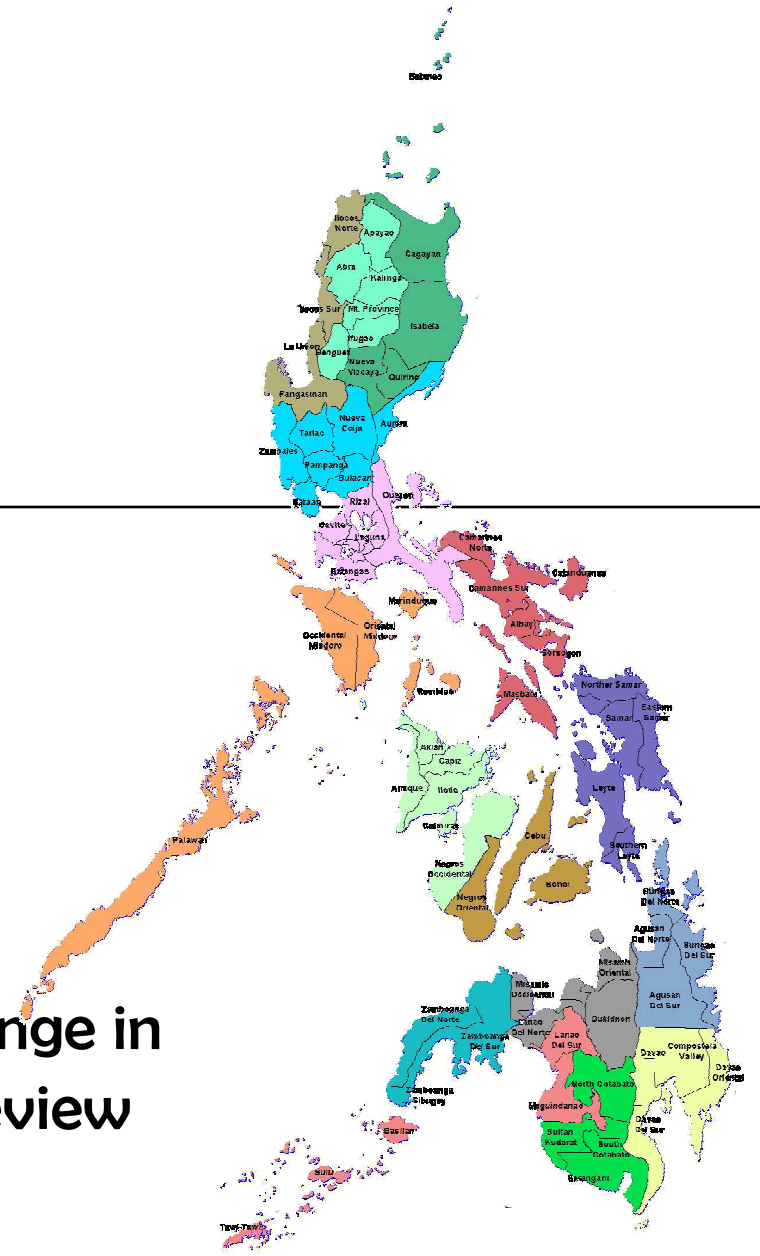
Symposium on
The Economics of Climate Change in SE Asia
North Wing, Marilen Gaerlan Conservatory, De La Salle University
17 November 2009

Climate Change in the Philippines

Presented by:
Dr Rosa T. Perez

Country Report - Philippines

Dr. Rosa T. PEREZ
National Climate Expert



The Economics of Climate Change in Southeast Asia: A Regional Review

ASIAN DEVELOPMENT BANK

Outline

- Brief overview of the country report
- Major Findings
- Major Policy Responses
- Way Forward

Purpose of the Philippine country report

- **Present** the results of scoping work
- **Discuss** vulnerability to the impacts of climate change,
- **Review** climate change adaptation and mitigation practices
- **Review and evaluate** existing policy responses and initiatives on climate change

The Philippines

- Highly prone to natural disasters - tropical cyclones, floods and rain-induced landslides (Climate –related disasters)

- Cost - P15 billion per year in terms of direct damages or more than 0.5% of the national GDP [World Bank/NDCC, 2004]

Weird weather costs 3 Bicol provinces P80M in crops

PILI, CAMARINES SUR— Rains and floods brought by what experts had described as weird weather have destroyed at least P80 million worth of rice plants in three Bicol provinces, officials of the Department of Agriculture (DA) said yesterday.

Marilyn Sta. Catalina, regional technical director for DA operations, reported that the estimated losses were from destroyed rice farms in the provinces of Catanduanes (10 towns); Camarines Sur (eight towns and the City of Naga); and Sorsogon (three towns).

She said the rains and floods devastated rice crops in some 8,773 hectares of farms in Camarines Sur. At least 2,657 hectares of farms were destroyed while 6,116 hectares suffered extensive damages.

Given the extent of damage, she said the estimated production losses could run to 11,460 metric tons of *palay* worth at least P65,421,224.

She added that the towns that reported damages on rice farms included Bombon, Buhi, Cabusao, Calabanga, Canaman, Libmanan, Magarao, Siruma and the city of Naga, all in Camarines Sur province.

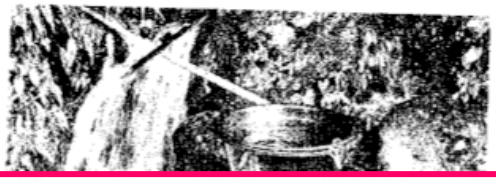
In Catanduanes, the towns of Bagamanoc, Baras, Bato, Gigmoto, Pandan, Panganiban, San Andres, San Miguel, Viga and Virac have reported that 3,645 hectares of farm flooded as a result of ing rains.

Of these, at lea hectares were de while some 2,803 hecta fered heavy damages. mated loss in rice pla placed at 4,404 metr worth at least P14,596.

In Sorsogon provin towns of Barcelona, Jub Sta. Magdalena have re damages in 447 hecta rice farms. At leas hectares were destroyed 249 hectares suffered ages.

The estimated losses duction in the pr reached 397 metric ton least P513,227 worth plants.

Sta Catalina said the of damage and cost of



produced certified seeds. DA regional director Jose Dayao has ordered the regional DA to get supply of certified seeds from other regions and to immediately distribute them to farmers in the three Bicol provinces who are suffering

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ARTICLE

Storm damage up to P10B, says agri dept

First posted 22:59:19 (Mla time) October 10, 2009
Riza T. Olchondra

Philippine Daily Inquirer

MANILA, Philippines—Crop losses due to tropical storms Ondoy (Ketsana) and Pepeng (Parma) have reached P10 billion, Agriculture Undersecretary for Operations Jesus Emmanuel M. Paras said Saturday.

Paras said in a text message that losses due to Pepeng grew to P3.2 billion as of Friday from P1.14 billion around midweek. Damage due to Ondoy was still pegged at P6.8 billion.

Some 478,000 metric tons of palay were lost to the two storms. This volume would have comprised seven percent of the national production target of 6.5 million tons of rice for the fourth quarter of 2009.

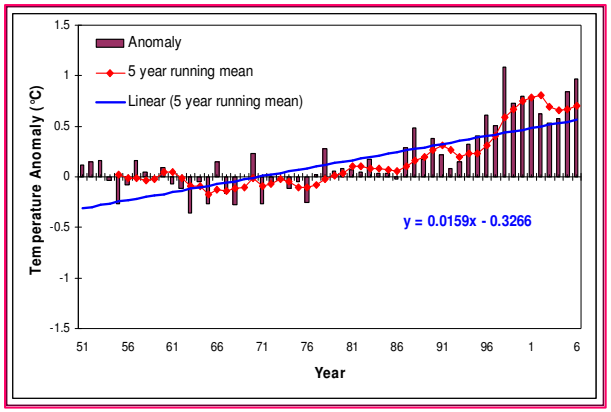
Corn losses reached 18,000 metric tons, more than one percent of the national production target of 1.4 million tons for the fourth quarter.

The Philippines

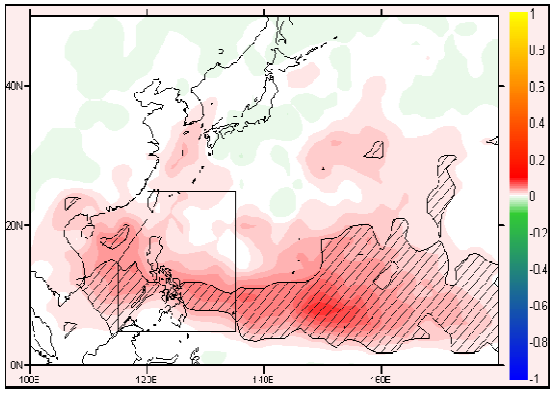
- Indirect and secondary impacts
  - Substantial social and environmental impacts
- Large number of smaller hazard events unaccounted for but have very large impacts at the household level, primarily for the poor
- Linkages between poverty and vulnerability to disasters including climate risks - mutually reinforcing effects

Major Findings: Climate Change Impact and Vulnerabilities

- Mean temperature is increasing
- Nigh time temperature on the rise
- Shifting pathways of more intense typhoons
- Shifting seasons
- Decreasing number of rainy days

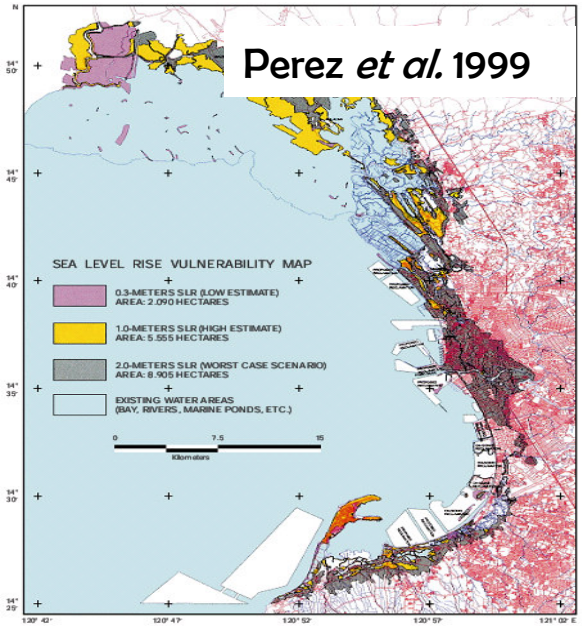


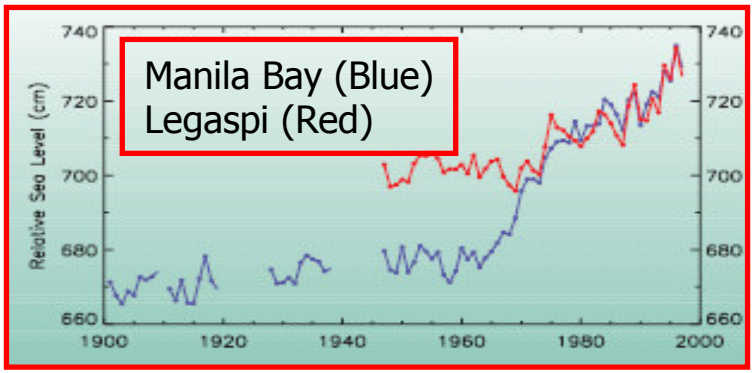
Source: Tibig, 2004



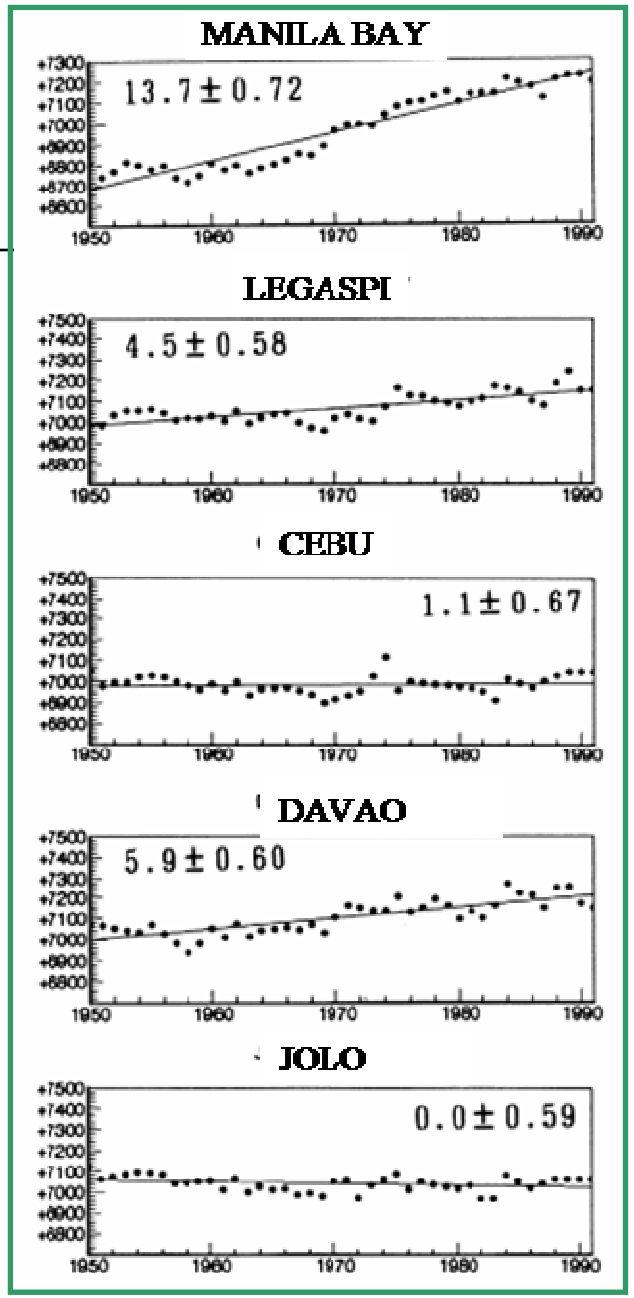
Source: Anglo, 2005

Sea Level Rise in the Philippines



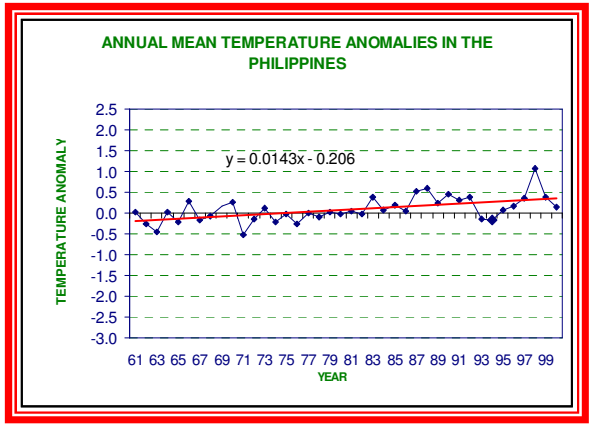


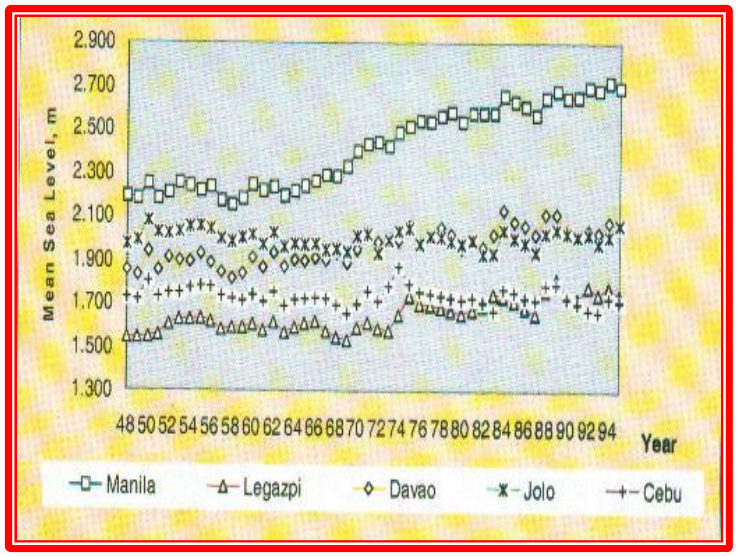
Hulme and Sheard 1999



Strong signals: start of climate change process already evident in the country

- Increasing trends in temperature, sea level rise, etc, are consistent with the global trends.





Major Findings: Climate Change Impact and Vulnerabilities

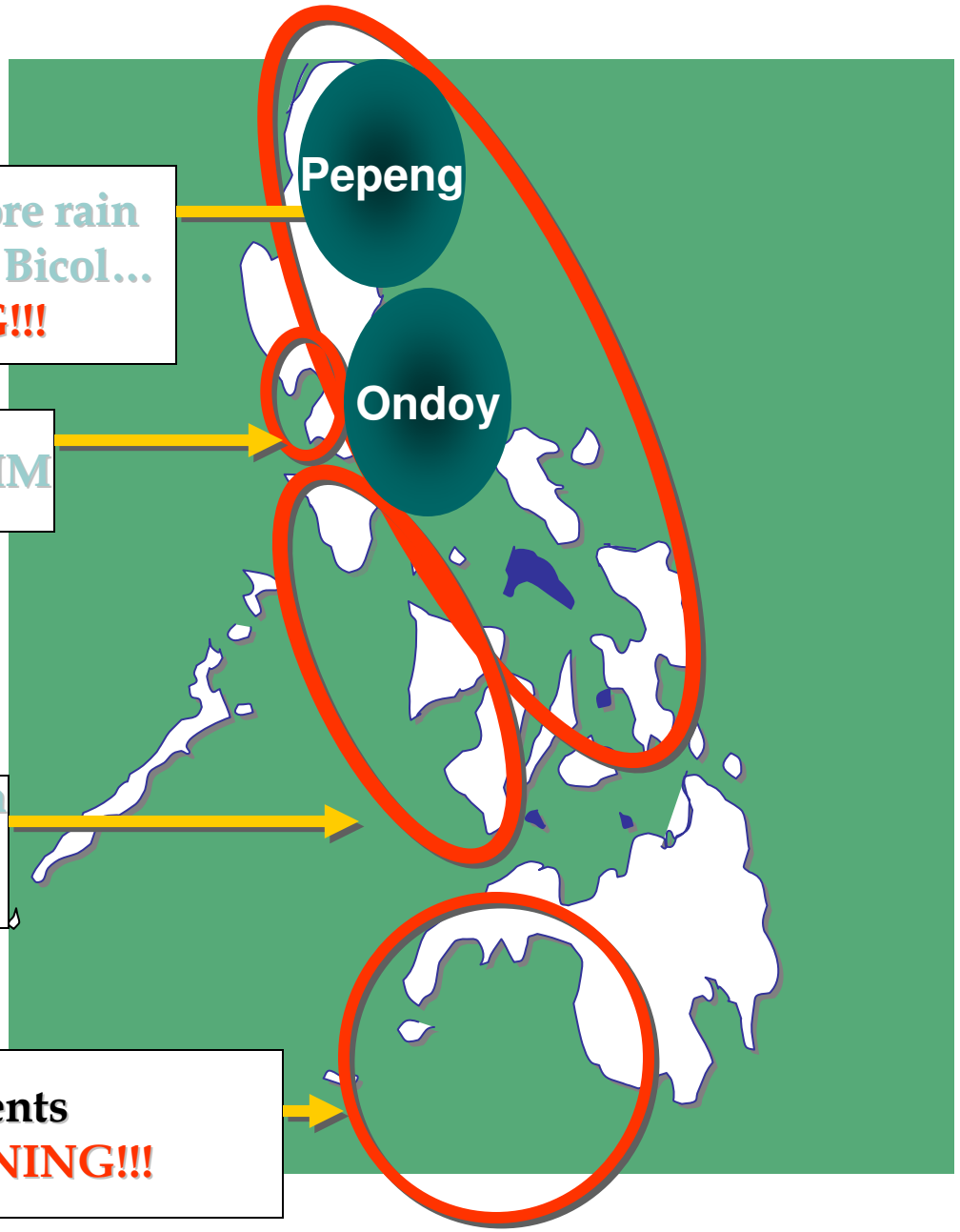
- Observed impacts include increasing number of weather-related disasters
- It is generally believed that the more intense tropical cyclones and heavy rainfall episodes causing large economic costs and loss of lives are already fingerprints of a changing climate.

More extreme events, more rain in north Luzon, Quezon, Bicol…
ALREADY HAPPENING!!!

Risk of sea level rise in MM

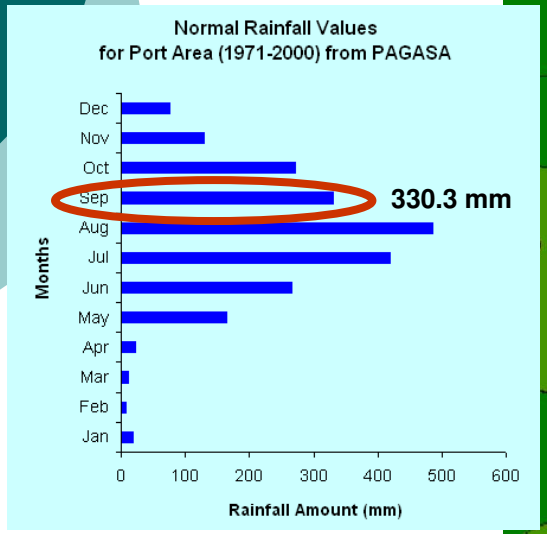
Risk of droughts in Eastern Philippines

Extreme rainfall events
ALREADY HAPPENING!!!

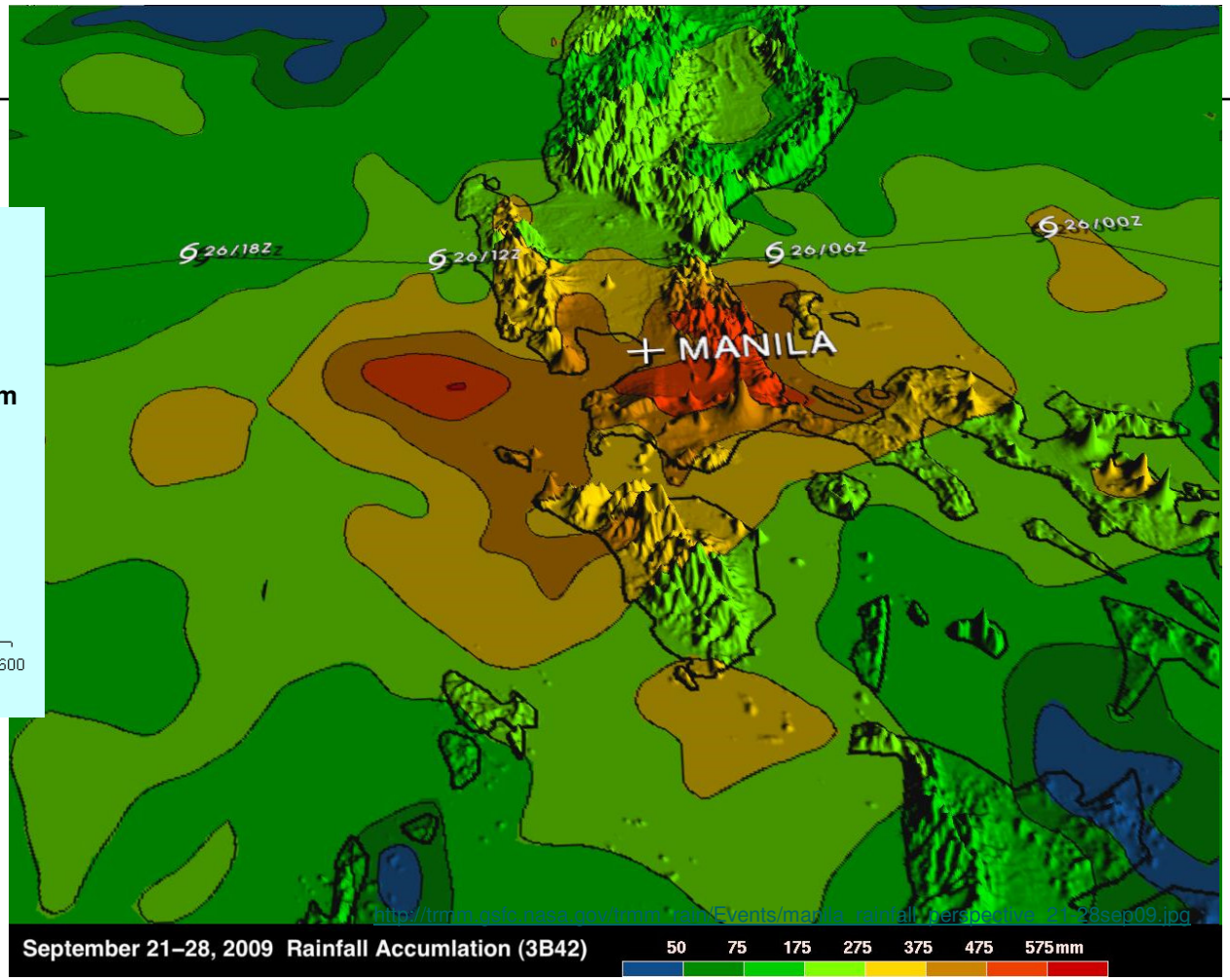


Tropical Storm Ketsana ("Ondoy")

Accumulated Rain (21-28 Sep 2009)



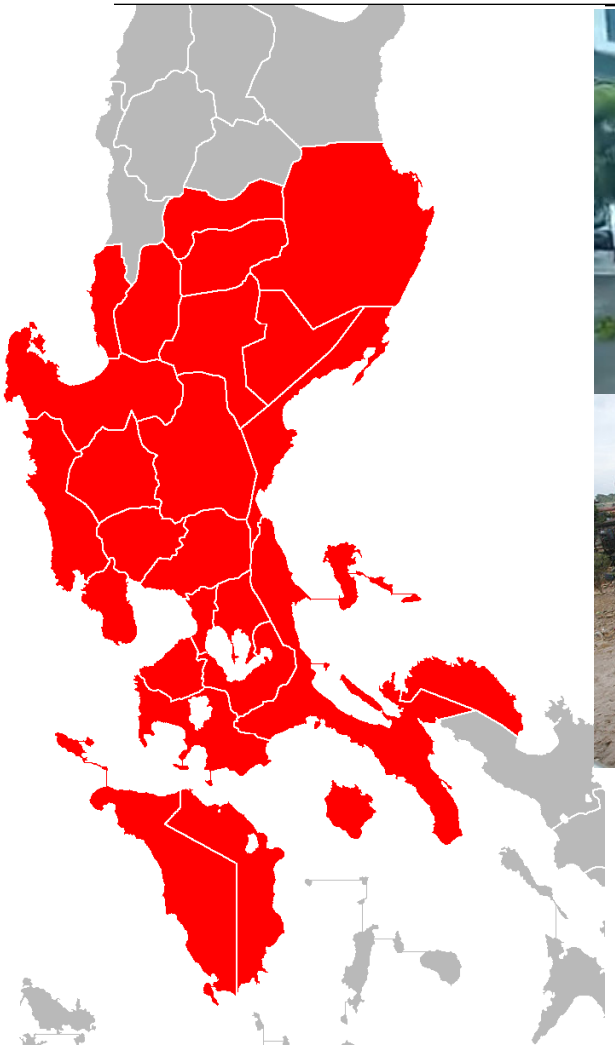
http://www.nscb.gov.ph/headlines/StatsSpeak/2009/030909_rav_climatechange.asp



http://trmm.gsfc.nasa.gov/trmm_rain/Events/manila_rainfall_perspective_21-28sep09.jpg

- Accumulated rainfall over a week measured by TRMM was over 500 mm in Metro Manila. This value is higher than the monthly normal.

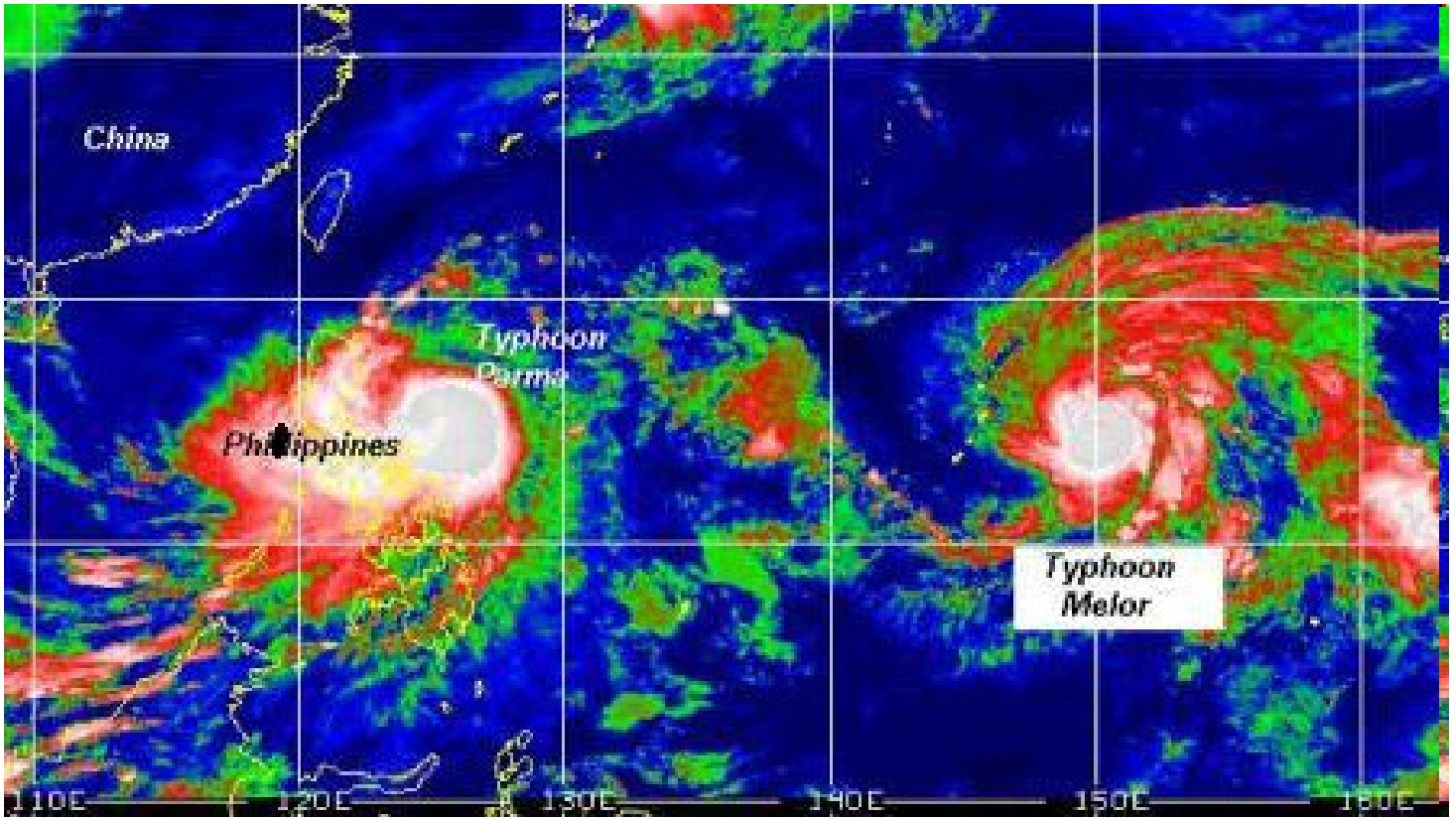
Tropical Storm Ketsana ("Ondoy")



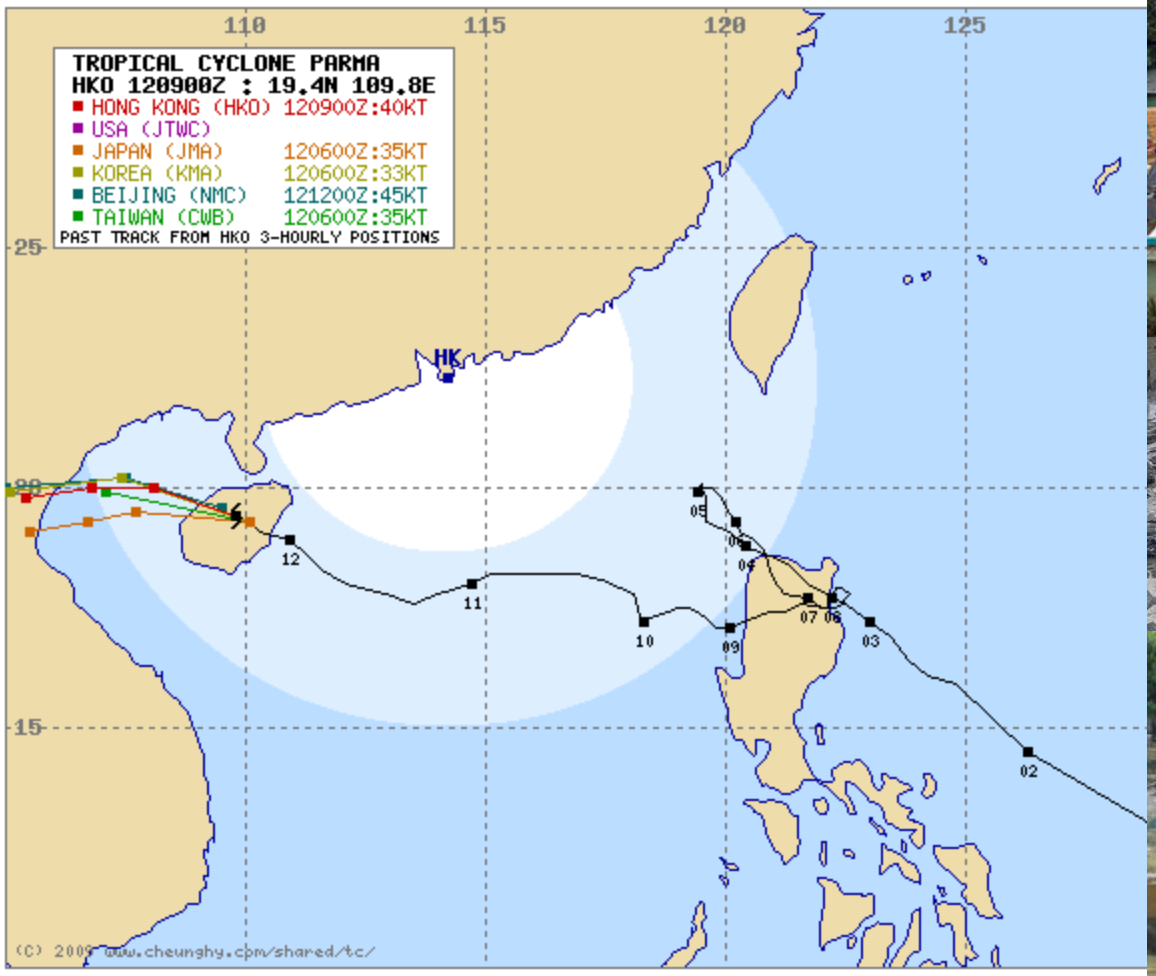
26 September 2009

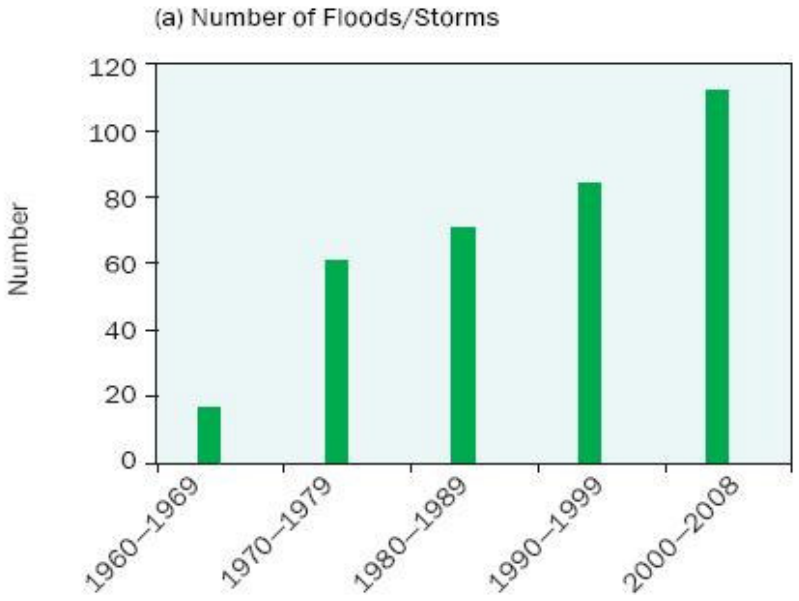
Heavy rains and floods

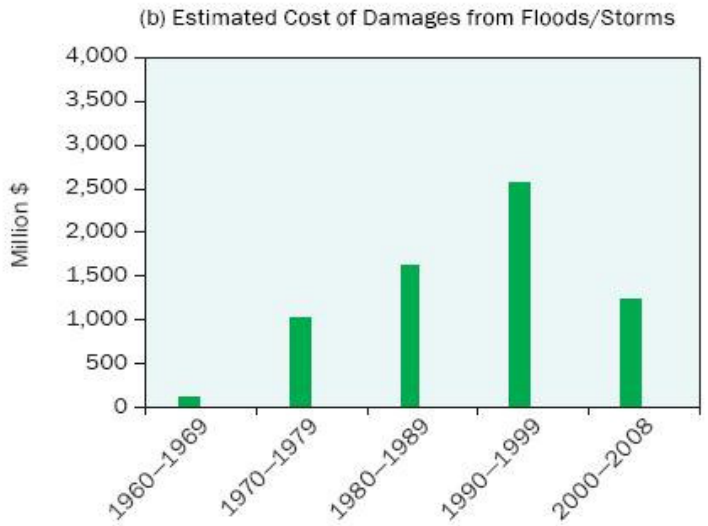
Tropical Storm Parma ("Pepeng") & Typhoon Melor ("Quedan")

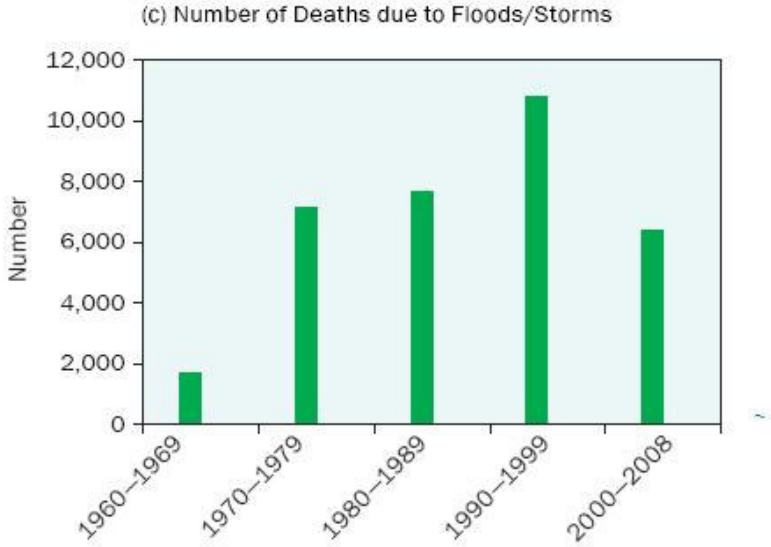


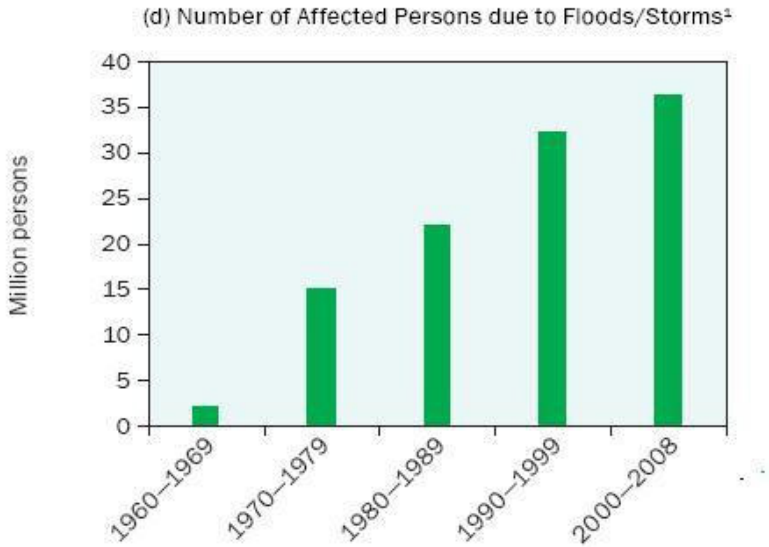
TC Parma ("Pepeng") – Very Unusual Motion





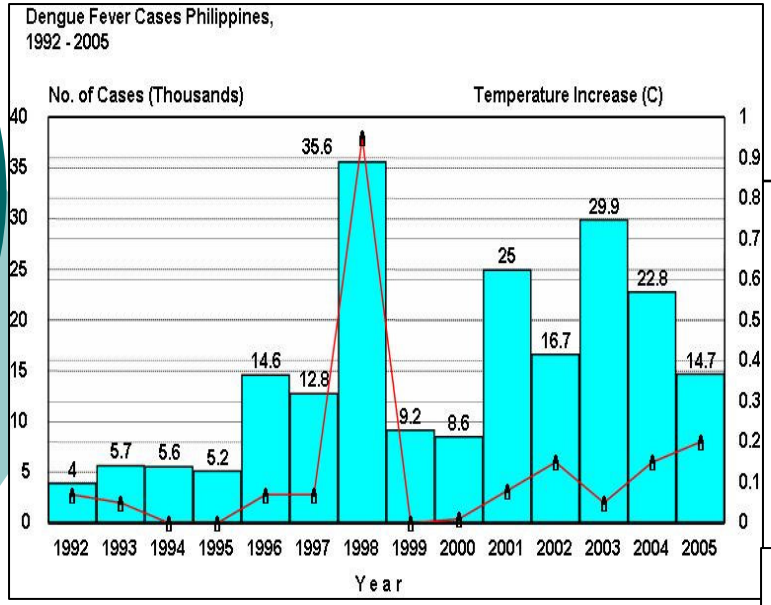




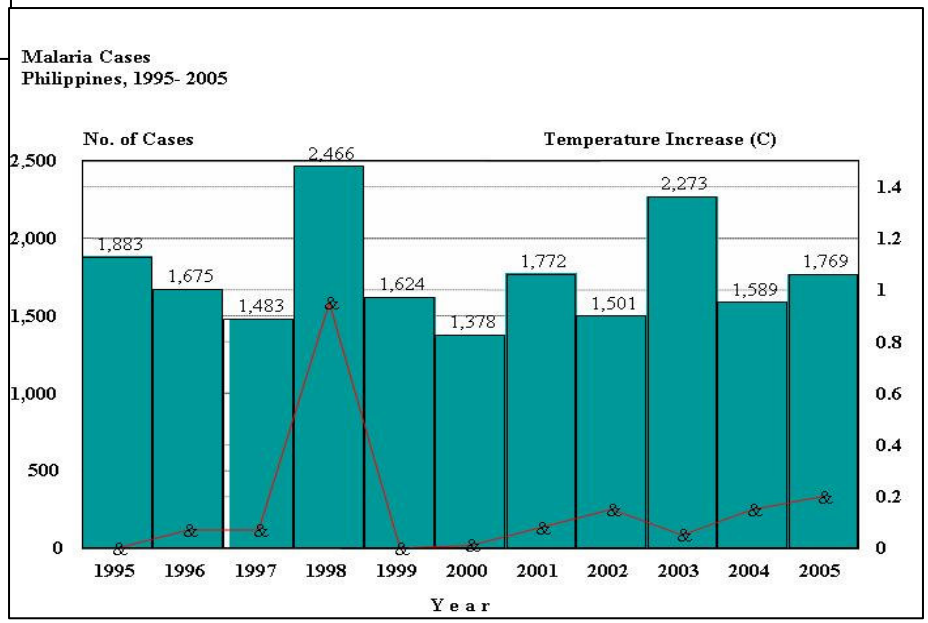


Source: EM-DAT, 2009

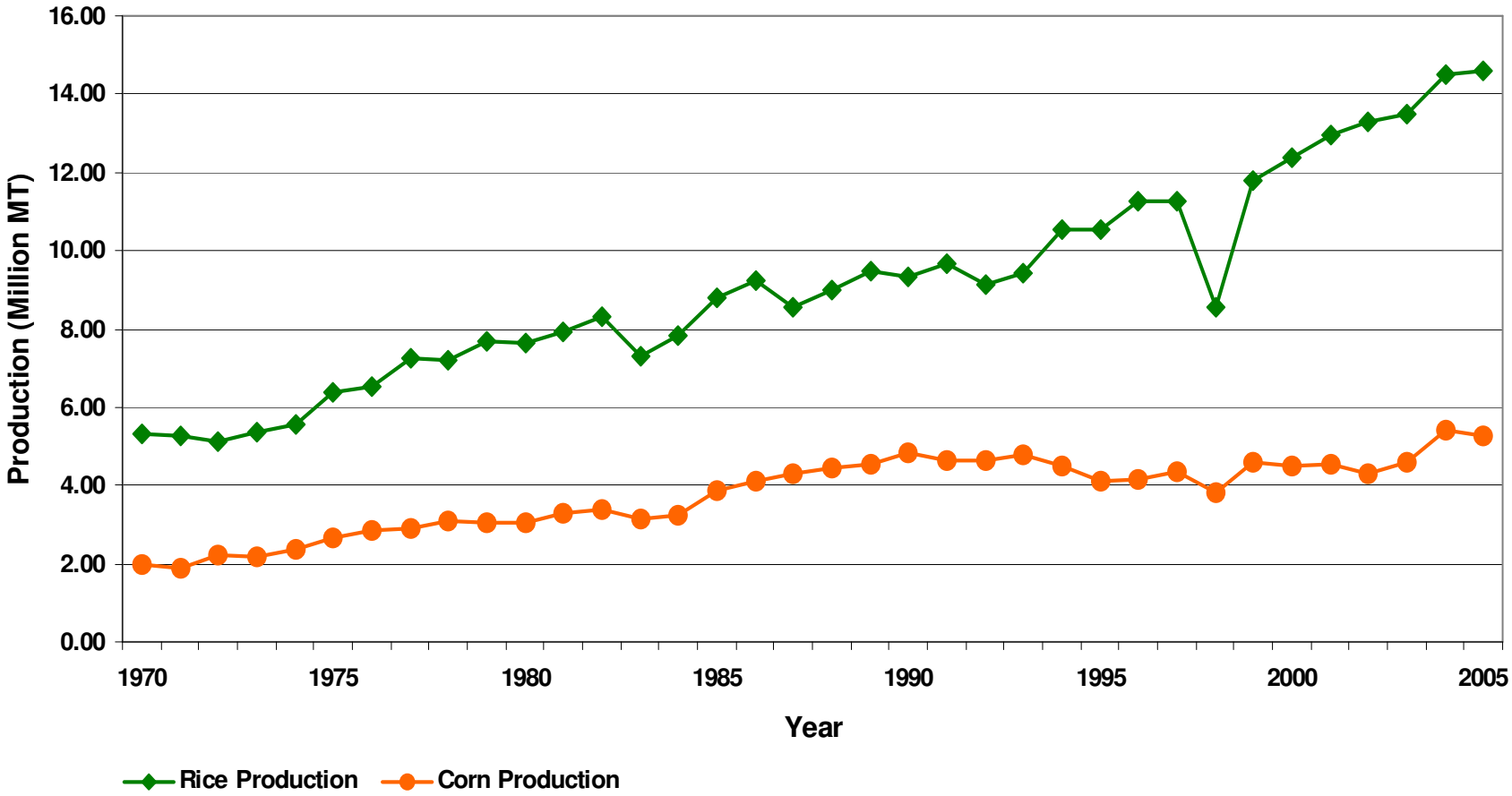
Dengue Cases vs. Temperature Change



Malaria Cases vs. Temperature Change

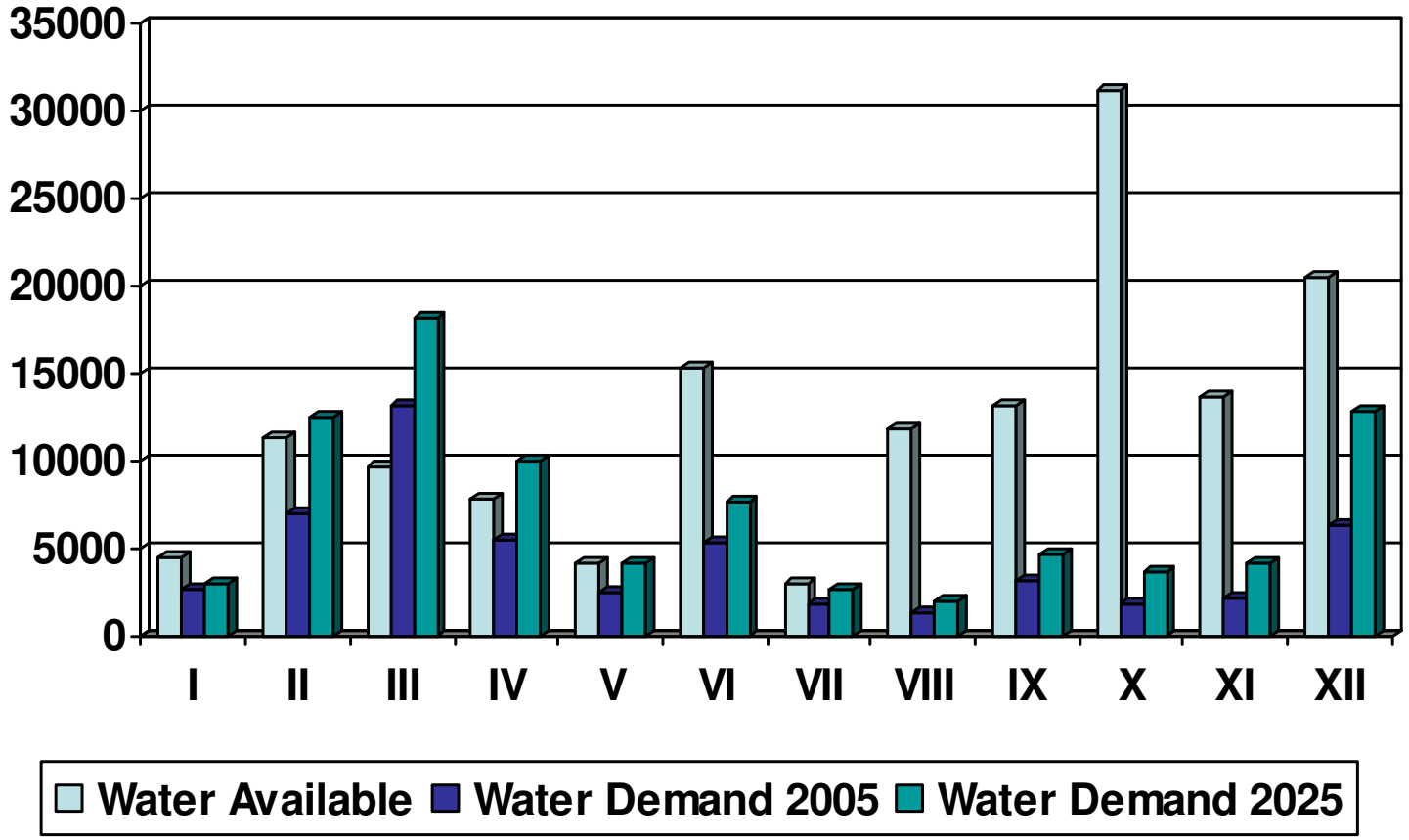


Philippine Rice and Corn Production



Source of Data: BAS

Projection of Water demand vs. Water Availability



(Source: Alikpala – NWRB, 2008)

Major Findings: Climate Change Adaptation

- Two factors appear to predominate in shaping the adaptation response - the existing capacity of those responding, and the level of information available about expected climate change
- Adaptation measures range between purely developmental efforts to explicit CC adaptation
- Largely sectoral; cross sectoral integration not yet widely practiced

Water Resources

- Impacts: Water shortages, Water quality degradation
- Adaptation practices: Anticipatory
  - Reiterate existing policy to prioritize abstraction from surface water to remove the pressures from groundwater sources (NWRB, MWSS and other agencies)
  - Encourage adoption of new environment-friendly technology for efficient water use and water conservation, e.g. SWIPs
  - Capacity building programs for all levels of governance (Different concerned agencies)

Agriculture

- Impacts
  - Soil erosion lead to soil nutrients mining and lower soil productivity
  - Lower crop yields
- Adaptation: anticipatory
  - Crop diversification
  - Change of crop or crop variety
  - Crop insurance
- Adaptation: Reactive
  - Provision of subsidies

Human Health

- Impacts:
  - Water borne diseases outbreaks
  - Other vector borne diseases outbreak
- Adaptation: anticipatory
  - Sanitary practices
  - Preventive medicines (e.g., vaccines)
  - Information and awareness
- Adaptation: reactive
  - Treatment

Coastal and Marine Resources

- Impacts
  - Flooding/ Inundation due to relative sea level rise (SLR)
  - Salt water intrusion
- Adaptation: Anticipatory
  - Strengthening of the Disaster Management Program
  - Early warning system (Typhoons, floods)
  - Flood prevention / protection/Shoreline stabilization
  - Risk maps to floods and to probable sea level rise
  - Mangrove reforestation
- Adaptation: Reactive
  - Retrofitting of infras to accommodate SLR
  - Disaster relief / Reconstruction /Rehabilitation

CC Adaptation

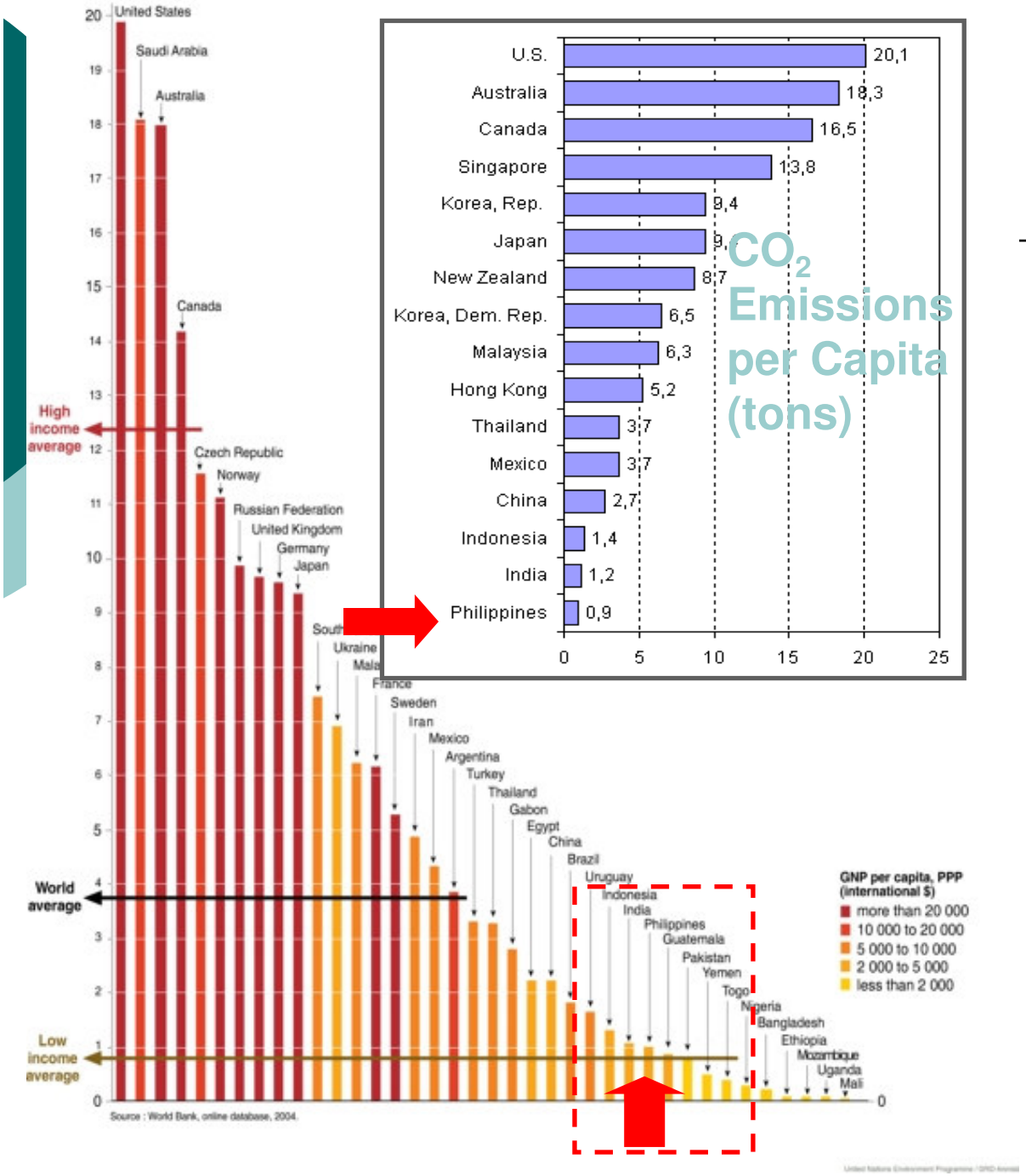
- Costing the adaptation strategies is rather challenging.
- Increased understanding of the future risks, before costs and benefits of anticipated adaptations can be accurately calculated
- As today, indirect damages and non-market nature of benefits derived from adaptation strategies are still difficult to assess and masks the future estimates of avoided losses.

Major Findings: Climate Change Mitigation

- The Philippine government formulated and started to implement mitigation strategies to limit its greenhouse gas emissions through various sectoral plans particularly those of energy, transport and agriculture sectors.
- Major programs of the energy sector center on energy efficiency and promotion and use of new and renewable energy (NRE) sources, as reflected in the Philippine Energy Plan (PEP) – 1999-2008.

Major Findings: Climate Change Mitigation

- The implementation of the different mitigation programs have largely been backed up by policies and laws of the country such as the Philippine Clean Air Act of 1999, Biofuels Act of 2006, and the latest, the Renewable Energy Act of 2008.



Where the Philippines Stands and What it Means

- Even if the Philippines **stops** emitting CO_2 there will be **little effect** on global warming
- Emission reduction is done for other benefits: cleaner air, less oil dependence, cheaper energy

Major Findings: Climate Change Mitigation

- The greatest challenge for the Philippines is to explore more possibilities to improve its efforts toward greenhouse gas mitigation and abatement in line with its thrust on sustainable development, such as low carbon lifestyles.

CC Mitigation

- Figuring out how to limit future emissions is a difficult problem –to determine how to do it effectively at reasonable cost is even more difficult.
- This has to start with accurate report and inventory of greenhouse gas emissions.
- Local emission factors need to be developed

Major Findings: Climate Policies

- Provide the regulatory framework to guide the role of different stakeholders in the development and implementation of effective adaptation and mitigation strategies.
- The National Gov't has the responsibility
  - to provide sound regulatory structures and policies that would attract investment on climate-friendly technologies
  - to come up with strategies to appropriately address issues particularly that of the vulnerable sectors.
- Currently, we have a fragmented policy on climate change at the national level

o Climate Change Act of 2009 RA 9729

Major Findings: Climate Policies

- LGUs, on the other hand are seen as having the best role in identifying and appropriately address climate change impacts at the local level.
  - localized strategies appropriate in their area
  - new climate change champions are emerging particularly on adaptation.
  - rallying points are the recent disaster experiences that have never happened before, almost all related to extreme climate and weather events.

Major Findings: Climate Policies

- **Climate change is a complex problem** that requires a multitude of solutions and at the core is **sustainable development.**
- An **integrated mitigation-adaptation framework** should be anchored on a sustainable development agenda, which would translate as **"no regrets" options** and will serve the better long-term interests of the country regardless of the ultimate impacts of climate change.
- The Philippines has made substantial progress in **institutionalizing laws** that aim to promote sustainable development, but its predicament lies chiefly in implementing these laws.
- Today, the most difficult and most important challenge for the country is **how to make these laws matter**.

Mitigation and Adaptation Policies are not Alternatives

- Both will have costs but both can produce economic benefits
- Possible Criteria for Evaluating Climate Policy
  - Environmentally Effective
  - Economically Effective
  - Administratively Effective
  - Equitable
  - Politically Feasible

Way Forward

- Research and Development on the issue of climate change particularly the causes and impacts are important
- Evidence-based decision making; appropriate strategies to address climate change.
- Downscaled climate change and socio-economic scenarios necessary to support targeted strategies for adaptation.

Way Forward

- Sharing of information, derived from these activities, whether baseline or projected, makes the researches truly an instrument for development
- For vulnerability assessment, inter-sectoral coordination must be strengthened, with emphasis on cross sectoral integration

Thank You

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