Tell Me How ?

Clean Food Net Zero is the best Model for Climate Change Mitigation and Adaptation

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Climate change is a real and undeniable threat to our entire civilization. The effects are already visible and we are moving towards a catastrophic climate breakdown, UNLESS WE ACT NOW.

https://www.globalgoals.org/goals/13-climate-action/

MORE IMPORTANTLY

Disruption in crop production system due to **climate change impact will be a major threat towards mitigation of GLOBAL HUNGER** as . . .

50% Higher Food Production will be required to meet the Food Requirement by 2050.

But the 'UN' Warns . . .

"Climate Change Threatens the World's Food Supply"

By 2030, at least Nine out of Ten of the Major Crops will experience REDUCED GROWTH RATES due to Climate Change

Enhanced GHG Emission → **Accelerates Climate Change** → **Disrupts Food Production** → **Exacerbate Global Hunger**

The Climate Commitment

As per Paris Agreement, the **goal is to limit global warming to well below 2.0, preferably to 1.5^{0}C**, compared to pre-industrial levels. That means . . . .

In the near term, global GHG emissions need to be halved by 2030 and **net-zero CO_2 emissions** to be achieved globally by 2050.

THE PRESENT REALITY

UN environment programme 50 1972-2022

- Climate commitments fall far short of what is needed to meet the goals of the Paris Agreement, leaving the world on track for a global temperature rise of at least 2.7°C this century, -*UNEP Emissions Gap Report 2021.*

LACK of LOW-COST commercially available mitigation TECHNOLOGIES and the related IMPLEMENTATION CHALLENGES, is mainly responsible for the shortfall; especially in respect of the hard to abate sectors.

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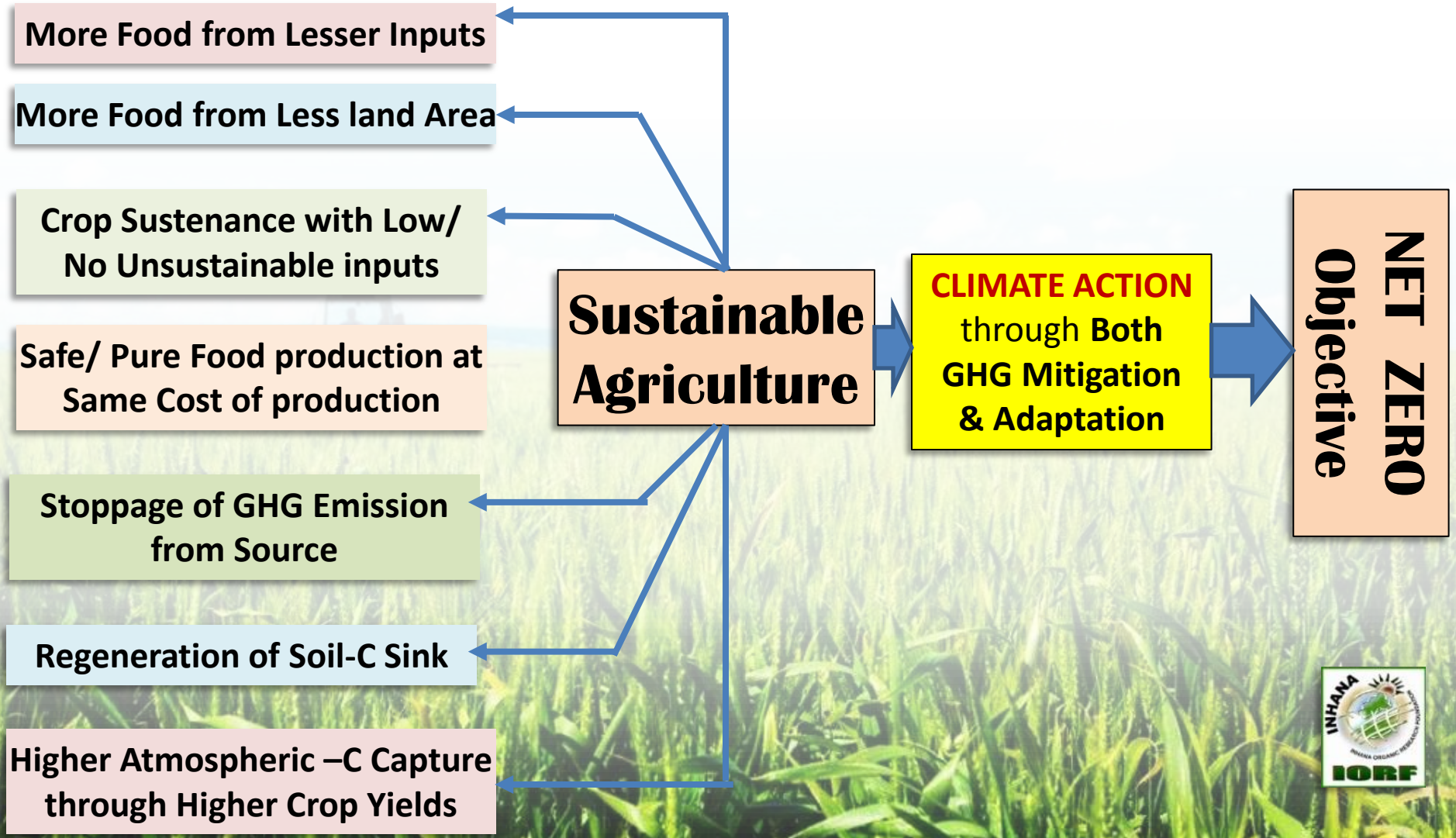
AGRICULTURE - Endless Possibilities towards the Net Zero GHG Goal hiding behind the identified threats

- **Agricultural ecosystems have the potential to** store a vast amount of soil carbon up to 1 billion metric tons per year, which would **offset around 10% of the annual GHG emissions of 8–10 billion MT/year**.

- **Soil alone can hold 42 to 78 billion metric tons more carbon.** Hence, increasing Carbon in Soil can meet the dual objectives of GHG Mitigation and improving Soil Productivity- **sustainable agriculture can be the Right Solution for this .**

Attaining Climate Action through Sustainable Agriculture is also the BEST SOLUTION because it can Attend NET ZERO EMISSION, FOOD SECURITY & ENVIRONMENTAL ACTION All At ONE GO



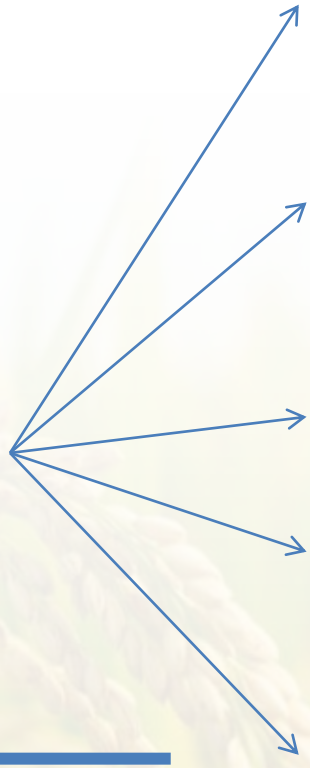
Challenges towards the NET ZERO Objective - the Indian Perspective

- 97.85 million hectares (mha) or **29.7%** **of India's total geographical area** (TGA) is **already DEGRADED.**
- In India about **10% of Desertification** **is due to Vegetation Degradation** and about **80%** of total degradation is **due to Water Erosion**.
- **More than 90%** **of Indian Farmers Small & Marginal farm holders,** with extreme resource scarcity towards Soil Health Management.
- Yield of Major Crops is declining. Agricultural productivity attained during 1980s has not been sustained during the 1990s and has posed a challenge for the researchers to shift the production function upward by improving the technology index.
- **Access to resource and agro-technology is very limited for the small and marginal farmers** and so are their risk taking abilities.

Clean Food

‘NET ZERO’

Driven by Inhana Rational Farming Technology



Inclusive Agriculture & Food Production can Create Jobs and Eliminate Hunger in Rural Areas, giving people a chance to feed their families and live a decent life.

End hunger , Achieve food security Improved nutrition and Promote sustainable agriculture

Achieve the Sustainable Management and Efficient use of Natural Resources. Achieve the Environmentally Sound Management of chemical and all wastes

Take urgent action to combat climate change impact.

Combat desertification, Restore Degraded Land and Soil and strive to achieve a Land Degradation Neutral World.

NUMERO UNO Model that can meet **NET ZERO Goal** along with **Social & Environmental Impacts**

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Technological intervention from SEED SOWING to CROP HARVEST

360 Degree care for Safe and Sustainable Crop Production with increasing productivity and reducing cist of cultivation

'Inhana Rational Farming (IRF) Technology' developed by

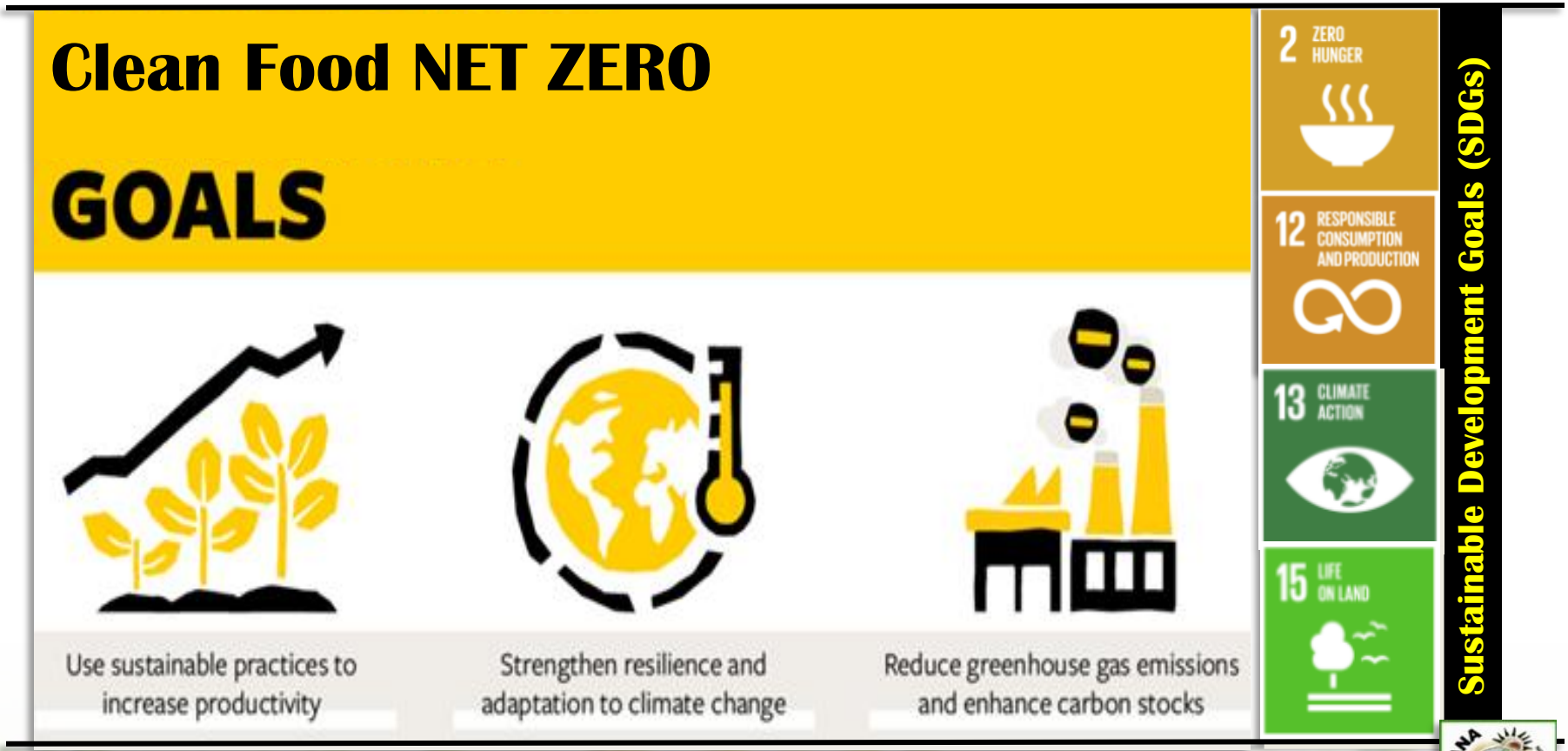
Dr. P. Das Biswas

(Founder Director, Inhana Organic Research Foundation)

has been the **'SUSTAINABILITY ENABLER'** for more than Two Decades providing **Science Based Adoptable Agriculture Models** especially for the Marginal & Small Farmers **towards Ensuring Higher Crop Yields, Without Raising the CoP**

‘Clean Food’ Net Zero Model –

the **NUMERO UNO Model** that can meet **NET ZERO Goal** along with **Social & Environmental Impacts**



The Ongoing **IBM-IORF Clean Food 'NET ZERO' Program** has specifically indicated that **SUSTAINABLE AGRICULTURE** can **DELIVER** the Best

Best Climate Action Model

Bio-conversion of Land Fill Material

- Removal of GHG Emission of 5500 – 6500 MT CO_2 Eqv. / 1000 ton
- Removal of Especially **CH_4 Emission** – 75 times Higher GWP_{24Y} than CO_2 **Atmospheric Life Time of CH_4 is 12 Years** and CH_4 is Precursor to Ozone, which itself is a GHG

NO Nitrate Fertilizers & Chemical Pesticides

- This Program can ensure up to **ZERO N_2O Emission** as N-fertilizers release N_2O with GWP of 3200 kg CO_2 Eqv. per ha (considering 250 Kg N/ha)

Reclamation of Degraded Barren Land

- Upto **4000 kg Org. C** or 7000 kg Organic Matter Addition per ha resulting **GHG Mitigation of 700 – 750 MT CO_2 Eqv. / 100 ha**
- Addition of **Trillion Billion Self- generated** **(hence better acclimatized)** **Microflora** in Soil per ton application of Novcom Compost- - **Regeneration of the Largest Sink for GHG's**

Improvement of Crop Yields in Degraded Agricultural Land

- up to 75000 kg **NET ZERO (CLIMATE NEUTRAL) FOOD** per ha with GHG saving up to **1500 MT CO_2 Eqv. / 100 ha – The Best form of GHG Adaptation Model So far - possible with Adoption of Inhana Rational Farming (IRF) Technology.**

SUMMARY of IMPACTS

Only Model that can attend the objectives of

'Clean Food' (NET ZERO) Model

Driven By

IRF Technology

Ecologically Sustainable, Economically Viable and designed for Convenient Adoption especially by the marginal and small farmers

SAFEST Food	Development of Pesticide Residue Free (as per FAO-WHO-Codex Alimentarius Std.) '**Clean Food**'
Human Health, Soil, Environment	**Soil & Environment Friendly Agriculture** that can provide SAFEST food for >20,000 consumers from a mere 100 ha .
Crop Sustainability	About 15–25% **Increase Crop Productivity** as compared to conventional farmers' practice.
Land Fill Material Bioconversion	**Bioconversion of any type of waste material** (within 21 days) towards soil productivity regeneration and GHG offsetting upto 36 – 40 ton / ha
MAJOR GHG Mitigation	Potential for **GHG mitigation upto 10,000 ton CO_2 equivalent**- ready to serve the NET ZERO OBJECTIVE -A model that can equally benefit the Farmers, Consumers & Corporates as per their specific objectives
Carbon Sink	**Initiative towards regeneration of Soil Carbon Sink,** through enhanced Soil-C sequestration (upto 300 kg/ha/year)
Soil Reclamation	**Low Cost, Time Bound** reclamation program for degraded agricultural soil
Seed Development	Initiative towards development of climate resilient organic paddy & vegetable seeds for self sustenance of the farmers
Ecological Sustenance	Significant Impact on Ecological Sustenance with **increased Soil microflora & earthworm activity**
Energy Saving	Upto **32% lesser Energy Input** with **>60% Higher Energy Productivity** & upto **183 % higher Nutrient Energy Efficiency**
Livelihood Support	Livelihood support to Farmers through **Transfer of Sustainable Crop Technology** & knowledge support.

THANKYOU

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