



THE UNIVERSITY OF PAPUA NEW GUINEA



2023 PNG UPDATE
Resilient and diverse development
17th August
UPNG, Waigaini

Identification and response to Agricultural Risks in the Highlands of Papua New Guinea

Stanley Amben

NARI – High Altitude Regional Centre, Tambul

Co-authors – Pakatul J. P, Mauro, O., Sine, M., Ahizo., J., Anton, J.T., Aku, R., & Fooks., L.

Outline

- ▶ Background
- ▶ Ag. Threats and Impacts
- ▶ Methodology
- ▶ Identified Threats
- ▶ Interventions
- ▶ Conclusions
- ▶ Recommendations
- ▶ Acknowledgements
- ▶ References



Background

- ▶ PNG's rich diversity presents challenges & opportunities in building livelihood resilience
- ▶ Agriculture, the mainstay is threatened by prevailing challenges and emerging risks
- ▶ Climate variability poses the major threat to PNG's vulnerable farming systems
- ▶ Understanding threats to Ag. will define interventions for building adaptive capacities



Climatic Variability's – Threats & Impact

- ▶ Extreme events
 - Excess rainfall
 - Frosts
 - Droughts
- ▶ Slow on-set events
 - Rainfall variability
 - Temperature anomalies
 - Cloud cover
- ▶ Impacts in agriculture
 - Complete destruction
 - Loss of genetic material
 - Yield and quality decline



Other Threats & Effects

▶ Extreme natural threats

- Earthquakes (2018 SHP & 2021 EHP)
- Pestillences

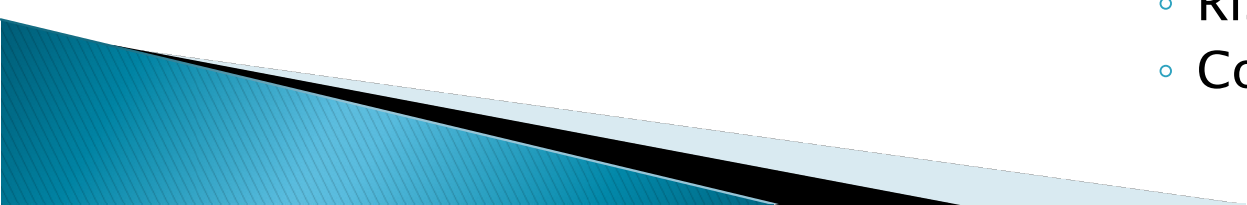
▶ Social threats

- Political instability (NGE's)
- Tribal conflicts & other gender & sorcery related violence
- Social service deficiencies

▶ Economic threats

- Global price trends
- Trade imbalances (import/export)
- Pandemic (COViD 19)
- Sectoral deficiencies

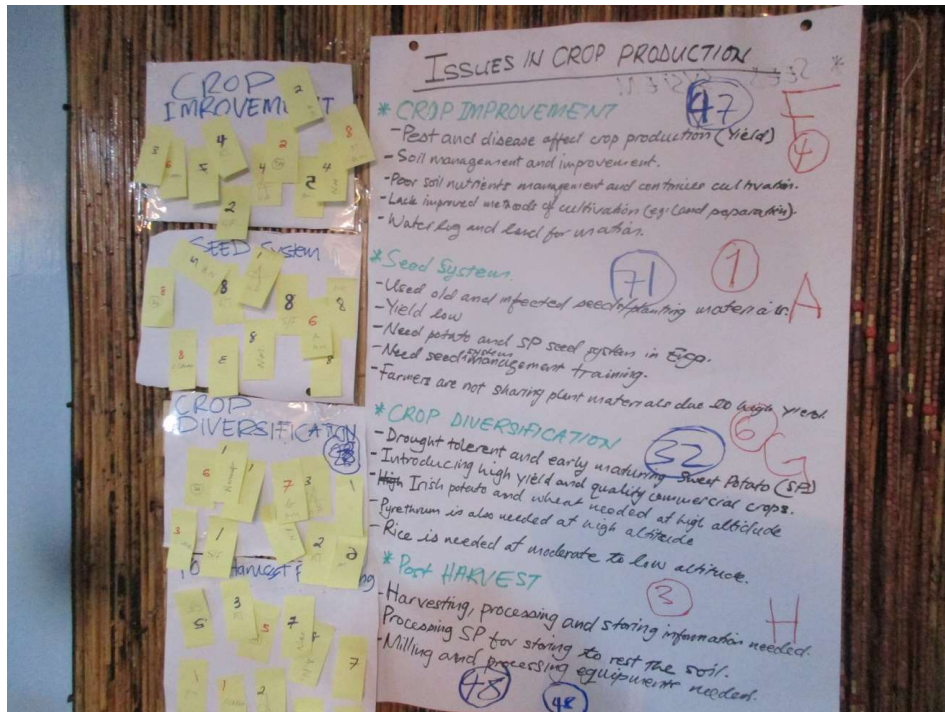
▶ Effects

- Food shortages
 - Displacement/refugees
 - Rising cost of inputs (fertilizer)
 - Comodity price uncertainties
- 

Consultation workshops



Prioritization of Provincial Needs



Signing of Agreements



Delivery of interventions (1)



Delivery of interventions (2)



Risks to Ag in the Highlands Region

- ▶ Loss of indigenous crop spp (Drought, frost, fires)
- ▶ Biosecurity risks (FAW, ASF & DBM, BW, PLB)
- ▶ Seed systems threatened (seed & soil borne diseases)
- ▶ Storability of food
- ▶ Labour issues (skills, youth)
- ▶ Land issues (tenure & fertility)
- ▶ Political economy (stability, NGE)

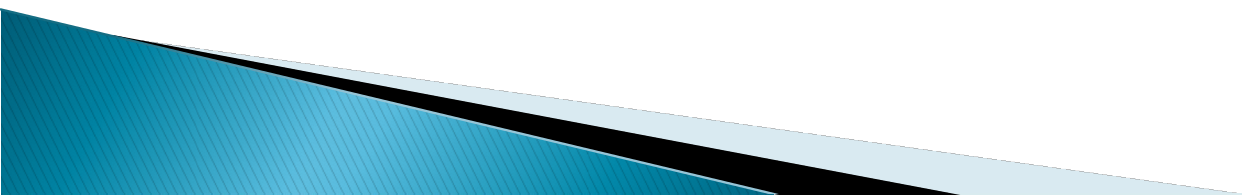


Provincial Prioritization

Priority	Thematic Areas	EHP	Simbu	Jiwaka	WHP	SHP	Enga	Hela	Totals
1	Seed system	1	2	2	1	1	1	3	10
2	Livestock improvement	4	5	4	2	3	2	4	24
3	Post harvest & processing	3	3	1	4	6	4	4	25
4	Crop diversification	1	1	7	3	4	8	2	26
5	Crop improvement	2	7	5	3	2	5	6	30
6	Livestock diversification	6	3	6	2	4	6	7	34
7	Soil management	5	4	8	5	5	3	5	35
8	Early warning system	7	6	3	6	7	7	1	37

Interventions – Provincial Didiman Centres

- ▶ Establishing clean seed and livestock breeding systems
- ▶ Promoting GAP – TOT Trainings
- ▶ Crop/breed diversification (rice, wheat, chickens & goats)
- ▶ Improved mechanisation and irrigation
- ▶ Water shed management studies
- ▶ Seasonal Forecast Advisories (EWS, Weather data collection)
- ▶ Agricultural entrepreneurship
- ▶ Development of a National Seed policy



Conclusions

- ▶ The highlands region is in a constant state of recovery
- ▶ Incremental and transformational changes is needed to build resilience
- ▶ Bridge the gap between commercial export driven sector vs. subsistence farming
- ▶ Focal point for agricultural development in the provinces through PDCs

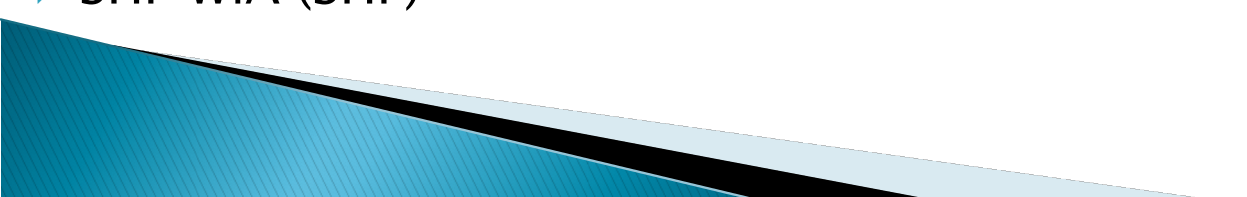


Recommendations

- ▶ Identify Ag policy gaps and enablers via NASP 2023 – 2024 and
- ▶ Prov Admin must become the drivers for Ag. development via PDC's
- ▶ Development of Provincial Disaster plans
- ▶ Develop appropriate risk assessment tools



Acknowledgement

- ▶ Department Of National Planning and Monitoring
 - ▶ Provincial Administration for all 7 highlands provinces
 - ▶ National Weather Service (NWS)
 - ▶ Food and Agriculture Organisation (FAO)
 - ▶ United Church (Hela)
 - ▶ Hoieabia Women & Youth (Hela)
 - ▶ Pombobos TVET (Enga)
 - ▶ Banz Lutheran College (Jiwaka)
 - ▶ Kondiu Secondary School (Simbu)
 - ▶ Kabiufa Secondary School (EHP)
 - ▶ Kaupena Secondary School (SHP)
 - ▶ Imbonggu DDA (SHP)
 - ▶ SHP WiA (SHP)
- 

References

- ▶ Kripalani, R. H., & Kulkarni, A. (1997). Climatic impact of El Nino/La Nina on the Indian monsoon: A new perspective. *Weather*, 52(2), 39–46.
- ▶ Iese, V., Halavatau, S., N'Yeurt, A. D. R., Wairiu, M., Holland, E., Dean, A., ... & Navunicagi, O. (2020). Agriculture under a changing climate. *Climate change and impacts in the Pacific*, 323–357.
- ▶ Louwaars, N. P., & Manicad, G. (2022). Seed Systems Resilience—An Overview. *Seeds*, 1(4), 340–356.
- ▶ NWS (2023) June 2023 Drought Update. Issued 21 /06/2023
- ▶ Underhill, S., Kumar, S., Joshua, L., Patolo, S., Molimau–Samasoni, S., & Burkhart, S. (2022). Horticultural food loss in the South Pacific and its capacity to shape the fresh food system. In *Food Systems in Small Island and Developing States (FSSIDS): Towards Resilient Food Systems*.

