

The Crawford Fund Annual Conference

## **Progress and Prospects for Climate-Resilient Agrifood Systems: Actionable Recommendations for Policymakers and Practitioners**

11-12 August 2025

Parliament House, Canberra,  
Australia, and online



# **Securing Our Future: Building Resilient Agrifood Systems in the Pacific Islands**

**Professor Graham Sem**

**School of Natural and Physical Sciences**

**The University of Papua New Guinea**

**Crawford Fund Annual Conference, 11-12 August 2025**

# 1. Outline of the Presentation

1. Introduction
2. Background to climate resilience and agrifood systems
3. Climate resilience in context
4. Challenges for Agrifood Systems
5. Evidence of Emerging Solutions
6. Policy and Regional Support
7. Evidence from the Region
8. Actionable recommendations
9. Conclusions



The Crawford Fund Annual Conference

**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**

11-12 August 2025

Parliament House, Canberra, Australia, and online



## 2. How can we build a sustainable future for agrifood systems in the Pacific Islands amidst the challenges of climate change?

- **Food security** – heavy reliance on agriculture and fisheries, CC increases the risks from droughts, floods, cyclones, sea level rise, threatening local food production and availability
- **Health and nutrition** – Diets are vulnerable and changing and vulnerable to disruptions in local food systems. When agriculture is affected, people turn to imported, processed foods which worsen malnutrition, obesity and NCDs
- **Population growth** – rapid popn. growth puts additional pressure on limited resources and local food systems. Without strengthening resilience and productivity, it becomes harder to meet growing food demand



The Crawford Fund Annual Conference  
**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**  
11-12 August 2025  
Parliament House, Canberra, Australia, and online



## 2. How can we build a sustainable future for agrifood systems in the Pacific Islands amidst the challenges of climate change?

- **Economic Development** – Agriculture and fisheries are a major source of livelihood in the Pacific. Climate-resilient agrifood systems protect jobs , sustain incomes, and reduce poverty, supporting broader economic development
- **Sustainable Development** – Building climate-resilient food systems helps achieve the SDG goals by promoting environmental stewardship, reducing climate risks, supporting biodiversity, and delivering social and economic benefits.
- **Improving climate resilience and agrifood systems** - is essential for PICs to safeguard food security, health and long-term development in the midst of changing climate conditions



The Crawford Fund Annual Conference

**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**

11-12 August 2025

Parliament House, Canberra, Australia, and online



### 3. Climate Resilience in Context

Pacific Island nations are **highly vulnerable** to:

- **Rising sea levels** - threaten coastal communities, loss of land and freshwater resources critical for drinking and irrigation.
- **Erratic rainfall patterns** lead to unpredictable water supply, causing periods of both drought and flooding that disrupt agricultural activities.
- **Saltwater intrusion** into freshwater sources can severely impact local crops, drinking water quality, agricultural land's productivity.
- PI nations are regularly exposed to **intense cyclones** that can devastate infrastructure, ecosystems, and livelihoods

**Agriculture is vital for food security and incomes**

- **Subsistence farming and fishing** provide nutrition and cultural connections and traditional practices.
- **Highly susceptible to climate shocks**, which can lead to severe disruptions in food production.
- **Changes in temperature and rainfall** affect crop yields, while extreme weather events can obliterate farms and fisheries overnight.
- **Agricultural resilience is paramount** and is fundamental to the future resilience of Pacific Island communities and their economies.



The Crawford Fund Annual Conference  
**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**  
11-12 August 2025  
Parliament House, Canberra, Australia, and online



## 4. Challenges for Agrifood Systems

**Smallholder farmers** dominate; many lack:

- **Access to climate data** – seasonal forecasts, rainfall patterns, cyclone warnings, isolation and lack of technology
- **Resilient crop varieties** – drought-resistant, salt-tolerant, flood-prone
- **Finance** – technology, irrigation, farming practices and infrastructure
- **Insurance** – unavailability of insurance products
- **Infrastructure** – CC resilient infrastructure – cyclone shelters, water storage, roads and transport facilities
- **Market disruptions** after extreme events – transport & communications disrupted and key infrastructure destroyed.



The Crawford Fund Annual Conference

**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**

11-12 August 2025

Parliament House, Canberra, Australia, and online



Major concerns that directly influence the vulnerability & adaptive capacity of Pacific agrifood systems



# 5. Evidence of Emerging Solutions

- **Adoption of climate-smart practices**

- **Fiji – CSA:** promotion of salt-tolerant taro and yams, agroforestry, improved drainage systems to reduce flood damage
- **Vanuatu** – Dissemination of actionable climate information for farmers through EWS, training, decision-support tools
- **PNG** – Productive partnerships in Agriculture (PPAP) – strengthen coffee and cocoa value chains by improving climate risk management, farmer training and market linkages.
- **Samoa** – Enhanced resilience of agrifood production through improved infrastructure (irrigation, road access, post-harvest handling & extension.
- **Solomon Islands** – Food Security and Livelihoods Programme – Drought & flood tolerant crops, strengthen community seedbanks and farmer training in sustainable practices.

- **Agroforestry**
- **Salt-tolerant crops**
- **Improved water management**
- **Integrated Pest Management**
- **Use of mobile tech & networks for early warnings**
- **Value-adding in agrifood systems boosting resilience**

**Emerging Solutions require more investments!**



The Crawford Fund Annual Conference  
**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**  
11-12 August 2025  
Parliament House, Canberra, Australia, and online



## 6. Policy and Regional Support in the Pacific

### Support by:

- Pacific Island Governments
- Secretariat of the Pacific Community
- Bilateral (e.g. Australia & ACIAR) & Multilateral donors (World Bank)
- National and International NGOs

### Through:

- Partnerships
- Climate Resilience
- Agriculture

- Capacity building
- Funding
- Technical Support

### Examples:

- Pacific Adaptation to Climate Change (PACC)
- Pacific Island Farmers Organisation Network (PIFON)
- Productive Partnerships in Agriculture Project (PPAP) in PNG
- Integrating Traditional Agroforestry for Climate Adaptation in Samoa



The Crawford Fund Annual Conference  
**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**  
11-12 August 2025  
Parliament House, Canberra, Australia, and online





## 7. Evidence from the Region

- **Pacific Island Countries** – Fiji, Samoa, Solomon Islands & Vanuatu
  - Farmer field schools and microfinance build resilience
  - Traditional knowledge integrated into solutions
  - Diversification (tree crops, aquaculture) improves income security
  - Strengthening coffee farmers' climate resilience
- **Remaining gaps:** scaling solutions, finance, reaching the most vulnerable, logistical delays, limited uptake by older farmers, strengthen farmer cooperatives



The Crawford Fund Annual Conference

**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**

11-12 August 2025

Parliament House, Canberra, Australia, and online



## 8. Actionable Recommendations

- **Scale up climate smart agriculture** – promoting sustainability, farmer training and capacity building, access to technology, incentives & support
- Target **finance and insurance to support adaptation** – Public-private partnerships, crop insurance schemes, microfinancing initiatives, climate/green bonds
- **Improve disaster risk management and recovery** – comprehensive risk assessments, strengthen EWS, disaster recovery plans, community engagement
- **Foster regional cooperation for shared knowledge** – Regional knowledge hubs/platforms, collaborative research, policy alignment, capacity building workshops



The Crawford Fund Annual Conference

**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**

11-12 August 2025

Parliament House, Canberra, Australia, and online



## 9. Conclusions

- Pacific agrifood systems are adapting to adverse impacts of climate change but they face significant hurdles
- Collaboration is key – across governments, communities, and partners – to ensure resilient livelihoods



The Crawford Fund Annual Conference

**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**

11-12 August 2025

Parliament House, Canberra, Australia, and online



# Any Questions?



The Crawford Fund Annual Conference

**Progress and Prospects for  
Climate-Resilient Agrifood Systems:  
Actionable Recommendations for  
Policymakers and Practitioners**

11-12 August 2025

Parliament House, Canberra, Australia, and online

