

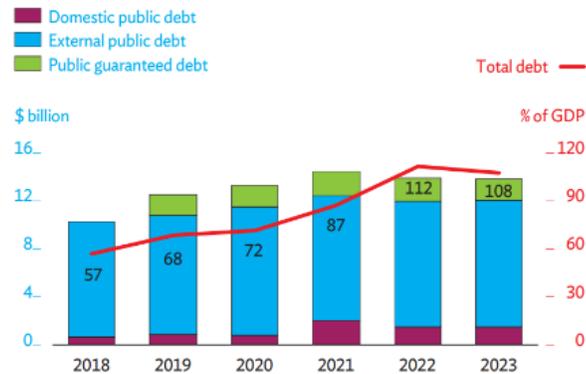


Lao PDR Sustainable Agrifood Systems Sector Project

Presentation Deck for
Seminar on Nature-based Solutions for
Climate Change Adaptation
~Toward Private Sector Engagement~

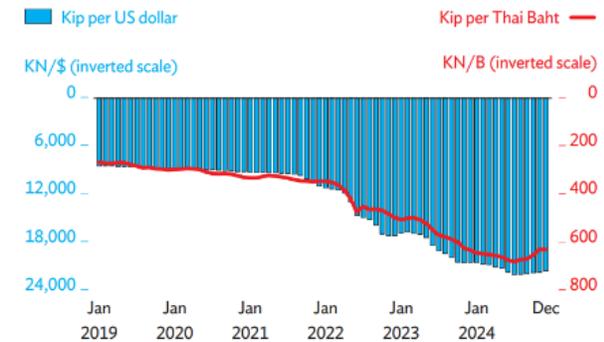
Macroeconomic trends

Public and Public Guaranteed Debt



GDP = gross domestic product.
Source: Ministry of Finance.

Kip Depreciation

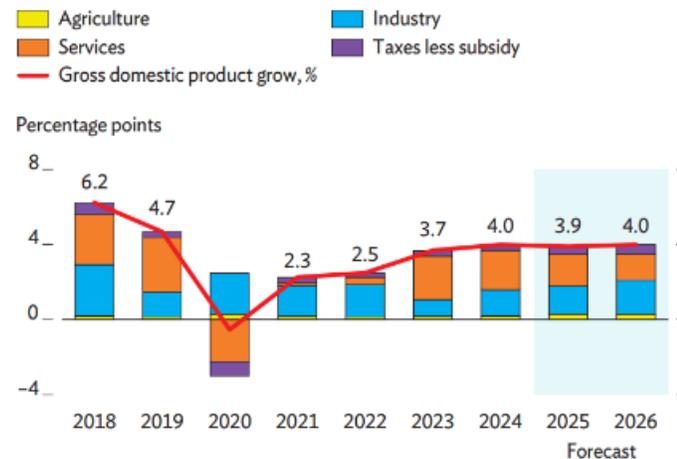


US = United States.

Note: Based on the average rate of the kip per US dollar and Thai baht at the commercial bank official rate.

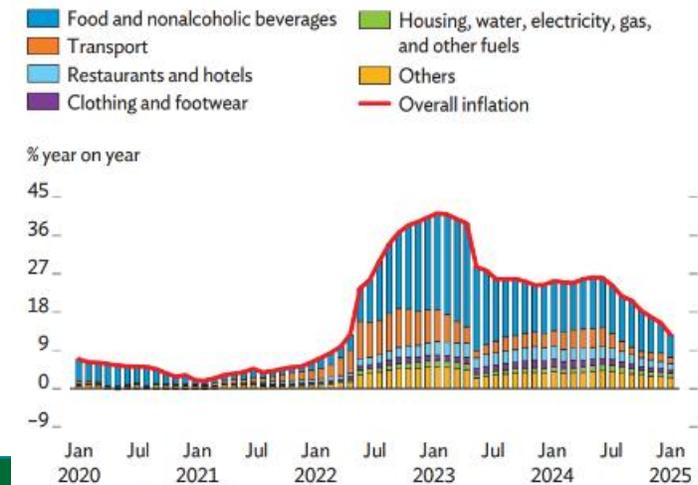
Sources: Bank of the Lao PDR; Asian Development Bank estimates.

Growth



Sources: Lao Statistics Bureau; Asian Development Bank estimates.

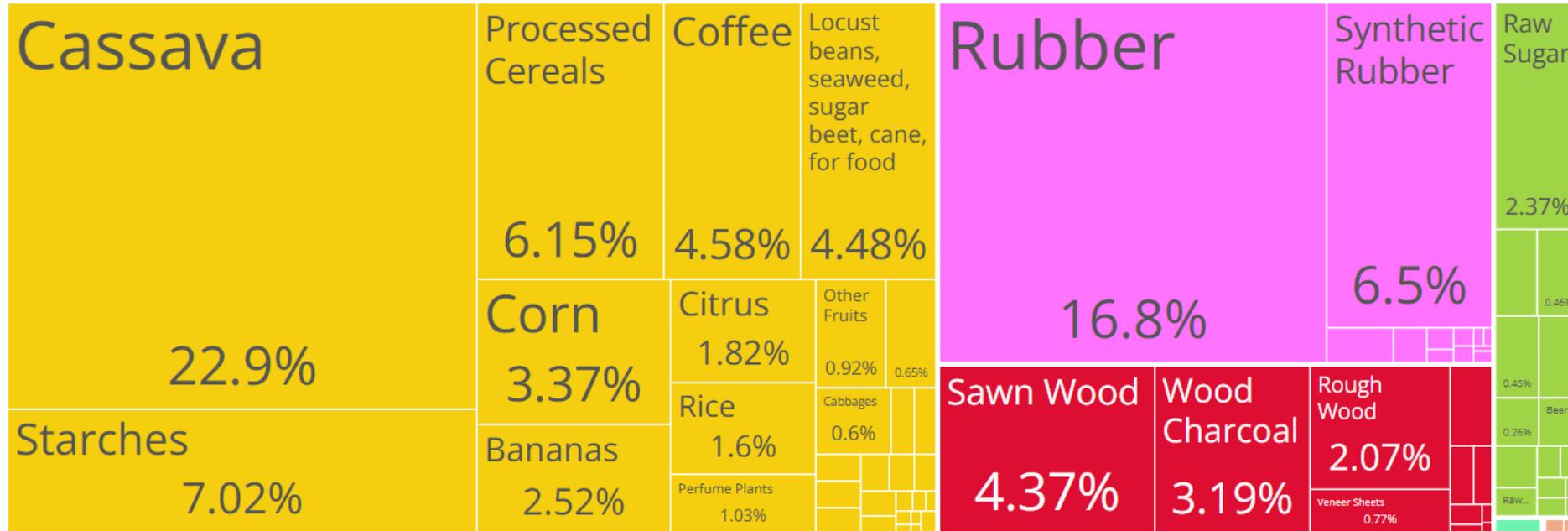
Inflation



Source: Lao Statistics Bureau.

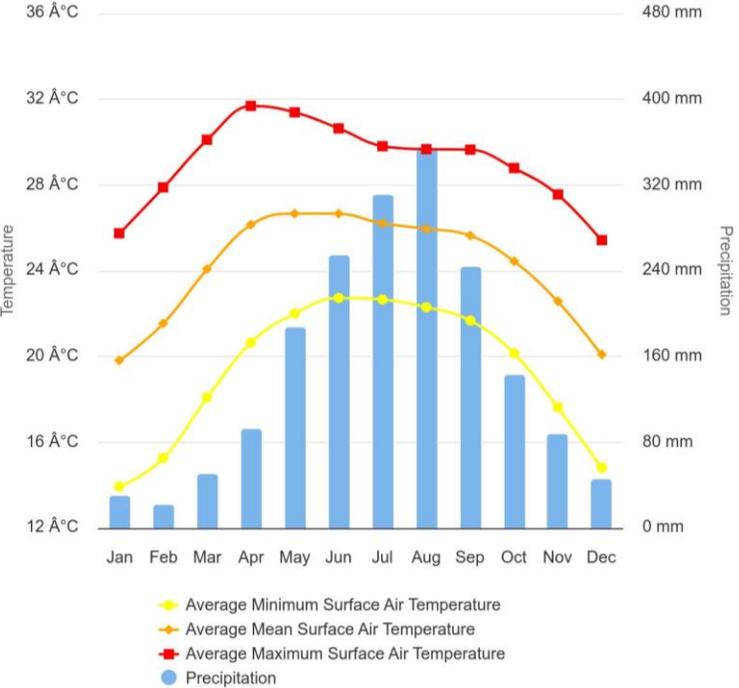
Agriculture exports

Lao PDR Agriculture Exports, 2023 – about \$1.4 billion

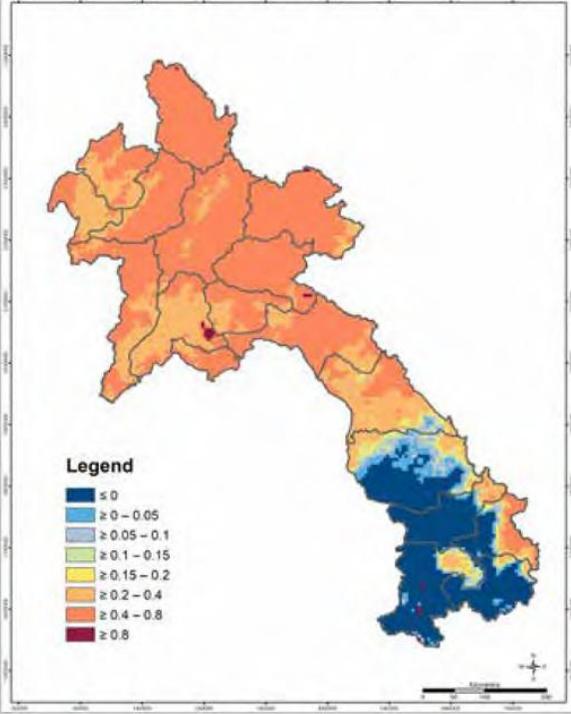


Current climate and trends

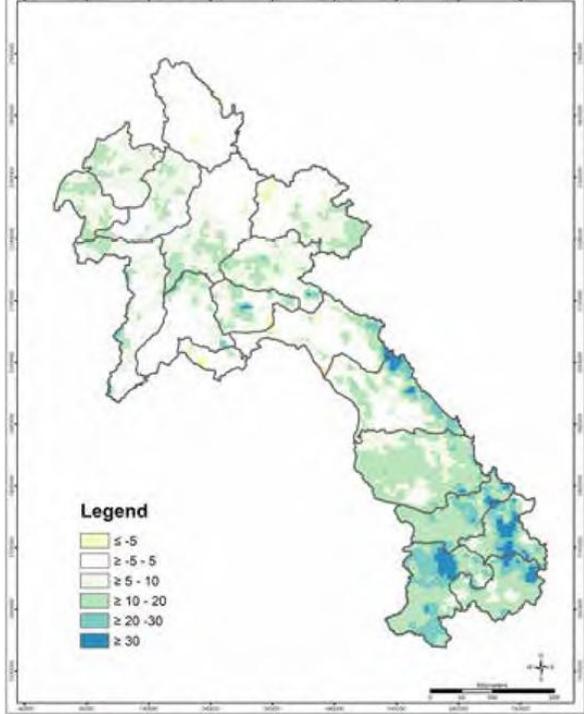
Climate



Trends in Temperature



Trends in Rainfall



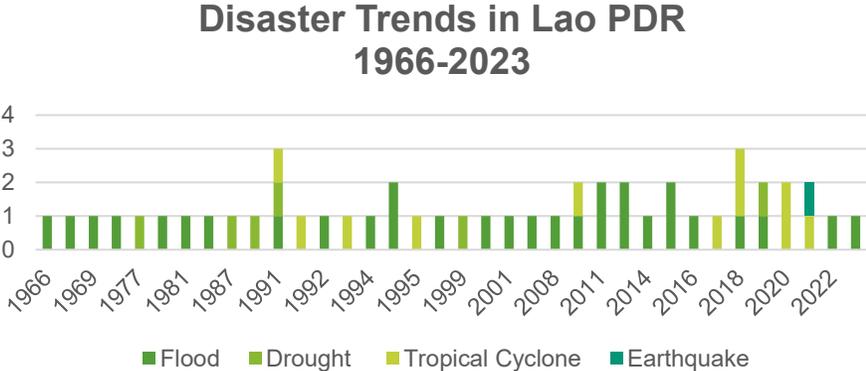
Tropical climate with high spatial and temporal variability



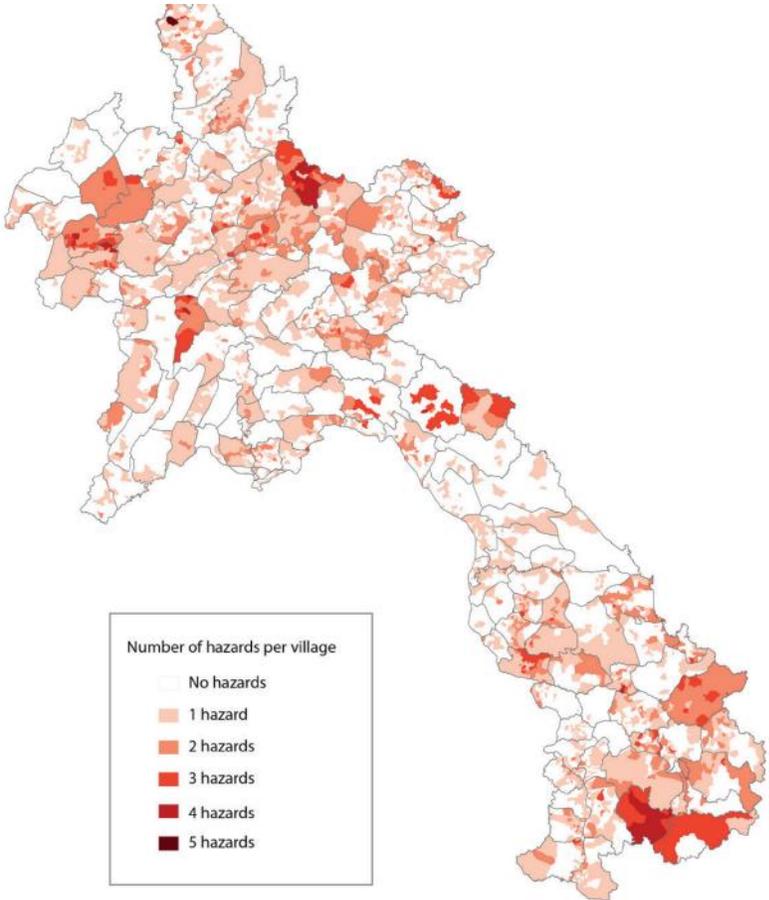
Sources:
Climate Change Knowledge Portal
FAO

Climate hazards and trends

Increase in frequency of hazards



Geographic distribution of hazards in 2019



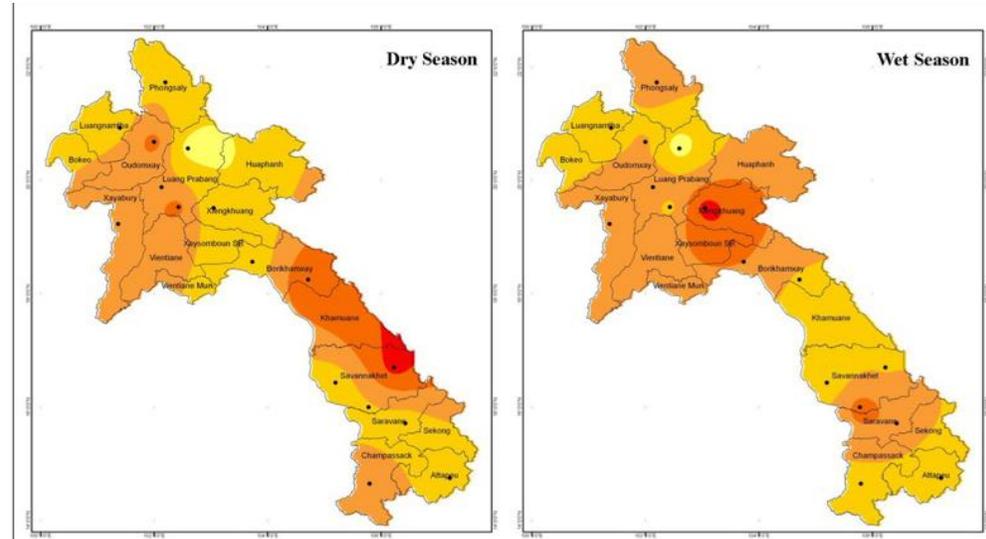
Climate hazards and its impacts

Floods



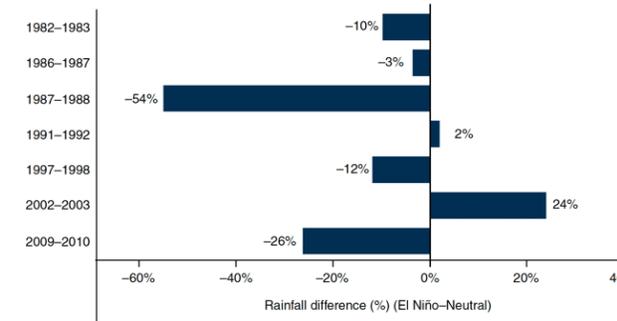
- Prone to riverine floods along Mekong and major river basins.
- Severe flash flood events due to heavy rainfall events and storms

Moderate to extreme drought susceptibility by season



- Prone to droughts in both seasons
- Flash drought during wet season
- Severe hydrological drought every 10 years

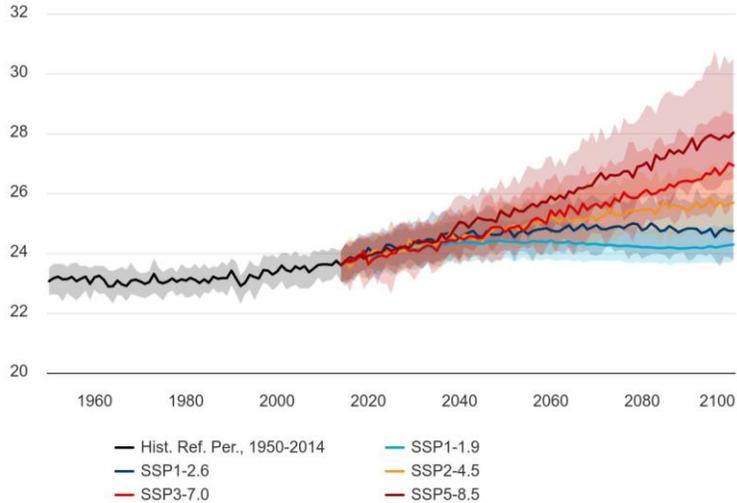
ENSO impacts



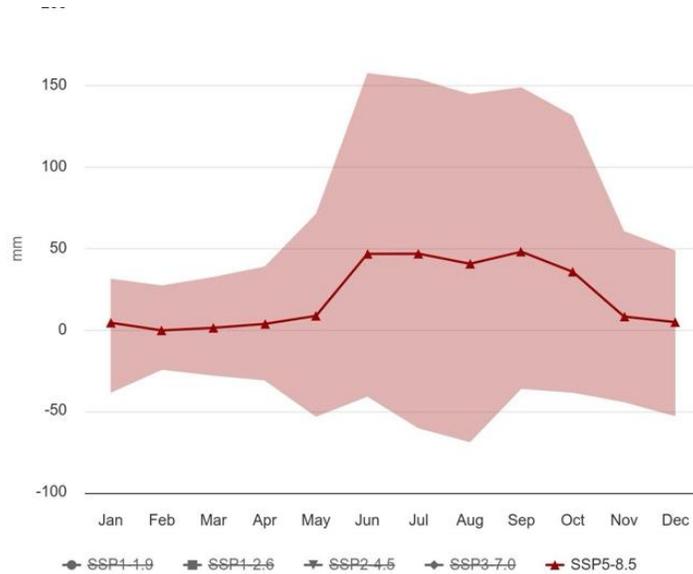
- Floods also associated with El Niño and La Niña events
- Droughts also associated with El Niño events

Climate change scenarios and predictions

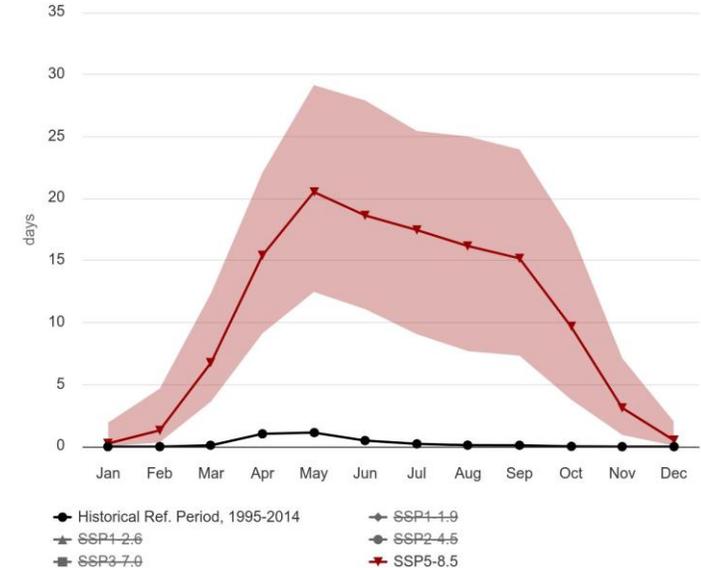
Increase in average temperatures



High uncertainty in seasonal rainfall



Heat index >35°C

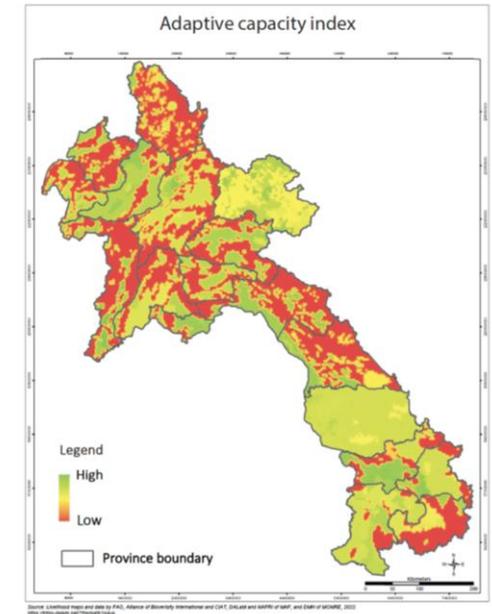
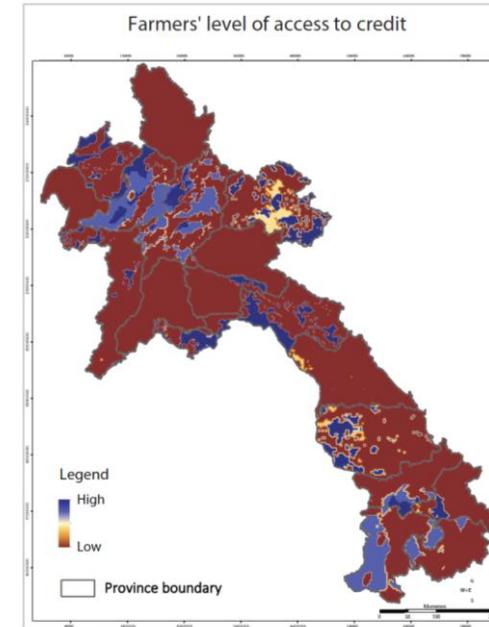


Under all climate scenarios, high confidence in (i) increase in surface temperatures; (ii) high uncertainty in precipitation events and in seasonal rainfall and (iii) increase in heat index >35°C resulting in increased frequency and severity of climate events across the country.

Increased temperature will result in a heat stressed environment impacting lives and livelihoods of the poor.

Exposure and vulnerability to climate risks

- **High climate vulnerability:** Economy reliant on natural resources and rainfed agriculture (mostly single rice crop); floods cost ~2% of GDP annually, droughts ~3.5%.
- **Low resilience of farmers:** Small farmers—especially women—face high risk amid limited adaptive capacity and weak extension services.
- **Structural constraints:** Low productivity, limited diversification and value addition, weak value chains, limited infrastructure, and poor access to markets and services.
- **Food and environmental stress:** Persistent food insecurity and nutrition challenges alongside unsustainable practices and environmental degradation.
- **Climate risks to crops and nutrition:** Key crops (rice, maize, cassava, coffee) may become marginal, with seasons disrupted, worsening malnutrition.
- **Results:** Low productivity, little value addition, and increasing climate and environmental vulnerability



Proposed solutions

Expected impact

Food security and nutrition improved, and agriculture exports increased in a climate resilient manner

Expected outcome

Climate resilient and gender-sensitive nutritious food production and agrifood value addition increased

Output 1

Smallholder agriculture improved in a nutrition-sensitive and climate resilient manner

Output 2

Commercial export-oriented agriculture improved in a climate resilient manner

Output 3

Small-scale climate resilient value chain infrastructure developed

Output 4

Food safety certification upgraded

Development solutions

Development methodology based on sustainable financial services, privatized technical advisory services, productive infrastructure and food safety certification to facilitate results at scale while minimizing incremental public debt pressure and sustaining the environment.

Key elements of the methodology applied:



Sustainable financial services through banks and MFIs (almost two-thirds of project cost)



Commercial approach – no grants to farmers or agribusinesses



Privatized technical advisory services to support productivity gains



Productive infrastructure to improve production, connectivity, market links



Food safety certification to facilitate exports



Nature based solutions, climate resilience and ecosystem stability integrated in all activities

Output 1: Smallholder access to financial, technical and nutrition services improved in a climate resilient manner

Through Lao Access to Finance Fund (LAFF) supported by TA
Fund flow: BOL → Partner Financial Institutions → Smallholders

Financial services

- LAFF, apex financial institution of Bank of Lao PDR, is sustainable (market terms; no subsidy), well-performing (low PAR; interest covers costs/risk) and transparent (private sector auditors).
- Partner financial institutions are commercial banks and MFIs.
- Small loans to small farmers and microentrepreneurs (50% women).
- National coverage; all viable agriculture sector activities are eligible.
- Training on product development, agriculture lending, digitalization.

Technical services

- Climate smart technical advisory services, on-farm demonstrations
- Delivered by contracted service provider
- Improve skills, productivity, resilience, marketing of small farmers

Nutrition services

- Contract with WFP to improve nutrition in 140 villages
- Behavior change in hygiene/sanitation, infant/young child feeding, sustainable agriculture, nutritious food access, and gender roles.
- Strengthening nutritional levels for better climate adaptation as healthier communities have greater resilience.

Output 2: Agricultural enterprise value chains strengthened in a climate resilient manner

Through MSME Promotion Fund (MSMEPF) supported by TA
Fund flow: MSMEPF → Partner Financial Institutions → MSMEs

Financial services

- MSMEPF, apex financial institution, is under MSME Promotion Agency of Ministry of Industry and Commerce; working through commercial banks and MFIs.
- Larger loans to MSMEs (50% women borrowers).
- National coverage; all viable agribusinesses are eligible for financing.
- Training on product development, agriculture lending, digitalization.
- Strong private sector focus, seeking responsible investors.

Technical services

- Provide technical advisory services to farmers and enterprises
- Strengthen value chains: resilience, lower emissions, collective marketing, contract farming
- Upgrade post-harvest/processing, food safety & traceability, enterprise business skills, and export market diversity and access
- Supported by CIAT, Lao Coffee Association, private advisors
- Major role for Lao National Chamber of Commerce and Industry



Tea



Coffee



Sustainable cassava



Durian



Bamboo

Output 3: Small-scale climate resilient infrastructure developed in support of target value chains

Scope

- Where critically required to upgrade export commodity cluster, supply chain productivity, logistics, climate resilience, profitability
- Community-based, climate risk driven approach and consultation with supply chain actors to select subprojects
- Technical support to communities on design and supervision; community-based O&M to be agreed in advance.

Type

1. Climate resilient irrigation:

- small dams or diversion weirs for pumped or gravity-fed micro-irrigation with water use efficiency for high value commodities
- managed by water users' groups, with drip irrigation financed by owners who can apply for credit

2. Climate resilient rural connectivity roads:

- (i) minimize disturbance of roadside vegetation; (ii) apply nature-based solutions; (iii) improve drainage; (iv) incorporate multi-hazard resistant design.

Output 4: Food safety certification upgraded

MAF laboratory upgrade



MAF laboratory upgraded to **international standard** (ISO 17025) – working with partners such as **JICA**



International accreditation will allow laboratory to issue **internationally-recognized food safety certification**



Capacity building will be provided



Proposed nature-based solutions

Sustainable land & soil management

- Contour planting on slopes with permanent hedgerows
- Leguminous cover crops to fix nitrogen, sequester carbon
- Mulching & ground cover using crop residues
- Minimum tillage to preserve soil structure and retain water

Sustainable forest management

- Managed bamboo forests for regrowth, soil, carbon
- Sustainable bamboo harvesting to maintain regeneration
- Geo-tagging bamboo to monitor sustainable harvests

Agroforestry

- Shade-grown coffee/tea for temperature, biodiversity
- Agroforestry models combining trees, crops, and livestock
- Sloping Agricultural Land Technology

Integrated pest management

- Biological pest & disease control, resistant varieties
- Eliminate broad pesticides for cassava, coffee, tea
- Surveillance systems for climate-induced outbreaks

Proposed nature-based solutions

Climate resilient crops/varieties

- Clean planting materials and disease-free seeds
- Grafting (coffee) for heat, drought, pest, disease resilience
- Introduction of climate-tolerant varieties

Organic and biological soil enhancement

- Compost, manure, biochar, organic fertilizer use for soil carbon and fertility
- Application of biogas slurry as organic fertilizer

Water, microclimate, ecosystem regulation

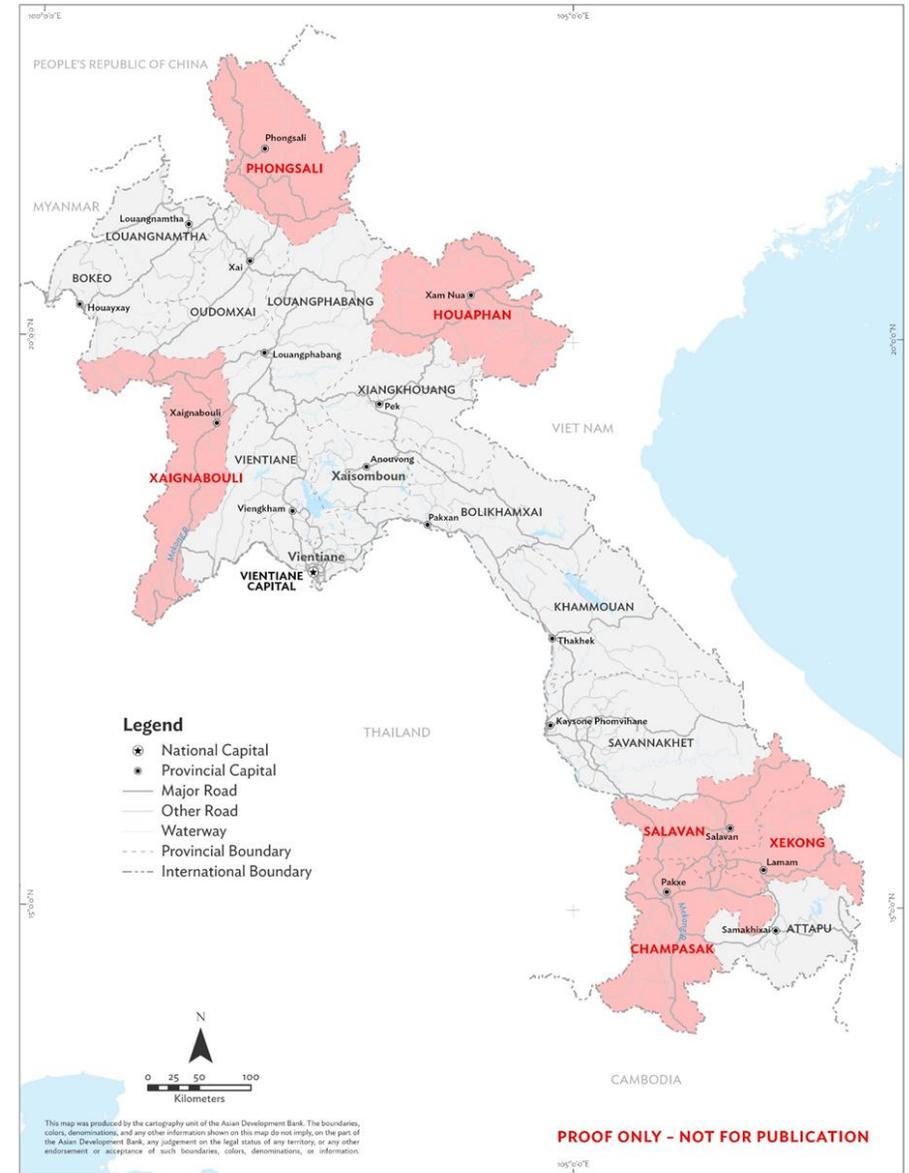
- Shade structures for livestock to reduce heat stress
- Raised beds/ridges in flood areas to prevent waterlogging
- Leguminous cover crops/mulching to stabilize soil moisture and regulate microclimates

Pollination and biodiversity support

- Beehives in orchards for natural pollination
- Promotion of beneficial insects and birds through diversified shade systems

Nationwide project but with infrastructure and technical advisory package in selected provinces

Province	Commodities
Champasak	Coffee; cassava; durian
Sekong	Coffee; cassava; durian
Salavan	Coffee; cassava; durian
Phongsaly	Tea; bamboo
Houaphan	Tea; bamboo
Xayaboury	Tea; cassava; bamboo



Implementation arrangements

Executing agency

MSME Promotion Agency of Ministry of Industry and Commerce (MOIC)

Implementing agencies

- MSME Promotion Agency of MOIC
- Bank of Lao PDR

Implementation period

September 2025 – December 2030

Project cost

Total cost: \$63m

- ADB concessional loan of \$30m
- AIF concessional loan of \$10m
- EU-ACGF concessional loan of \$10m
- Asian Development Fund grant of \$5m
- Community Resilience Partnership Program grant of \$8m
- *Standby additional financing of \$30m in 2028*



Thank you

Team Leader:

Omer Zafar

Principal Natural Resources and Agriculture Specialist

SG-AFNR

ozafar@adb.org