

Week-05-L-01

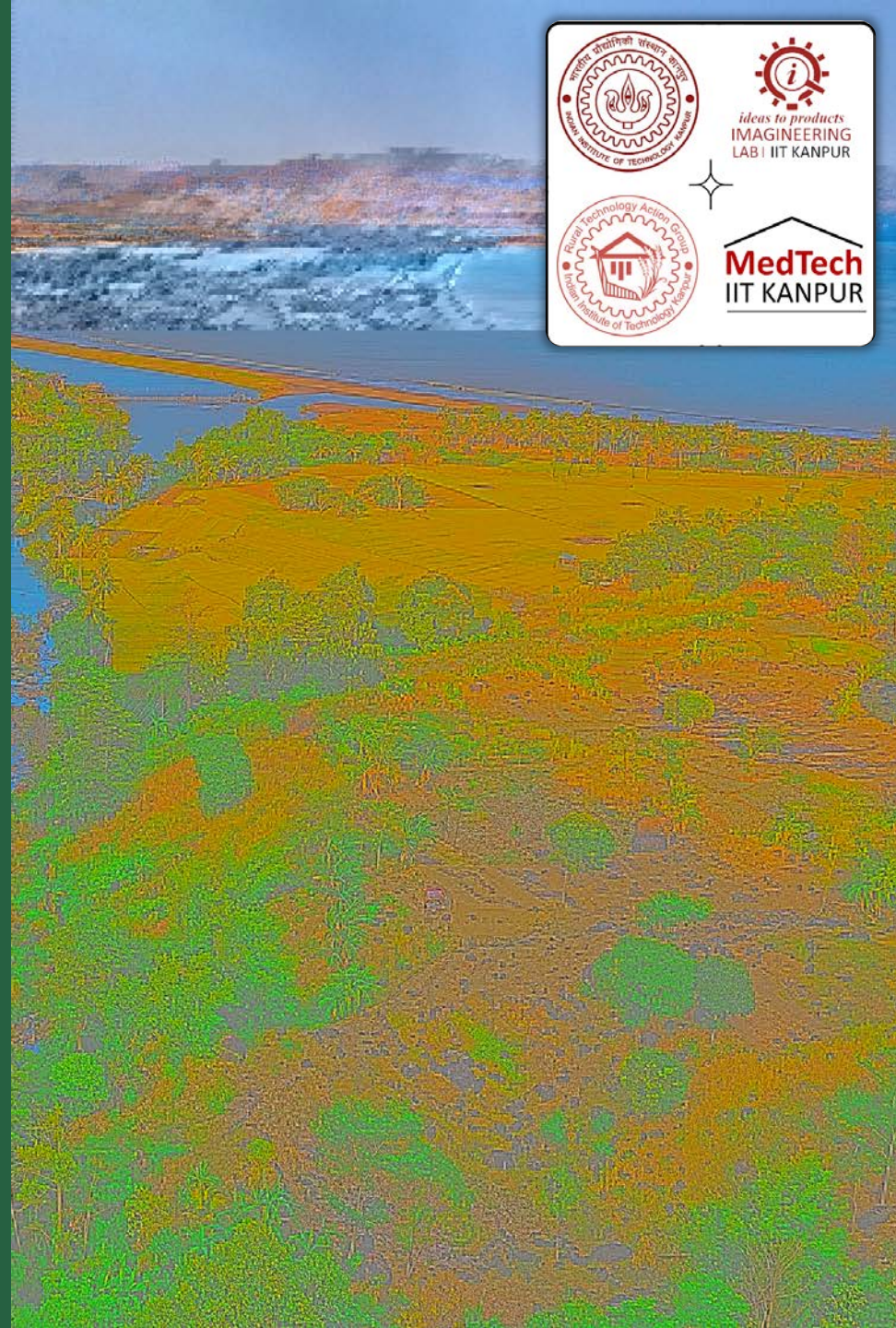
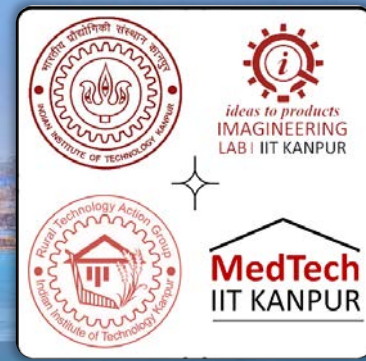
Value Engineering Agricultural Plan

Development and Implementation Phase

Sustainable Concepts Part – 1

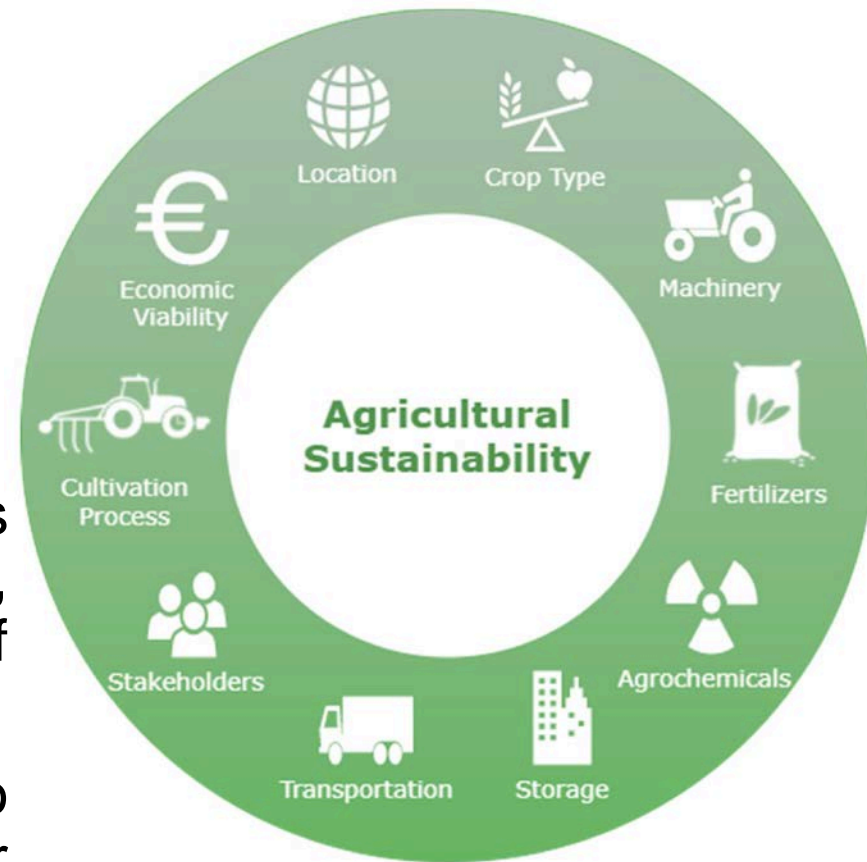
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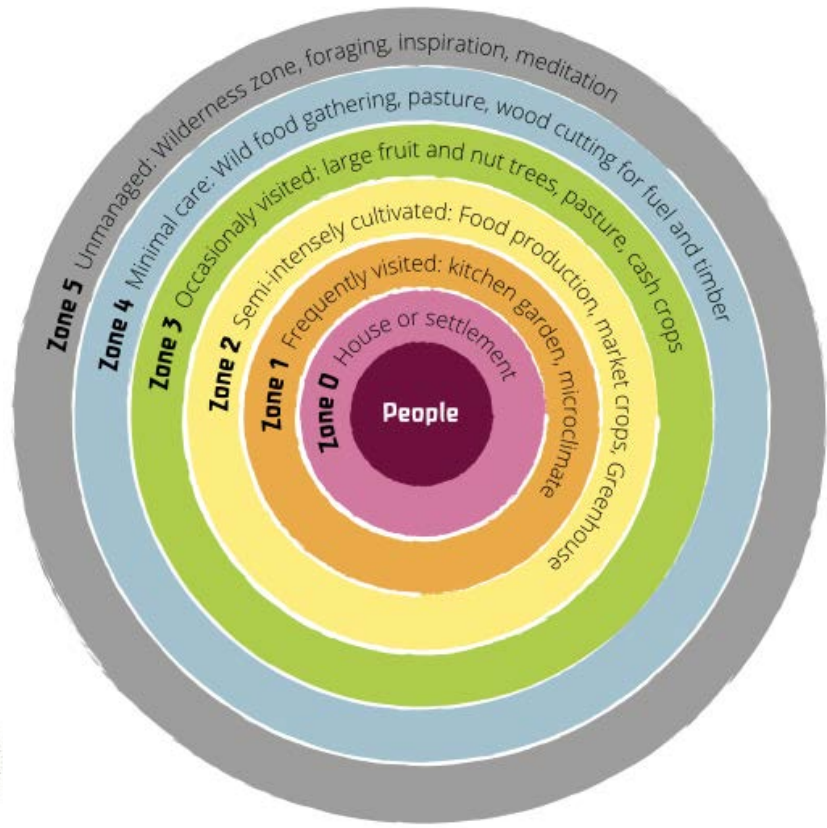


Sustainable Farming

- Various solutions exist for sustainable farming, including:
 - Landcare
 - Conservation farming
 - Permaculture
 - Biodynamics
 - Financial restructuring
- Suitability of these solutions depends on specific context, location, & timing of implementation.
- Each solution can be tailored to suit needs of particular agricultural site.



Developments in Farming – Permaculture

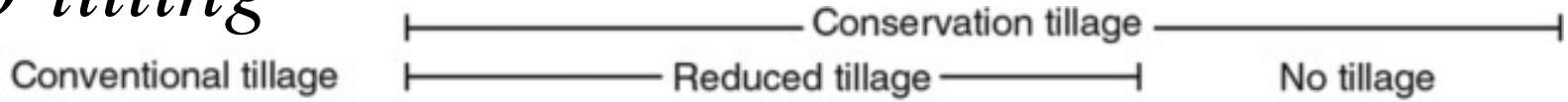


Permaculture in Malawi: fighting floods & hunger

- Permaculture tackles climate challenges through forest gardening, landscape restoration, and diverse food production.
- Projects like AMPP collaborate for food security and resilience.
- To expand, unity and government backing are key.
- A mandate for food forests and water-harvesting can transform sustainability in Malawi.



Minimal Cultivation – No-tilling



Operations

1 Weed Control:

No-dig techniques rely on mulching and raised organic beds for effective weed control, minimizing the need for soil disturbance, in contrast to conventional cultivation methods.



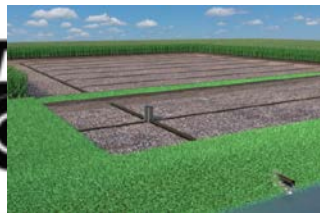
2 Erosion Mitigation:

It employs mulching & soil cover, helps protect against soil erosion caused by elements like wind, rain, & irrigation, addressing concerns of soil erosion attributed to conventional cultivation.



3 Conserved Drainage:

No-dig practices help retain natural drainage patterns, reducing the potential for waterlogging issues commonly associated with soil cultivation.



4 Soil Health Preservation:

It maintains natural soil profile, microbial ecosystems, & soil structure, preventing creation of hard pans & waterlogged soil conditions often associated with traditional cultivation.



5 Disease Prevention:

No-dig methods reduce the risk of disease transmission through soil disruption, as minimal cultivation may inadvertently promote diseases by disturbing the soil.



Cultivating

Cultivating

Minimal Cultivation – Vegetable-sod inter planting

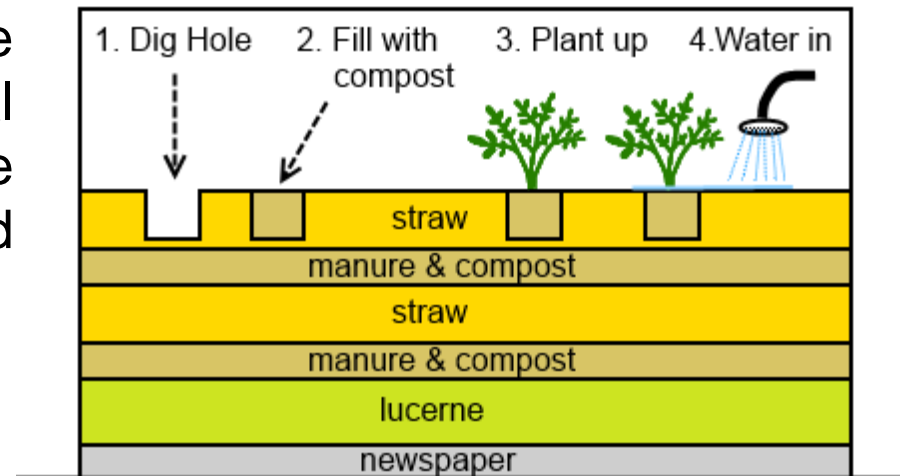
- Cultivate vegetables in 20–40 cm wide rows on established mowed turf.
- Utilize cultivated lines within rows to hasten seed germination.
- Employ mulch mats, black plastic, paper, or organic mulches for effective weed control.
- Implement crop rotation practices between rows to enhance weed control.
- Encourage clover growth in turf strips between rows to increase soil nitrogen levels.



Minimal Cultivation – No dig raised beds – 1 method

- Build timber-walled beds, 20–30 cm high, 1–3 m long, with no traditional soil cultivation. Ensure proper drainage.
- Remove surrounding weeds using methods like burning, mowing, hand weeding, or mulching.
- Fill beds with organic soil, compost, ensuring good drainage & freedom from weeds & disease.
- Place a perforated plastic bottle beneath the soil for gradual watering and apply surface mulch for water conservation and weed control.

Planting the No-Dig Bed



Thank You

