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- Project ‘Sustainable Rural Development for the Poor (SRDP)’ in Ha Tinh and Quang Binh provinces
- Non-governmental organizations (NGOs) working in the project area.

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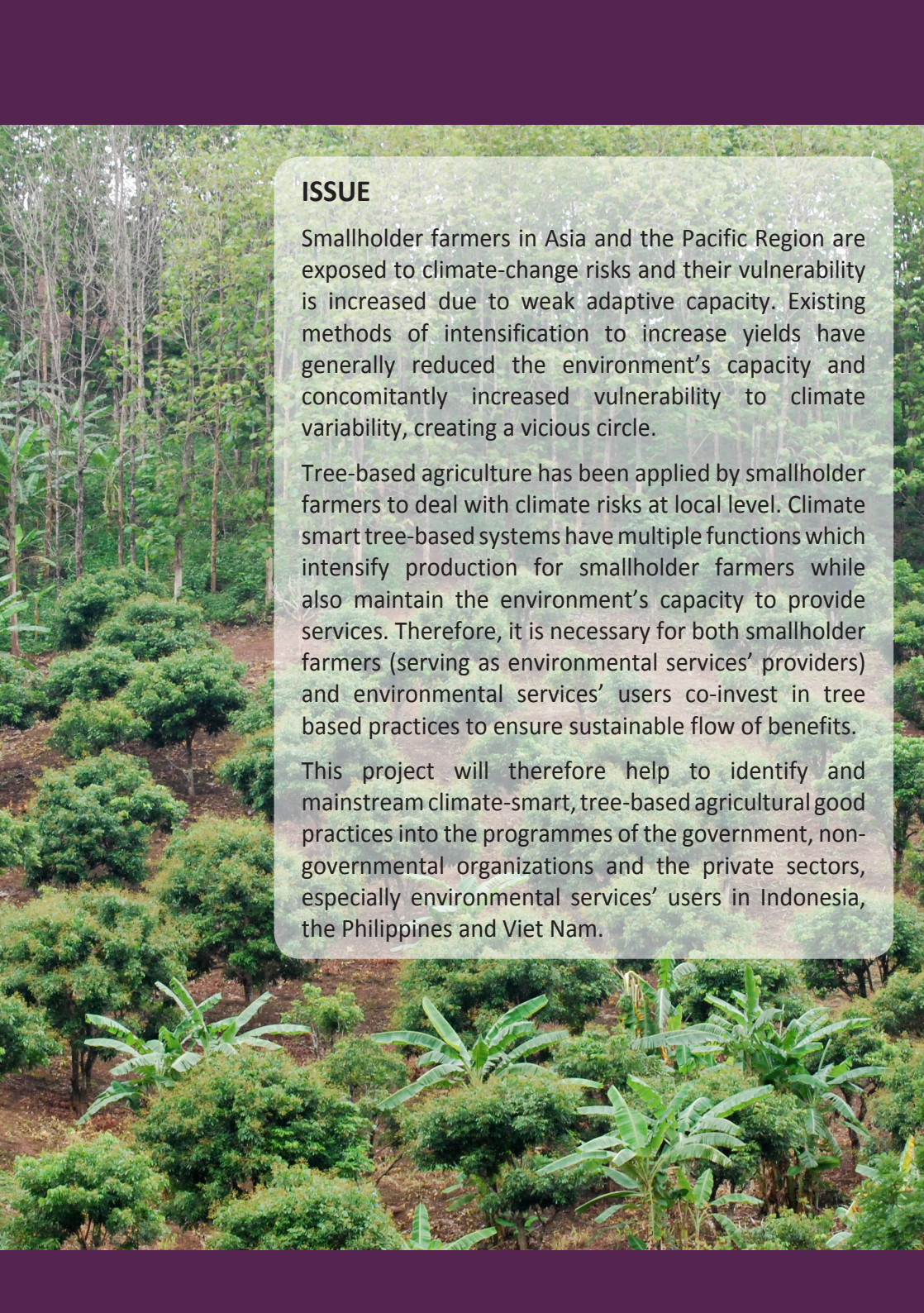
# Climate-smart, tree-based, co-investment in adaptation and mitigation in Asia

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## ISSUE

Smallholder farmers in Asia and the Pacific Region are exposed to climate-change risks and their vulnerability is increased due to weak adaptive capacity. Existing methods of intensification to increase yields have generally reduced the environment's capacity and concomitantly increased vulnerability to climate variability, creating a vicious circle.

Tree-based agriculture has been applied by smallholder farmers to deal with climate risks at local level. Climate smart tree-based systems have multiple functions which intensify production for smallholder farmers while also maintain the environment's capacity to provide services. Therefore, it is necessary for both smallholder farmers (serving as environmental services' providers) and environmental services' users co-invest in tree based practices to ensure sustainable flow of benefits.

This project will therefore help to identify and mainstream climate-smart, tree-based agricultural good practices into the programmes of the government, non-governmental organizations and the private sectors, especially environmental services' users in Indonesia, the Philippines and Viet Nam.

## OVERALL OBJECTIVE

To improve the livelihoods and resilience of smallholder farmers through the promotion of climate-smart, tree-based agriculture in Indonesia, the Philippines and Vietnam.

### Specific objectives

Assess climate-change vulnerability of female and male farmers and synthesize local ecological knowledge that reduces vulnerability.

Enable local communities to devise climate-smart, tree-based, good adaptation practices in collaboration with beneficiaries of the environmental services (e.g. downstream users) who will co-invest to ensure benefits.

Integrate gender-responsive, culture-sensitive, climate-change mitigation and adaptation actions with improved livelihoods for smallholding farmers into mainstream policies and programmes.

## RESEARCH QUESTIONS

- 1 What are roles of multifunctional landscapes in providing ecological, social and economic buffers for climatic shocks?
- 2 How can smallholder farmers and environmental services' users co-invest to ensure both environmental and livelihood benefits from climate smart tree-based systems?
- 3 How is farmers' vulnerability, exposure, sensitivity and adaptive capacity to changing climatic patterns in the target region?

## RESEARCH APPROACHES

Vulnerability assessment of landscape, societal and human capacities to adapt to climate change across different spatial scales using the Capacity Strengthening Approach to Vulnerability Assessment (CASAVA) framework.

GIS analysis to map land use changes and communities vulnerable to climate risks and hot spots.

Modeling climate variability with changes in landscape for understanding buffering roles of landscape in coping with climate risks.

Statistical analysis to correlate climate variability, climate hazards with changes in farming practices and landscape at the household level.

## EXPECTED OUTPUTS AND IMPACTS

Local solutions on how to cope with climate risks, reduce vulnerability and benefit from mitigation are available for female and male smallholders.

Female and male smallholder farmers, who perform well in mitigating climate change, benefit from external public and private funding and from their local actions in adapting to climate change.

Capacity of stakeholders increased and robust information becoming available in mainstreaming smallholders' tree-based farming systems for climate-change mitigation and adaptation.

