



# Rice Post-Harvest Challenges and Opportunities in Tshopo, DRC

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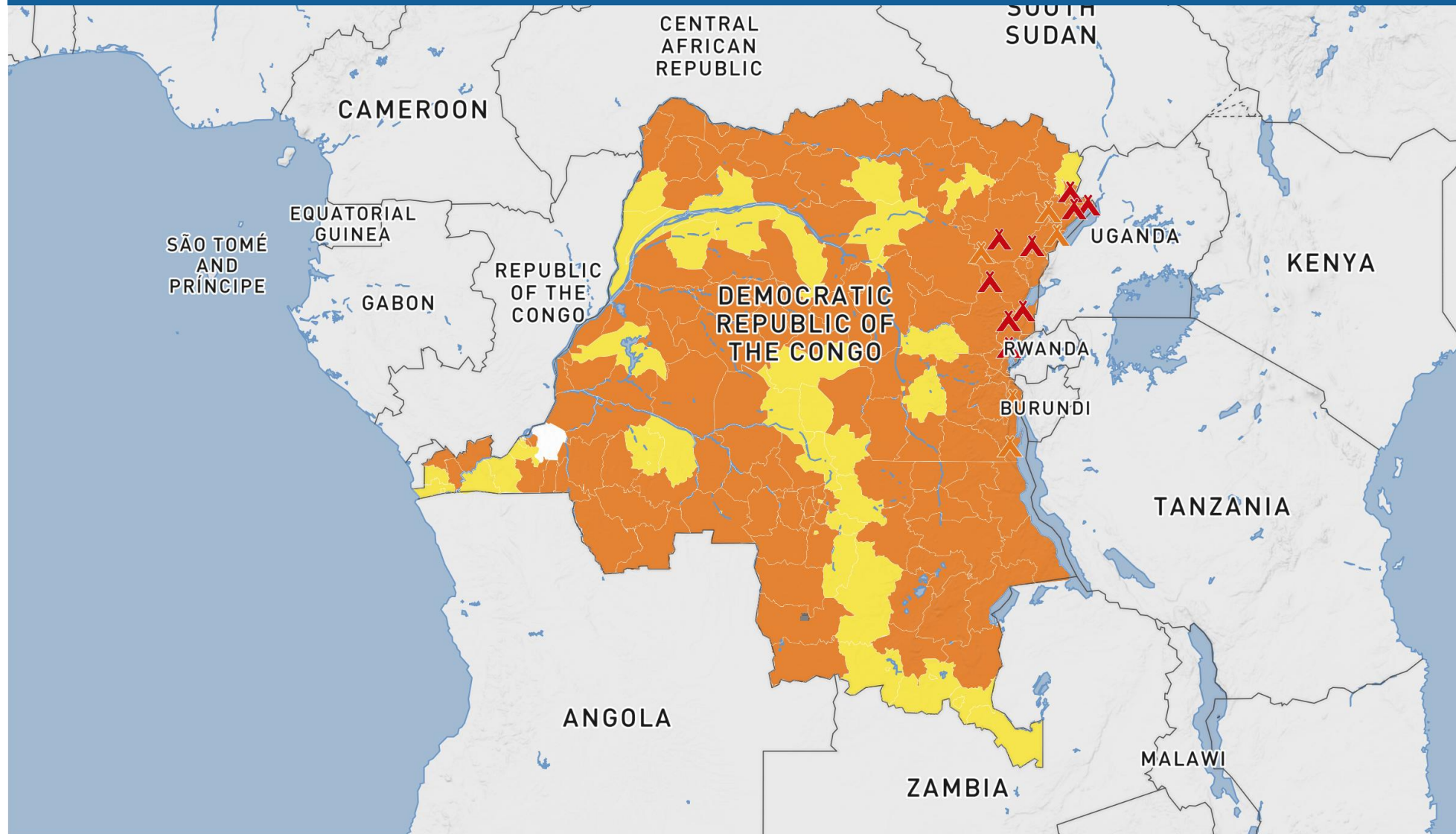
# Background and research questions



# Congo, the Democratic Republic of the

Acute Food Insecurity March 2025

Projected: Jan 2025 - Jun 2025



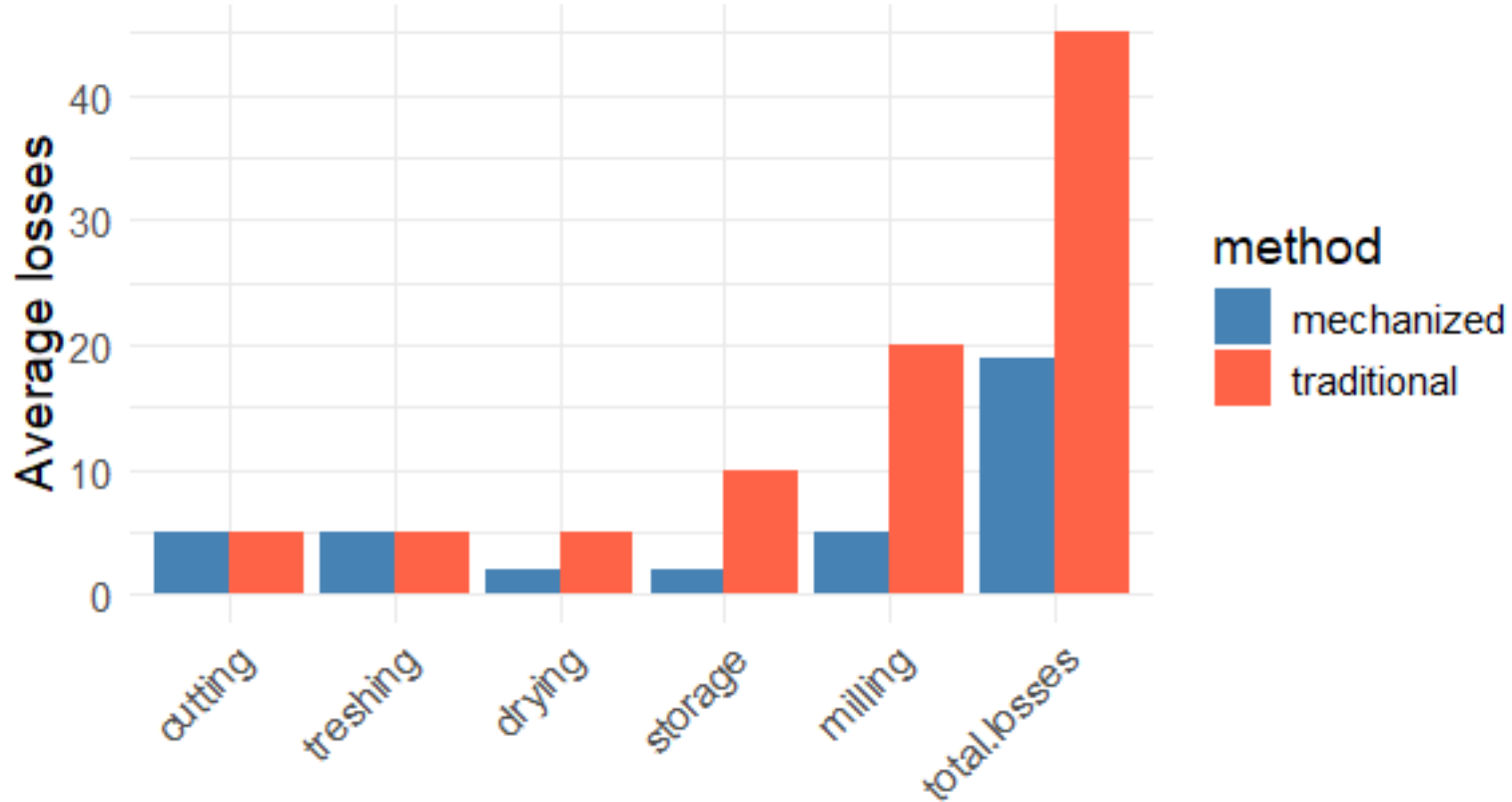
IPC Map Key: Acute Food Insecurity

1 - Minimal 2 - Stressed 3 - Crisis 4 - Emergency 5 - Famine Famine (with reasonable evidence) Areas with inadequate evidence Areas not analyzed

Disclaimer: The information shown on this map does not imply that the IPC and CH officially recognizes or endorses physical and political boundaries.

Source: Integrated Food Security Phase Classification

# Why does post-harvest matter during a food security crisis ?

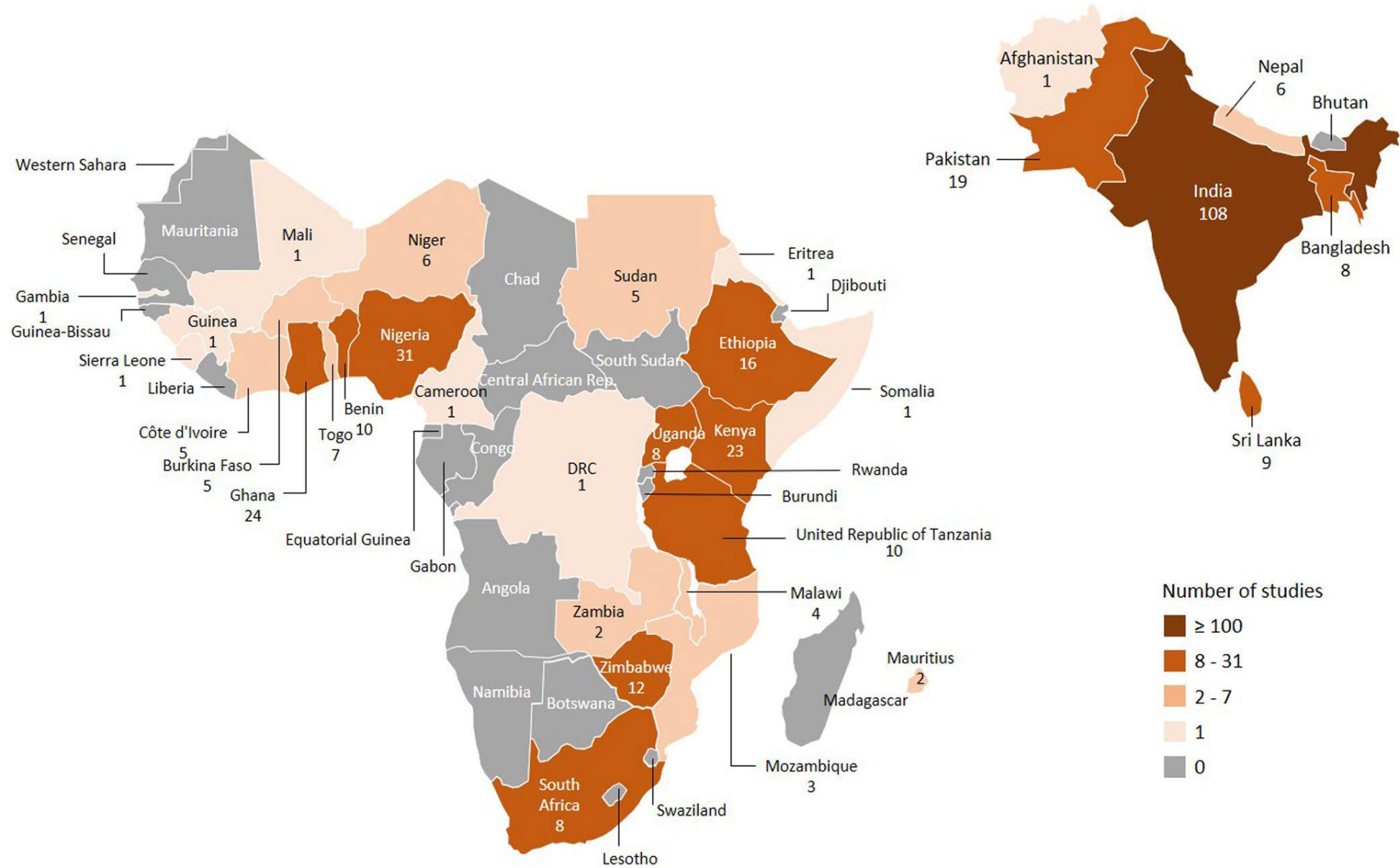


Quantitative losses in traditional vs mechanized post-harvest practices in South Asia

Source: Adapted from Hodges et al. (2010)

Shifting from traditional to modernized practices must be driven by

- Objective indicators
- Scalable and feasible projects
- Sustainability



The 334 postharvest loss reduction intervention studies shown by country.  
 Source: Stathers et al. (2020)

# Main research questions

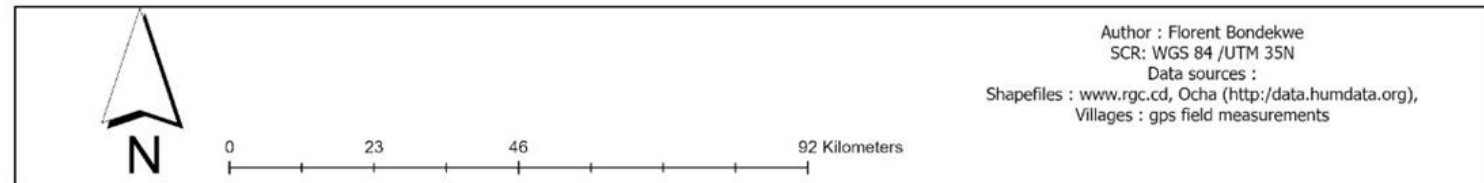
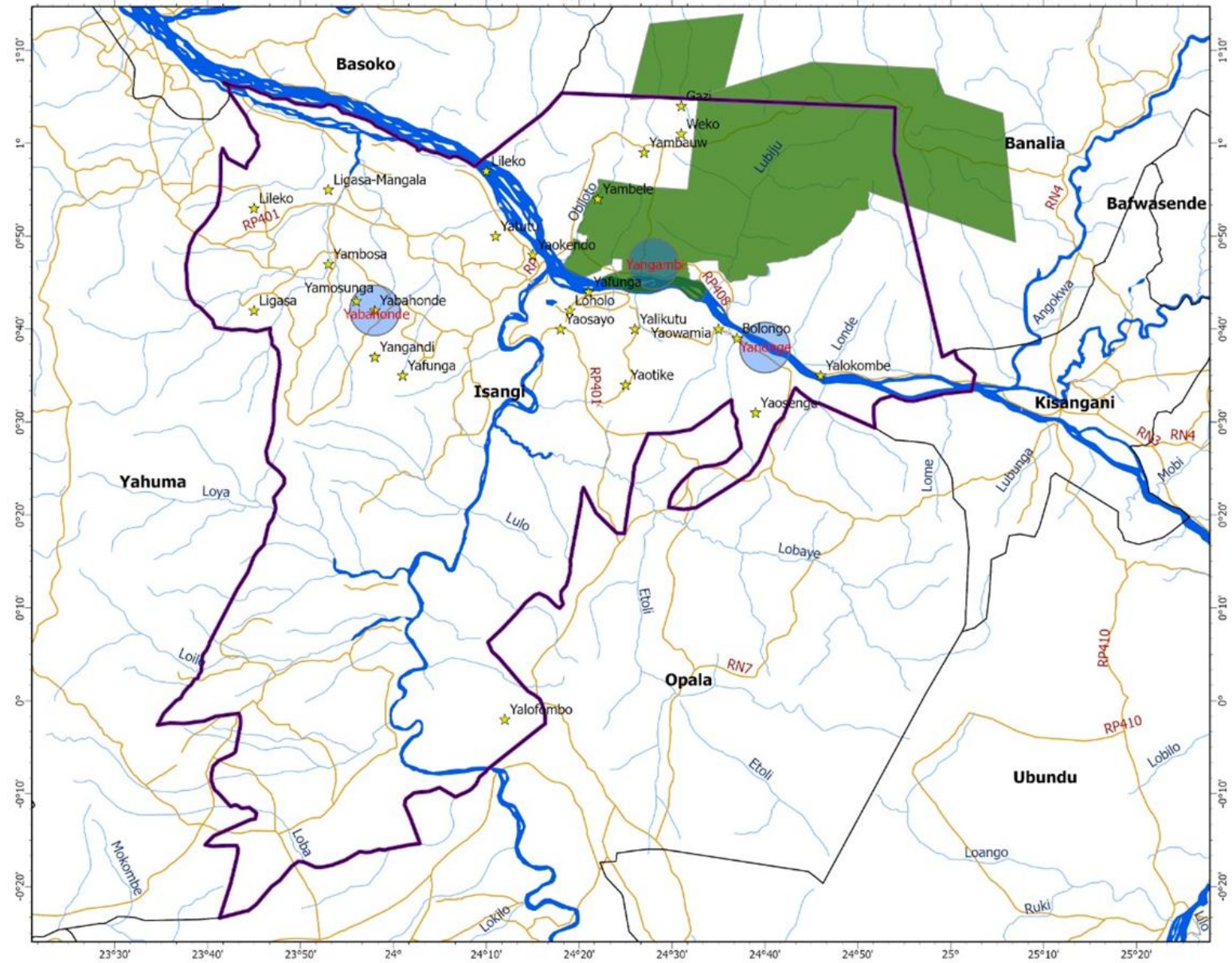
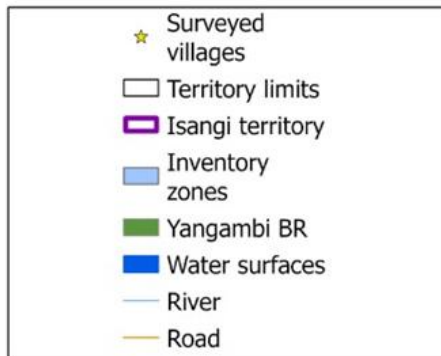
1. How do the farmers perceive their rice losses after harvest ?
2. How does the geographic location of the rice farmers alter the profitability of rice crops ?
3. How does the availability of necessary tools in production areas contribute to the protection of storages ?
4. What are the drivers that determine the choice of post-harvest agricultural practices among rice farmers ?
5. What parameters could be leveraged to improve post-harvest practices in the area ?

# Methodology

Semi-structured  
interviews  
N=99 Stratified random  
sampling

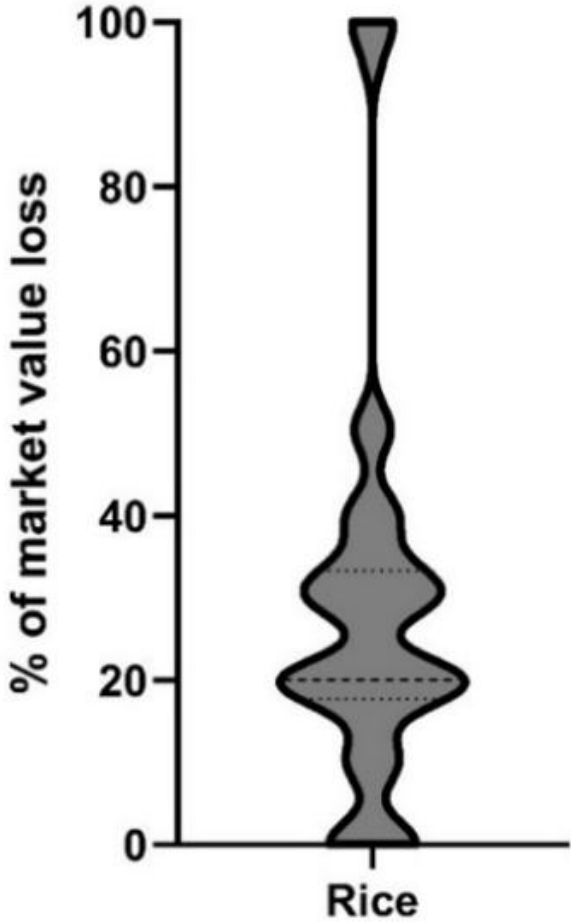
Focus groups  
N=20  
Purposive sampling

Forest inventory N=3  
Random sampling



Author : Florent Bondekwe  
 SCR: WGS 84 / UTM 35N  
 Data sources :  
 Shapefiles : www.rgc.cd, Ocha (<http://data.humdata.org>),  
 Villages : gps field measurements

# How do the farmers perceive their rice losses after harvest ? (1/2)

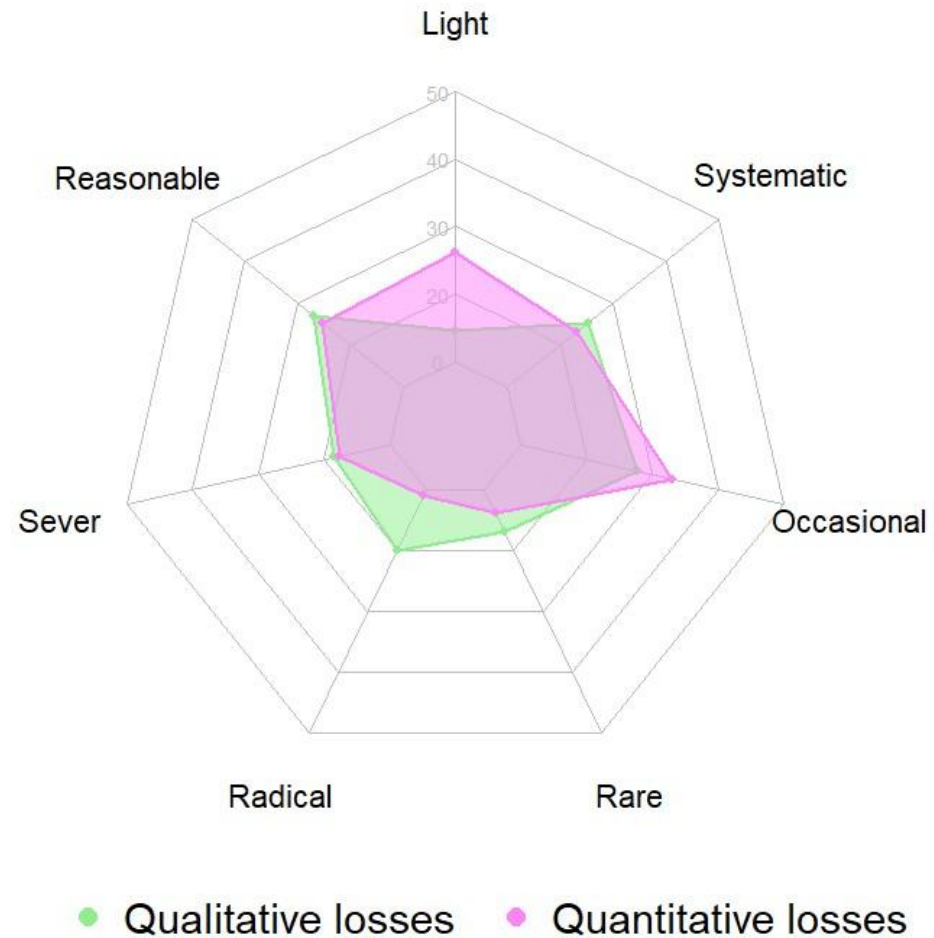


Distribution of rice market value losses



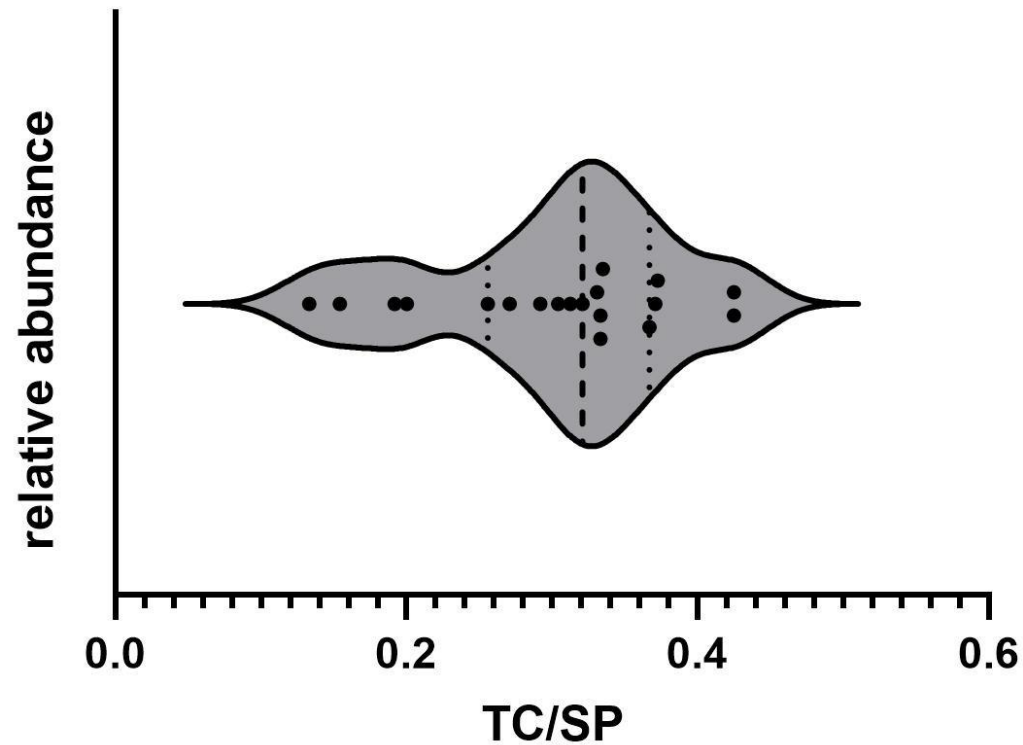
Damaged paddy rice

# How do the farmers perceive their rice losses after harvest ? (2/2)

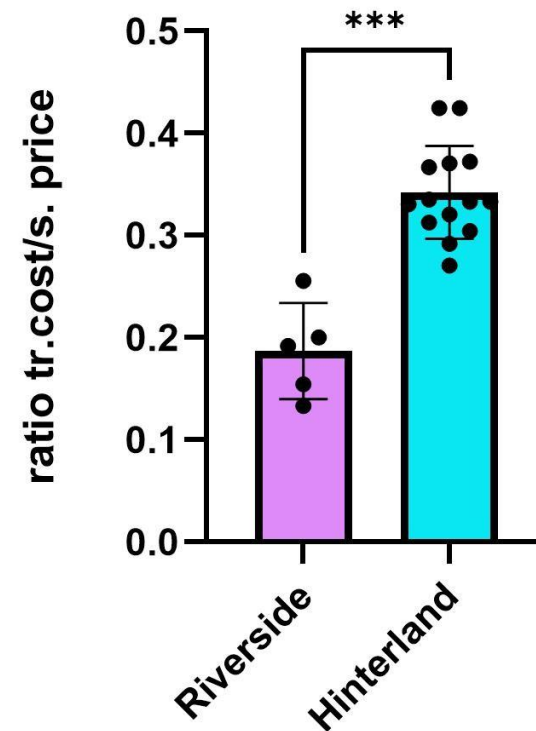


Perceived quantitative losses of stored rice      perceived qualitative losses of stored rice

How does the geographic location of the rice farmers alter the profitability of rice crops ?

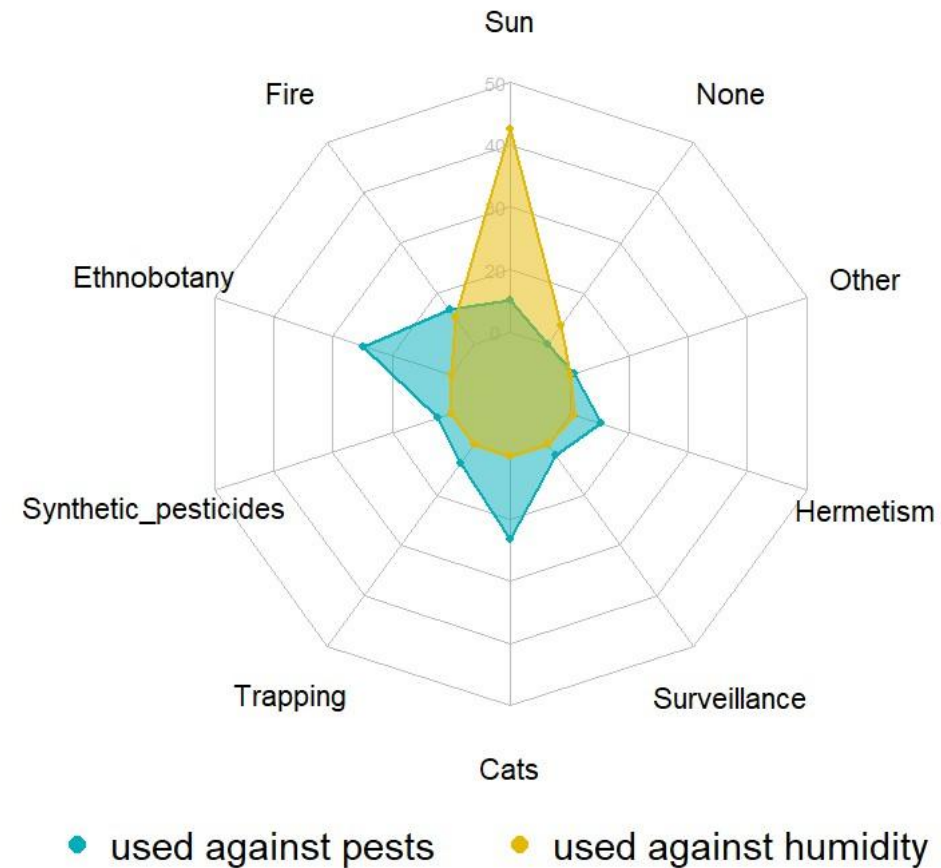


Distribution of transport cost to selling price ratio in Tshopo province, DRC



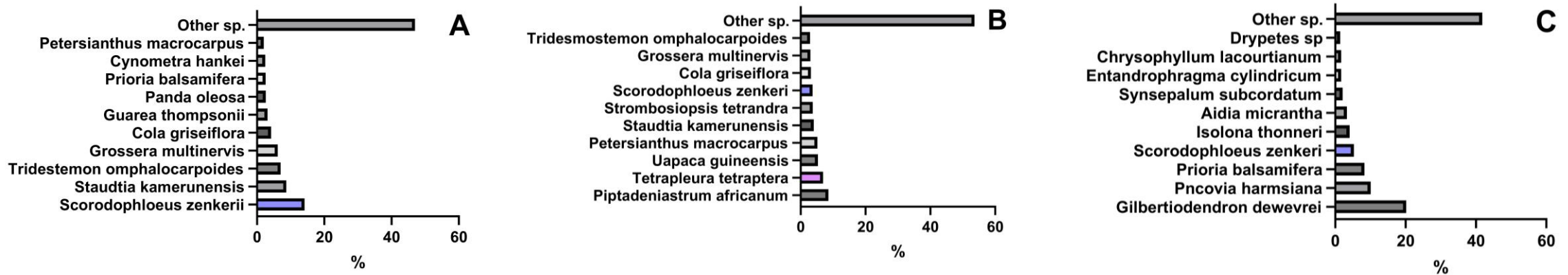
Riverside vs Hinterland transport cost to selling price ratio, t-test

How does the availability of necessary tools in production areas contribute to the protection of storages ? (1/2)



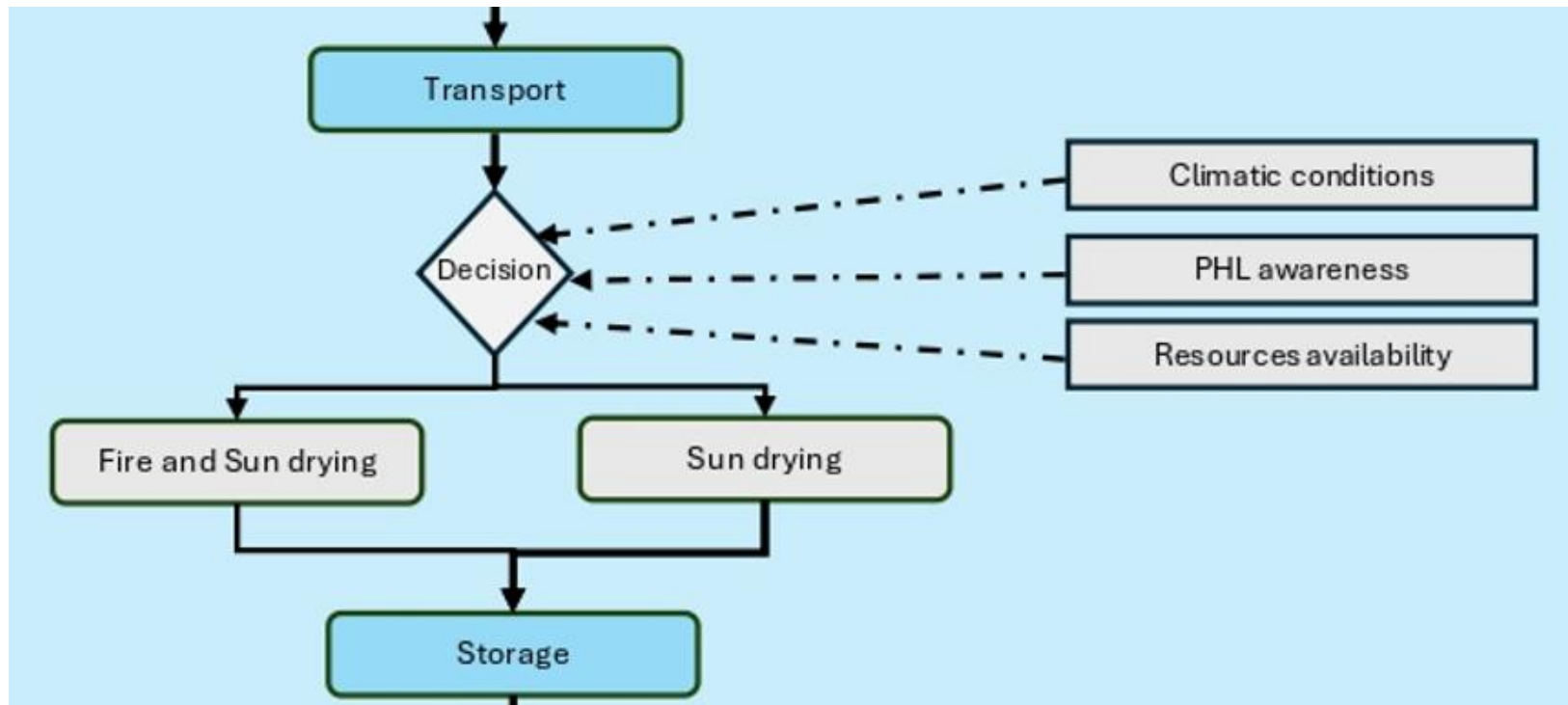
Radar chart of modes of protection used against humidity and pests

How does the availability of necessary tools in production areas contribute to the protection of storages ? (2/2)



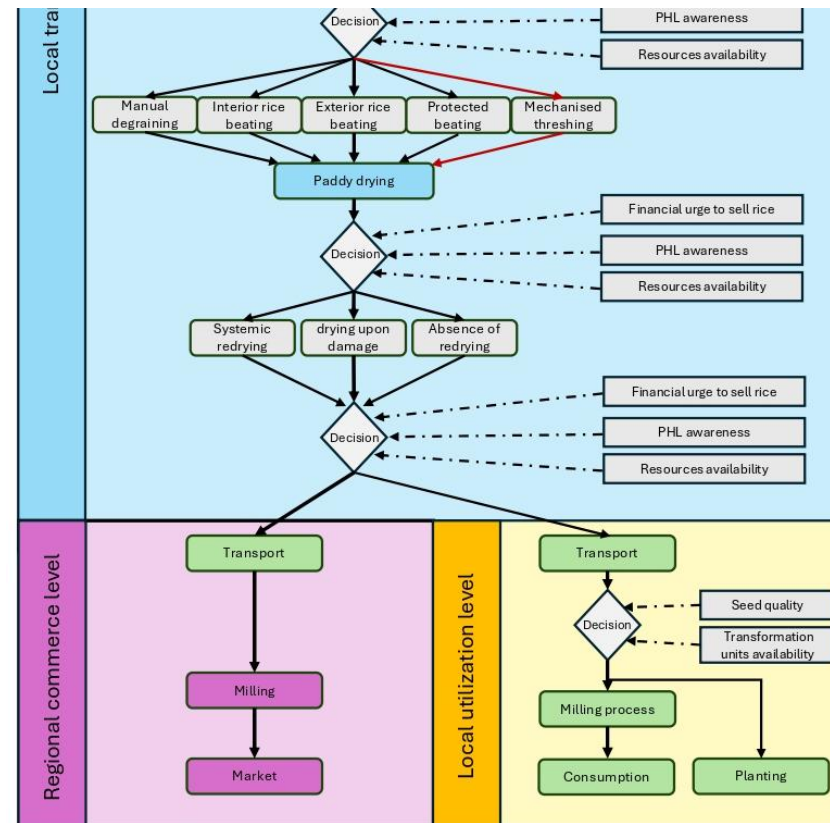
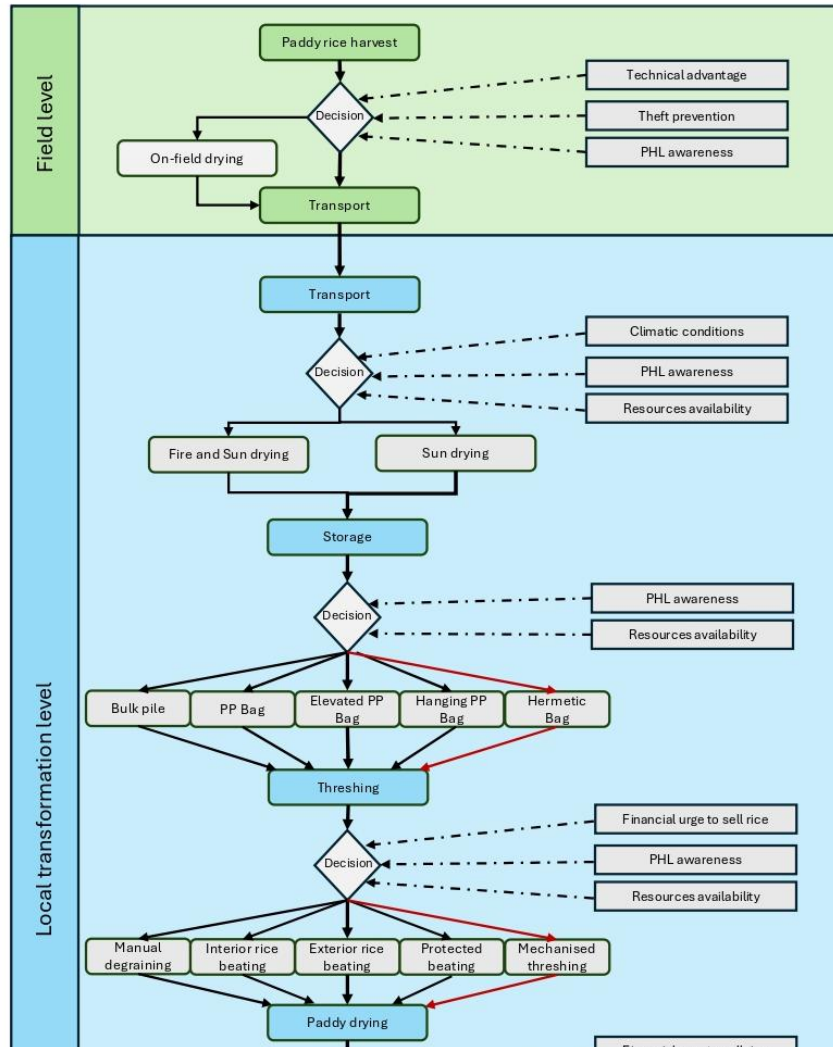
Relative abundance of trees around surveyed villages in (A) Yangambi area, (B) Yabaondo area and (C) Yanonge area

What are the drivers that determine the choice of post-harvest agricultural practices among rice farmers ? 1/3



Decision tree choice module

# What are the drivers that determine the choice of post-harvest agricultural practices among rice farmers ? 2/3



Decision tree of post-harvest practices in Tshopo, DRC

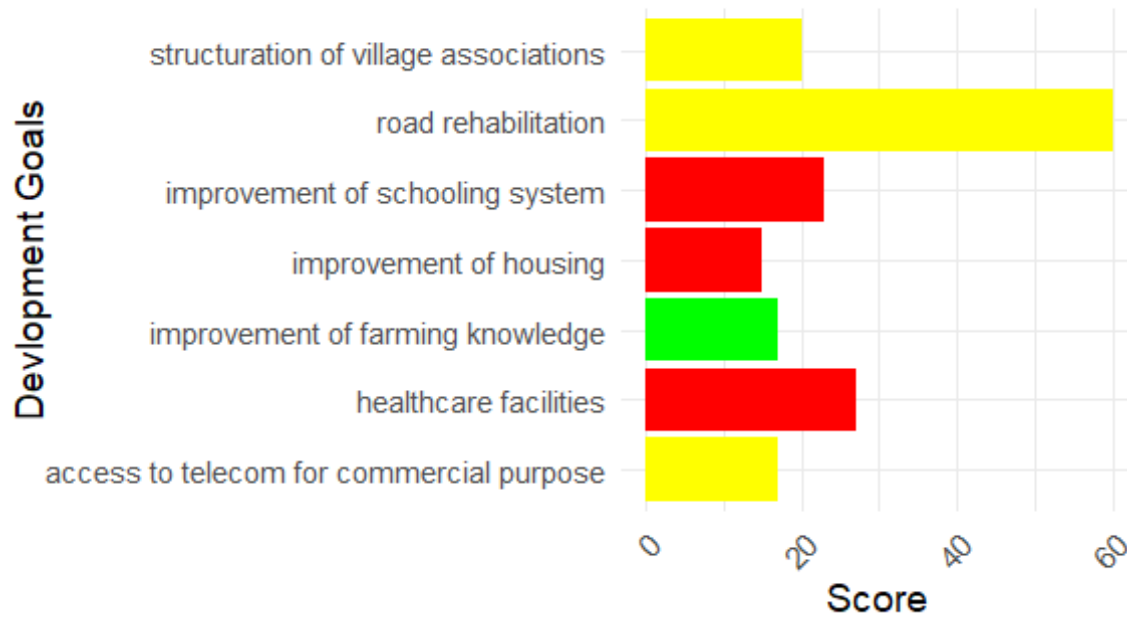
What are the drivers that determine the choice of post-harvest agricultural practices among rice farmers ? 3/3



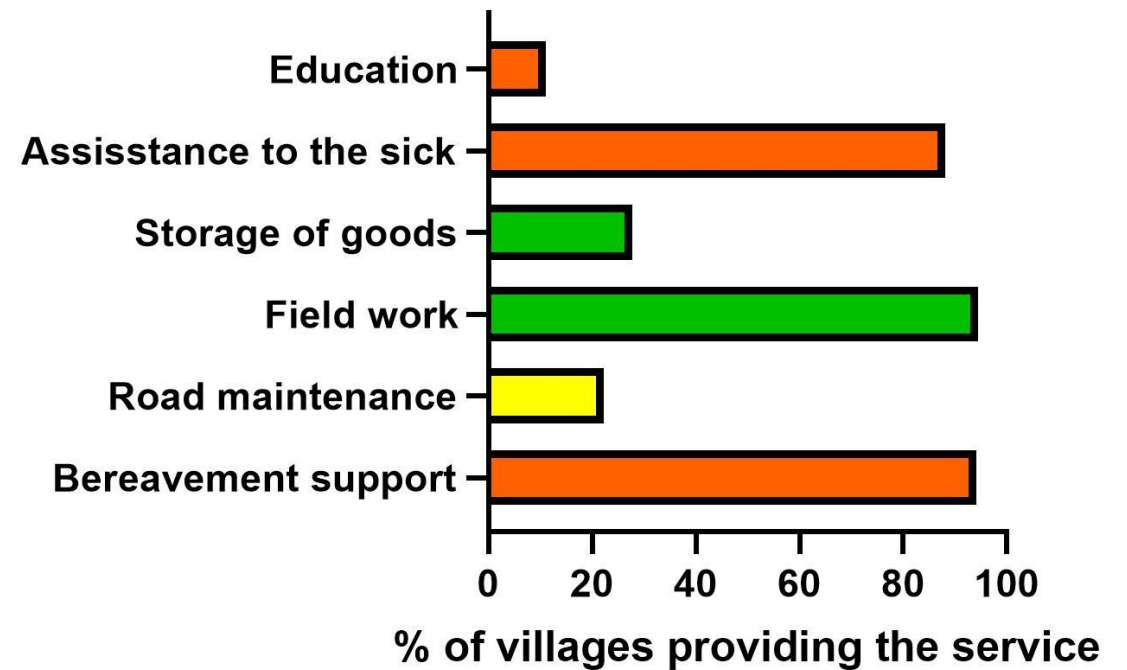
Main driving factors to remember :

1. **Awareness on post-harvest losses and practices**
2. **Availability of resources**

What parameters could be leveraged to improve post-harvest practices in the area ?



Scoring of the 7 most mentioned development goals in surveyed villages



Availability of services in surveyed villages

# To conclude

Organisation level	Recommendations
Local level	<ul style="list-style-type: none"><li>• Promoting community-led training programs</li><li>• Formation and strengthening of farmer cooperatives</li><li>• Train transporters and usage of logistic capacity of local companies</li></ul>
Regional level	<ul style="list-style-type: none"><li>• Emphasize road rehabilitation</li><li>• Support and subsidization of hermetic storage bags, bio-sourced pesticides and mechanization</li><li>• Facilitate access to micro-credit</li></ul>
International level	<ul style="list-style-type: none"><li>• Strategic planning and scaling of regional and local initiatives through institutional and financial interventions of international agencies.</li></ul>



## Acknowledgments

Gratitude to the partners of the project





to the contributors to this study  
and coauthors