CSE SCHOOL OF SUSTAINABLE FOOD SYSTEMS AAETI

NATIONAL CONCLAVE

# SUSTAINABLE FOOD SYSTEMS

**October 27-29, 2025**

**Anil Agarwal Environment Training Institute, Nimli, Rajasthan**

# Modern agriculture at crossroad


- US: soya, corn --- single cropped; huge acreage; modern farming methods; ‘high’ productivity and now crisis of markets or costs
- EU: survives with massive massive subsidy and yet costs of organic-green farming methods cannot be sustained. New Green Deal has been rolled back because of protests
- Has implications for others
- Africa: has turned from food grower to food importer – cannot compete with low costs of subsidized foods; its own commodities face export tariffs with value addition (cocoa)
- And our health has been compromised with availability of cheap and non-nutritive food

# Challenges for Indian farming/farmers


- On one hand,
- Climate change – extreme weather events are increasing; putting huge stress on the ability of farmers to cope; increasing risk and cost
- On the other hand
- Farmers need to invest more and more to grow food – cost of all inputs is increasing (more now with cost of fuel going up)
- And
- Governments and people need cheap food – food for public distribution and for consumers

# Need to rework science; method; markets for food

- **1. Rework science of productivity – today it is about more investment and so more output**
- With climate change the higher the input the higher the risks. The indebtedness crisis impacts livelihoods; health; but also impacts ability of farmers to reinvest in land and water.
- Need agriculture that is low-input so that risks are lower; returns are high; cost of food is affordable without subsidy.
- This means investment in soils so that input costs are reduced – improved yields does not mean crops above ground; but below ground health
- This then means reworking methods of higher return; need local procurement; need high-value product; need value-addition and need farmers to be producers

# Rework: Minimize risk

- Climate change will add to weather shocks; pest attacks
- Single-cropped lands are highly “productive’ but also highly vulnerable to shocks
- Need methods that minimize risk
- Multiple cropped lands
- Investment in resilient biodiverse crops and breeds
- Agro-silvo-pastoral systems; livestock economy and value addition

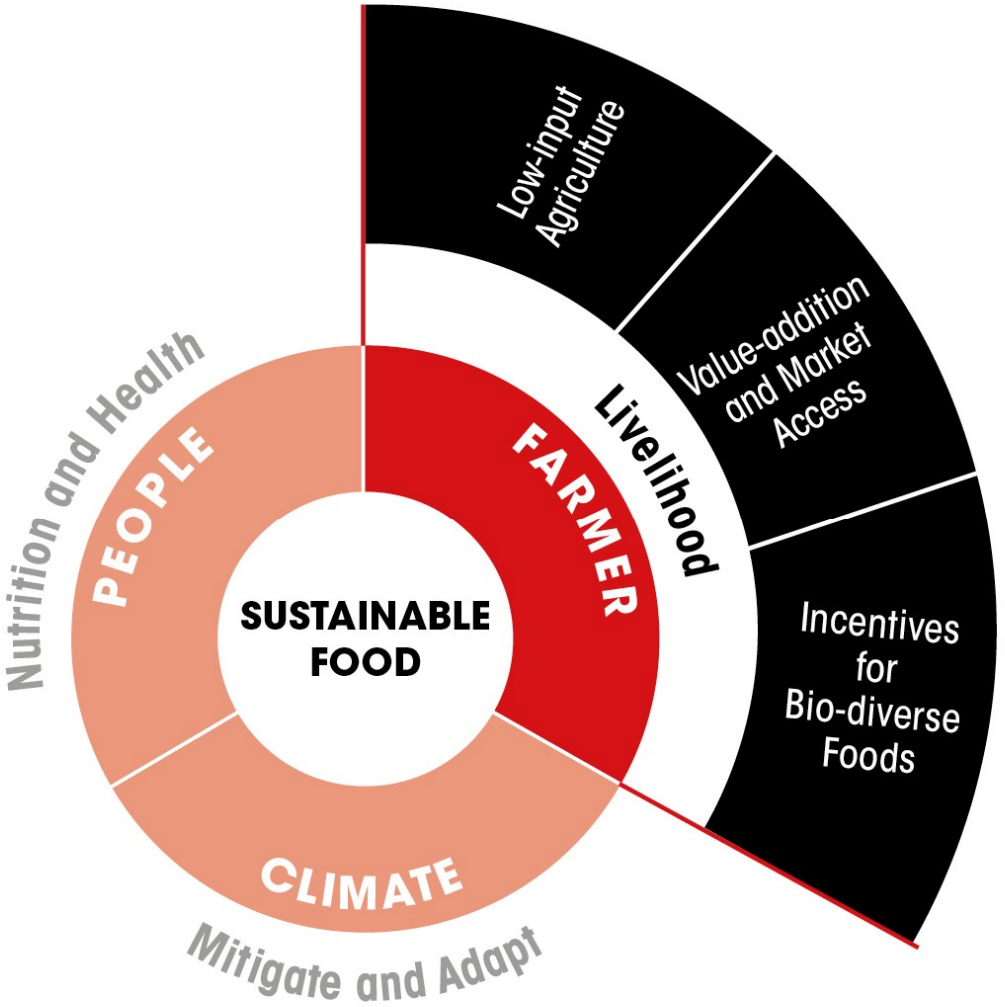
## Livelihood connection

Putting more money in the hands of farmers means building food systems **that will rebuild nature so that there is sustainability; less cost**

**Today farmers discount nature**; destroy fertility; deplete groundwater; then add costs for chemicals and inputs; this makes them even more vulnerable when the next storm comes

Need systems that invest in nature; **low cost but high value**

Need nutrition for local food security
Need producers to connect to markets



# Climate: adaptation and mitigation


- Agriculture contributes to emissions – roughly 10-15% global greenhouse gas emissions from growing food for humans and livestock
- Of this; bulk from methane emissions from livestock and rice production; rest from dumped manure and chemical fertilizers
- But land also sequesters carbon – it absorbs the greenhouse gases from atmosphere; stores it in soil and in plants. It is a sink
- We need ways to mitigate emissions from agriculture; to mitigate emissions from other sectors using agriculture and to this in ways that help farmers to adapt to extreme weather events and market shocks

# Mitigate; mitigate

- We need ways to mitigate emissions from agriculture;  and agriculture/land to mitigate from other sectors

- Livestock: numbers or feed management
- Rice: what works and why
- Chemical/organic manure management

# Carbon markets: Win-win?

Huge opportunity: using land to sequester carbon. Will improve soil productivity; improve vegetation cover; will potentially improve farmer livelihoods

What can we do better? What is working?

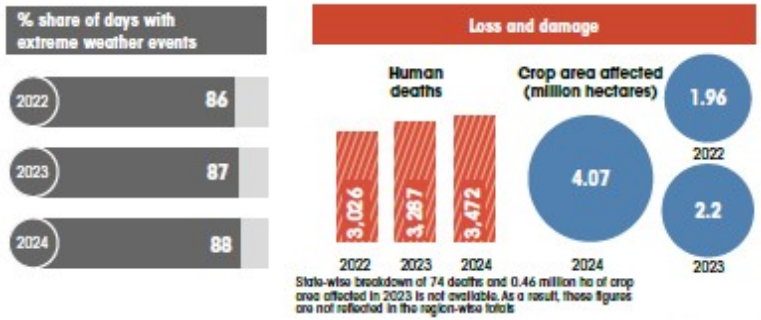
How do we measure carbon sequestered?

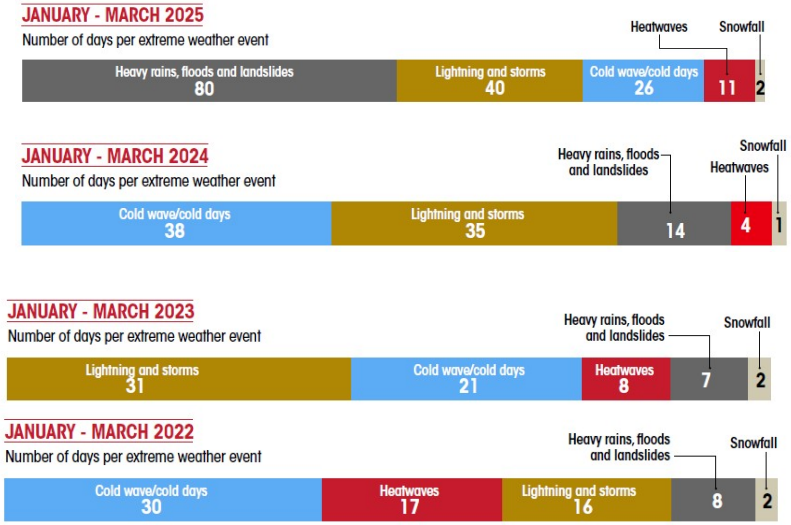
What can we do to improve benefits

# Watermark of climate change

- We know climate change is not about the single event but about the increased frequency of the events
- Each year, each month extreme weather is breaking a new record
- Each region of the world is devastated; Revenge of Nature
- This is breaking the backs of the poorest/farmers who are worst impacted
- They are losing their capacities to cope with these repeated and frequent events coming on the back of existing poverty
- Climate change is exacerbating poverty

# State of Extreme Weather/India




Extreme weather events occurred on 88 per cent of the days in 2024, marking a sharp rise in both frequency and impact since 2022.

Almost one extreme weather event a day in 2024

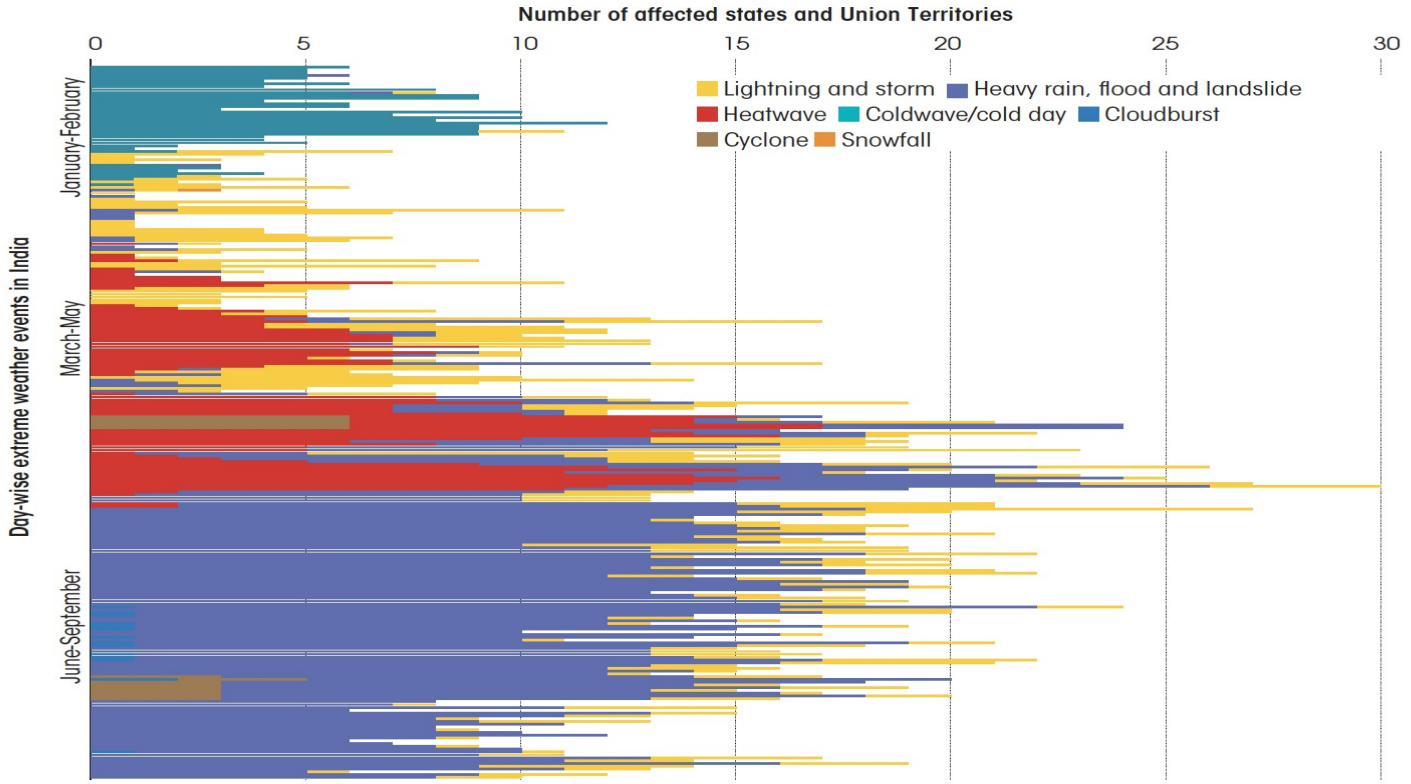
Breaking the backs of the poor

The first quarter of 2025 stands out as one of the wettest starts to the year in recent memory. Compared to the same period in the past three years (2022–24), India witnessed an alarming spike in heavy rains, floods and landslides, reported on 80 out of 90 days

ANIL AGARWAL DIALOGUE
2025

## YEAR OF DISASTERS

India experienced extreme weather events on 255 of 274 days in the first nine months of 2024




Source: "Climate India 2024: An Assessment of Extreme Weather Events", Centre for Science and Environment, November 2024

# Adaptation

- Key elements
- Timely accurate weather information to farmers – forecasting
- Advisory on what to do because of unseasonal weather – agro-met
- Insurance to help to cope with losses because of unseasonal weather/pest etc

- In this past decade there have been number of government programmes/private and civil society initiatives on these. What is working and what is not? What needs to be done further

Agriculture is impacted because of climate change but this sector is also a major cause of climate change.

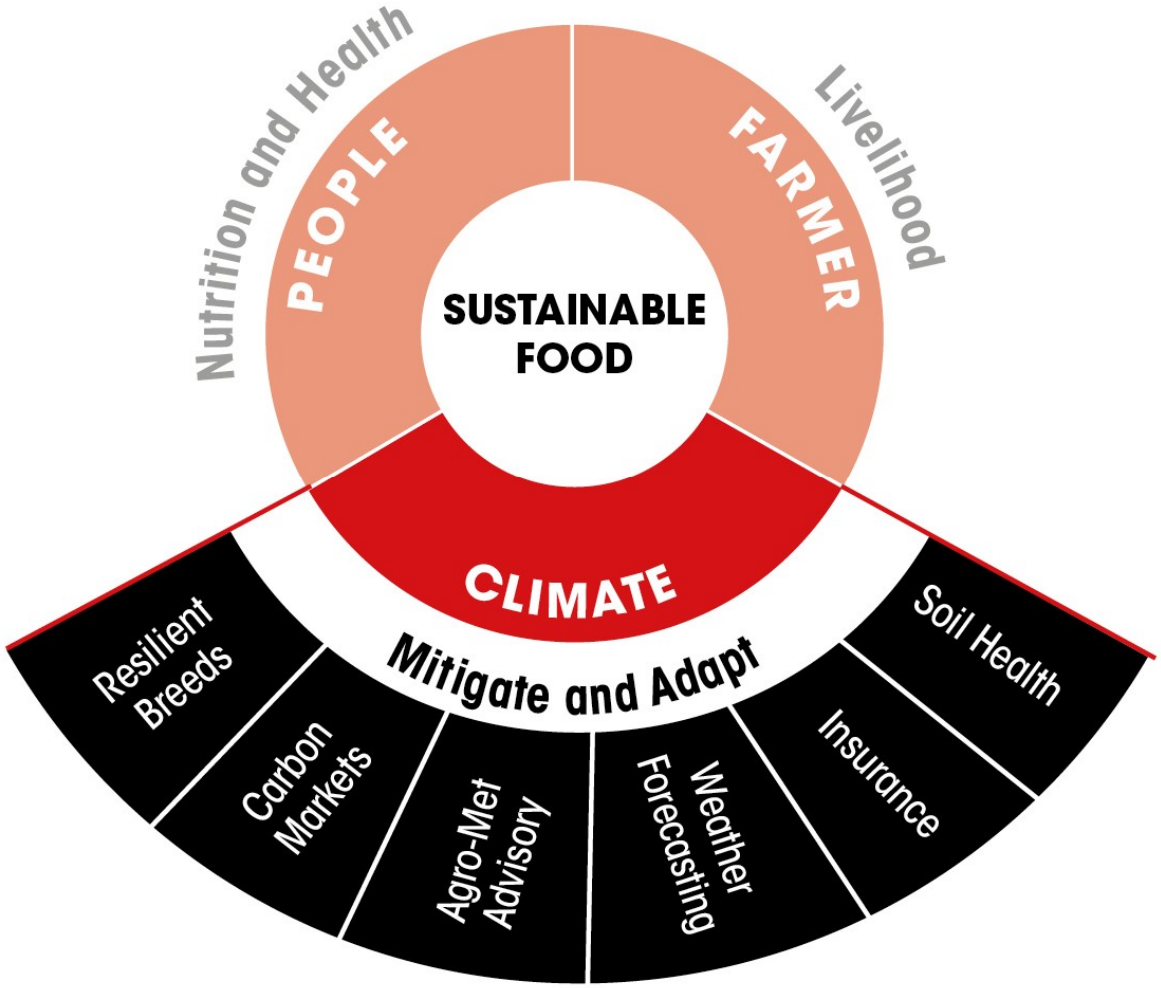
Biodiversity is about resilience

Adaptation will only work if farmers have timely and accurate information about weather anomalies.

Farmers need safety nets designed for extreme weather and climate impacts.

They need insurance systems that will be designed for uncertain times and high risk.

We need carbon markets to work for producers and not auditors.



# Agriculture-food-climate


- Food-climate is not about what vegan/vegetarian or even organic
- **It is about how food is grown; how meat is grown**
- **It is about what we eat for nutrition and how much we eat so that it is bad for our health**
- We need to bring this debate to the world so that there is a better understanding of the need for diets that work for humans and Planet

# Food connect: All of us


- Consumers determine food choices
- Markets determine consumer food choices
- We need to rework/reconnect to our food

- Understand the true cost/risks of intensive farming systems
- Understand the importance of small-holder farming systems to improve environment/mitigate risks/livelihoods
- Understand the need to ban/regulate ultra-processed food; junk the junk

What we eat determines our health

food is about nutrition

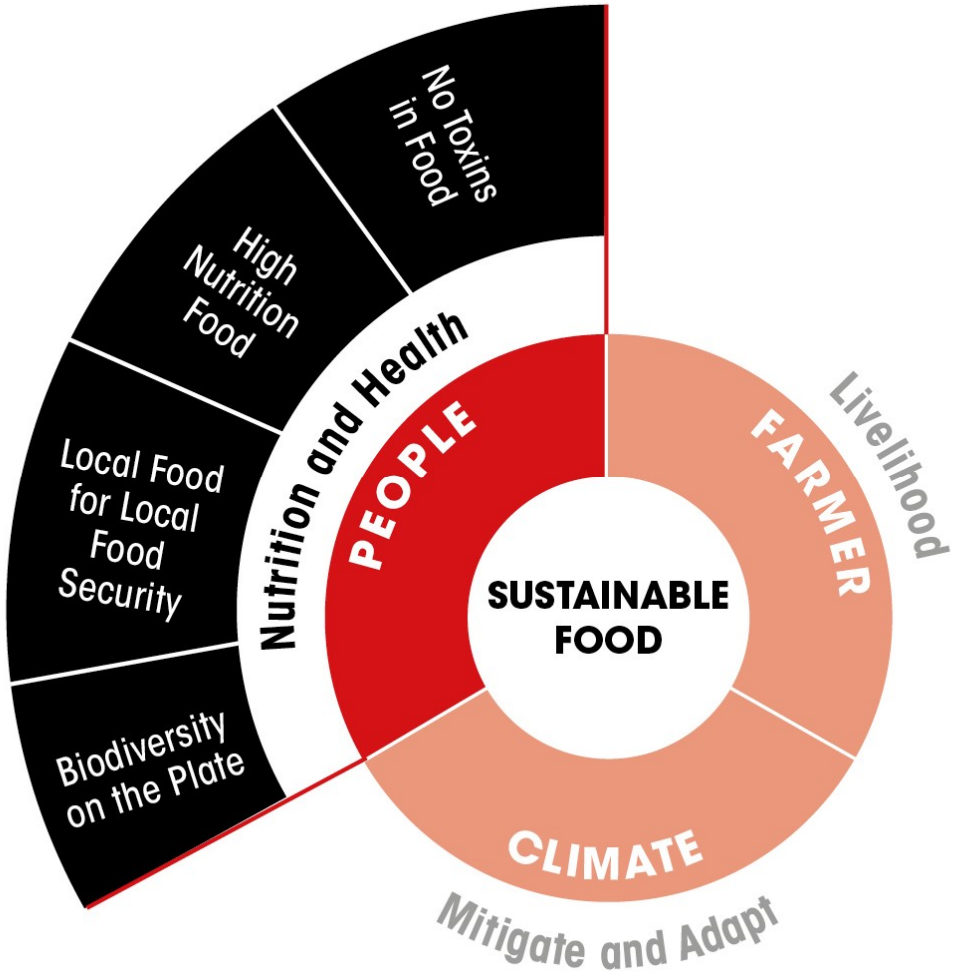
food is about medicine

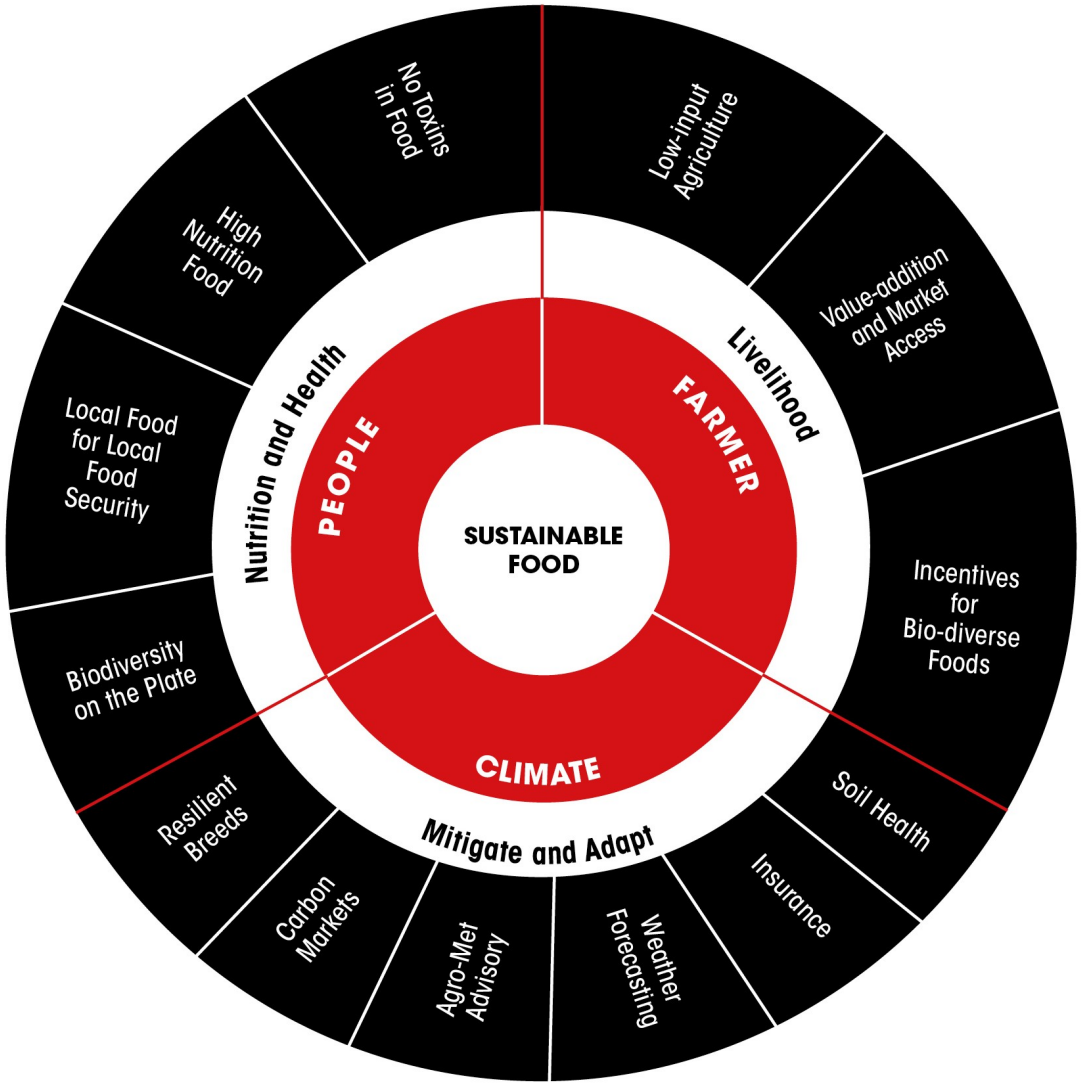
Toxins used for producing food add to our health burden

If agriculture are redesigned so that there is more money in the hands of producers they will not discount our health and nature

We need not just food; but nutritive food that reaches everyone for food security

We need to junk the junk; obesity and NCD is about regulating industry




SUSTAINABLE FOOD
PEOPLE
FARMER
CLIMATE
Nutrition and Health
Livelihood
Mitigate and Adapt
No Toxins in Food
High Nutrition Food
Local Food for Local Food Security
Biodiversity on the Plate
Resilient Breeds
Carbon Markets
Agro-Met Advisory
Weather Forecasting
Insurance
Soil Health
Incentives for Bio-diverse Foods
Value-addition and Market Access
Low-input Agriculture