

# **Realizing Climate Security Through Strengthening Adaptation Planning and Other Synergistic Approaches in Sri Lanka**

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# Introduction

- **Sri Lanka is one of the most climate-vulnerable countries globally,** experiencing frequent and severe impacts from climate change, as reported by the *Global Climate Risk Index*.
- **The country has consistently ranked among the most affected nations,** placing 4th in 2016, within the top 10 between 2018–2020, and 18th in 2025
- (<https://english.newsnow.lk/2025/10/27/>)

# Introduction Cont.

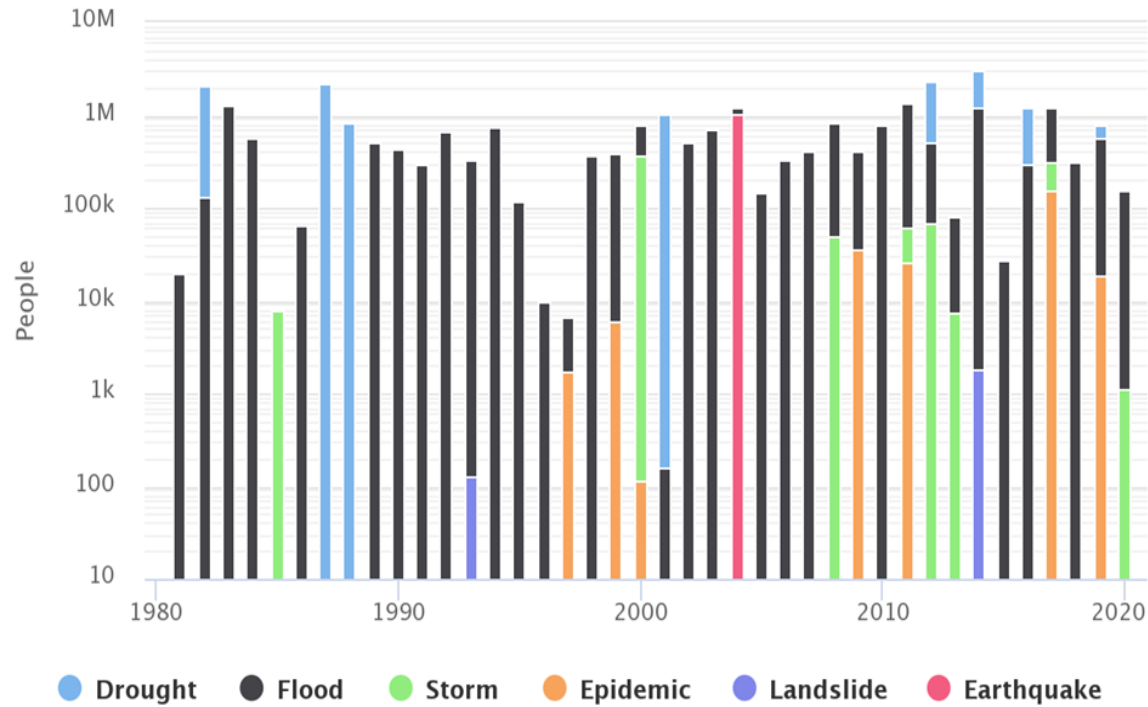
- **Climate change poses direct threats to human security, economic stability, and national security**, increasing risks across social, environmental, and economic systems.
- **Key climate-related impacts include** water scarcity, extreme weather events (floods, droughts, cyclones), coastal erosion and sea-level rise, food insecurity, health risks, and climate-induced migration.
- **Climate-related hazards account for approximately 96% of disasters**, with major impacts from flooding, landslides, extreme winds, and prolonged droughts.

## Introduction Cont.

- **Sri Lanka's national adaptation planning must integrate a climate security perspective**, linking environmental risks with human security, governance, and peace-building processes, particularly in light of disasters that are escalating rapidly over time.
- **This requires strengthening institutional capacity and cross-sectoral coordination**, along with the active involvement of affected grassroots communities in decision-making and implementation processes.
- **Policy and practice should also draw on lessons from Asia-Pacific countries** that have successfully embedded climate security into disaster risk reduction, migration policy, and regional cooperation frameworks

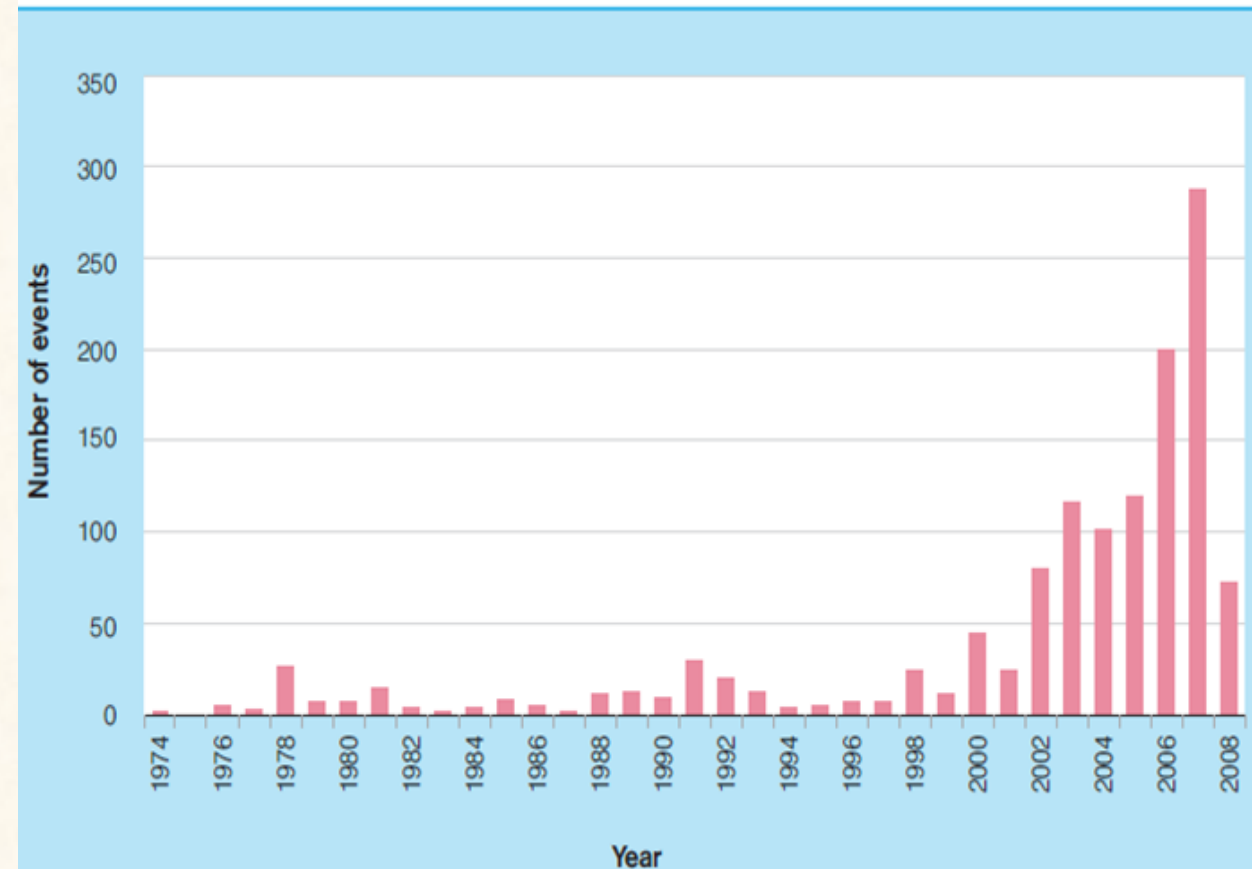
## Key Natural Hazard Statistics for 1980-2020

Number of People Affected



Source: <https://climatefactchecks.org/natural-disasters-of-sri-lanka-in-the-last-several-decades-and-the-contributions-of-climate-change/>

## Cyclones events in Sri Lanka 1974- 2008



▶ A sudden increase can be seen in the latter part of the period, with the highest number of events in 2007.



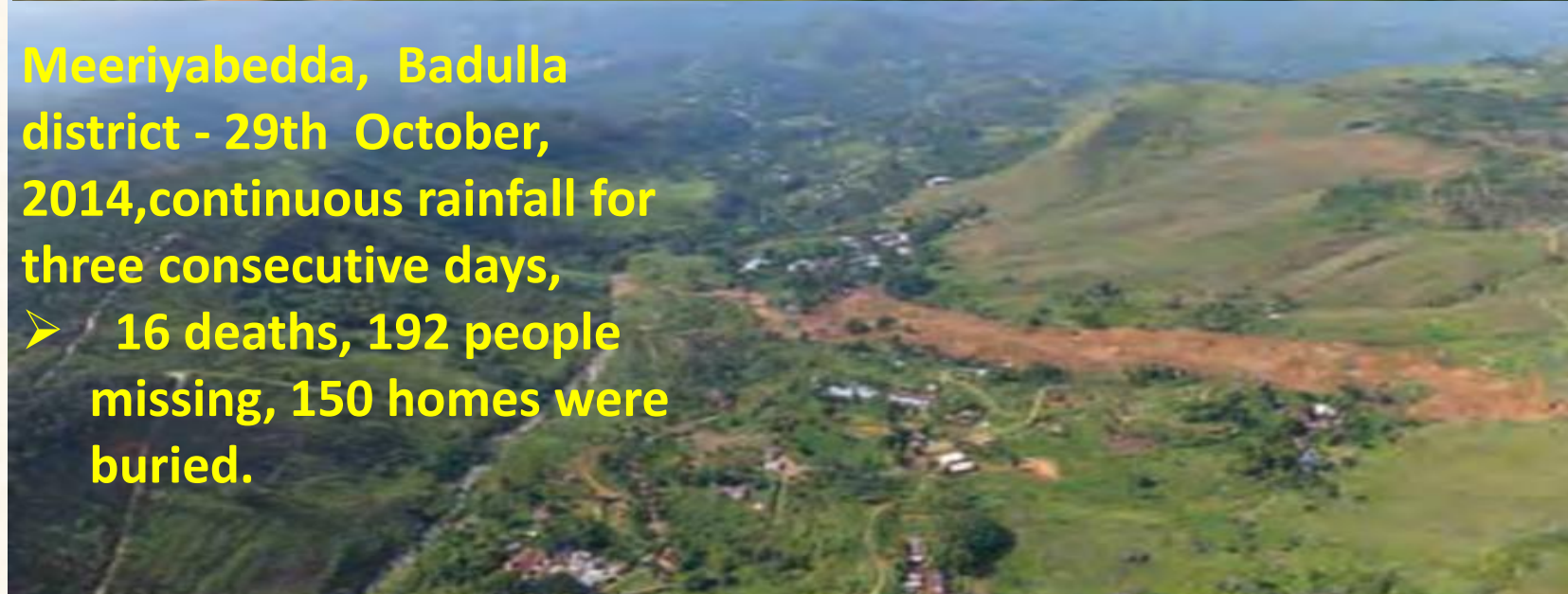
- **Approximately 30% of Sri Lanka's land area (about 20,000 sq. km) across ten districts is identified as landslide-prone.**

- **Landslide-prone districts include:**

Badulla, Nuwara Eliya, Kegalle, Ratnapura, Kandy, Matale, Kalutara, Matara, Galle, and Hambantota



**Aranyaka 17-05-2016. relentless rain 14th to the 17th of May killed over 150 people, and destroyed many houses.**



**Meeriyabedda, Badulla district - 29th October, 2014, continuous rainfall for three consecutive days,**  
➤ **16 deaths, 192 people missing, 150 homes were buried.**

# Comparative Snap Shot ( Indian Ocean Tsunami and Dithwa Cyclone

Disaster	Year of occurrence	Damage US \$ Blin	% GDP	Scope
Indian Ocean Tsunami	2004 Dec	1,45	7.6	Coastal devastation, fisheries, housing
Dithwa	2025 Dec	4.10	4.0	Nationwide infrastructure, agriculture, housing

# Cyclone Ditwah: The Scale of a National Disaster

Cyclone Ditwah triggered catastrophic flooding and landslides across Sri Lanka, affecting every district in the country. This infographic highlights the key statistics that reveal the full scale of the disaster's devastating impact on the nation's people, infrastructure, and economy.

## The Human Cost

# 639 & 203 DEAD & MISSING

A devastating toll from landslides and flash floods in multiple districts.



# 2.3 MILLION PEOPLE AFFECTED

Including over 275,000 children facing displacement and trauma.



## Widespread Devastation

# 1 IN 12 BUILDINGS EXPOSED TO FLOODING

5,000 houses were completely destroyed and over 86,000 more were damaged.

# 20% OF SRI LANKA FLOODED

Over 1.1 million hectares of the country's land area were inundated.



# US \$6-7 BILLION IN TOTAL ECONOMIC LOSSES

Hitting agriculture, infrastructure, energy, and transport sectors hard.



## Mobilising for Recovery

# 70+ COUNTRIES PLEGGED SUPPORT

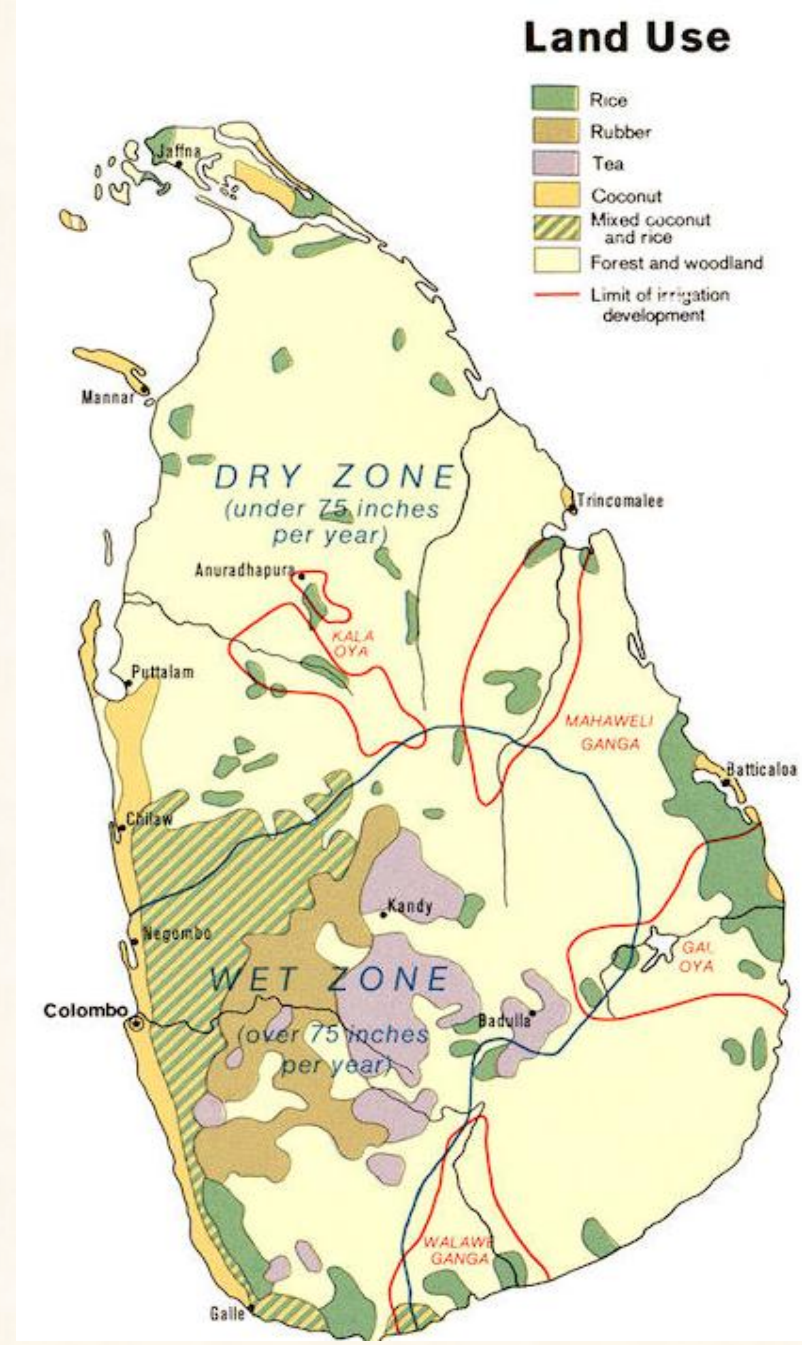
Creating one of the largest global relief responses in the nation's history.

# OVER 697 MILLION RUPEES RAISED DOMESTICALLY

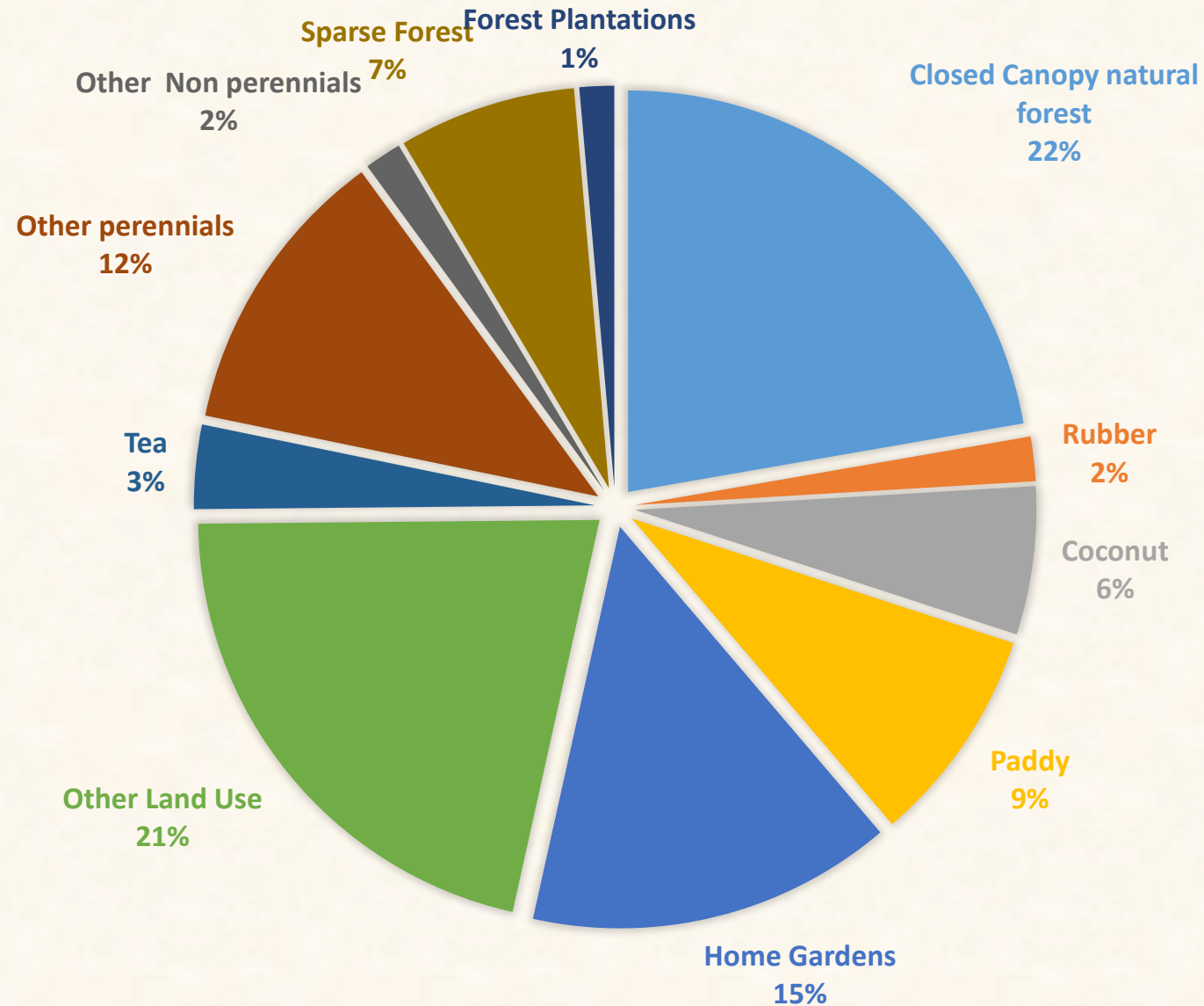
The 'Rebuilding Sri Lanka' fund saw a surge of national solidarity.



➤ Agriculture sector in Sri Lanka plays a pivotal role, because it is both highly vulnerable to climate risks and central to livelihoods, food security, and economic stability



# Forest and Agro Systems



- How ever Sri Lanka's agricultural planning is weakened by fragmented institutions, inconsistent policies, underinvestment in innovation, and poor climate integration.
- Addressing these requires a unified national agricultural policy, stronger institutional capacity, and investment in climate-smart, market-oriented strategies.

# Dithwa Impact eye opened for better Planning the Agric Sector

- The cyclone struck during the *Maha* (primary) cultivation season. Over **130,000 hectares of paddy land** were damaged, with nearly 10% suffering severe topsoil erosion. This creates a reliance on imports, straining national foreign exchange reserves.
- **Resource Conflict & Social Unrest:** In the aftermath, food prices for staples like vegetables and fish spiked (with some prices doubling or tripling). Resulting with social and political instability.
- **Displacement & Human Security:** Over **1.4 million people** were affected, with tens of thousands displaced into emergency centers. This "distress migration" disrupts social cohesion and putting immense pressure on urban infrastructure and state resources.
- **Critical Infrastructure Failure:** The breach of tank bunds (like the Mavil Aru) and the sudden massive water releases from major hydropower plants (Kotmale, Rantambe) highlighted that "hard" security infrastructure is currently ill-equipped for climate-induced water surges.

# Planning for Food Security & Agriculture Resilience

The massive crop losses during Ditwah (over 130,000 hectares) highlighted the need to move beyond traditional farming toward "climate-proofed" production in National planning

- **Decentralized Seed & Input Hubs:** Establish climate-resilient seed banks at the district level. This ensures that when a cyclone destroys current crops, farmers have immediate access to **submergence-tolerant paddy varieties** without waiting for centralized supply chains.
- **Incentivized "Protected Cultivation":** Provide subsidies and low-interest "green loans" for farmers to adopt polytunnels and permanent rain shelters. This stabilizes vegetable supplies during extreme monsoon events, preventing the 30–200% price spikes seen after Ditwah.
- **Mandatory Disaster Risk Insurance:** Integrate affordable, index-based crop insurance into the *Aswesuma* social registry. This prevents "distress borrowing" and ensures farmers can replant within the same season after a shock.

# 3. Livelihood & Human Security

Protecting the "human" element of the economy is vital for preventing social unrest.

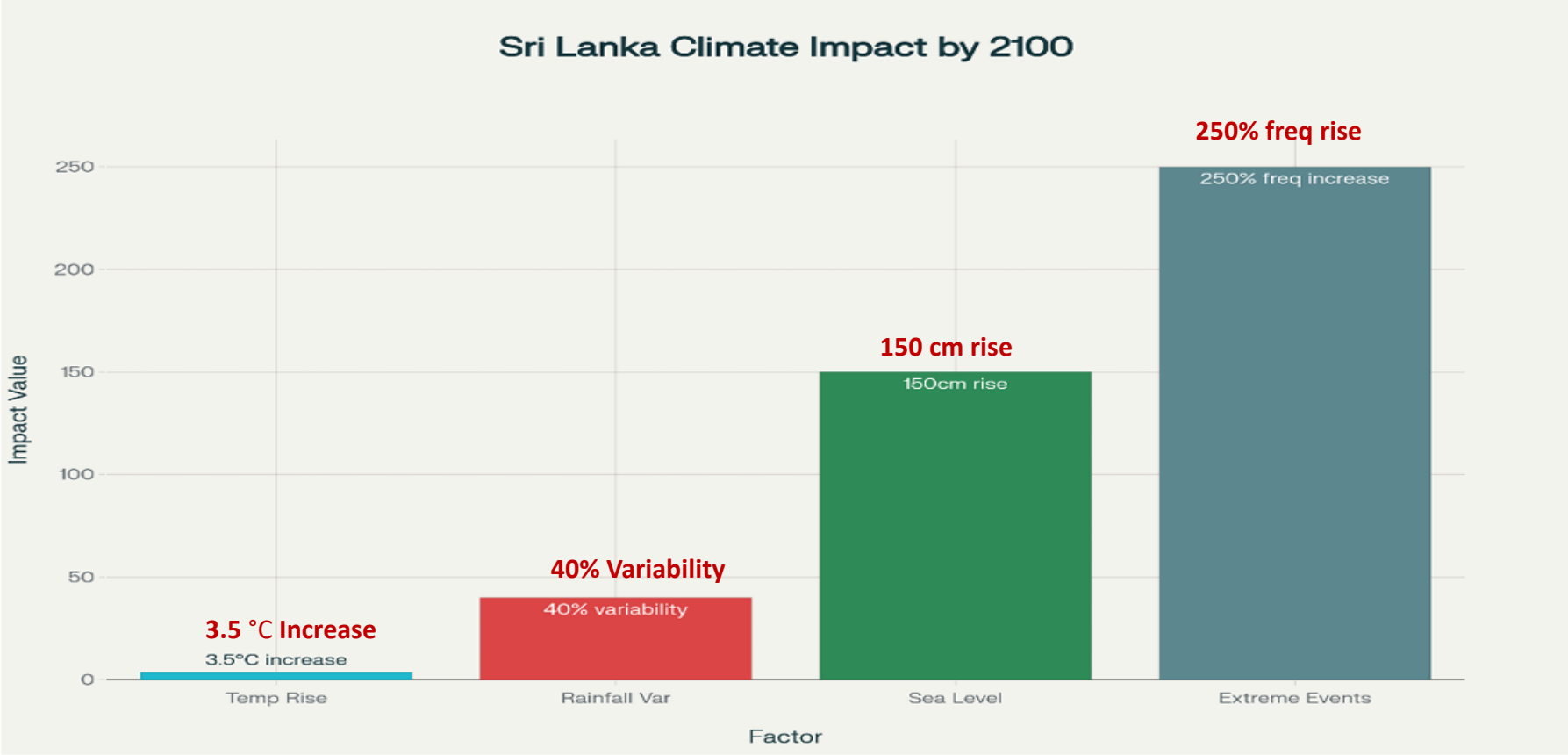
- **Climate-Responsive Social Safety Nets:** Update the national social registry to be "dynamic." When a district is declared a "National Disaster Affected Area" (as 22 districts were during Ditwah), cash transfers should be automatically triggered to prevent malnutrition in vulnerable households.
- **Resilient Rural Connectivity:** Policy must prioritize the "climate-proofing" of at least 500km of critical rural road networks and bridges. Using permeable materials and higher elevation designs ensures that "production zones" (like Nuwara Eliya) are not cut off from "consumption hubs" (like Colombo) during floods.
- **Sustainable Livestock Housing:** Develop national standards for elevated, flood-resistant livestock shelters to prevent the massive loss of cattle and poultry (over 500,000 animals lost during Ditwah).

# Strengthening Climate Security Governance

Climate change must be treated as a core pillar of national defense and state stability.

- **Establish a "Climate Security Council":** Create a high-level body that bridges the Ministry of Defence, the Ministry of Environment, and Ministry of Finance. This council would treat food and water shortages as national security threats rather than just "departmental issues."
- **Sovereign Green Bonds & Climate Finance:** Operationalize the **2025 National Climate Finance Strategy** to tap into international markets. Funds should be ring-fenced specifically for "Loss and Damage" recovery, ensuring the state doesn't have to divert education or health budgets every time a cyclone strikes.
- **Trilingual Crisis Communication Act:** Legally mandates that all disaster warnings and recovery instructions be issued simultaneously in Sinhala, Tamil, and English to ensure equitable access to life-saving information.

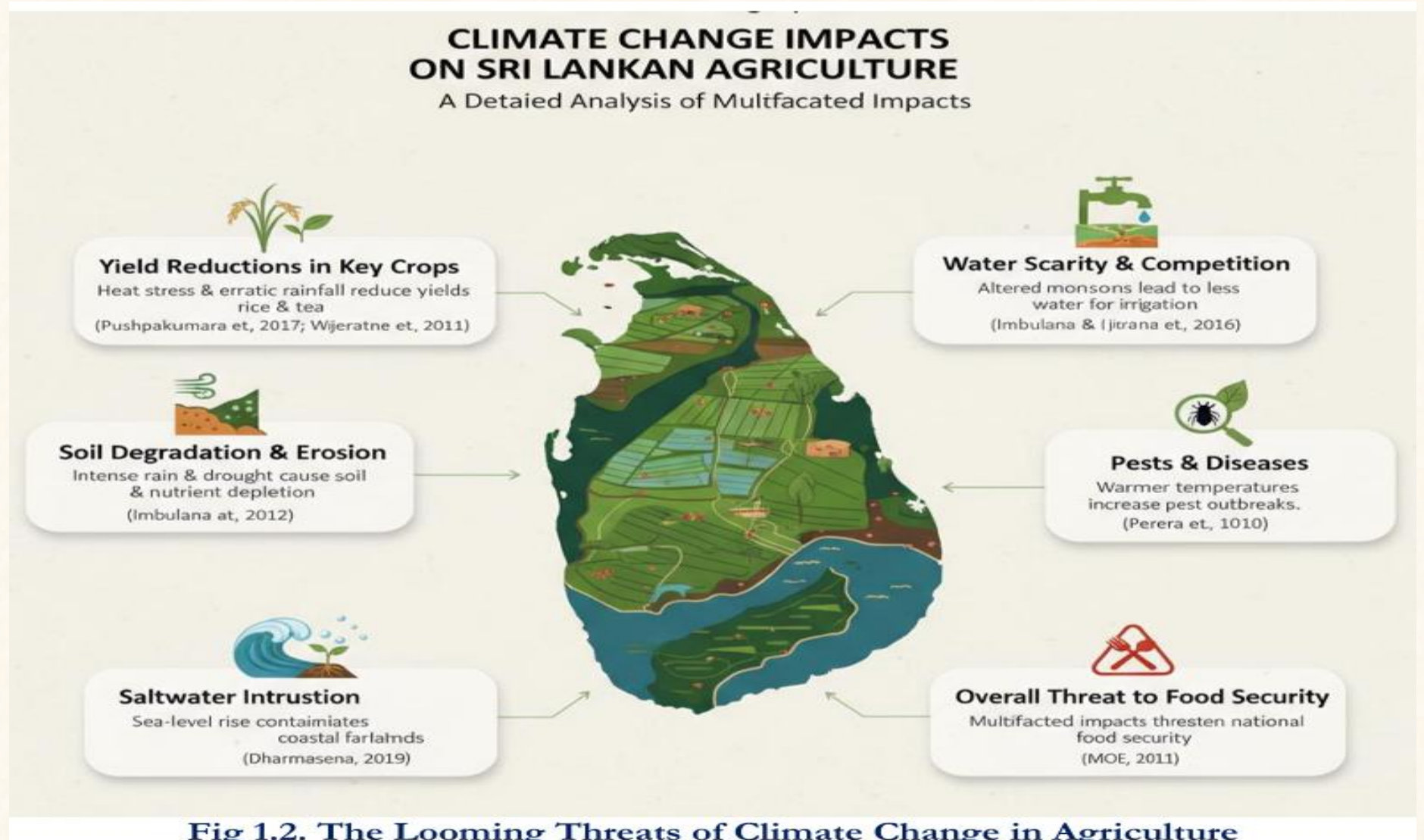
# Climate Change Impact on Sri Lanka's Primary Production Sector - 2100



**Fig 1.1. Climate Change Impacts on Sri Lanka's Primary Production Sector by 2100**

Source ; [https://www.apn-gcr.org/wp-content/uploads/2025/11/Annexure-9d\\_White-paper-on-climate-resilient-strategies-for-coastal-agriculture-in-Sri-Lanka-1.pdf](https://www.apn-gcr.org/wp-content/uploads/2025/11/Annexure-9d_White-paper-on-climate-resilient-strategies-for-coastal-agriculture-in-Sri-Lanka-1.pdf)

# Climate Change Impact on Agriculture

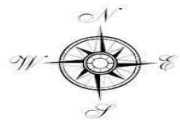
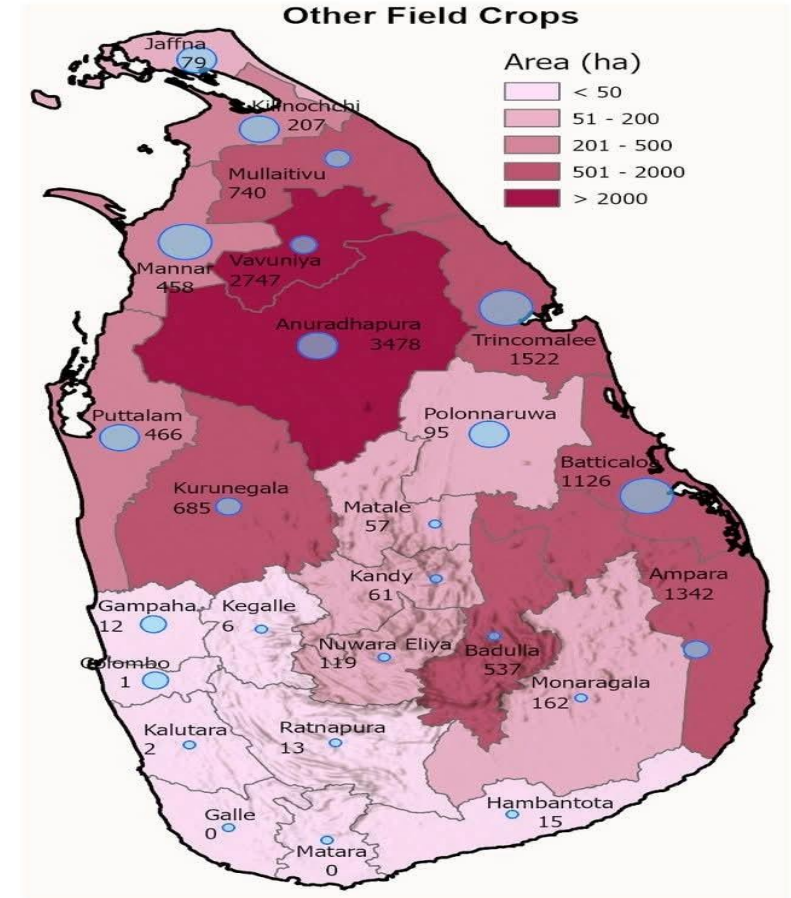
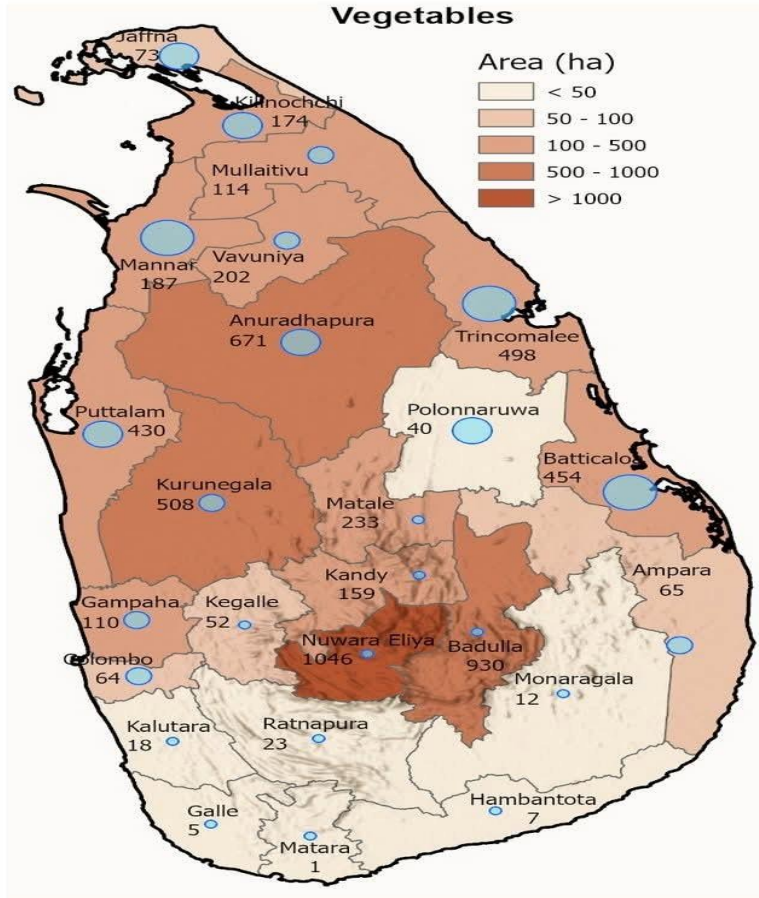
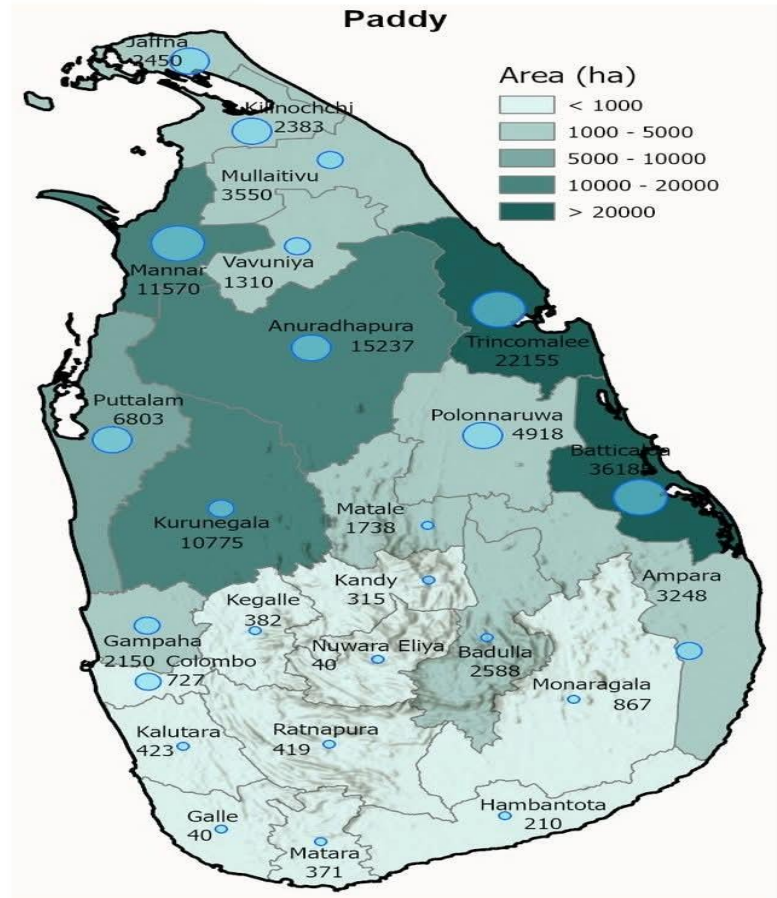


Source [https://www.apn-gcr.org/wp-content/uploads/2025/11/Annexure-9d\\_White-paper-on-climate-resilient-strategies-for-coastal-agriculture-in-Sri-Lanka-1.pdf](https://www.apn-gcr.org/wp-content/uploads/2025/11/Annexure-9d_White-paper-on-climate-resilient-strategies-for-coastal-agriculture-in-Sri-Lanka-1.pdf)



# Impact on Agriculture

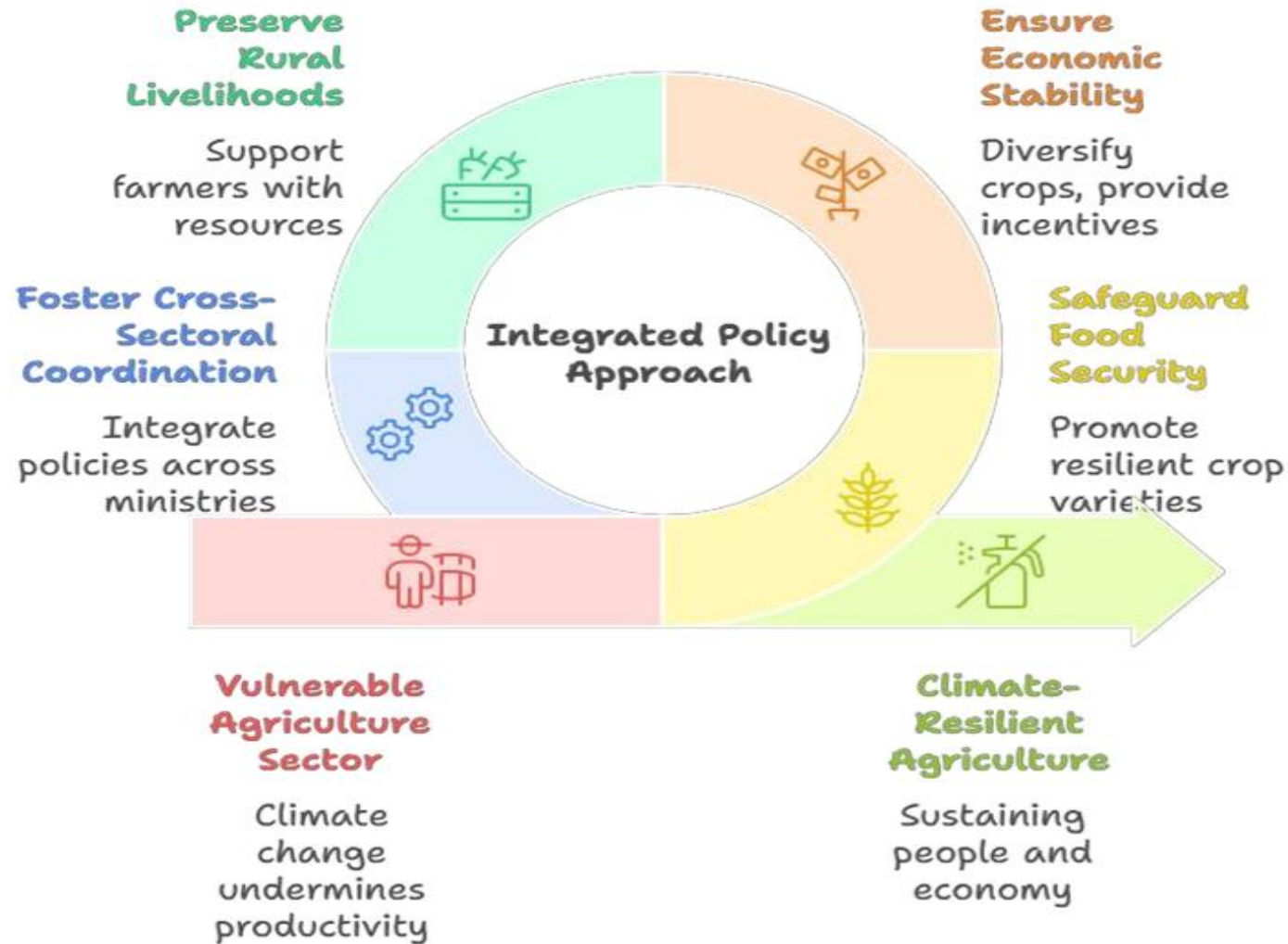
## Flood Affected Crop Area



Data source: Department of Agriculture (as of 17/12/2025)

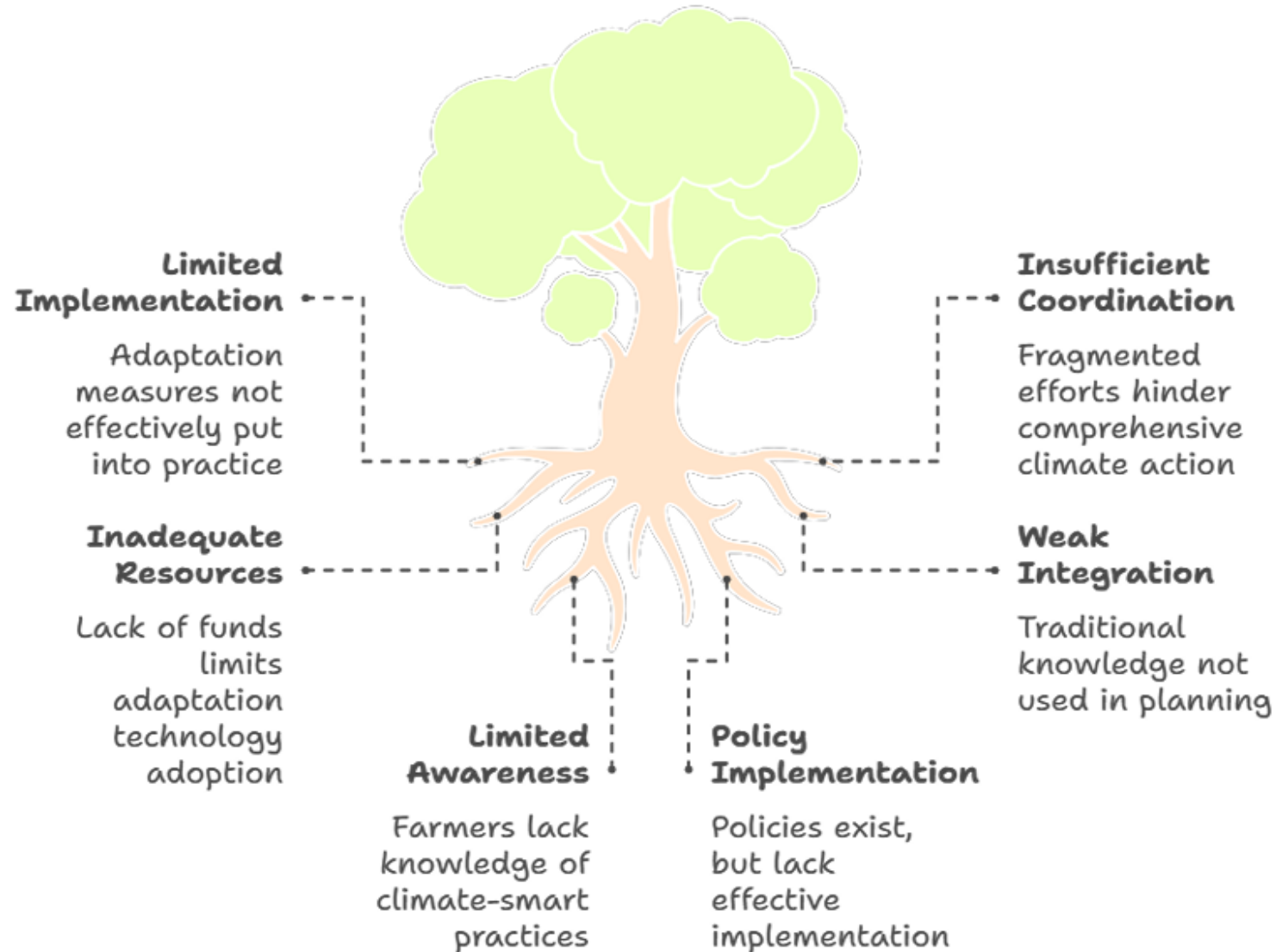


## Building Climate-Resilient Agriculture in Sri Lanka



[http://apn-gcr.org/wp-content/uploads/2011/Annexure-9d\\_White-resilient-strategies-for-coastal-sri-lanka-1.pdf](http://apn-gcr.org/wp-content/uploads/2011/Annexure-9d_White-resilient-strategies-for-coastal-sri-lanka-1.pdf)

# Ineffective Climate Resilience in Sri Lankan Agriculture



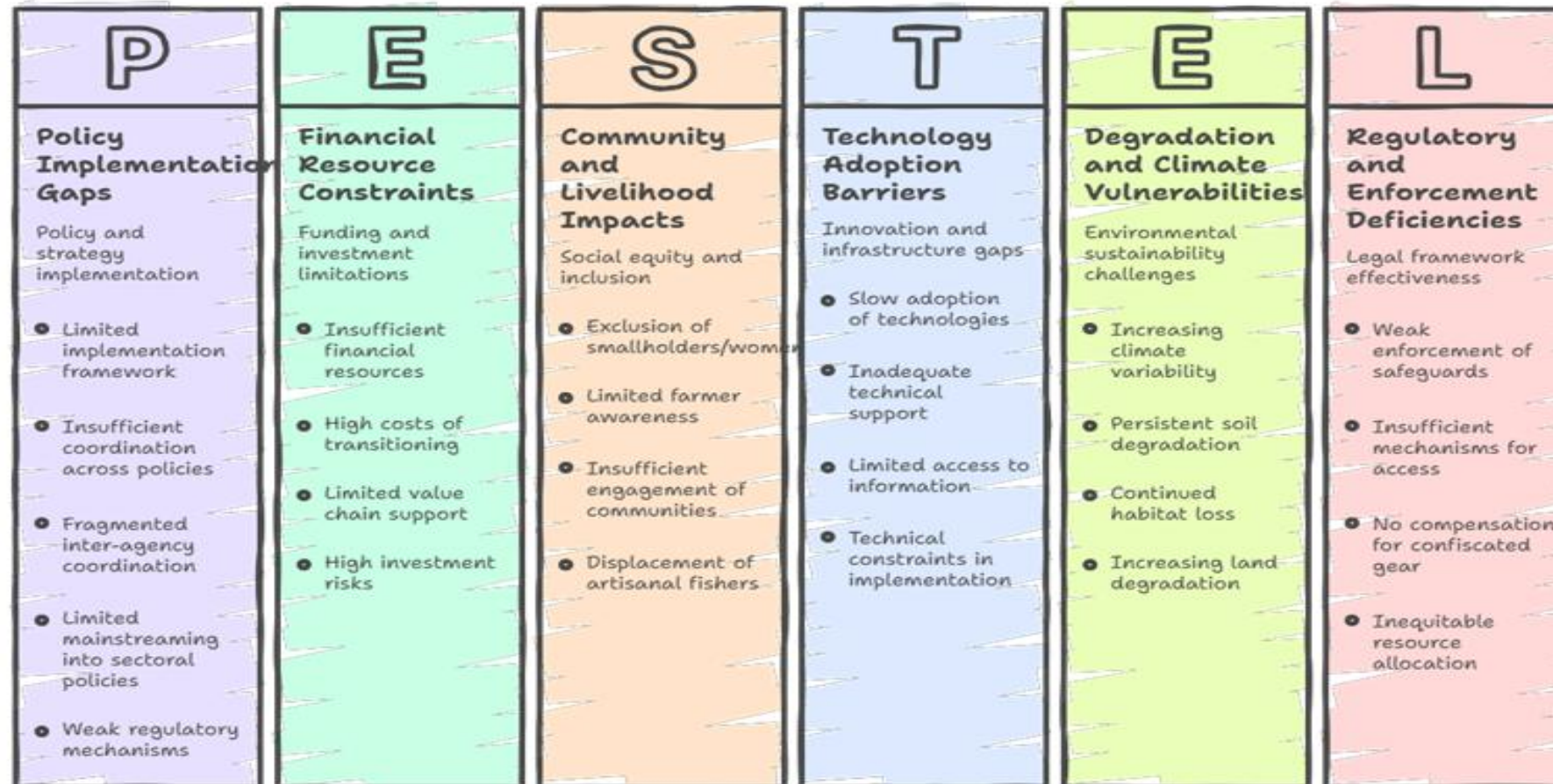
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gies-for-coastal-agriculture-

## Climate-Resilient Agriculture Strategies

- **Crop Diversification** – Reduces risk by integrating climate-resilient crops
- **Precision Irrigation** – Improves water-use efficiency in dry regions
- **Cascade Tank Systems** – Enhances rainwater harvesting and recharge
- **Conservation Agriculture** – Improves soil health and water retention
- **Agroforestry** – Enhances microclimates and prevents erosion
- **Agro-Meteorological Services** – Supports climate-informed planning
- **Weather-Indexed Insurance** – Provides financial protection to farmers
- **Integrated Farming Systems** – Diversifies income and reduces risk
- **Community Seed Banks** – Conserves indigenous crop varieties
- **Integrated Pest Management** – Manages climate-driven pest changes
- **Farmer Organizations** – Strengthen collective action and knowledge sharing

Source [https://www.apn-gcr.org/wp-content/uploads/2025/11/Annexure-9d\\_White-paper-on-climate-resilient-strategies-for-coastal-agriculture-in-Sri-Lanka-1.pdf](https://www.apn-gcr.org/wp-content/uploads/2025/11/Annexure-9d_White-paper-on-climate-resilient-strategies-for-coastal-agriculture-in-Sri-Lanka-1.pdf)

## Sri Lanka Agriculture and Environment PESTEL Analysis



**Fig 5.1. PESTEL framework: The Political, Economic, Social, Technological, Environmental, and Legal factors affecting Sri Lankan Agricultural Sector**

Source [https://www.apn-gcr.org/wp-content/uploads/2025/11/Annexure-9d\\_White-paper-on-climate-resilient-strategies-for-coastal-agriculture-in-Sri-Lanka-1.pdf](https://www.apn-gcr.org/wp-content/uploads/2025/11/Annexure-9d_White-paper-on-climate-resilient-strategies-for-coastal-agriculture-in-Sri-Lanka-1.pdf)

*South Asian Forum for Environment (SAFE)*



**Fig 6.1. The Path Forward**

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**THANK YOU**