Climate risk assessment for agricultural value chains in Cambodia

Country experience with a project preparation “Public-Social-Private Partnerships for Ecologically-Sound Agriculture and Resilient Livelihood in Northern Tonle Sap Basin (PEARL)” to GCF

Food and Agriculture Organization of the United Nations

Webinar

Scaling up Climate Ambition on Land Use and Agriculture through NDCs and NAPs (SCALA)

7 September 2021 | 13:00-14:15 CEST

PEARL Project

Climate change impacts:

- Shorter/more intense wet season incl. flash floods
- Longer/more intense dry season incl. droughts
- Increased temperatures
- Increased pest and disease outbreaks

Present

NTSB smallholders' livelihoods

PEARL aims to catalyzes paradigm shift towards resilient, diversified, higher-value and sustainable agriculture

Rice, mango, cashew and vegetable

Critical period ~ 2030

Future

After PEARL

- Climate resilient, diversified, and higher-value practices adopted
- Options for private sector investment increased
- Resource access and adaptive capacity increased
- Enabling environment created

BAU Scenario

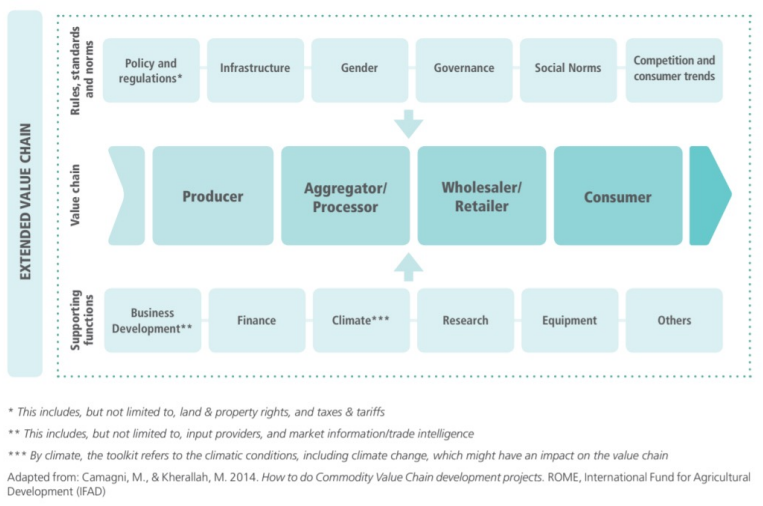
- Increased crop loss and damage
- Reduced yields/farm income (esp. rice based)
- Increased food insecurity
- Little to no adaptive capacity

Climate resilience assessment

Adopted Value Chain Approach to Assess Climate Resilience

- Mapping the value chain
- Climate risk assessment and climate rationale aimed to identify climate impacts on all steps of the 4 value chains
- Identifying climate resilient interventions and investment options for climate resilient value chain transformation

Mapping the value chain



Source: FAO and UNDP. 2020

- Processed products, e.g. dried mango, mango ice cream
- Fresh mangoes:
  - Formal exports (Thailand, Korea, Singapore, China, EU, US etc.): 97,628 tonnes (10 percent)
  - Informal exports (Viet Nam and Thailand): 849,998 tonnes (90 percent)

EXPORT

RETAIL

Small retail shops, open air markets, street vendors, modern retailers/supermarkets

PROCESSING

Mostly at small scale: dried mango, pickled mango, mango ice cream mainly for domestic market, with some for export

AGGREGATION

Local small and medium collectors

Wholesalers, large traders and exporters (with packing house and processing facilities to local retail or export): 60 percent sourced from producers and 40 percent from local collectors

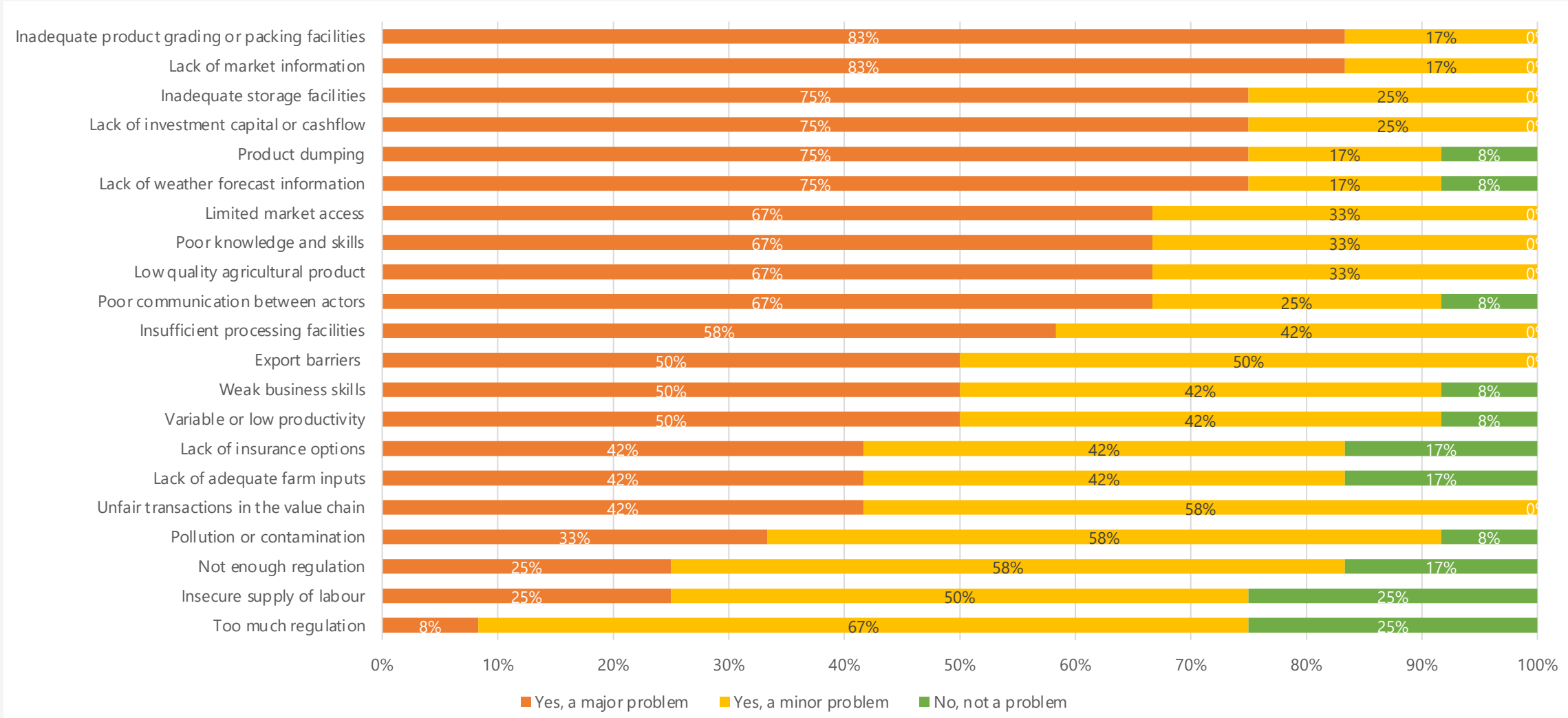
PRODUCTION

Small-, medium- and large- scale producers: 327,000 households
Cultivated area: 131,890 ha
Harvestable area: 93,099 ha
Production: 1.38 million tonnes

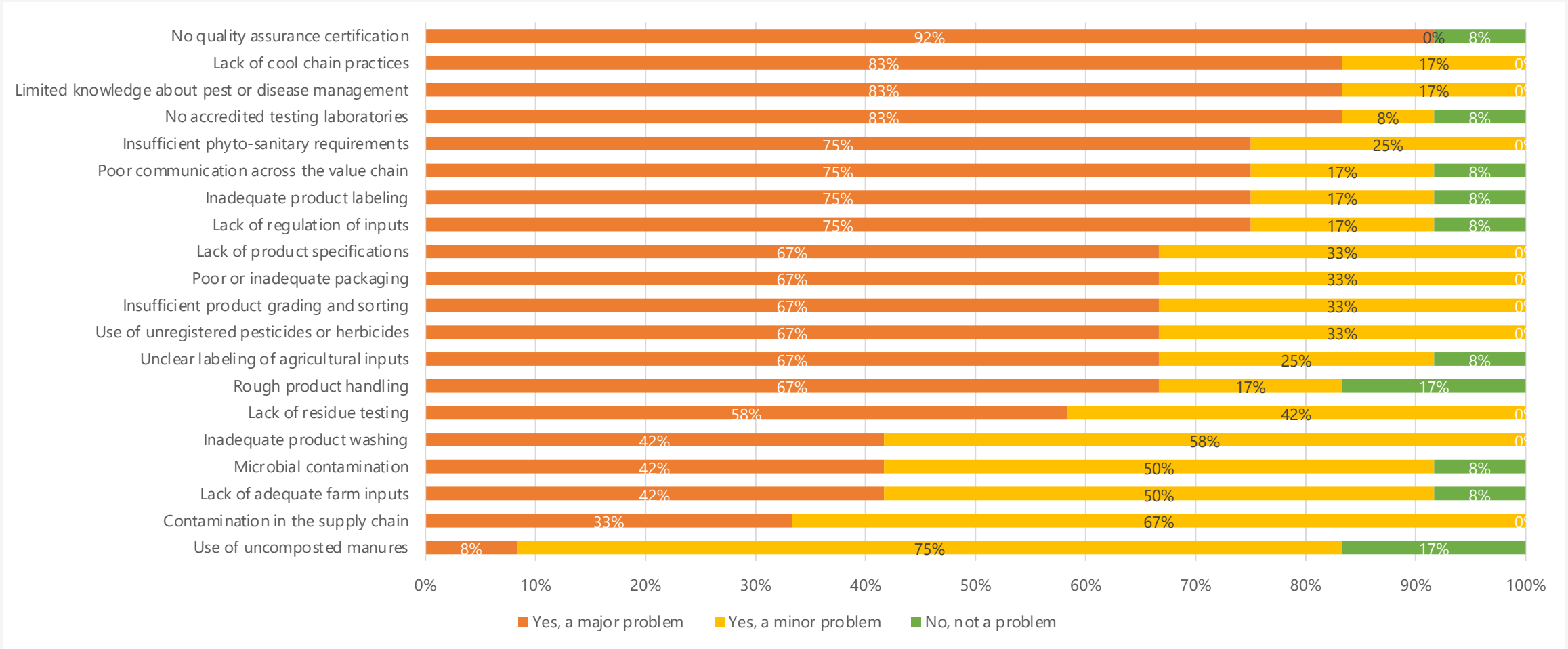
INPUT

Input importers → Input supplier/shops

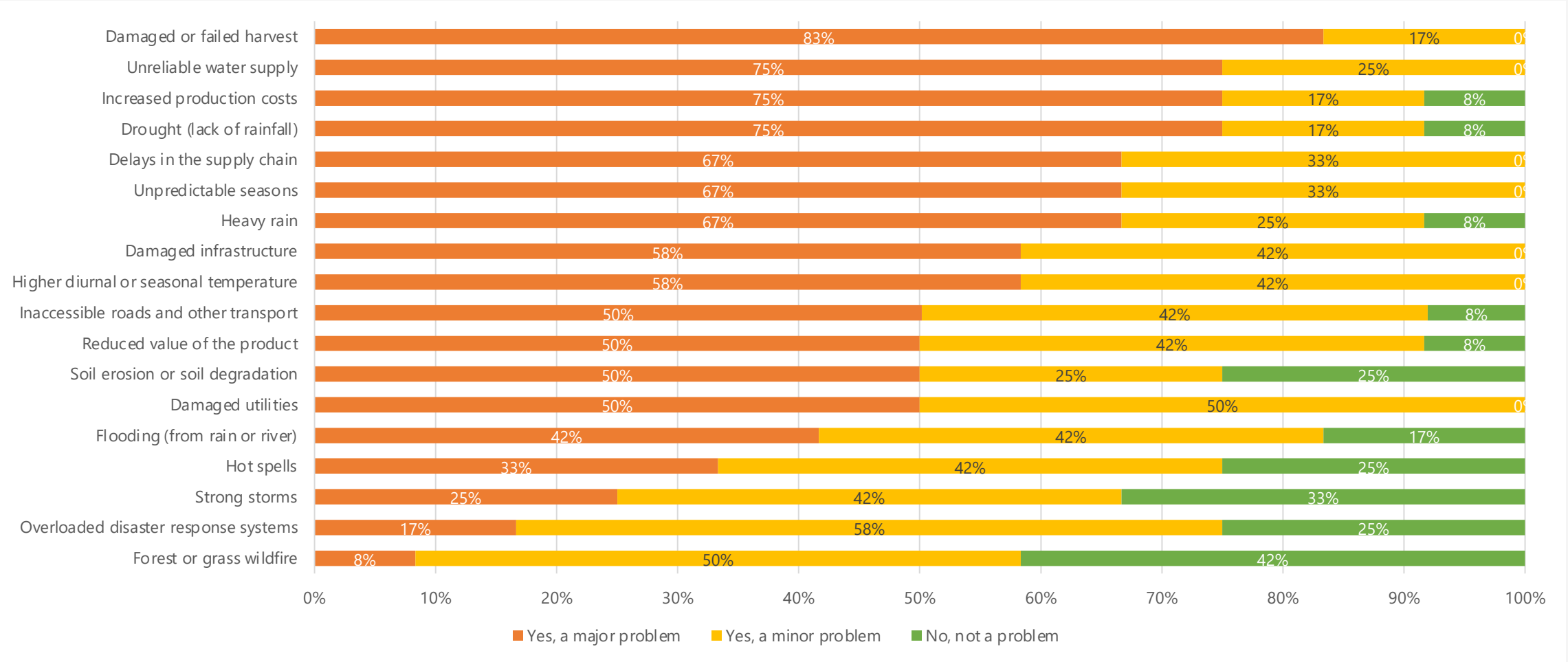
General problems in the mango value chain (e-survey)



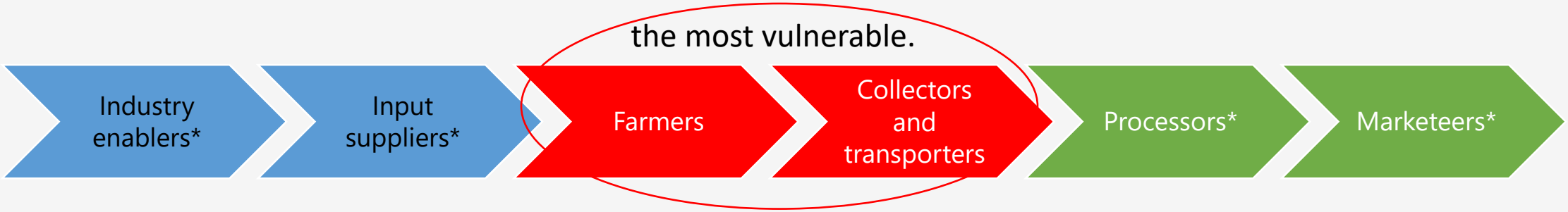
Food safety problems in the mango value chain (e-survey)



Climate related problem along mango value chain (e-survey)

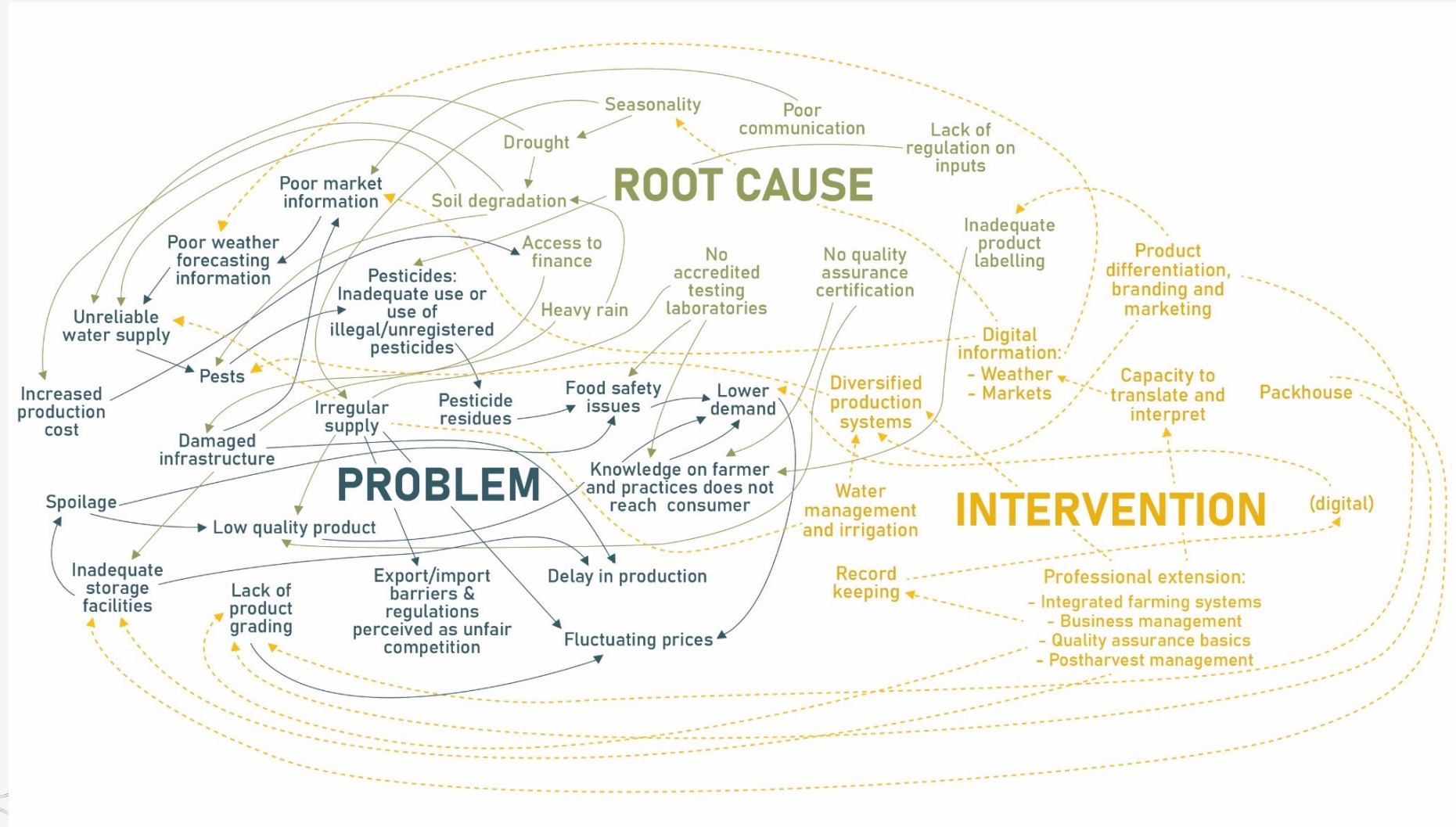


Climate risk assessment

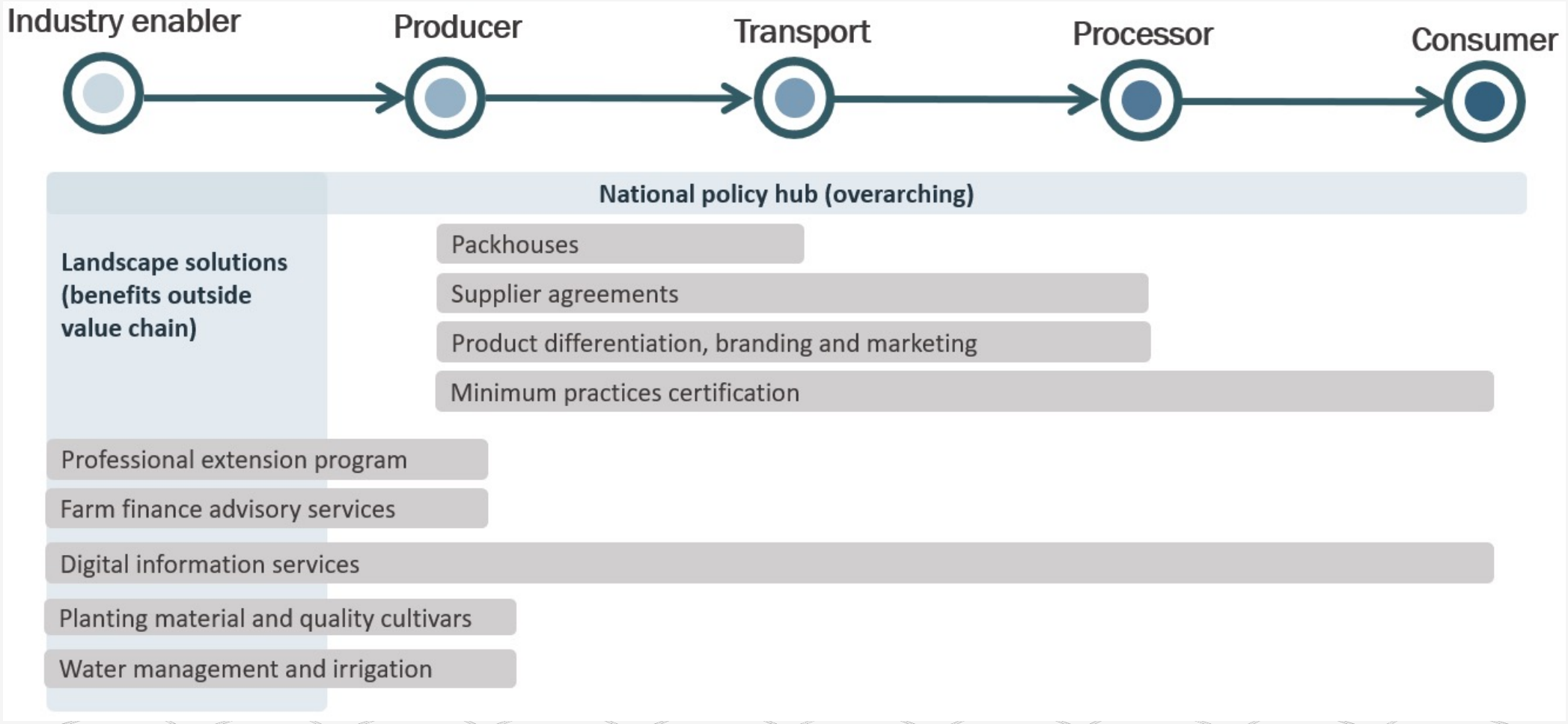


- Lack of weather forecast is a major problem confirmed by 75% of the participants.
- The climate risks posing major problems for mango: drought (75%), unpredictable seasons (67%), heavy rain (67%), increasing diurnal or seasonal temperatures (58%).
- The impact of climate risks on mango value chain: damaged or failed harvest (83%), increased production costs (75%), delays in the supply chain (67%), damaged infrastructure (58%), inaccessible roads (50%), reduced value of the product (50%), damaged utilities (50%).
- Extended drier and hotter periods, such as during El Nino, increases water demand and wildfire risks, as well as causes more pests (especially fruit fly and thrips)
- Increase pesticide application => food safety concern
- Changes in the rainfall intensity and duration can damage flowers (April-May) and fruit.

Key issues and possible breaking points for the mango value chain



Key measures for enhanced resilience to climate change, food safety and value addition for mango value chain



Key measures for enhanced resilience to climate change, food safety and value addition for mango value chain

Water management and irrigation, together with **digital technologies**, are highly applicable to building climate resilience in the mango value chain.

Digital technologies provide a significant opportunity to build highly accessible information services including weather forecasting with linkage to water management and irrigation, pest and disease alerts (linked to extension and advisory services) and market data.

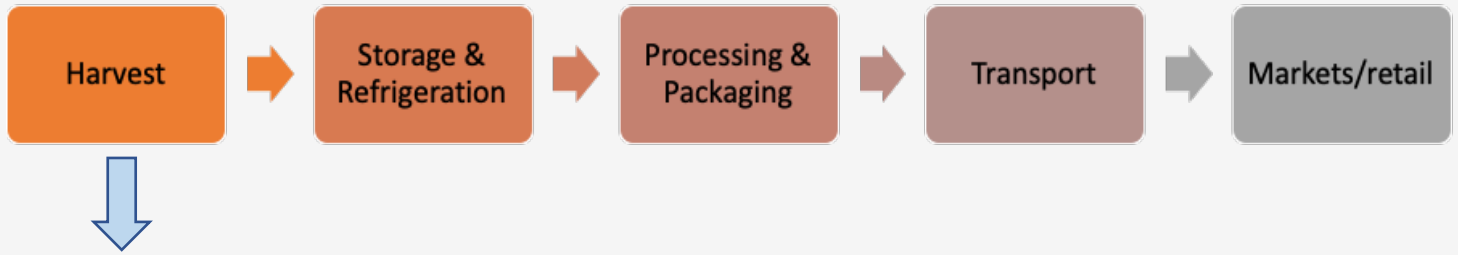
Packhouses need to be a priority for Oddar Meanchey mango, to provide postharvest aggregation and improve economies of scale for smallholders.

Product differentiation: Branding, packaging and certification.

Cluster of production and supplier agreement: Organize farmers into clusters, so they can better plan and monitor production schedules, ensuring reliability of supply and minimizing oversupply. Foster collaborative agribusiness partnerships (public-private-producer partnership- 4 Ps) through contract farming between producer groups and processors, wholesalers and exporters

Additional assessments

- Currently Assessing Climate Hazards and risks, Climate Services, and Climate Resilience Practices along Food Value Chain Steps building on previous works;
- Understanding climate risks along 4 target value chains;
- The survey was targeted to key stakeholders on climate risks and potential for climate services
- Identifying, and fine-tuning the climate resillient interventions



Climate Hazards	Climate Services	Climate Resilient Practices
Flooding and Drought	Real-time weather forecasts	- Adequate harvest equipment; - Training on harvesting methods and best timing.
Pests and diseases	Pest and disease alerts	- Earlier harvest; - Work hygiene and sanitation practices; - Immediate drying techniques.

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Thank you for your kind attention

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