Local Community Perceptions of Change and Climate Variability in Tropical Forests of Papua (Indonesia)



ICE 2012, Montpellier, 21-25 May 2012 Manuel Boissière, Bruno Locatelli, Douglas Sheil, Michael Padmanaba , Ermayanti



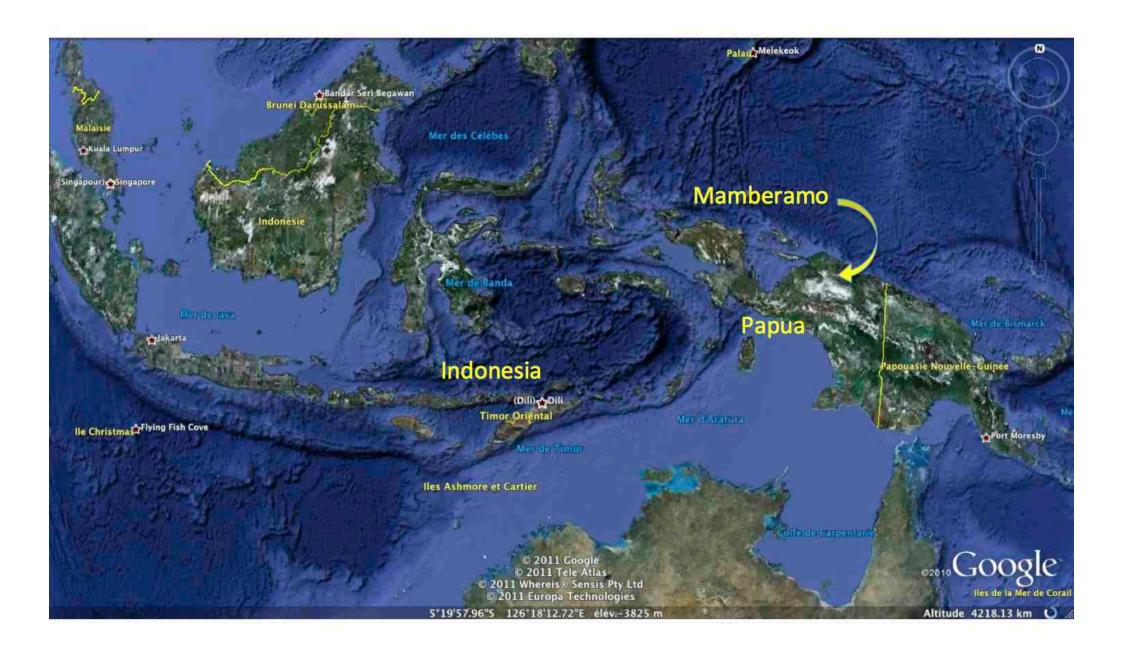




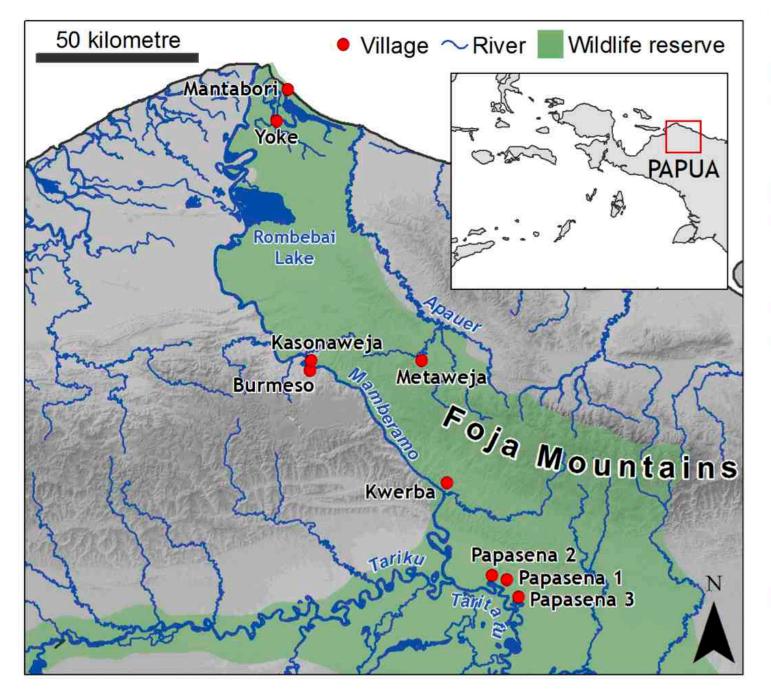




Site description



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Some numbers:

- Mamberamo Raya Regency: 2,8 million hectare
- 90% natural forest (swamp, montane, mangrove, lowland)
- Mamberamo-Foja
 Wildlife Reserve: +- 2
 million hectares
- Population: about
 19,000 inhabitants,
 cultivators, hunter
 gatherers, sago
 collectors
- Threats: logging (>600,000 ha), coal mining project, dam project

Introduction

- Why questions on perception of CC matter?
- What differences between scientific and local knowledge about seasonality, climate variability and climate?



=> Some definitions are necessary

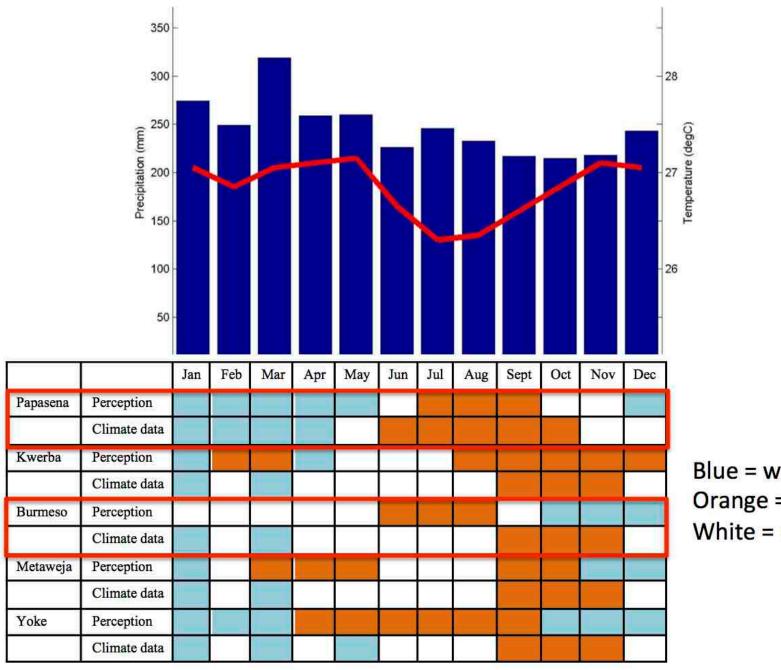
- Seasonality = normal variation in weather during an average year
- Climate variability = deviation from average
- Climate change = long-term trend in climate, from decades to millions of years.

Methods

- FGD part of a broader research
- 4 groups of women, men of different age per village
- Household surveys
- Climatic data: no local meteorological station, database WorldClimCL25 (mean climate based on interpolation of weather station data)



Seasonality



Blue = wet Orange = dry White = unclear

Climate variability

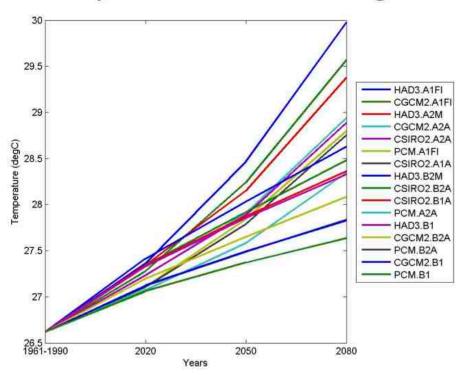
- Recorded inter-annual variability is relatively minor.
- Precipitation/temperature: lower coefficient of inter-annual variation than 70%/95% of other places in the world with similar climate.
- Local people: three major events related to climate variability in the last 10 years: extreme heat, strong winds, and flash floods.



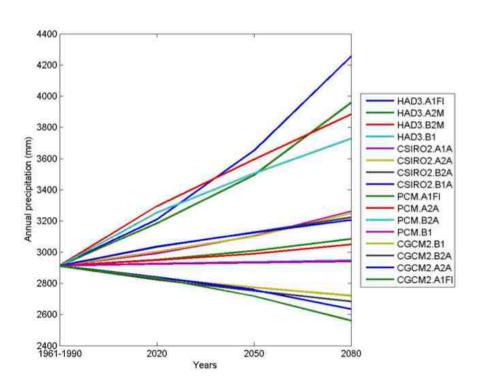
Future changes

Climate Models

Temperatures: Increasing



Annual precipitations: ?

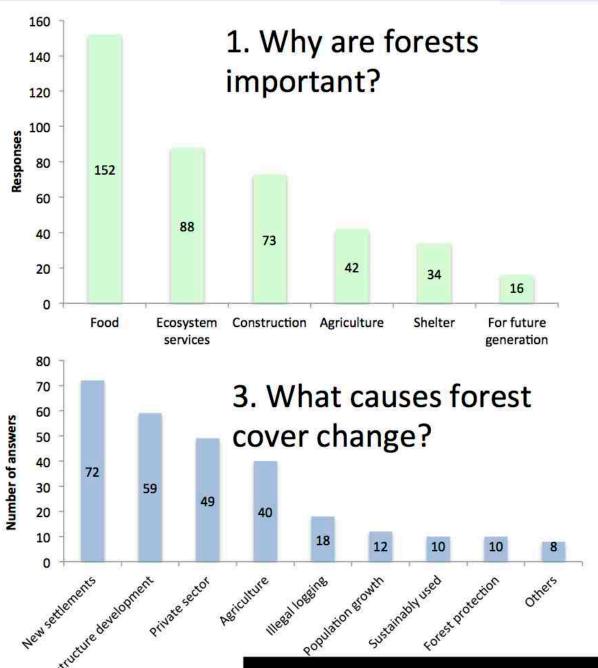


Local Perception: No perceived change

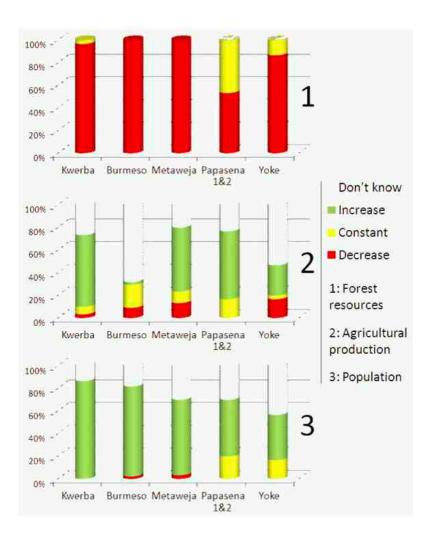
How do people adapt to climatic events?

Village	Event	Coping strategy	
Burmeso	Dry season	Use spades to break hard soll, same techniques for cultivation	
		Stay in the forest, in small settlements, seeking shade under trees	
	Flood	Temporarily relocate to higher ground	
		Plant only short-term crops: reduce the risk of losing produce	
Kwerba	Long rain	Temporarily relocate to higher ground.	
		Gardens are moved, old flooded gardens still used afterwards.	
		Roof tiles replaced with grass or Pandanus leaves	William
	Long drought	Rain call rituals	Naning
		Easier to catch fish (clearer water)	Moving
Metaweja	Floods	Temporarily relocate far from the main rivers	
		Gardens moved to higher ground	Planting
		Annual crops harvested before next rainy season	Traireing
		Streams change directions and locations of natural fishponds change	S. X.X.
	1	Taboos to prevent floods: no gardens planted in sacred mountain	Rituals and taboo
		Taboo against planting near the river: avoid crops swept away	
	Drought	Gnemo decreasing and replaced by fern leaves as wild vegetable	Other strategies
Papasena 1 & 2	Floods	Gardens and hunting areas moved to higher ground	
		Houses built on higher stilts	
	Droughts	Plant cassava, fast growing crops	
		Hunt in areas not affected, near gardens	
Yoke	Dry season	Go further looking for drinking water (not salty)	
		Gardens are not moved	
		Damaged houses repaired together with whole community	

Beyond climate: perception of other changes



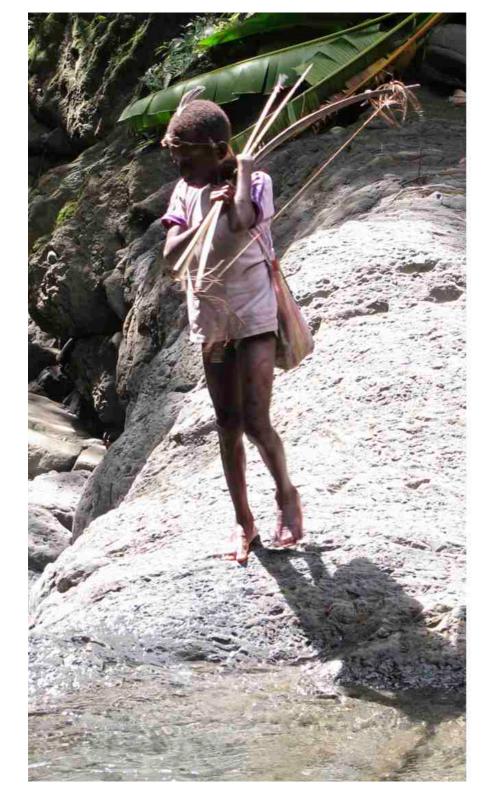
2. How are forest areas changing?



Climatic events NOT perceived cause of forest cover change

Discussion & conclusion

- Meteorological data: general information on climate variability.
- Local people: more detailed and locally relevant information on changes.
- They react to changes that does not include "climate change" =>
 respond to climate variability and to non climatic events (economic,
 political)
- Local knowledge = complementary source of information for analysing extreme events (floods and droughts), and consequences.
- Future research and adaptation programs should use the similarities between local and technical knowledge (engagement in common activities) and the gaps as direction for further clarification.



Thank you

Manuel Boissière (m.boissiere@cgiar.org)