



AGROECOLOGY EUROPE  
FORUM 2023 IN HUNGARY  
CONVERGING MOVEMENTS  
FOR **RESILIENT FOOD SYSTEMS**  
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# Past, present, and future of soil health by applying agroecological practices



## WORKSHOP 3

ORGANISED BY:



**#AEEUForum2023**

WITH THE SUPPORT OF:



# FACILITATORS OF THE WORKSHOP 3

Past, present, and future of soil health by applying agroecological practices



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# AGENDA

- Soil inoculation (applying microbes);
- Good practices to avoid soil degradation and soil erosion;
- Soil management;
- No tillage practices;
- Water management and agroecology;
- Climate mitigation;
- Social and economical aspects of agroecology and SZIA  
Agroecological Garden of MATE
- Group workshop: Analysis of agroecosystems

# SOIL MANAGEMENT

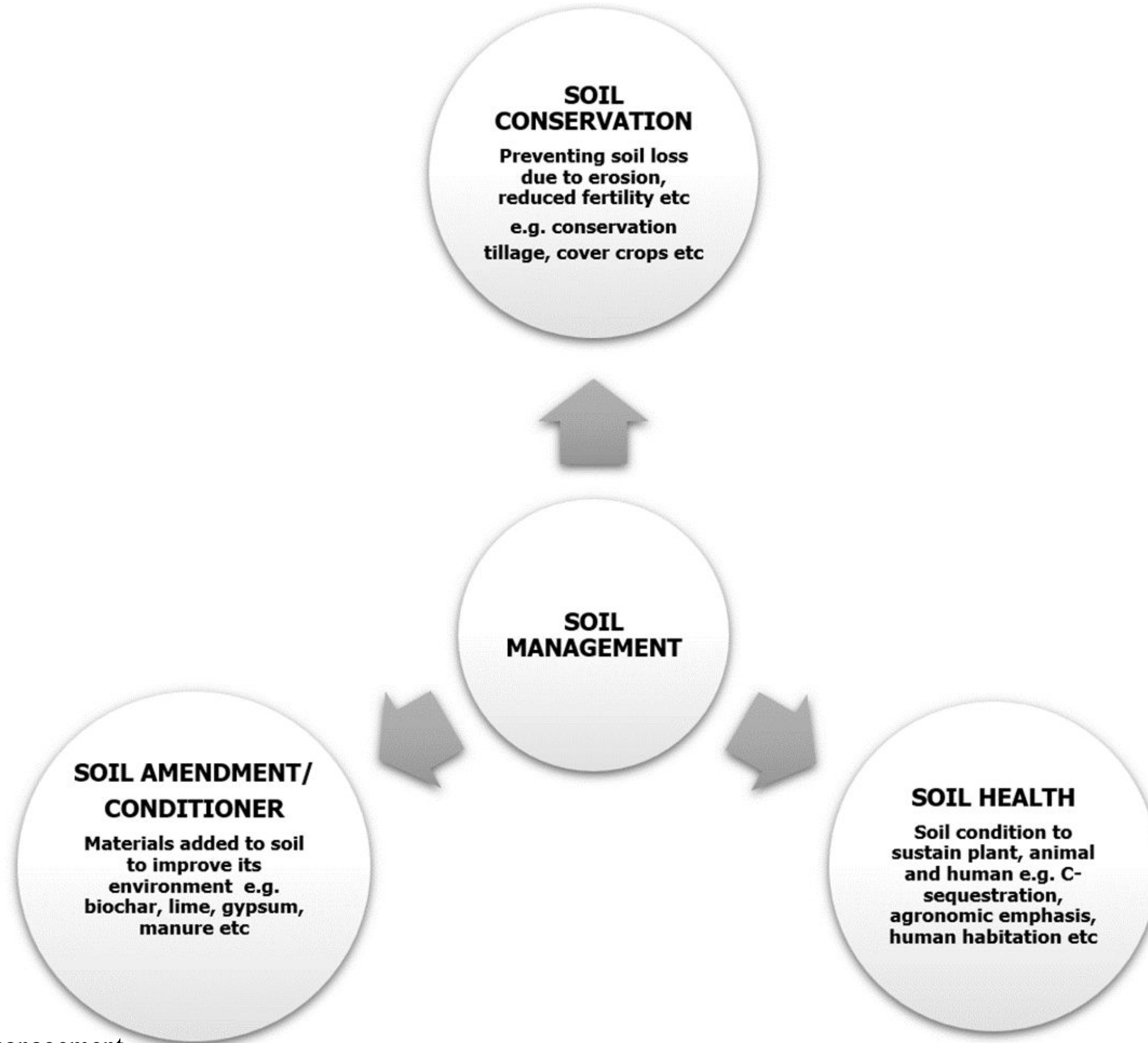


Fig. 1: Fundamental constituents of soil management

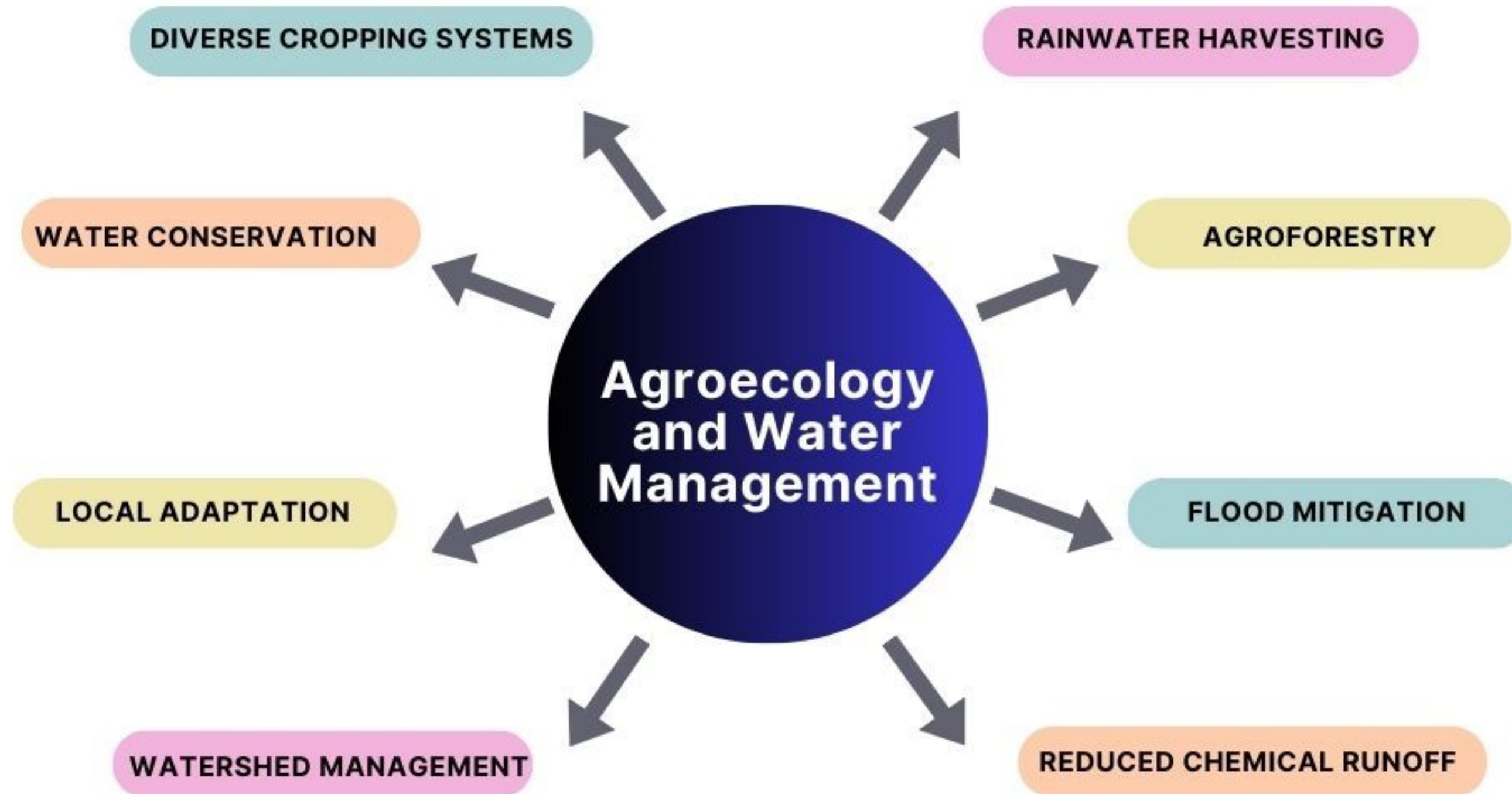
**Table 1. Management of some problem/degraded soils.**

<b>Soil</b>	<b>Problem</b>	<b>Management</b>
<b>Highly organic soil e.g., histosols</b>	<b>Cycling of nutrient interrupted, low pH etc</b>	<b>Shallow drainage ditches need to be built at intervals to speedup drying of peat, increase pH</b>
<b>Soils with heavy cracking clays e.g., vertisols</b>	<b>poor internal drainage and extremely slow hydraulic conductivity, leading to water logging etc.</b>	<b>Surface and sub-surface drainage, timely and well-planned cultivation</b>
<b>Gypsiferous soil (&gt;25 gypsum)</b>	<b>Soil lacks plasticity, does not stick, prone to erosion</b>	<b>Harrowing of soil to improve infiltration, terracing on deep hilly soils, improve organic matter, plant cover crops at fallow.</b>
<b>Calcareous soils (&gt;15% CaCO<sub>3</sub>)</b>	<b>Cemented subsurface soil, hardpan, low organic matter, low phosphorus, low micronutrients</b>	<b>Deep ploughing, manure application, fertilizer application</b>
<b>Acid soil (pH &lt;5.5)</b>	<b>Fe and Al toxicities, low available phosphorus</b>	<b>Liming, use of crops tolerant to low pH e.g., cassava, rice</b>
<b>Sandy soils (coarse textured up to 50cm depth)</b>	<b>Retain few nutrients and have a low water holding capacity</b>	<b>Improve organic content, manure application and inorganic fertilizer supplementation, afforestation</b>
<b>Salt affected soils (most common)</b>	<ul style="list-style-type: none"> <li>• <b>The presence of more soluble salts e.g., NaCl (saline).</b></li> <li>• <b>High Na content (Sodic)</b></li> <li>• <b>Saline-Sodic</b></li> </ul>	<p><b>Saline: Leaching of salt, use of salt tolerant crops.</b></p> <p><b>Sodic: application of gypsum (CaSO<sub>4</sub>)</b></p> <p><b>Saline-Sodic: Improve structure first then followed by leaching of salt.</b></p>
<b>Eroded soil</b>	<b>Detachment/removal of soil particles/topsoil</b>	<b>Terracing, shelterbelts, cover crops, strip cropping</b>

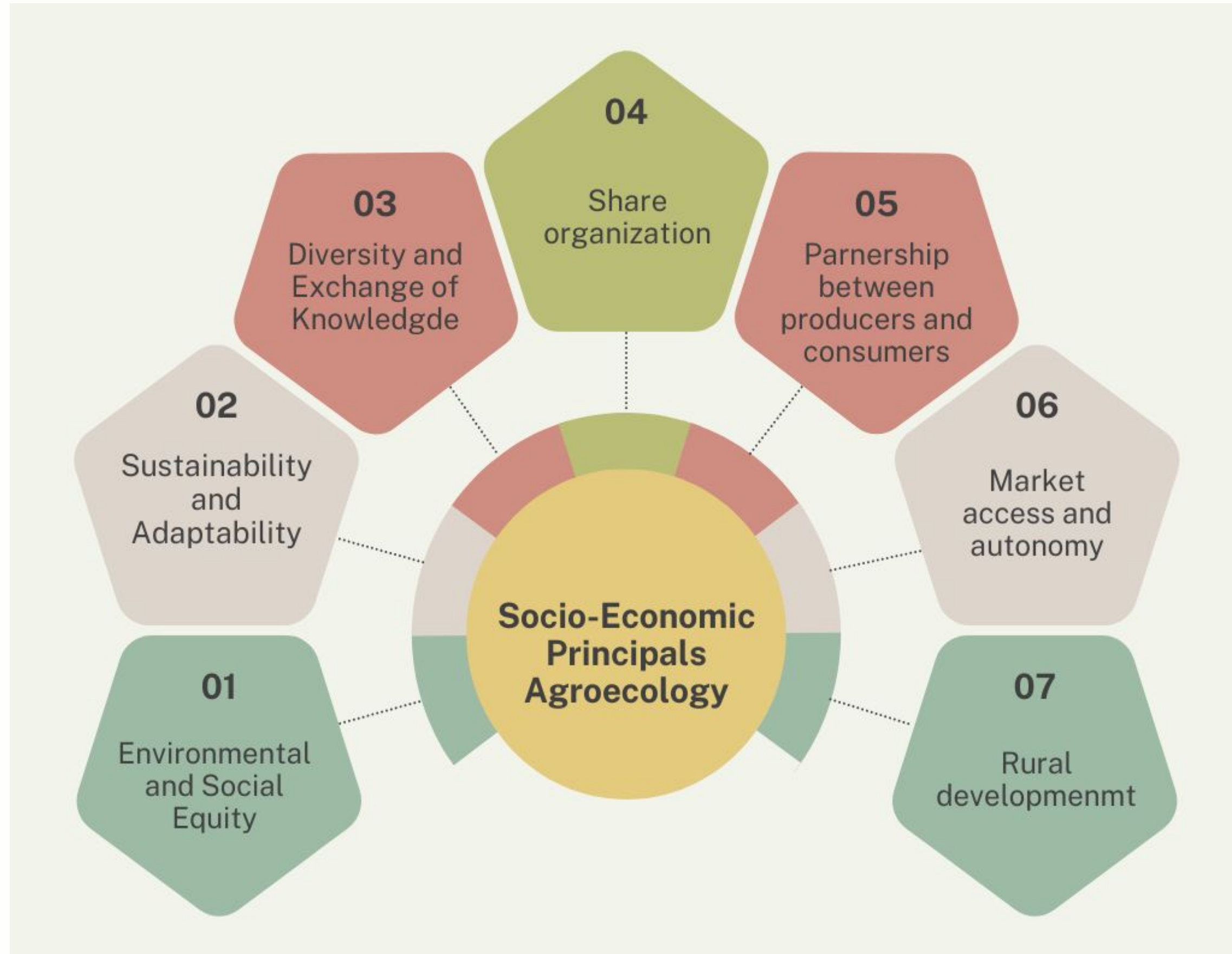
**Source: FAO SOILS PORTAL | Food and Agriculture Organization of the United Nations, n.d., Management of Some Problem Soils, 2023)**

# WATER MANAGEMENT AND AGROECOLOGY

## CLIMATE MITIGATION



# SOCIAL AND ECONOMICAL ASPECTS OF AGROECOLOGY



**SZIA Agroecological Garden of MATE**



# II PART OF THE WORKSHOP EXPLANATION

## **TITLE: Analysis of agroecosystems**

### **OBJECTIVE:**

- The workshop involves identifying the agroecosystem natural resources, analyzing the farms using observations, drawings, and models, and subsequently discussing and presenting the key components of agroecological systems

**DURATION:** 50-60 minutes

### **MATERIALS:**

- Paper toy <https://www.pukaca.com/product/the-farm-paper-toy>, scissors, glue

### **PROCEDURE:**

- Table Setup: Each station has one paper toy kit and other necessary equipment.
- Group Formation: To promote interactive learning, we encourage you to form groups consisting of 6-7 participants.
- Task Assignment: The mission of the group participants is to create a plan of a sustainable and ecological farm plan by applying the knowledge acquired from the previous experience.
- General Discussion: Once the groups have completed their respective tasks, we will hold a general discussion where participants can share and present what they created.