

Ecosystem Services in Natural Farming

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MANAGE

What do you understand by the term Ecosystem

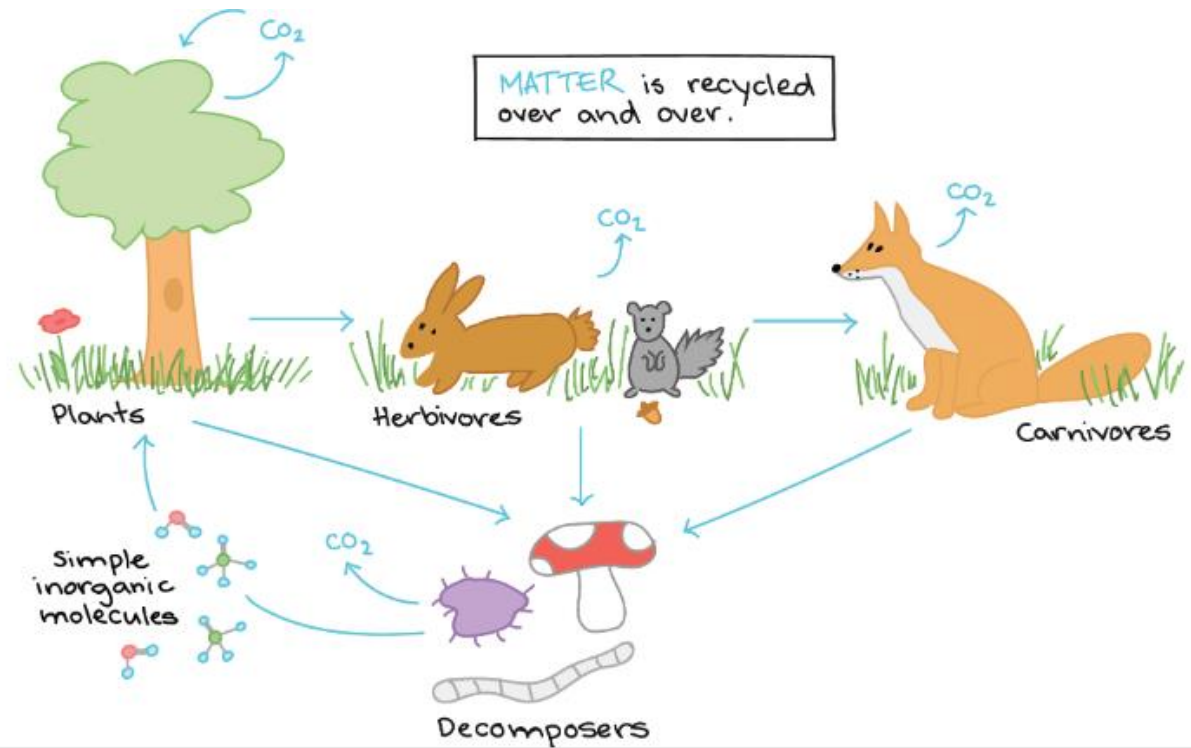


Image credit: based on similar image by J. A. Nilsson

ECOSYSTEM SERVICES

Ecosystem Services

The benefits provided by ecosystems to humans



Four types of Ecosystem Services

- **Provisioning Services**

includes the products/raw materials or energy outputs (drinking water, timber, wood fuel, natural gas, oils, plants)

- **Regulating Services**

regulate the ecological balance
(pollination, decomposition, water purification, erosion and flood control)

Four types of Ecosystem Services

- **Supporting services**

form the basis for other services

(biomass production, production of atmospheric oxygen, soil formation and retention, nutrient cycling, water cycling)

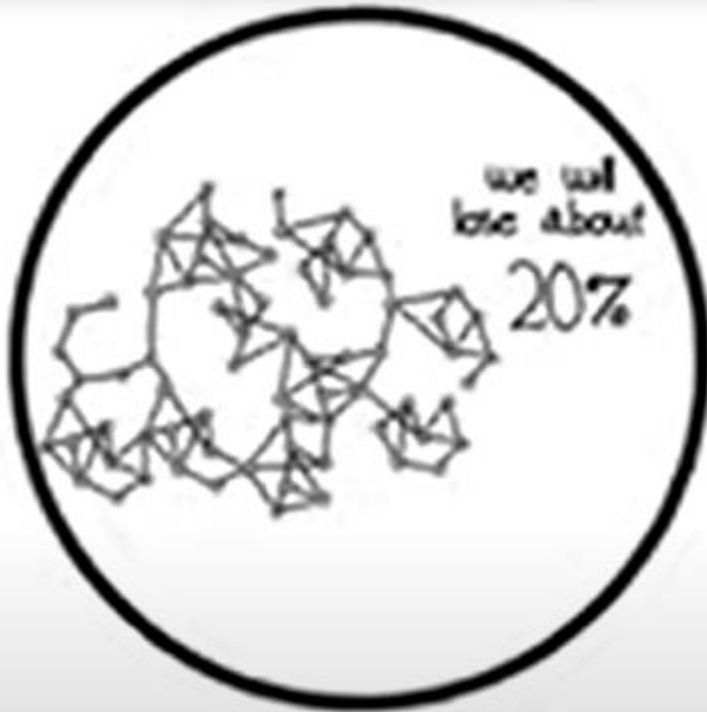
- **Cultural services**

It includes tourism; provides recreational, aesthetic,

cultural and spiritual services.

Biodiversity

- Drop In Biodiversity
- Removal of Biodiversity
- Extinction of Species



Ecosystem Services and Agroecology

Soil Microbes

Livestock

Forest

Bird

HH Nutrition

17.

18.

Fodder

Soil

Soil Moisture

Food

Crop

Fertiliser

Honeybee

Solar Energy

Rainfall

Biomass

Seed

17.

- 1. Pesticides**
- 2. Monocropping**
- 3. Excess use of Fertilizers**

18.

- 1. Desi Seeds**
- 2. Kashayams/Concoction**
- 3. Earthworm**

- 1. Group 1 – Sr. No. 1 to 5**
- 2. Group 2 – Sr. No. 6 to 10**
- 3. Group 3 – Sr. No. 11 to 15**

17.

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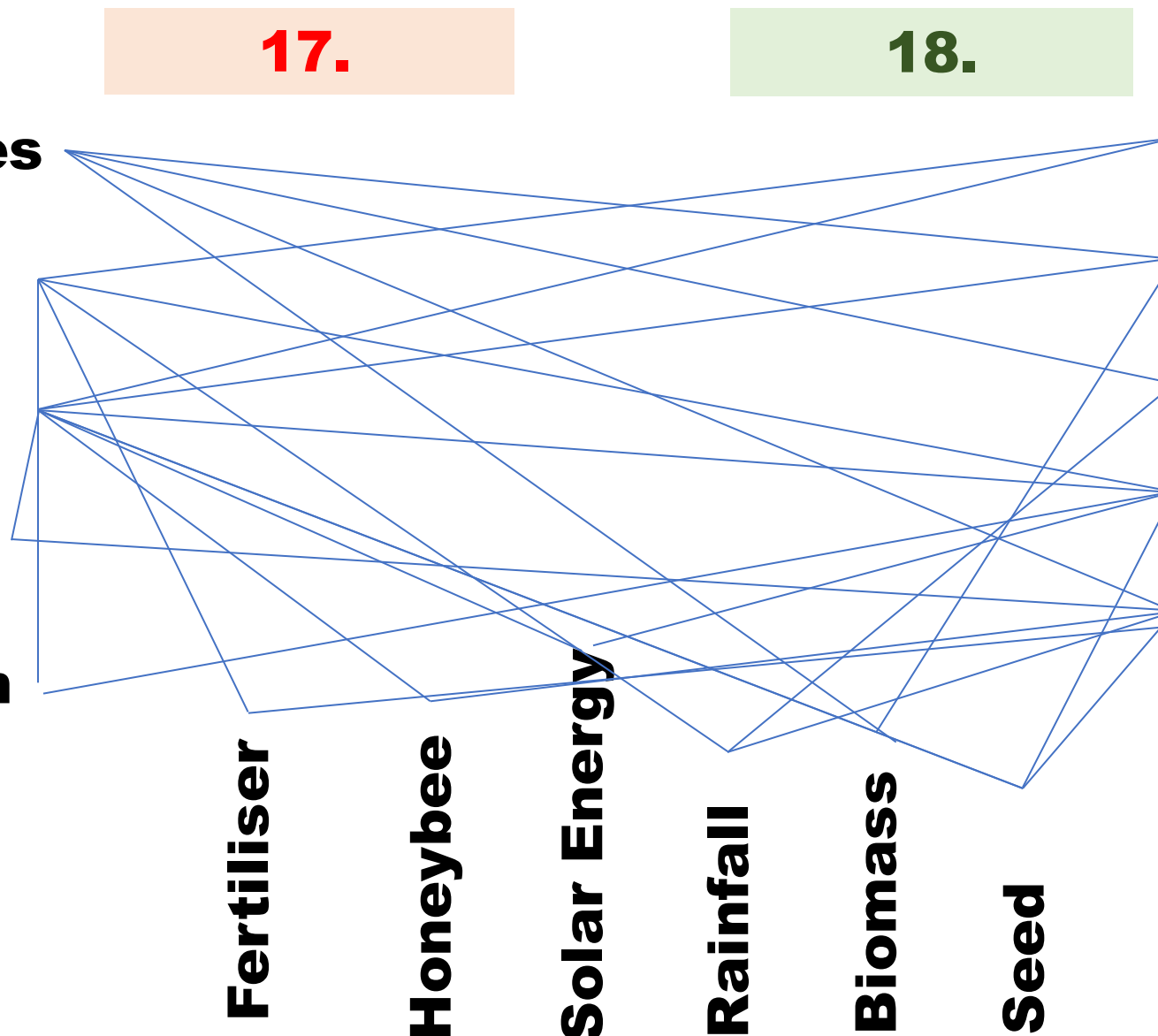
Honeybee

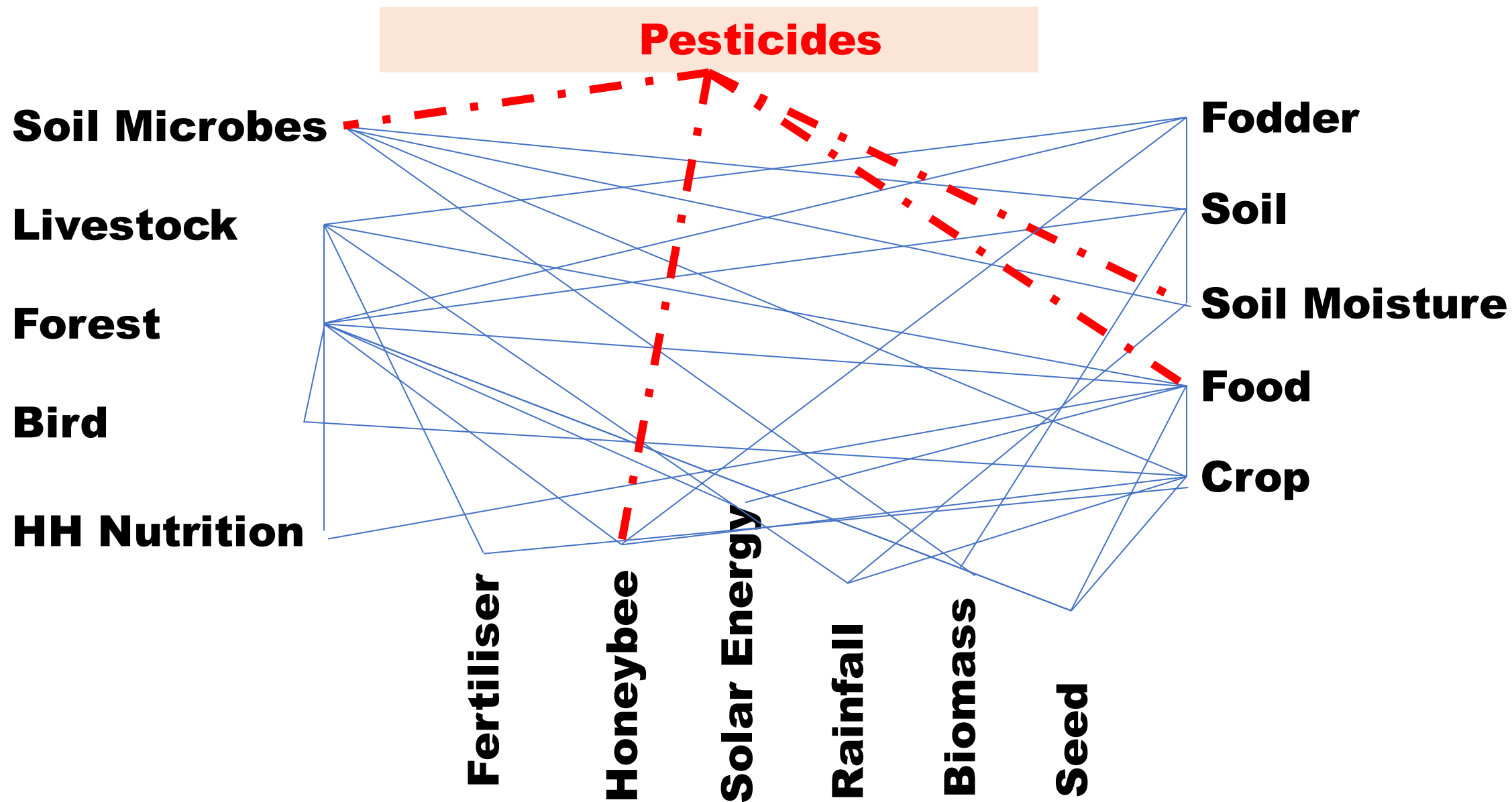
Solar Energy

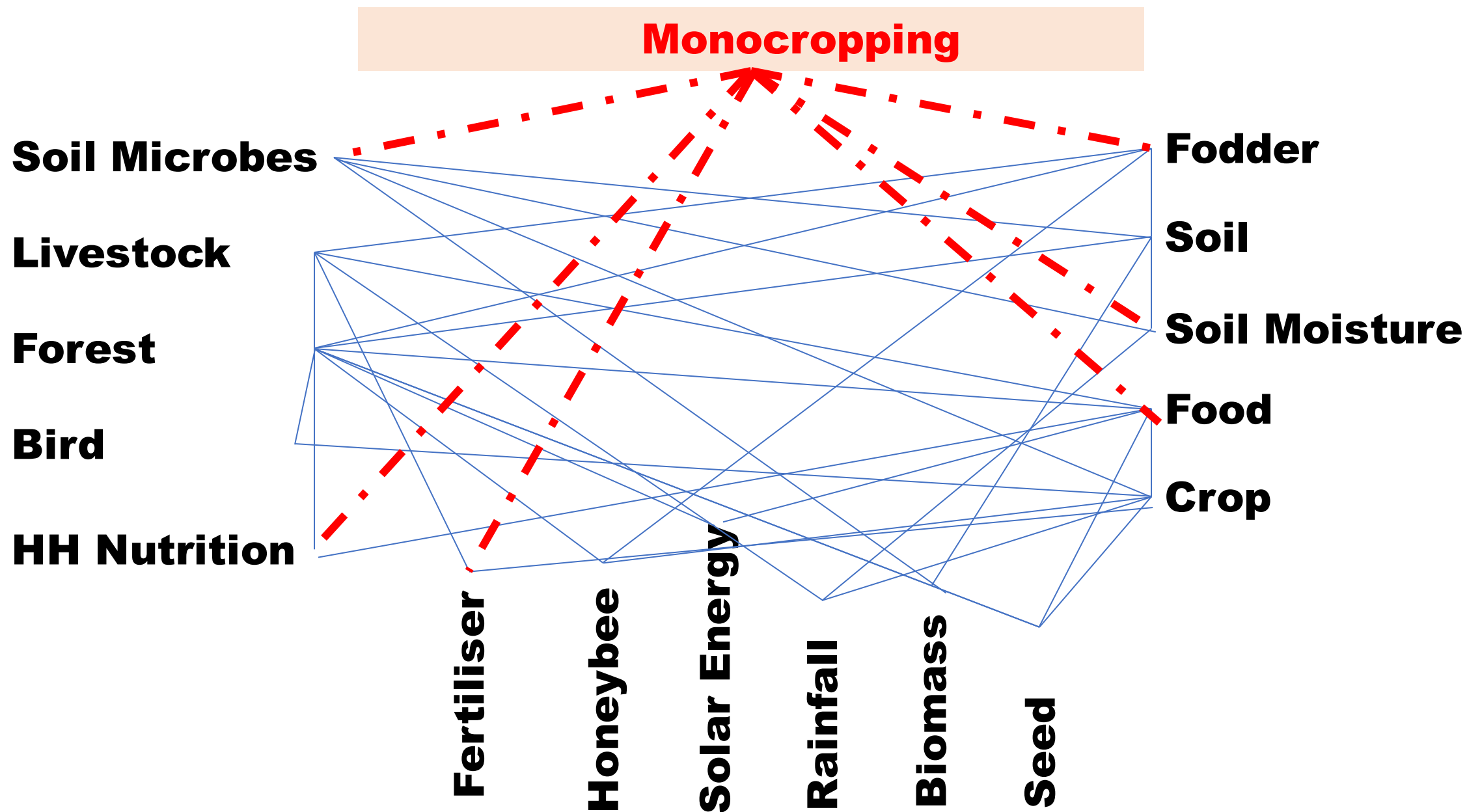
Rainfall

Biomass

Seed







**Excess use of
Fertilizers**

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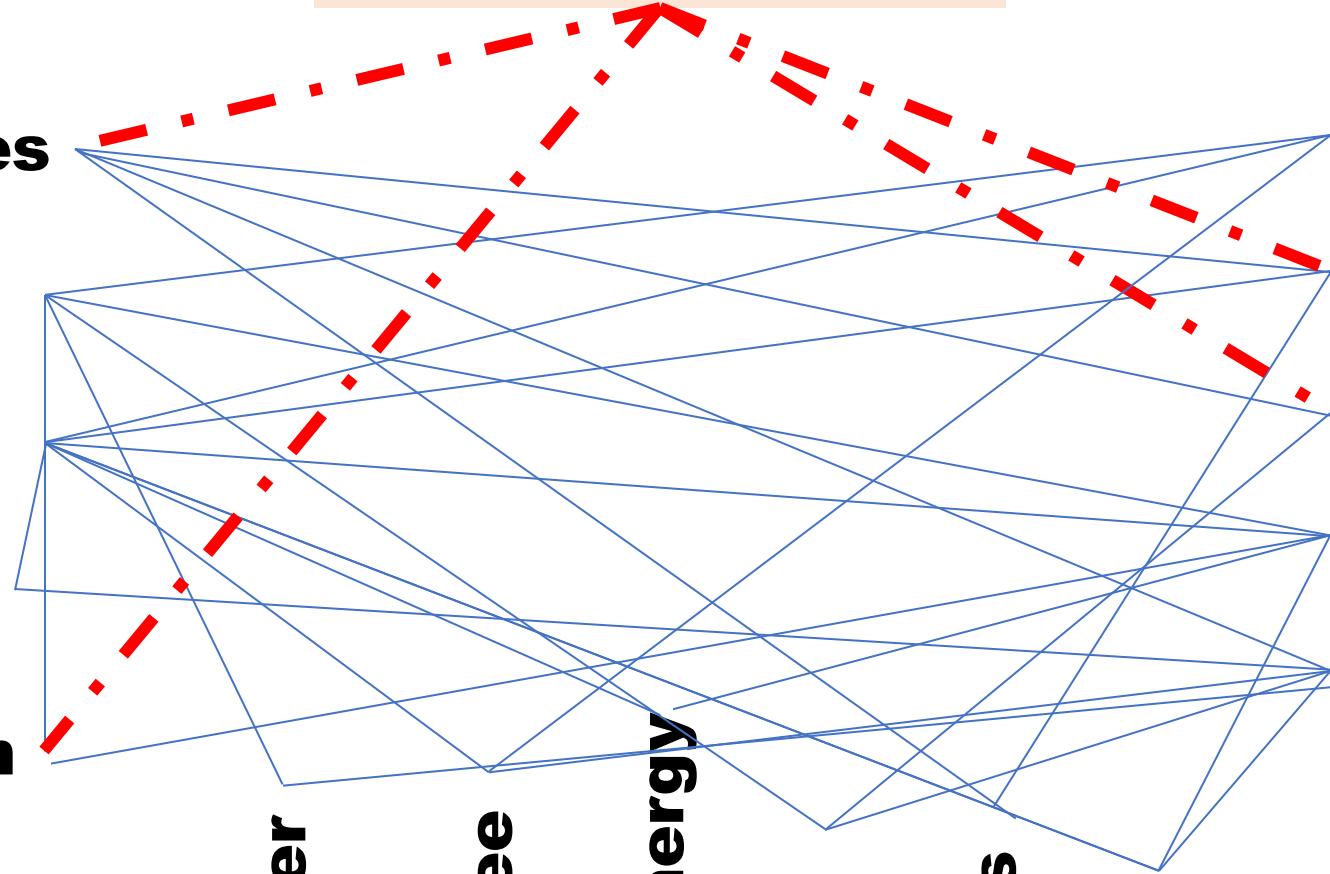
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Desi Seeds

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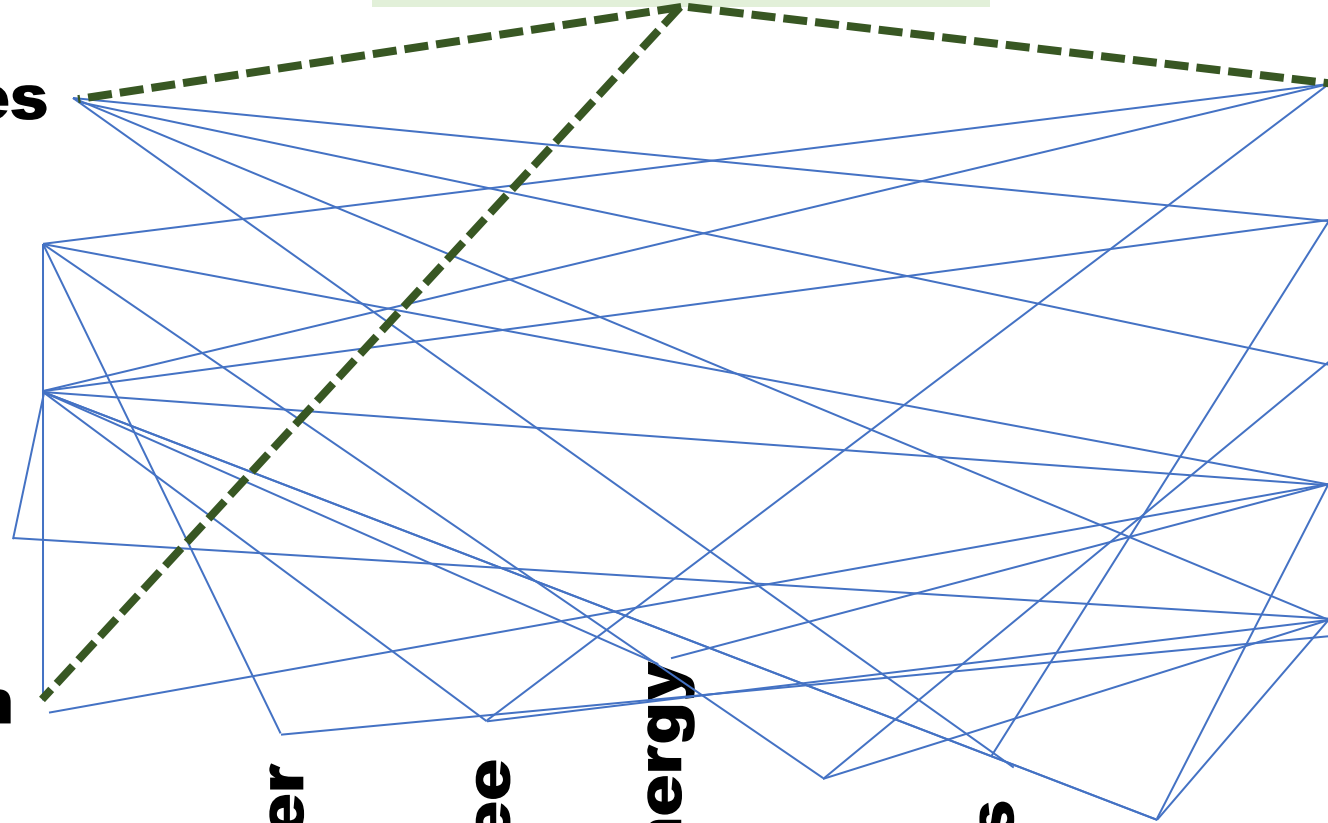
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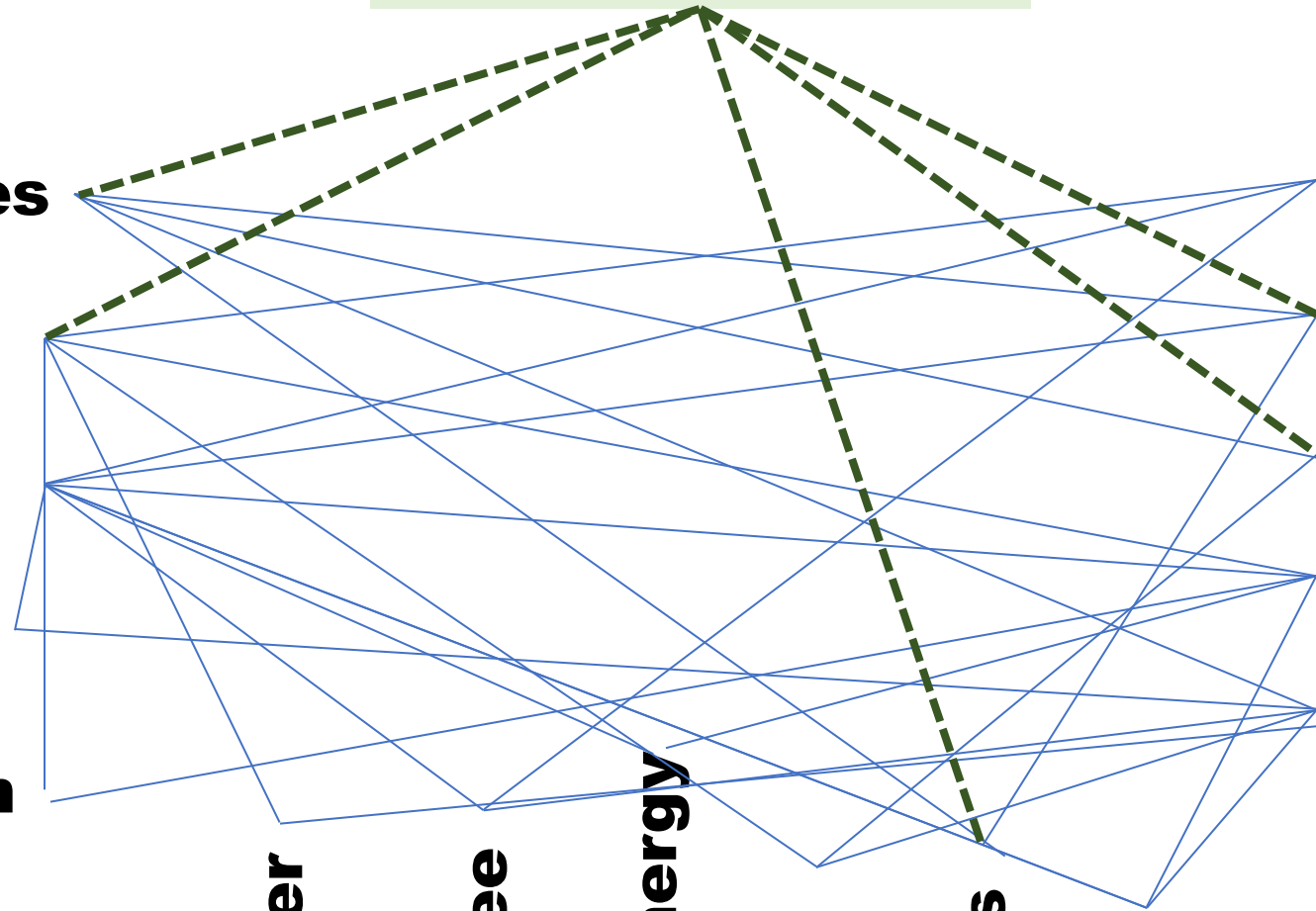
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Kashayams

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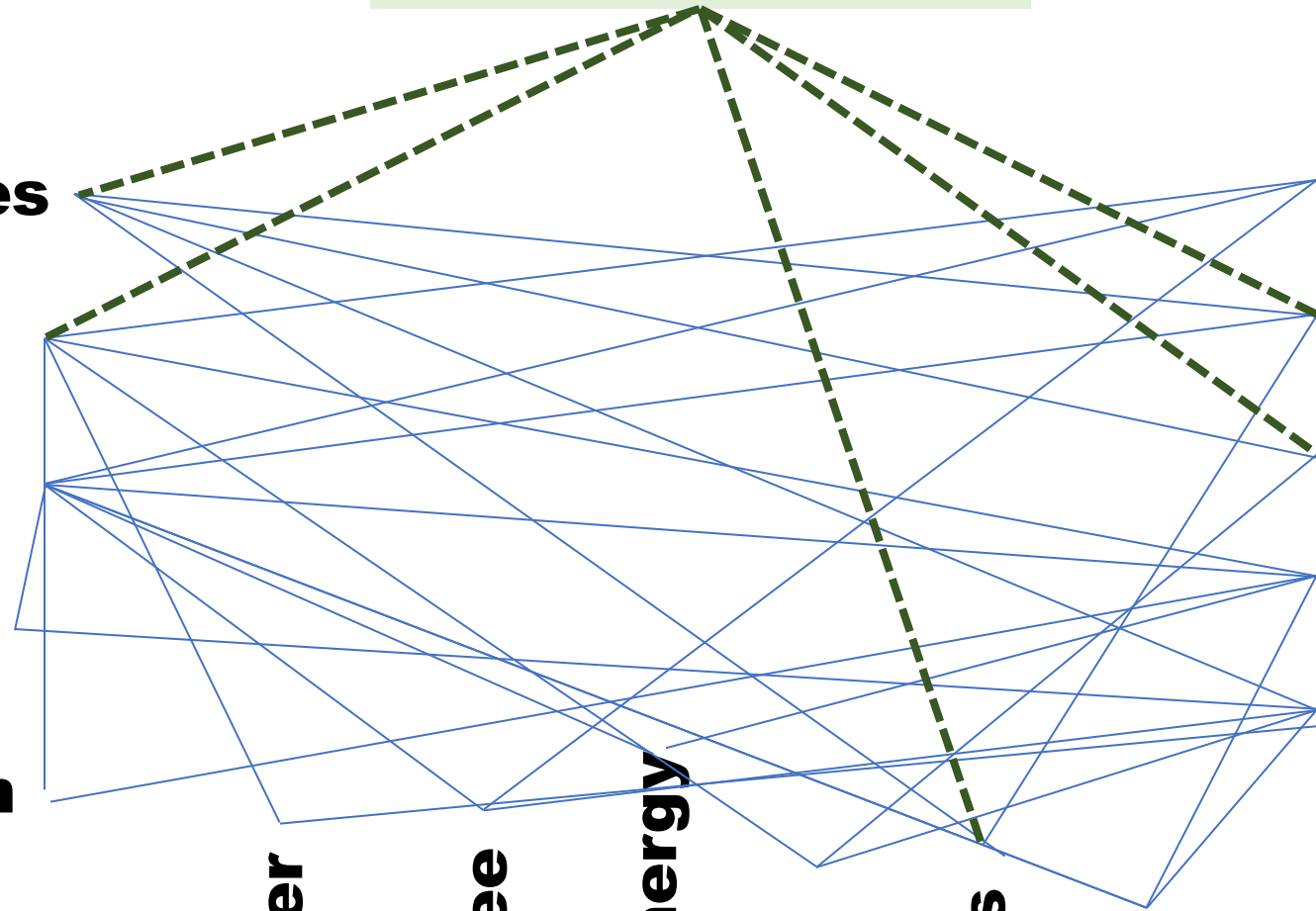
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365 days crop cover



Bio-stimulants as catalysts



Usage of Indigenous Seed



Diverse crops & trees

Principles of Natural Farming



Integration of livestock



**No synthetic fertilisers, pesticides,
herbicides, weedicides etc**



**Minimal disturbance
to soil**



**Pest management through
better agronomic practices &
botanical extracts**



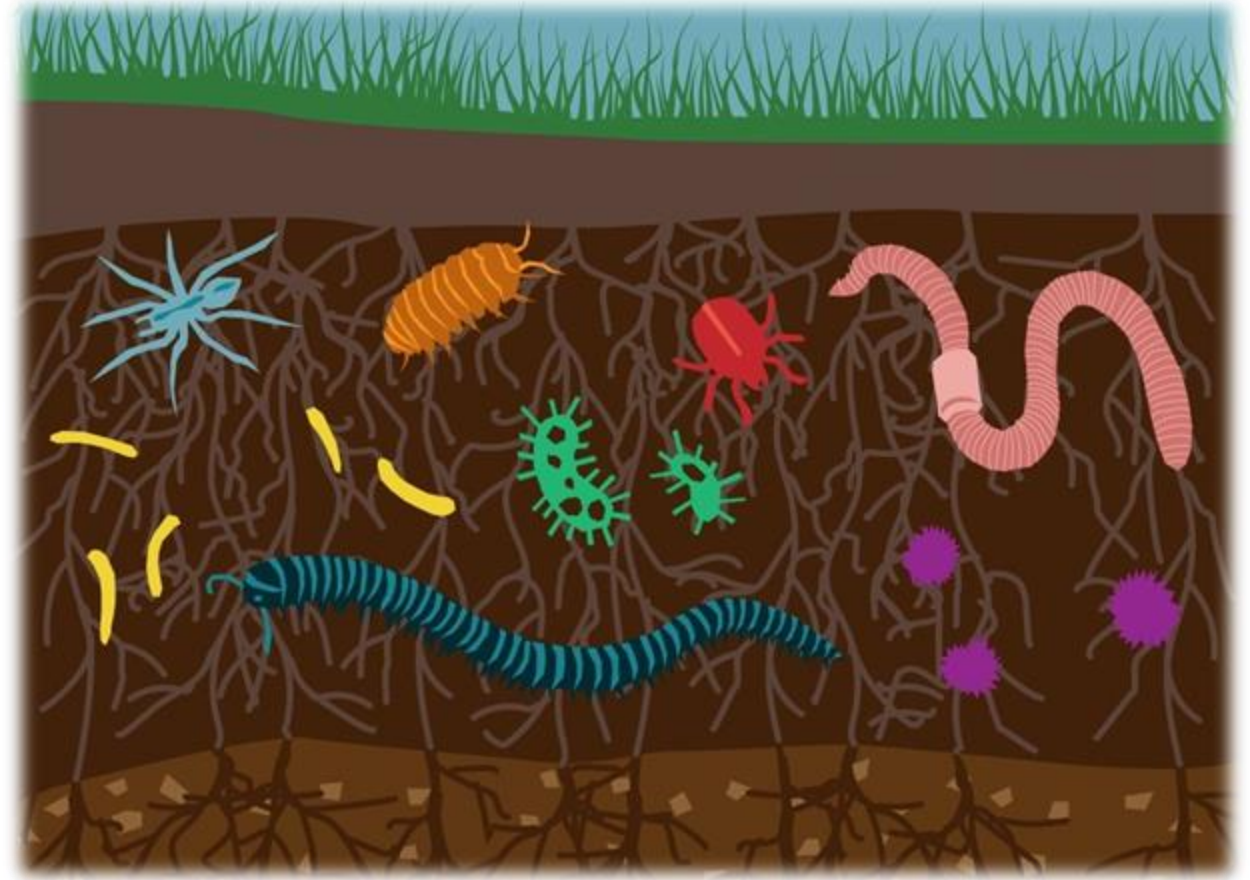
Pearl Millet



Akkadi Cropping System

Single gram of soil can
contain BILLIONS of
microorganisms

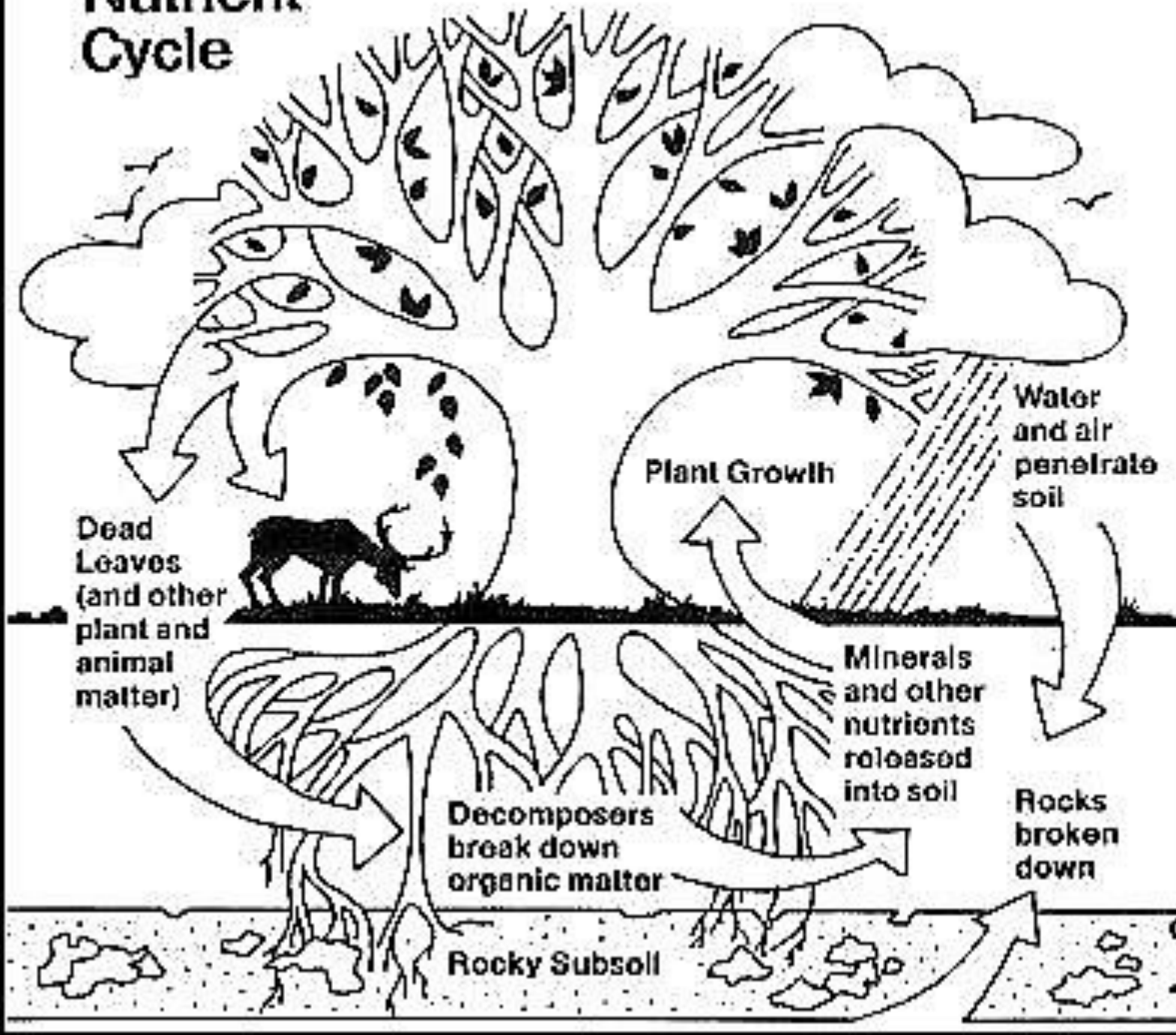
<https://www.youtube.com/watch?v=MUia6fkaIrc>



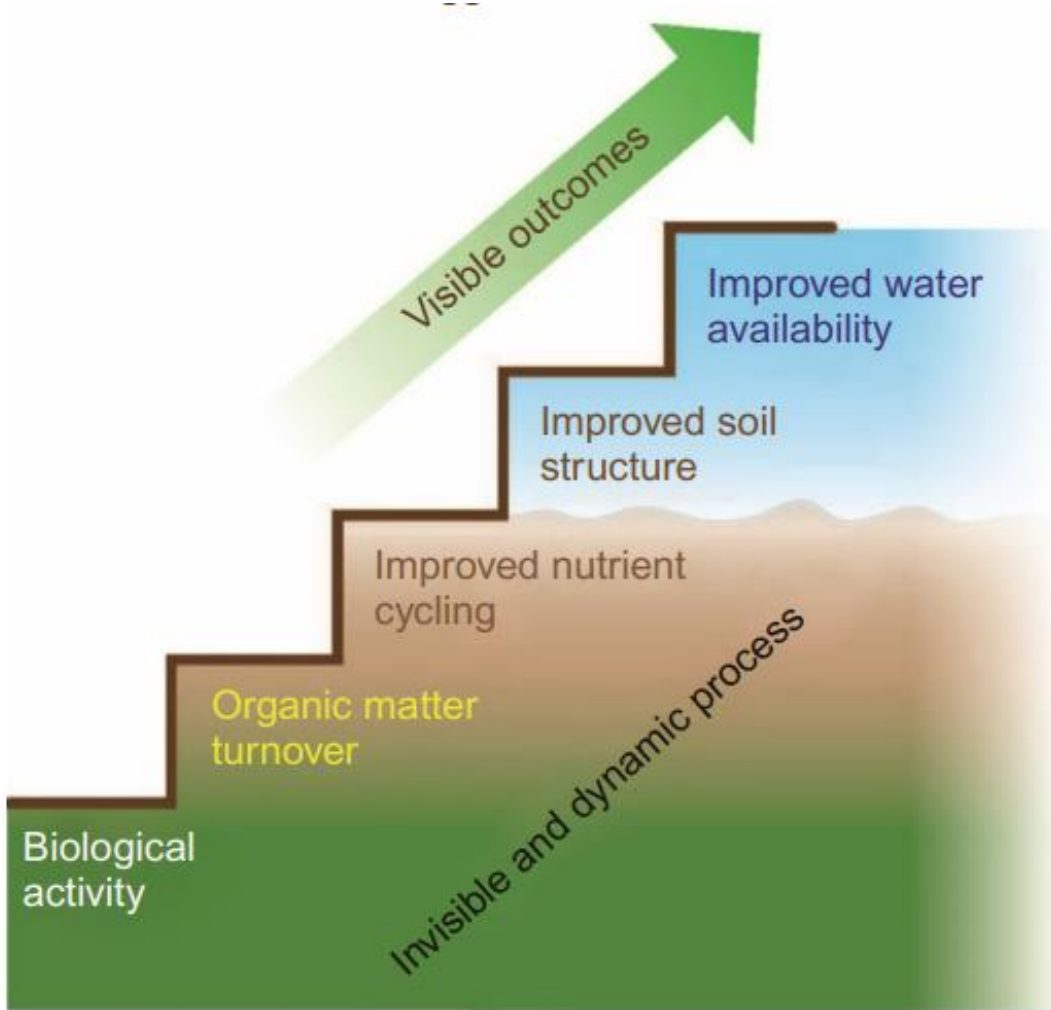


Crop Residue in Kurwa System Jharkhand

Nutrient Cycle



Nutrient Cycle



Soil biological system plays a crucial role in soil property modification

Source: *Soil: The Forgotten Piece of the Water, Food, Energy Nexus* Jerry L. Hatfield*,¹ Thomas J. Sauer*, Richard M. Cruse†



Thank you