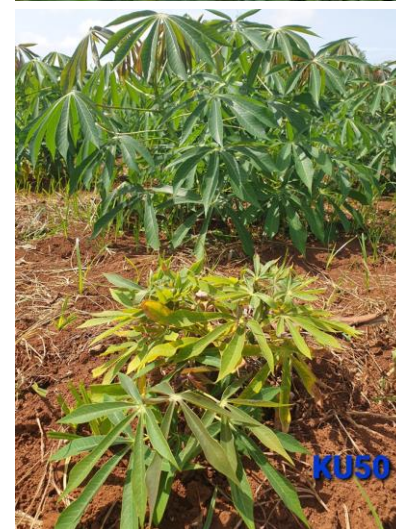
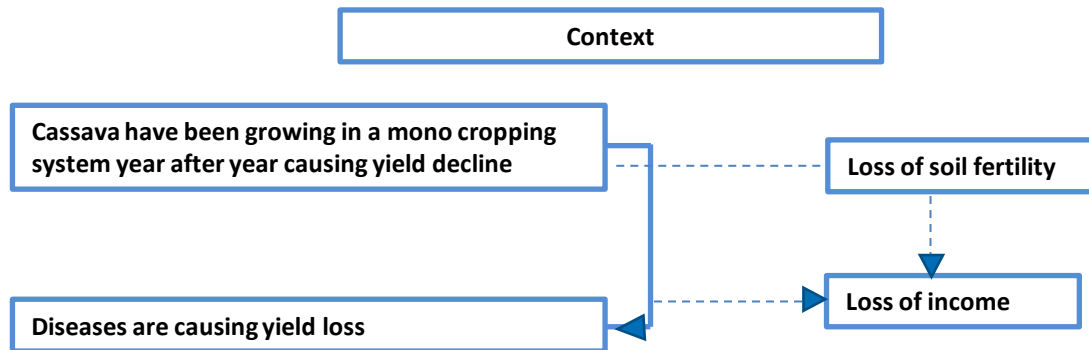


Project Aim

- To maintain a profitable smallholder cassava industry in the Mekong region by managing disease pressures and sustaining the soils it relies on.



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Research Objective

- The overall objective of this research is to improve cassava-based production system in Laos, Cambodia and Vietnam to meet the livelihood needs of rural households, with a focus on scaling and adoption pathways for technologies and knowledge through partnerships with stakeholders.

Two key over arching themes

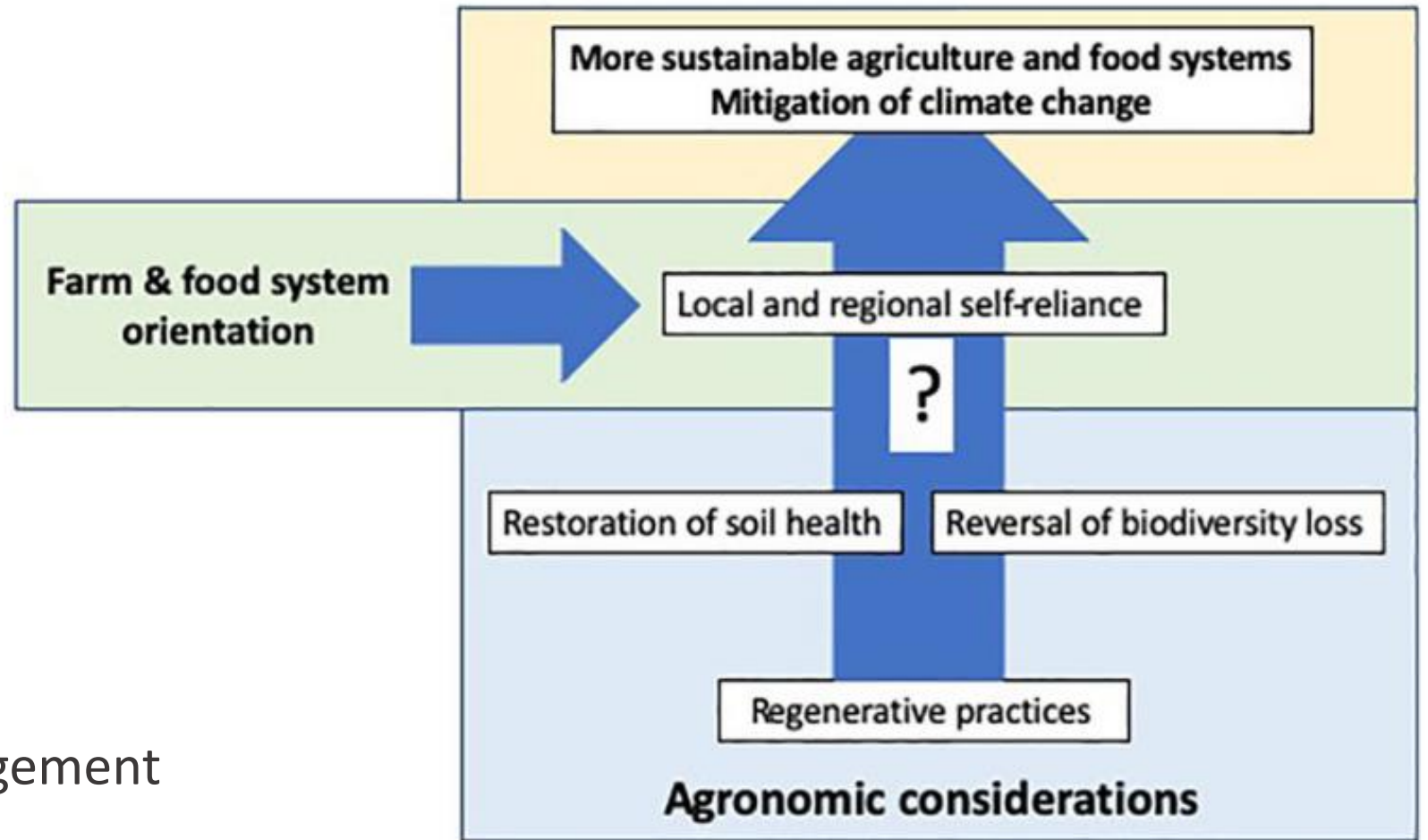
- Soil fertility management
- Disease management

Research focus

Develop an economically sustainable cassava-based cropping/farming system targeting to minimize soil degradation including soil erosion and disease management linking with crop/forage-livestock systems.

Is Regenerative Agriculture is meant to be the solution?

- Nitrogen fixation
- Nutrient Cycling
- Intergraded nutrient management
- Disease suppression
- Insects' population control
- Weed management



Is Regenerative Agriculture is meant to be the solution?

1. What is to be regenerated?

The main constrain is soil health (i.e. nutritional and biological).

2. What agronomic practices need to be changed to enable or facilitate regeneration?

Identify feasible technologies that can improve environmentally sustainable cassava production.

3. Whether these changes can be economically sustainable and socially acceptable (i.e. gender)?

Understand current market demand, trends and potential that may influence the adoption of alternative systems

Male and female farmers' participation and preferences will impact the adoption of the new technologies

Altered cropping patterns may change the role of male and female farmers in cassava production

4. May need any policy change??

Fertilizer (bio??) availability and concessions, tax benefit etc.

Principles and practices considered to be part of Regenerative Agriculture

- **Minimize tillage** (*Zero-till, reduced tillage, conservation agriculture etc.*)
- **Maintain soil cover** (*Mulch, cover crops*)
- **Build soil C** (*Biochar, compost, green manures, animal manures*)
- **Sequester carbon** (*Agroforestry, tree crops*)
- **Biological nutrient cycles** (*Animal manures, compost, reduce reliance on mineral fertilizers, organic agriculture*)
- **Plant diversity** (*Crop rotations, multi-species cover crops*)
- **Integrate livestock** (*Rotational grazing, pasture cropping*)
- **Avoid pesticides** (*Crop rotations, multi-species cover crops*)

Methodology

1. Evaluate and document past practices used for sustainable cassava production systems
2. Characterisation of cassava production systems and trajectories using survey data, soil analysis, cropping history, yield results and geospatial analysis.
3. Evaluate soil health, nutrient-water cycling under different management practices in on-station experiments. Optimal rotations with crop and/or forage systems.
4. Develop and implement a sustainable management practice of the research station and rapid multiplication hubs
5. Develop digital monitoring system of research station for water footprint quantification and remote supervision purpose.
6. Participatory development and evaluation of alternative cropping systems (including crop-livestock).

Output

- Adoptable cropping system options for smallholder farmers that are economically and environmentally sustainable cassava production
- **Will Regenerative Agriculture deliver environmental benefits as well as increase system production?**



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Thank you!

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- The main constrain is soil health (i.e. nutritional and biological).
- Will Regenerative Agriculture deliver environmental benefits as well as in increase system production?

Soil fertility management

- a. What are the feasible technologies that can improve environmentally sustainable cassava production?
- b. Can altered cropping patterns minimize (or increase) disease incidence and maximize farm productivity?
- c. What is the current market demand, trends and potential that may influence the adoption of alternative systems?
- d. How will male and female farmers' participation and preferences impact the adoption of the new technologies?
- e. How would alter cropping patterns change the role of male and female farmers in cassava production?
- f. What are the public private models for cassava research and scaling beyond the project?