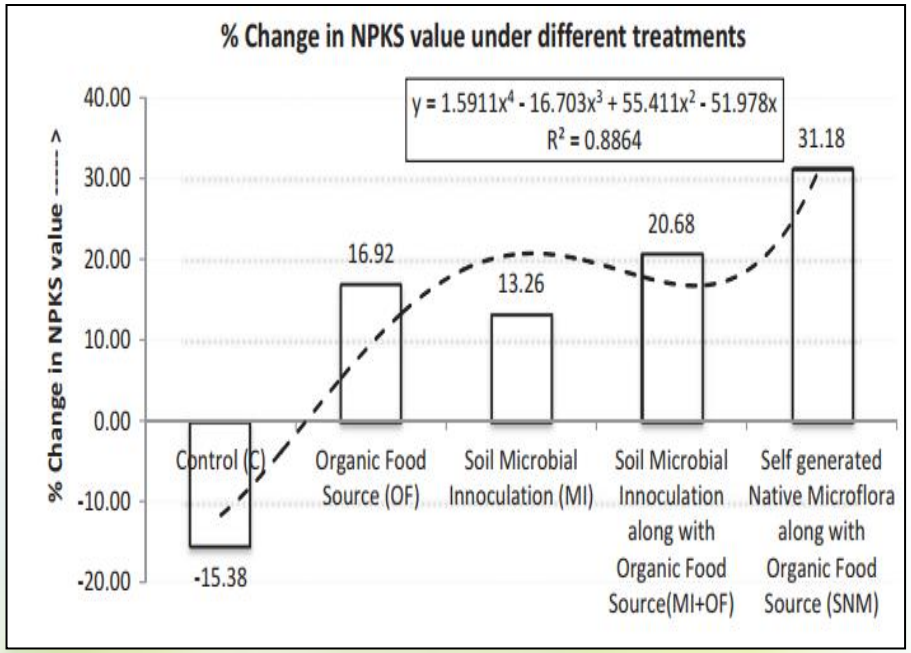
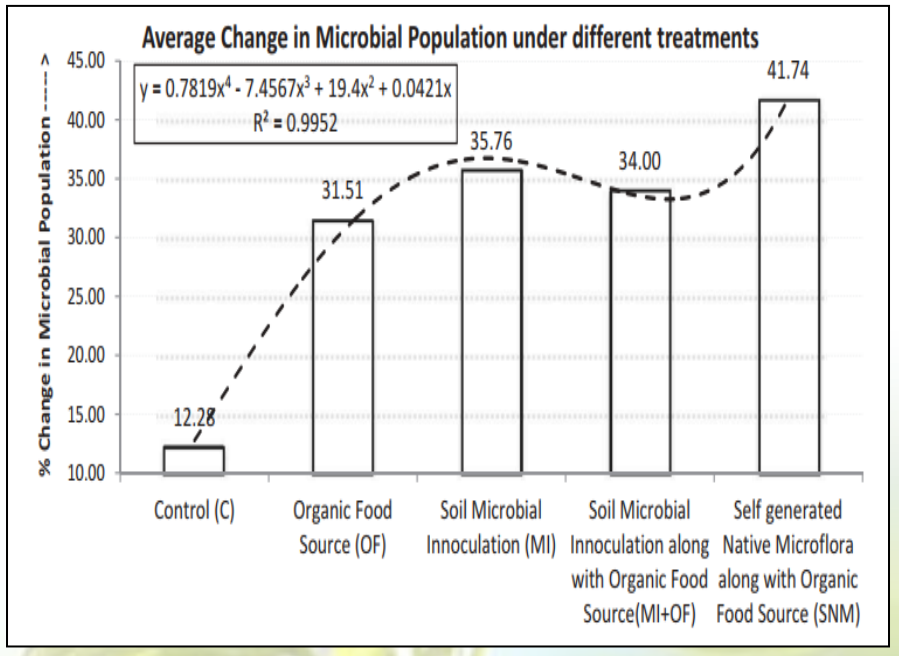
Source : Dr. Ranjan Bera
INHANA
IORF

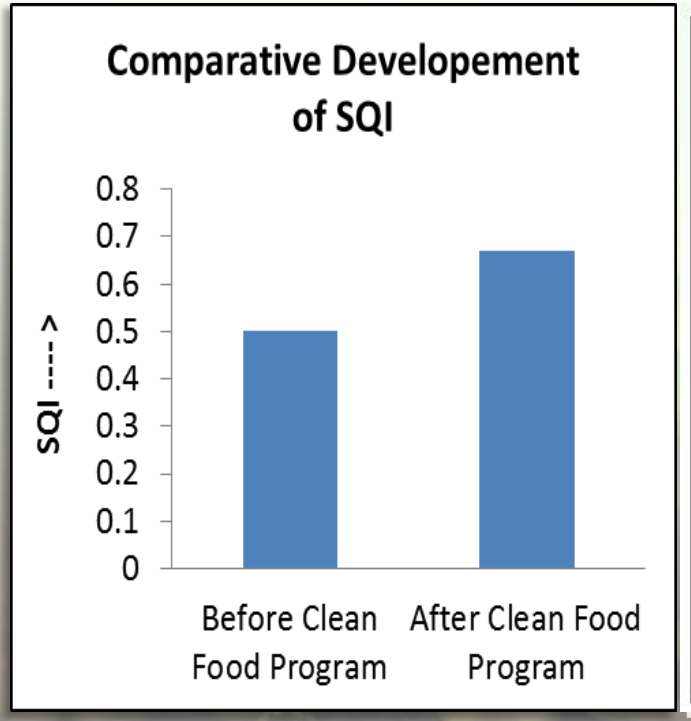
Soil Quality Development under application of Novcom compost in FAO-CFC TBI Project (2008 -13)

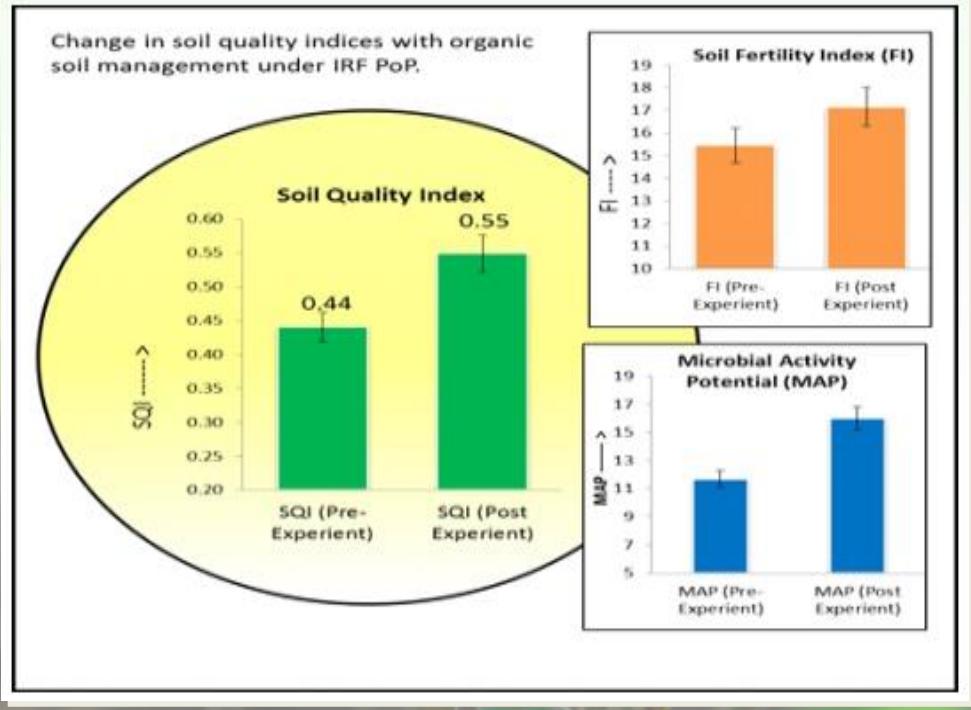




- The findings indicated that natural and prolific generation of native microflora in the compost material can deliver effective solution for successful organic soil management; reflecting in speedy soil rejuvenation vis-a-vis better crop performance.

Soil Quality Development under application of Novcom compost in Agriculture





- Enhancement of Soil quality post Novcom compost application was scientifically documented under different projects

THANK YOU

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