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Horizon Scanning: Prioritization of Rice Pest Threats Likely to Be Introduced in Regional Economic Blocs and the African Union

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Document Description
This report presents a horizon scanning exercise to systematically identify and prioritize rice pest threats with the potential for introduction and spread across major African regional economic blocs and the African Union. Key pest threats are highlighted, and recommendations are provided for risk analysis, surveillance, and contingency planning to strengthen food security and resilience in rice production systems.

Contents

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1. Introduction

Invasive exotic pests remain a substantial threat to food security, economic stability, and rural livelihoods in Sub-Saharan Africa (SSA). The increasing interconnectedness of global trade, climate change, and the expansion of rice cultivation are accelerating the establishment of new pest species. Although several pest incursions have been reported in Africa over the past two decades, relatively few have been specific to rice, indicating a gap in surveillance and research investment. Notable recent incursions include Asian like strains causing Bacterial Leaf Blight (Xanthomonas oryzae pv. oryzae). This horizon scanning exercise was conducted to proactively identify and prioritize rice pest threats for major African regional economic blocs and the AU, supporting improved risk analysis and preparedness.

2. Methodology

2.1 Horizon Scanning Approach

A systematic horizon scanning process was implemented, including:

- Compilation of a preliminary list of rice pests of global quarantine significance
- Review of pest distribution records (CABI, EPPO, FAO databases)
- Assessment of introduction and establishment likelihood based on host availability, climate, trade, and invasive status
- Prioritization of pests by risk to regional blocs and the AU

2.2 Stakeholder Engagement

Experts from national plant protection organizations (NPPOs), research institutes, and international agencies contributed to pest selection and risk scoring.

2.3 Data Presentation

A summary table was developed to present prioritized rice pests, their common names, economic blocs at risk, host range, and invasive status.

3. Results

The horizon scan identified several high-risk rice pests of quarantine importance posing immediate or medium-term threats to regional economic blocs. These pests threaten rice production, other crops, trade, and regional food security.

Table 1. Rice pests of quarantine importance in African Economic Blocs

Scientific Name	Common Name	Regional Economic Bloc at Risk	No. of Hosts	Invasive Status
Bipolaris victoriae	Victoria blight of oat	EAC, ECOWAS	26	Invasive
Dickeya zeae	Bacterial stalk rot	EAC, ECOWAS	41	
Laodelphax striatellus	Small brown planthopper	EAC, ECOWAS, SADC	21	
Verbesina encelioides	Golden crown beard	EAC	11	Invasive
Cicadulina bipunctata	Sorghum jassid	SADC, ECOWAS		
Phytoplasma oryzae	Rice yellow dwarf	SADC, ECOWAS	15	
Chilo suppressalis	Striped rice stem borer	AU	21	Invasive
Ditylenchus angustus	Rice stem nematode	AU	7	Invasive
Nilaparvata lugens	Brown planthopper	AU	3	Invasive
Oligonychus indicus	Sugarcane leaf mite	AU	7	
Orseolia oryzae	Rice stem gall midge	AU	2	

Rice stripe virus	Rice stripe tenuivirus	AU	25	

Notable Pest Profiles:

- *Bipolaris victoriae*: Victoria blight, invasive in EAC and ECOWAS.
- *Dickeya zeae*: Bacterial stalk rot, threatening EAC and ECOWAS.
- *Chilo suppressalis*: Striped rice stem borer, highly destructive and invasive continent-wide.
- *Nilaparvata lugens*: Brown planthopper, major viral vector, invasive across Africa.
- *Ditylenchus angustus*: Rice stem nematode, significant yield loss, invasive pest.

4. Discussion

4.1 Significance of Horizon Scanning

Horizon scanning enables proactive identification of emerging threats, allowing countries and regional blocs to allocate resources efficiently and minimize pest introduction impacts. This is particularly vital for rice, given the historical lag in research and surveillance.

4.2 Implications for Regional Economic Blocs

- *EAC & ECOWAS*: Shared pest risks due to cross-border trade and similar ecologies.
- *SADC & COMESA*: Vulnerable due to expanding irrigation and seed/plant material imports.
- *AU*: Continental threats necessitate harmonized surveillance and quarantine.

4.3 Gaps and Challenges

- Limited rice pest surveillance and diagnostic capacity
- Fragmented data sharing and lack of centralized databases
- Insufficient contingency planning
- Weak enforcement of phytosanitary regulations and limited cross-border coordination

5. Recommendations

5.1 Risk Analysis and Prioritization

- Conduct detailed pest risk analyses (PRAs) for priority pests
- Regularly update pest risk registers

5.2 Surveillance and Early Warning

- Invest in capacity-building for surveillance and diagnostics
- Establish centralized, real-time pest information systems

5.3 Contingency Planning

- Harmonize contingency plans for high-mobility or multi-host pests
- Coordinate plans regionally, aligned with AU and IPPC guidelines

5.4 Policy and Collaboration

- Strengthen phytosanitary laws and enforcement
- Promote joint surveillance and rapid response teams

5.5 Research and Communication

- Support research on pest behavior and management in African contexts
- Develop and disseminate pest alerts and fact sheets

6. Conclusion

This horizon scanning exercise highlights rice pest threats with potential for significant economic and social impact across Africa. Effective risk analysis, surveillance, policy harmonization, and contingency planning, underpinned by regional cooperation, are essential to build resilient rice systems and safeguard continental food security.

7. References

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