El Nino in the Asia Pacific Region

SANNY RAMOS JEGILLOS
Senior Advisor, UNDP Bangkok Regional Hub

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Both palaeoclimate and modern observations suggest that the strongest El Niño and La Niña events since the pre-industrial period have occurred during the last fifty years (medium confidence). There have been three occurrences of extreme El Niño events during the modern observational period (1982–1983, 1997–1998, 2015–2016), all characterised by pronounced rainfall in the normally dry equatorial East Pacific. There have been two occurrences of extreme La Niña (1988–1989, 1998–1999). El Niño and La Niña variability during the last 50 years is unusually high compared with average variability during the last millennium.

- Chapter 6: Extremes, Abrupt Changes and Managing Risks — Special Report on the Ocean and Cryosphere in a Changing Climate (ipcc.ch)

El Nino Hazards and Impacts

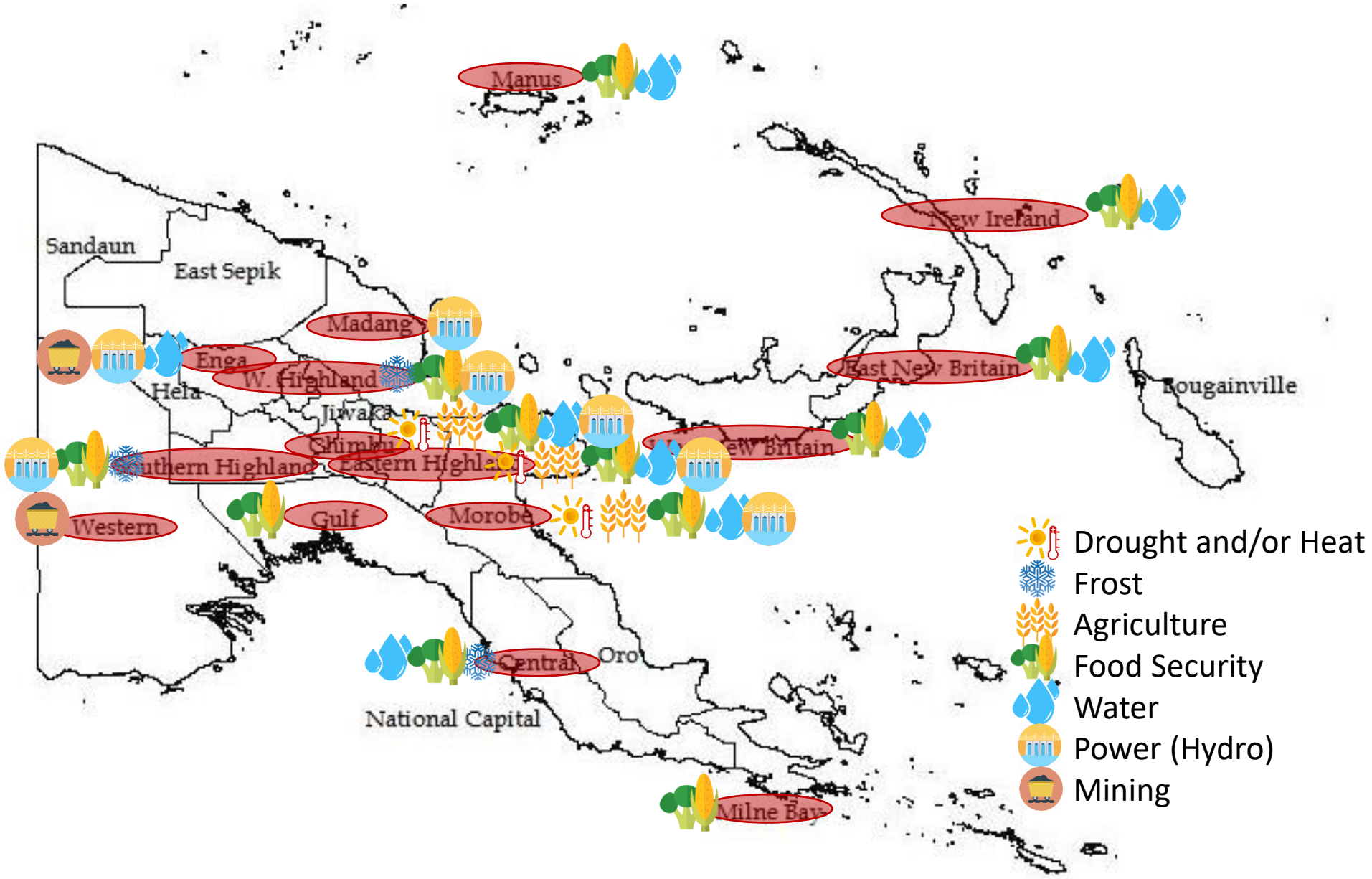
- The most concerning societal and environmental consequences of the meteorological conditions produced by an El Niño event tend to be droughts, floods, flash floods, heatwaves, and forest fires. Significantly, each of these upshots has its own secondary effects that tend to ripple even more deeply through societies and ecosystems. Effects such as food insecurity and forced migration, loss of biodiversity for example can have devastating consequences, both spatially and temporally.
- The 1997-1998 El Niño caused 23,000 fatalities from El Nino induced disasters, increased poverty rates by about 15 percent in many countries, and cost governments up to USD 45 billion from impacts of severe droughts, storms, and other related hazards. (de facto baseline for standard in impact, risk management and responses)
- The 2015-2016 El Niño (strongest since 1950) triggered weather extremes, from severe drought in South and Southeast Asia to intense rainfall in the Pacific. The event affected 60 million people globally and in at least 40 countries around the world were affected by floods, droughts, storms, wildfires, frosts, and diseases.

Enhanced capabilities minimize and address consequences

As bad as these impacts were, however, they could have been much worse had communities and countries not prepared to varying degrees for the event, taking mitigative and sometimes even preventive actions that likely saved countless lives and livelihoods:

1. Regional and national climate outlook forums from which were developed improved strategies and tactics for responding to future events.
2. Improved impact based forecasting
3. Risk assessment – Bio physical, Socio Economic Impacts (context and territorial)
4. Global, regional, national, sectoral and community responses
5. Communicating Risk
6. UN interagency contingency planning: building resilience, anticipatory actions for each sector at risk, response and recovery

Biophysical Impacts during **Strong** El Nino (1997-1998; 2015-2016) Papua New Guinea



Sector	Impact	Remarks
Agriculture	Severe damage to crops, reduced (garden) yields	Loss of major income source for subsistence farmers
Food Security	Food shortages Low water levels affect food supply routes	Reduced food consumption, and consequently health issues
Water	Dried up rivers - lack of drinking and household water	People walked long distances to get water
Power	Low water level in dam caused serious damages in hydro-power supply to seven provinces	
Mining	Low water level halting processing of raw ore Low water levels hindered transportation of copper ore and diesel	Mines shut down operation affecting at least 15% of local and 30% of expatriate workers

Enhanced capabilities minimize and address consequences

UN interagency contingency planning: building resilience, anticipatory actions for each sector at risk, response and recovery

PNG El Niño Early Action Plan (31 Jul 2017) | HumanitarianResponse

IASC Sectoral Activities- high risk humanitarian sectors

- Early Action
- Preparedness
- Response Actions
- Recovery Actions

UNDP: Lessons Learned and Challenges

ENSO capabilities apply usable science for minimizing and addressing climate loss and damages

Blind spots: event vis vulnerabilities (attribution); changes in risk patterns- exposure of biodiversity, irreversible loss and damages

Theories of attribution with climate change and application increasing

Unpredictability and uncertainty with seasonal and short term forecast (onset, process, behavior)

Inadequate granularity of vulnerabilities- poor risk communication- exacerbating conditions of those who are left behind

UNDP: Lessons Learned and Challenges

and temporally.

Limits to minimizing, preparedness, and anticipatory actions- considerable residual risks, loss and damage amplified- economic and non economic

Interconnected risks, consequences require integrated approaches- pre- during, short term, medium term, long term

Siloes (temporal, sectoral, spatial)

1. **Governance**
2. **Financing sources: humanitarian, DRR, Recovery and Development**
3. **Risk Management approaches**

UNDP: Lessons Learned and Challenges

and temporally.

Financing:

1. Development, DRR, Humanitarian Response and Recovery: unpredictable, insufficient.
2. Development aid based on bilateral relationships
3. Insignificant domestic and international funding in LDCs and SIDs

Thank you!

SANNY RAMOS JEGILLOS

Senior Advisor, UNDP Bangkok Regional Hub

sanny.jegillos@undp.org

@sanny_jegillos

Disaster Risk Reduction and Recovery for Building Resilience