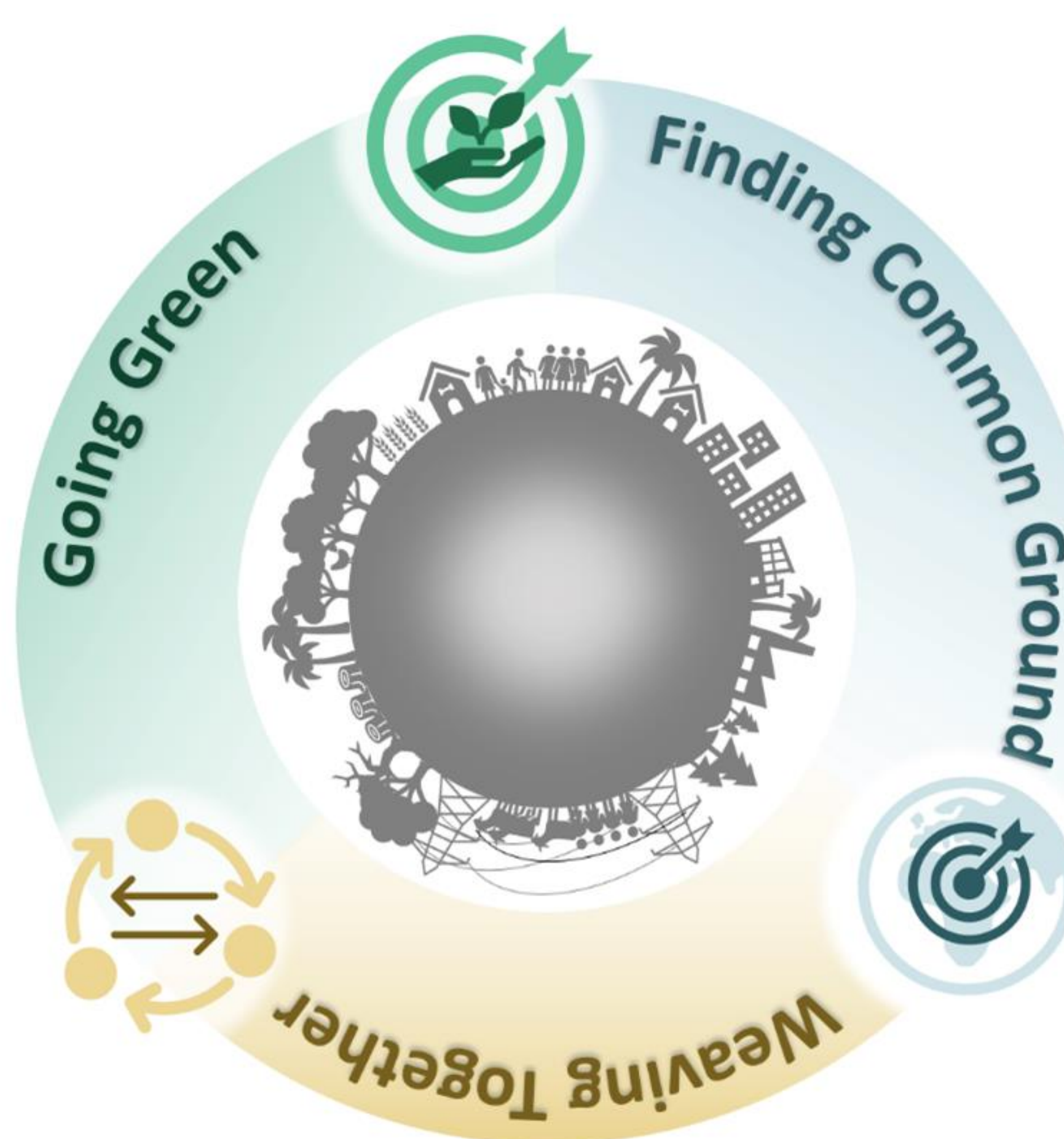


Problems addressed

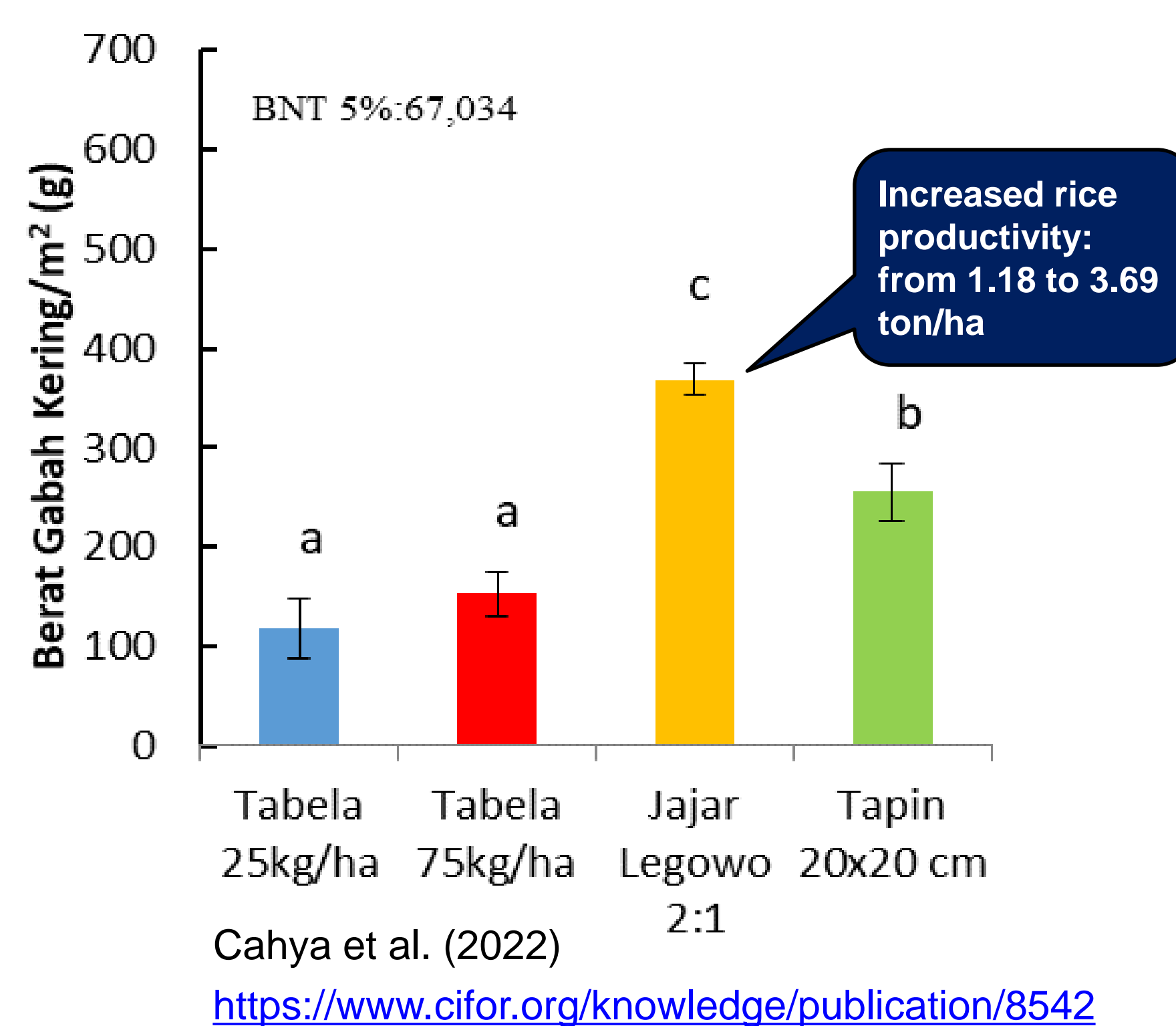
- Rising food and fuel prices exacerbate food and energy insecurity in Global South and North
- Smallholder households with difficulties to meet their needs for food, income, and energy
- Rural and peri-urban poor strongly reliant on woody biomass for energy
- Firewood and charcoal production associated with unsustainable management of forests and trees
- Food and energy issues addressed in isolation by policy and development, though intertwined



Research focus

Identification of opportunities and evidence-based options with regard to:

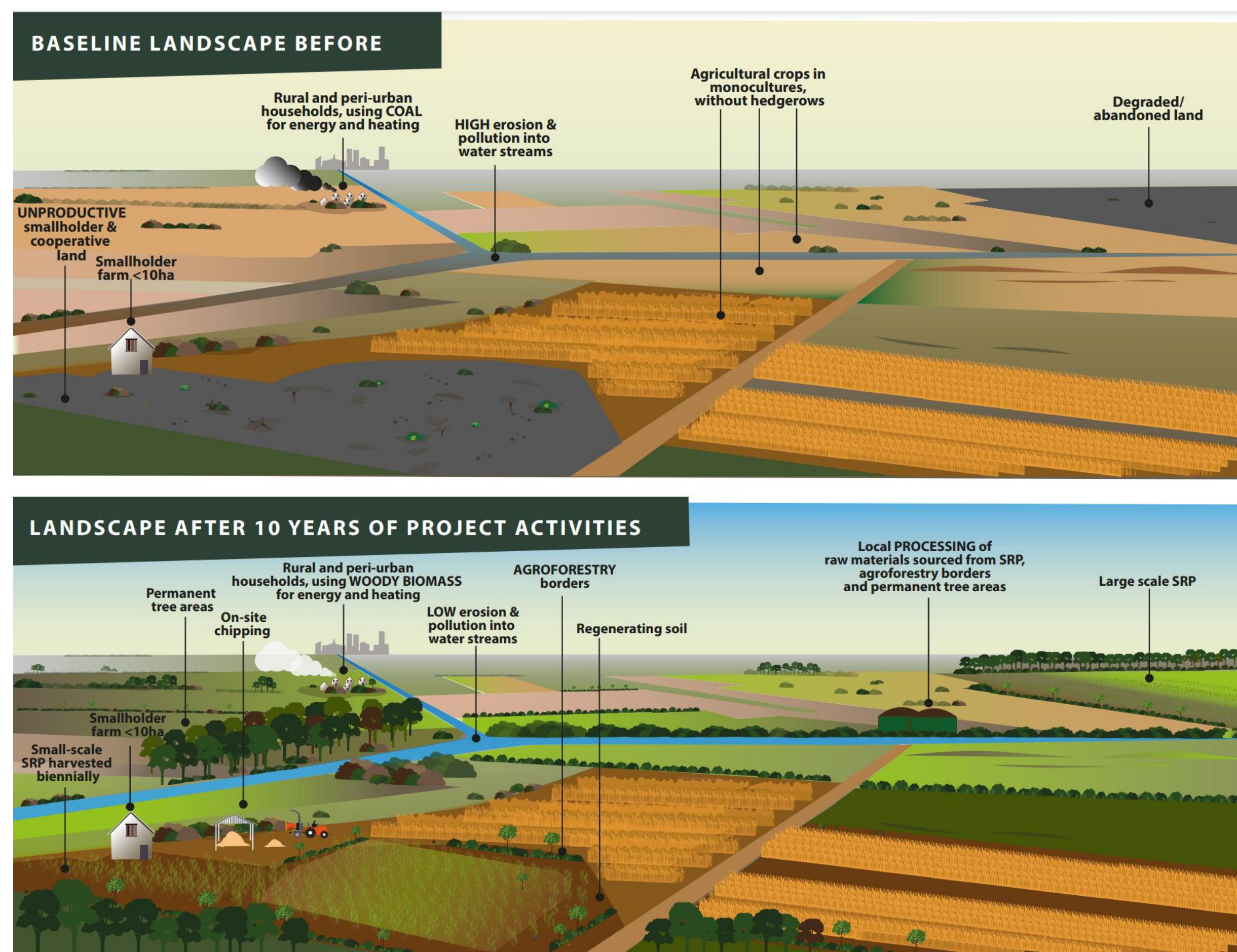
- Landscape resilience based on agro-ecological principles:
 - Measures to increase soil fertility and diversity of plant and animal species
 - Integrated control of pests and diseases
 - Sound water management
 - Combination of multi-structured land uses, including agroforestry and silvopastoralism
- Livelihood resilience among smallholder households, including food and energy security
- Strengthening the position of smallholders and their business organizations in bioeconomy value chains
- Integrating the delivery of technical, business and financial services for these value chains
- Mechanisms for accessing responsible finance with appropriate modalities for smallholders



Conclusions

Integrated approaches to bioeconomy based on agro-ecological principles are an often-overlooked pathway to:

- produce healthy foods
- provide sustainable energy
- reduce greenhouse gas emissions
- create equitable jobs and prosperity, and
- conserve biodiversity at global scale



Solutions identified

- Integrated approaches to food and energy security
- Use of agro-ecological principles for soil and water management, control of pests and diseases, and biodiversity conservation
- Value chains for diverse bioeconomy products, such as food crops, woody biomass for energy, timber and non-timber forest products
- Enabling environment, including public and private policies and sustainability standards
- Leverage of impact investments and other forms of responsible finance

Solutions in Sub-Saharan Africa

- Balanced agroforestry approaches considering diverse combinations of food crops and trees
- Recovery of waste bioresources for energy
- Balancing supply and demand in wood energy value chains
- Use of improved kilns and stoves
- National Bioenergy Strategy (Kenya)

Solutions in Southeast Asia

- Integrated agro-silvo-fishery approaches for combined production of food and energy crops and restoration of degraded peatlands
- Improved rice cultivation together with fruits
- Planting trees for wood, energy and biomaterial
- Farming of various local fish species
- Value chain and policy development

Solutions in Western Balkans

- Integrated landscape approach for energy security, land restoration, and livelihoods development
- Short-rotation plantations of fast-growing tree species (willow, poplar) → biomass for energy
- Agroforestry borders for diversity of animal and plant species and income diversification
- Permanent tree areas for biodiversity conservation and use of non-timber forest products
- Development of bioeconomy value chains
- National bioenergy strategies