

# Understanding factors affecting the resilience of local seed systems in Zimbabwe

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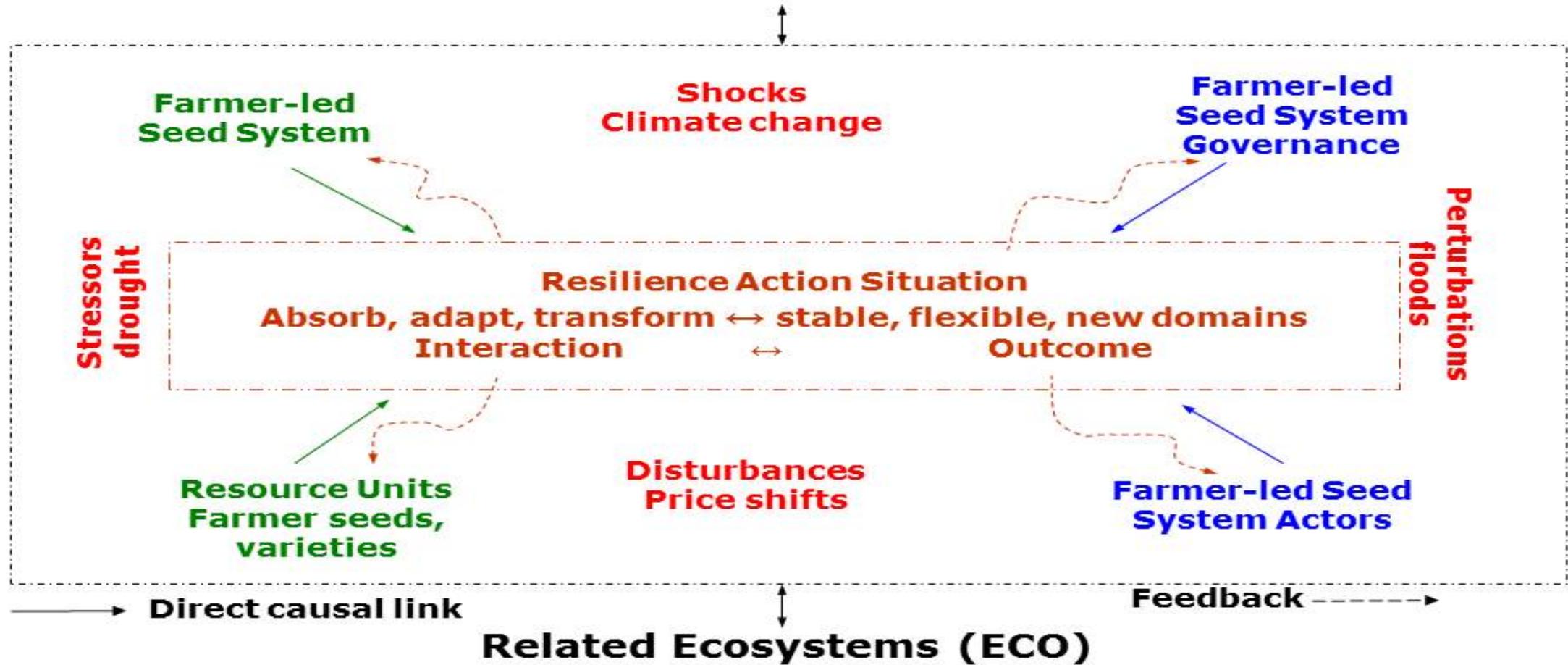
# Presentation overview

- ▶ Study questions
- ▶ Theoretic framework
- ▶ Methods
- ▶ Results and Discussions
- ▶ Conclusion and recommendations

# Study objectives

1. How have local seed systems responded to historical shocks and stresses?
2. What are the characteristics of a local seed system ?
3. Do smallholder farmer-led seed systems have the capacity to supply good-quality, fungal free sorghum seed?
4. How do different sources of seed and seed storage practices affect the physical qualities of local seed systems?
5. How do actors and institutions in smallholder farming systems contribute to or undermine the adaptive capacity of local seed systems?

## Social, Economic, and Political Settings (S)



Source: Adapted and modified from E. Ostrom (2007: 15182).

# Methodology

Case study - Uzumba-Maramba-Pfungwe and Chimanimani districts

Inter-disciplinary methods

Survey

Oral Histories

Observations

Secondary data retrieval

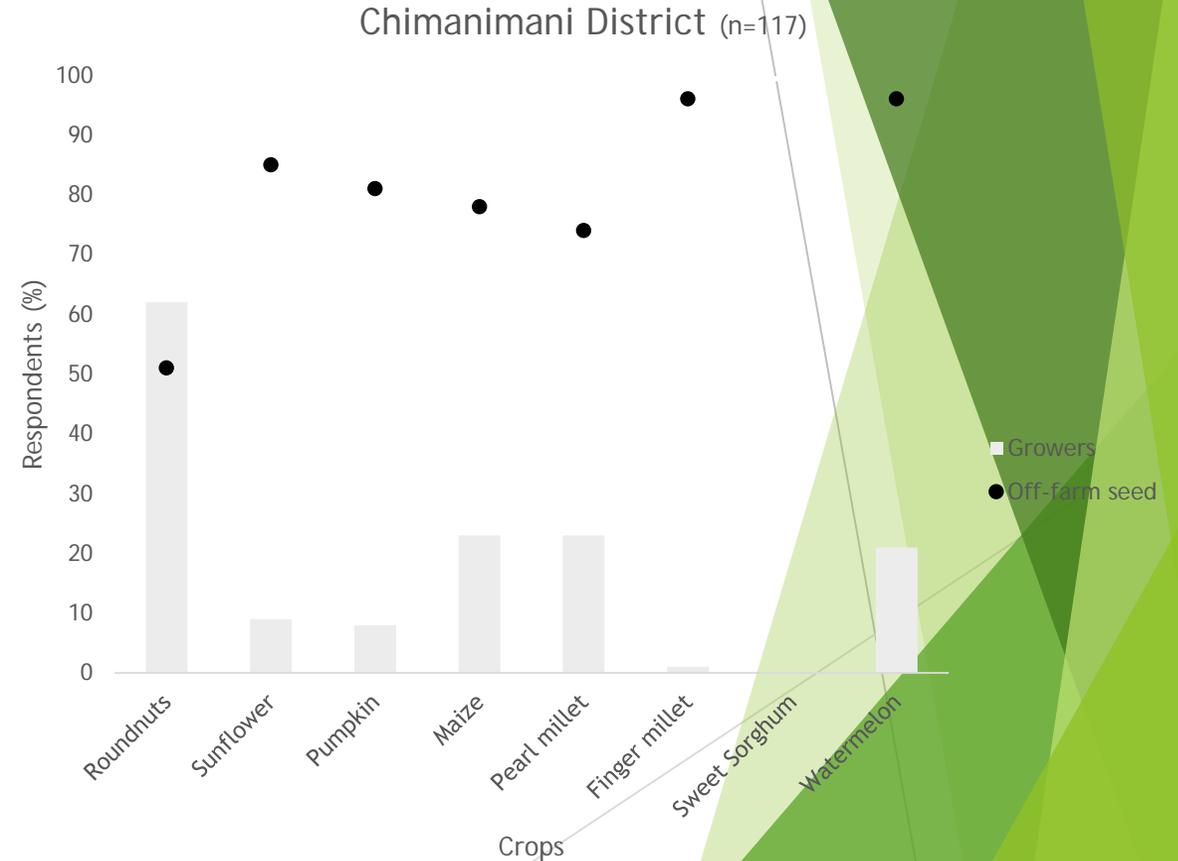
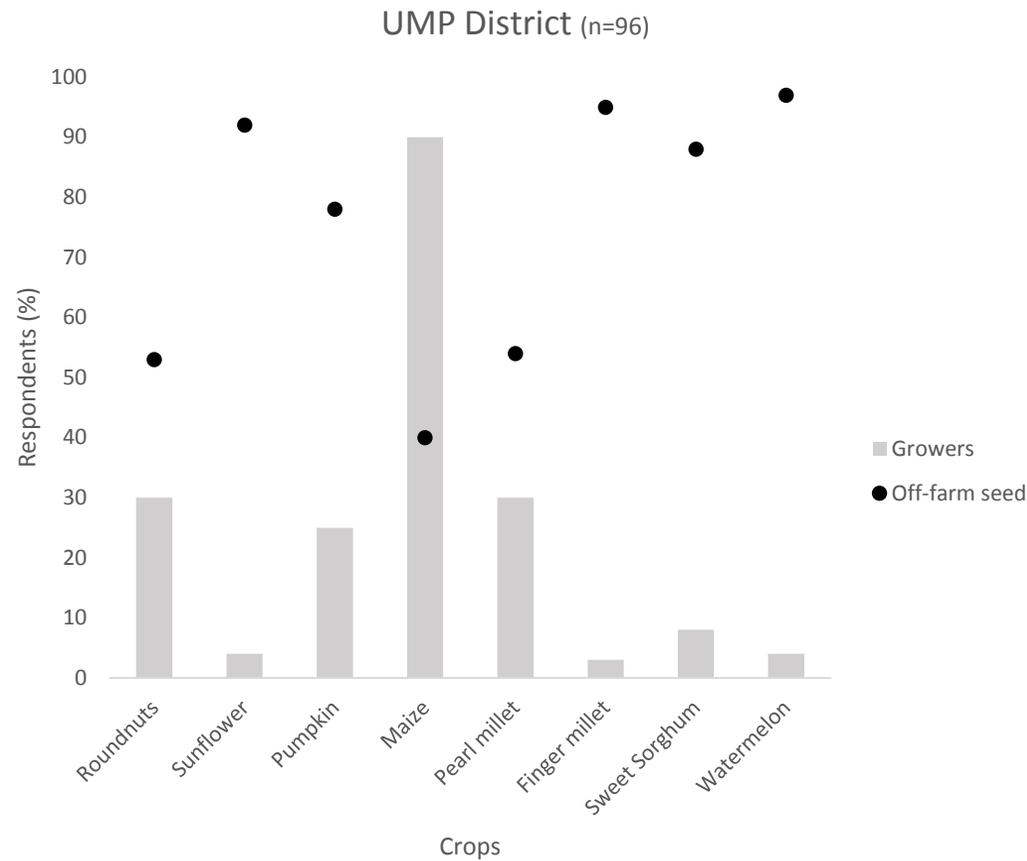
International Seed Testing Association seed quality testing methods

# Results and discussions

- ▶ 1920-2016 Zimbabwe suffered
- ▶ Colonial laws
- ▶ War
- ▶ Migration (War, economic)
- ▶ Drought
- ▶ Economic Crises
- ▶ HIV and AIDs

# Results and discussion

Proportions of farmers growing the crop against proportions using off-farm sources.



# Results and discussions

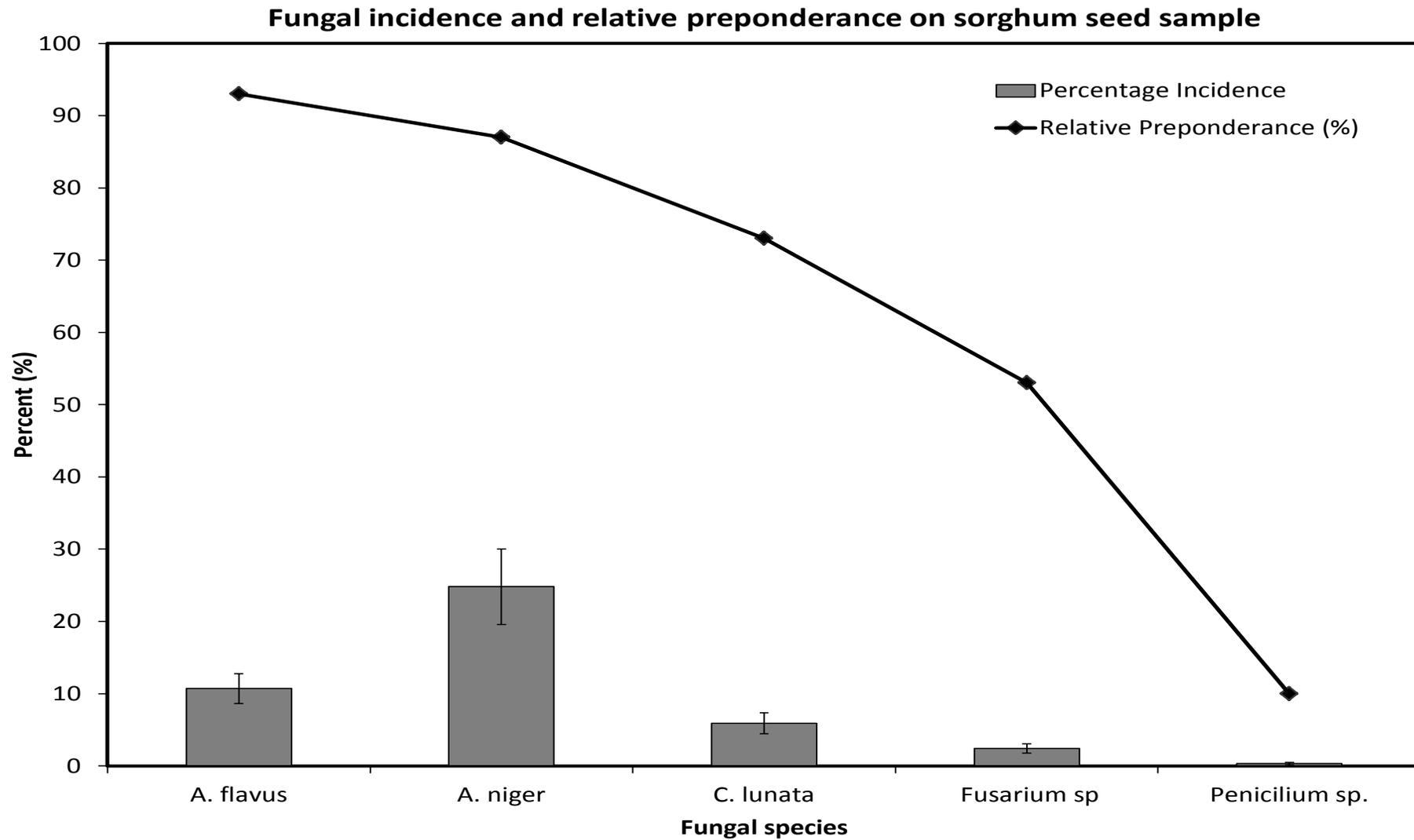


Table 3. Mean germination (%), seed purity (%) and moisture content (%) of sorghum seed that was obtained from different community-based sources and stored in different seed storage facilities.

Seed sources and storage facilities (sorghum seed samples tested N=10)		Germination (%)	Proportion of pure seeds (%)	Moisture Content (%)
Other farmers	sacks	83±1.85 <sup>c</sup>	94.6 <sup>cd</sup>	9.65±0.06 <sup>ab</sup>
	plastics	85±1.68 <sup>cd</sup>	-	9±0.03 <sup>a</sup>
	Kitchen	83.5±1.64 <sup>c</sup>	91.5 <sup>c</sup>	10.2±0.03 <sup>abc</sup>
	Granary	92±0.4 <sup>de</sup>	97.7 <sup>cd</sup>	10.7±0.25 <sup>bcd</sup>
Relative	sacks	64±4.49 <sup>b</sup>	82.4 <sup>b</sup>	9.2±0.04 <sup>a</sup>
	plastics	44.5±3.24 <sup>a</sup>	93.1 <sup>cd</sup>	13.3±0.32 <sup>f</sup>
	Kitchen	-	70.8 <sup>a</sup>	9±0.04 <sup>a</sup>
Government	sacks	79±2.75 <sup>c</sup>	98.7 <sup>d</sup>	11±0.17 <sup>bcd</sup>
	sacks	85±0.59 <sup>cd</sup>	93.4 <sup>cd</sup>	9.3±0.019 <sup>a</sup>
NGOs	Kitchen	-	99.1 <sup>d</sup>	10±0.10 <sup>abc</sup>
	Granary	79.5±0.81 <sup>c</sup>	92.7 <sup>cd</sup>	11.6±0.16 <sup>cde</sup>
	Granary	93±1.45 <sup>e</sup>	-	9.7±0.06 <sup>ab</sup>
Certified Seed Standards		80 <sup>c</sup>	98 <sup>cd</sup>	12.5 <sup>ef</sup>
Mean		78.85 <sup>c</sup>	91.4 <sup>c</sup>	10.2 <sup>abc</sup>
LSD(p≤0.05)		7.4	6.8	1.3

# Adaptation strategies

Diversification (Farmers Scale)

Social collective services (Community Scale)

National support services (National scale)

# Conclusions

- ✓ Firstly historically to date, the smallholder farmers have **suffered worsening social, economic, political and natural shocks and stresses** that have emanated from the local to global scales,
- ✓ Secondly these shocks and stresses are emanating from **complex interactions of the shocks and stresses**, some are long term (series of droughts, population increase) and some are short term (economics and political uprising),
- ✓ Thirdly **local community practices, entities and processes are found to assume centrality** in responding to shocks and stresses in the study areas, with individual household opportunities constricting and formal state and non-state entities involvement in various pathways of local seed systems is either weakening or stopping to function.
- ✓ Lastly is the **emergence of different actors and institutions** with agenda of addressing some of the shocks and stresses affecting the local seed systems?

# Recommendations

- ✓ Firstly is the need to **undertake a holistic analysis** of shocks and stresses, patterns and trends in contemporary environments
- ✓ secondly is the need to **utilize scale dimensions** that allow for capturing of pathways, processes, networks, linkages and elements in analysing the resilience
- ✓ Thirdly is the need for resilience **inquiry to shift from static, deterministic, mechanical, single sided frame analysis** towards a more flexible and dynamic approach that captures social dimension of resilience

- ✓ Fourthly there should be a **shift from the too prescriptive and mechanist interventions** around the resilience building with regards to the contemporary context of local seed systems,
- ✓ Lastly is the need to **abandon the linear planning and the development of policies and practices** in the context of contemporary dynamics of resilience thinking