

# PERMACULTURE IN INDIAN AGRICULTURE



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# Learning from Ancient Agricultural Civilizations

Ancient Agricultural civilizations like Indus, Egypt ,Mesopotamia flourished due to sustainable and integrated farming methods.

These civilizations died out due to increased unsustainable use of resources due to commercial trade and war.

# Green Revolution in India- A Broken System

## The Hidden Costs:

Electricity, Water, Hybrid seeds ,Inorganic Fertilizers, Weedicides and Pesticides, and Transport charges . ***10 Units of Energy input results in only 1 Unit of Energy output!***

## Ecological and Environmental degradation :

- of soil fertility, salinity, erosion, floods
- Loss of genetic variety which is essential for local adaptability
- Depletion and pollution of ground water

## Human and Social Costs:

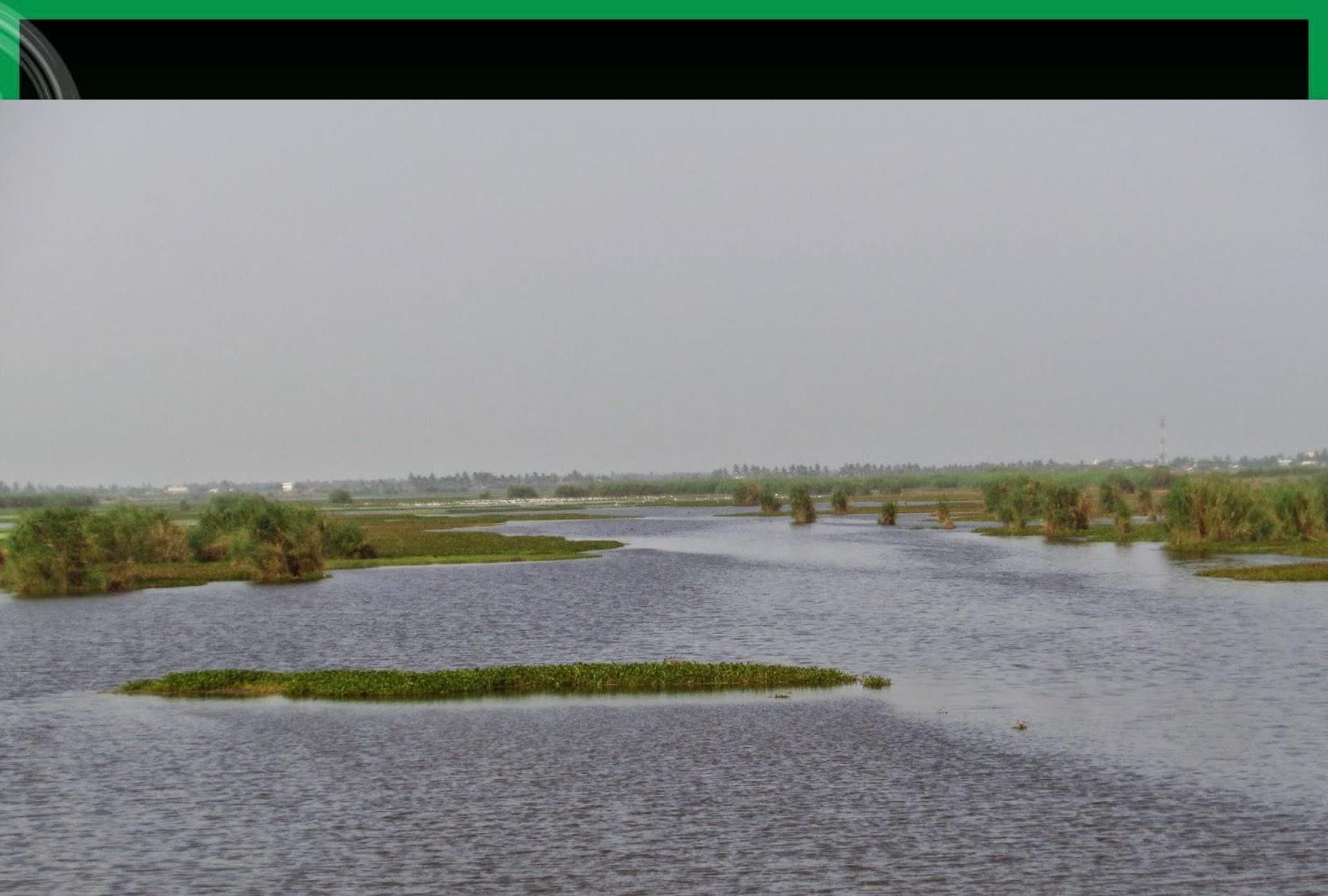
- Starvation
- malnutrition
- debts and suicides
- mass migrations

# Traditional Agriculture in India

*Indian farming was an integrated system*

- Forest and wild birds/animals was integral part of farming
- Bio diverse and locally adapted plants
- Water harvesting
- Polyculture of crops and trees (cereals,pulses,vegetables,fodder, medicinal,pest control)
- Biological Pest Control
- Food grown for direct consumption
- Surplus sold in regional mkts

*People had been able to meet all their food/ fodder /fuel from their village!*



Traditional Water Harvesting in India -Chervu ( water body) created in lowland



Traditional Multi Cropping- Millet/legumes



Animal husbandry



## ECOLOGICAL SIGNIFICANCE

**Conservation of Biodiversity** – The Sacred Groves / Forests are important repositories of floral and faunal diversity that have been conserved by local communities in a sustainable manner. They are often the last refuge of endemic species in the geographical region.

**Recharge of aquifers** – The groves are often associated with ponds, streams or springs, which help meet the water requirements of the local people. The vegetative cover also helps in the recharging the aquifers.

**Soil conservation** - The vegetation cover of the Sacred Groves / Forests improves the soil stability of the area and also prevents soil erosion.

# **How can we improve Food Security and Ecological Balance through Traditional Agriculture and Permaculture practices in India?**



# Subsistence Farming- Gram Swaraj( village self reliance)

Prioritize local autonomy and sovereignty in farming for inputs and local food sufficiency



## Gram Swaraj

- Using local resources
- Sharing indigenous knowledge
- Sharing resources-water, seeds, animals, labour etc
- Producing, consuming and selling locally/regionally

# Sustainable System

All needs must be met within the system-seeds,manure,water,fodder,energy

Seed Saving



Food/Fodder/Mulch/Pest Control



Live Mulch



Manure



Animal Husbandry



Water Harvesting



# Multifunctional and integrated designed farms

Produce food/fodder/fuel/fertilizer by integrating multiple species of perennial plants and trees with animals/birds.

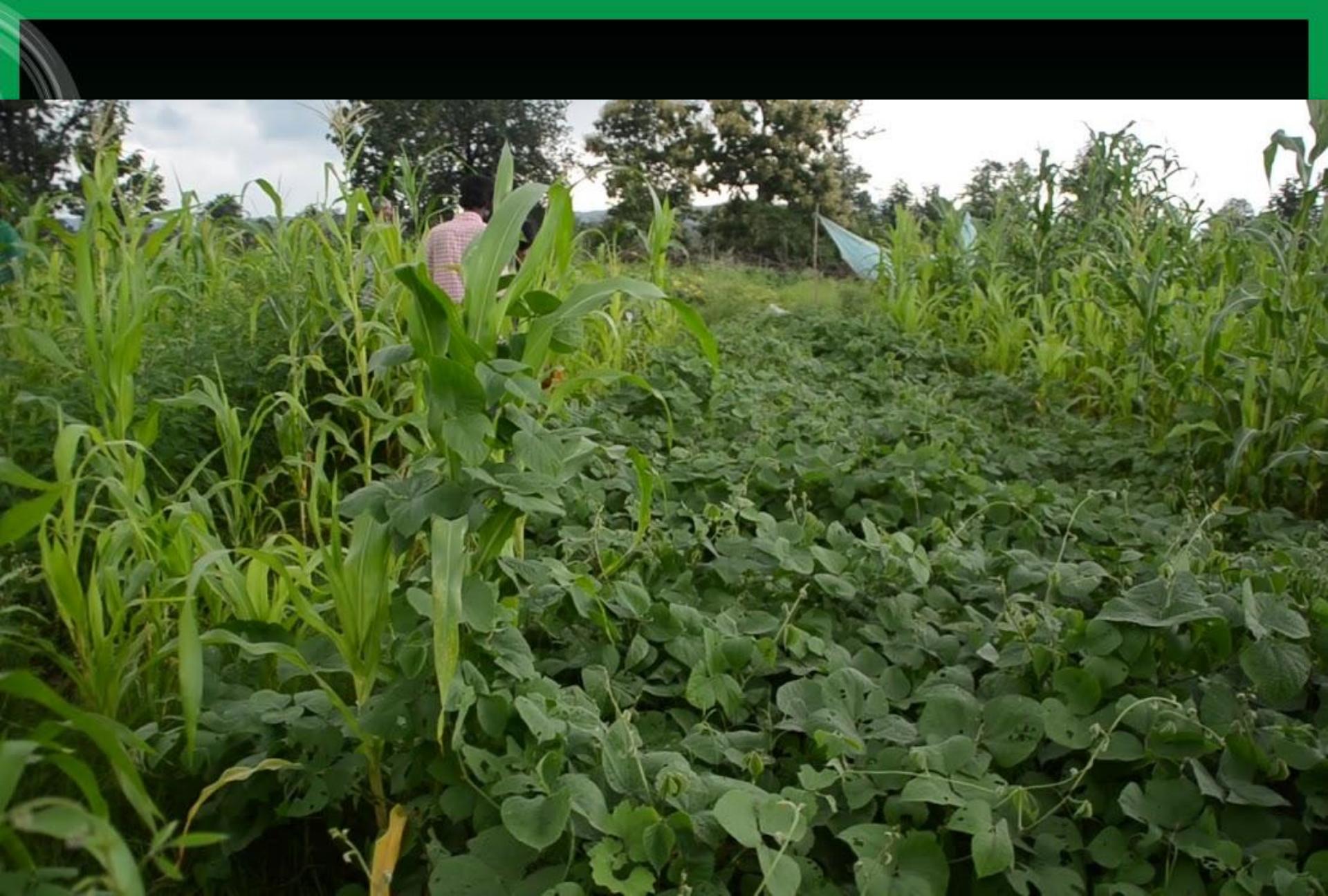


# TREES should dominate future farming systems

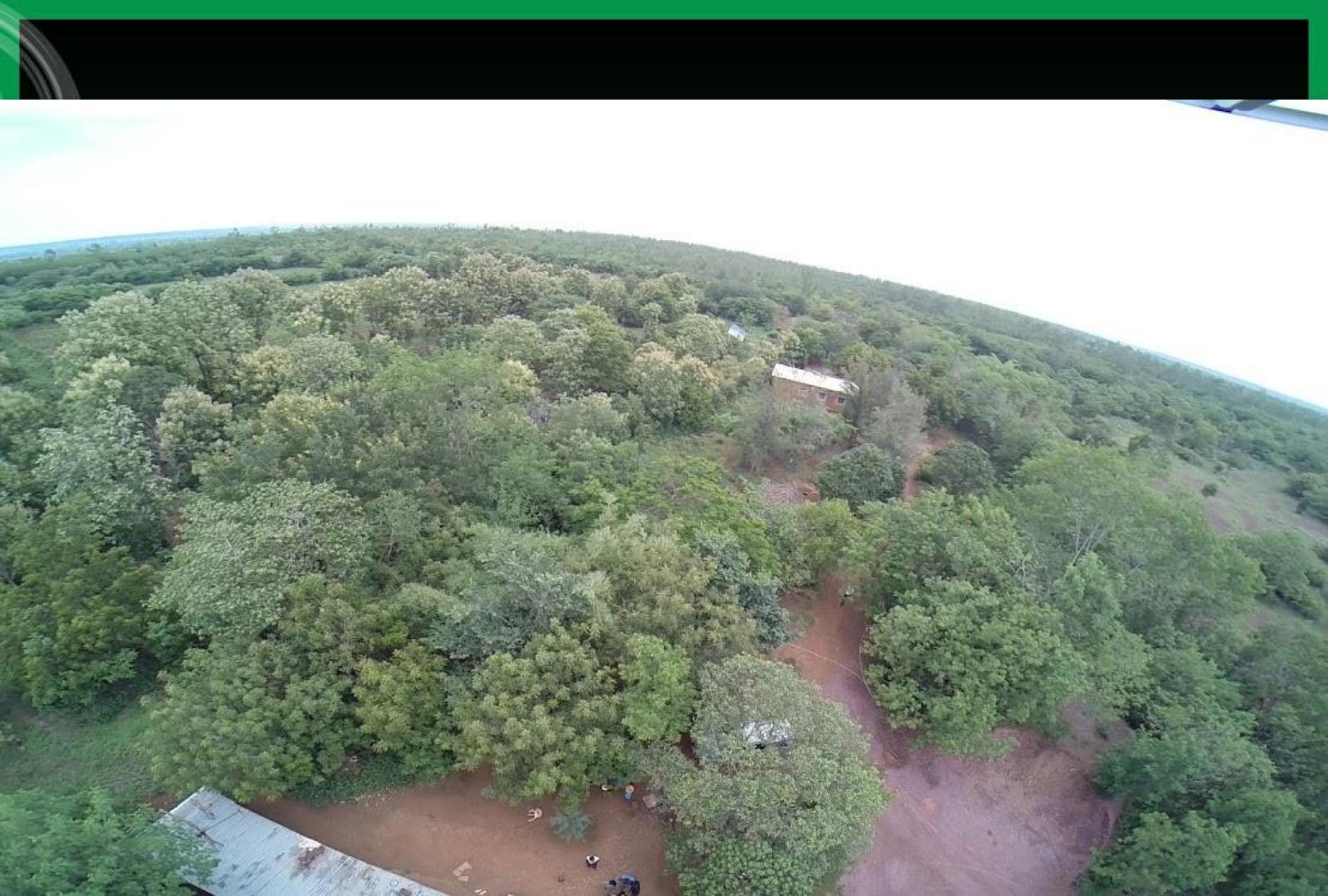
Trees are more efficient connectors of solar energy for food/fodder /fuel requirements than annual grain crops. More efficient way of drought and flood proofing farms and protecting soil!

- Fruit bearing and forest species
- Intercropping
- Live hedge planting
- Companion plantations

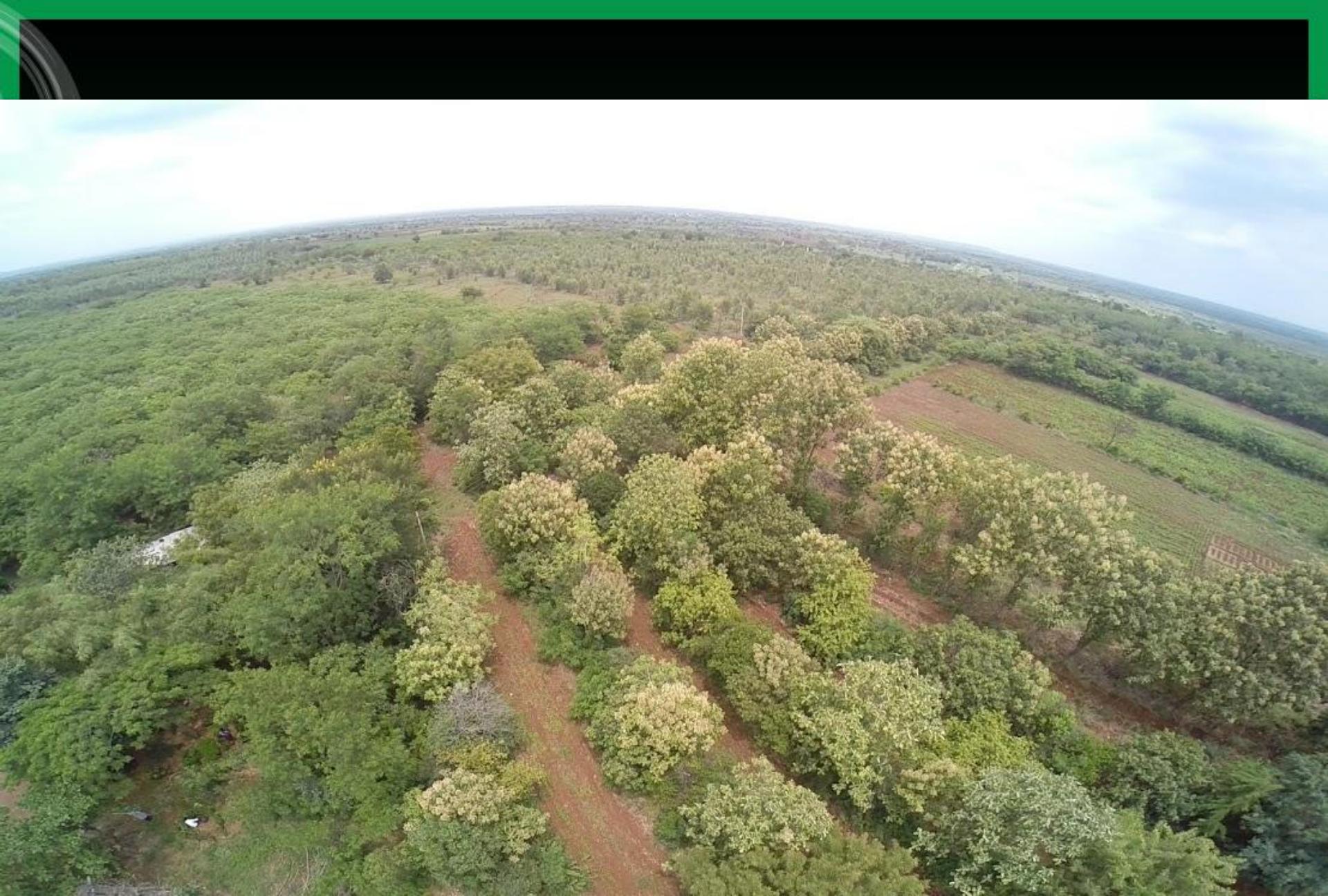




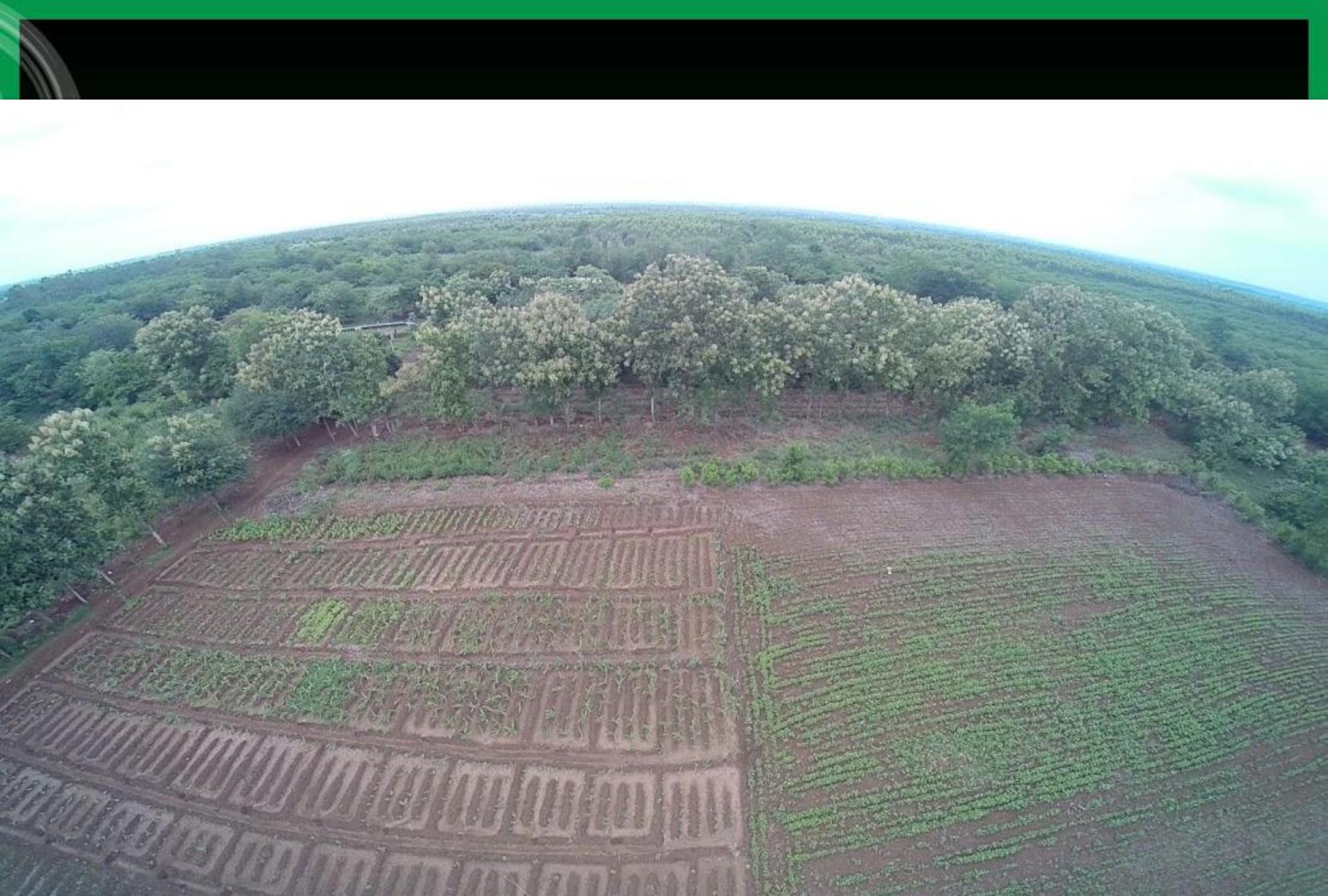
**Mixed Cropping with cereal/legumes- Food/Fodder/Mulch**



**Mixed Fruit and Forest Species- Diverse and Drought Resistant**



**Wind/Heat Breaker Tree Species with Fruit Trees**



**Heat /Wind Breaker Tree Species with multiple cereal/legume crops**



# International Permaculture Convergence

*ipcindia2017.org*



*Abundance is about what we feel rather than what we have...*



*Abundance happens with trust in Nature*

**Thank you**