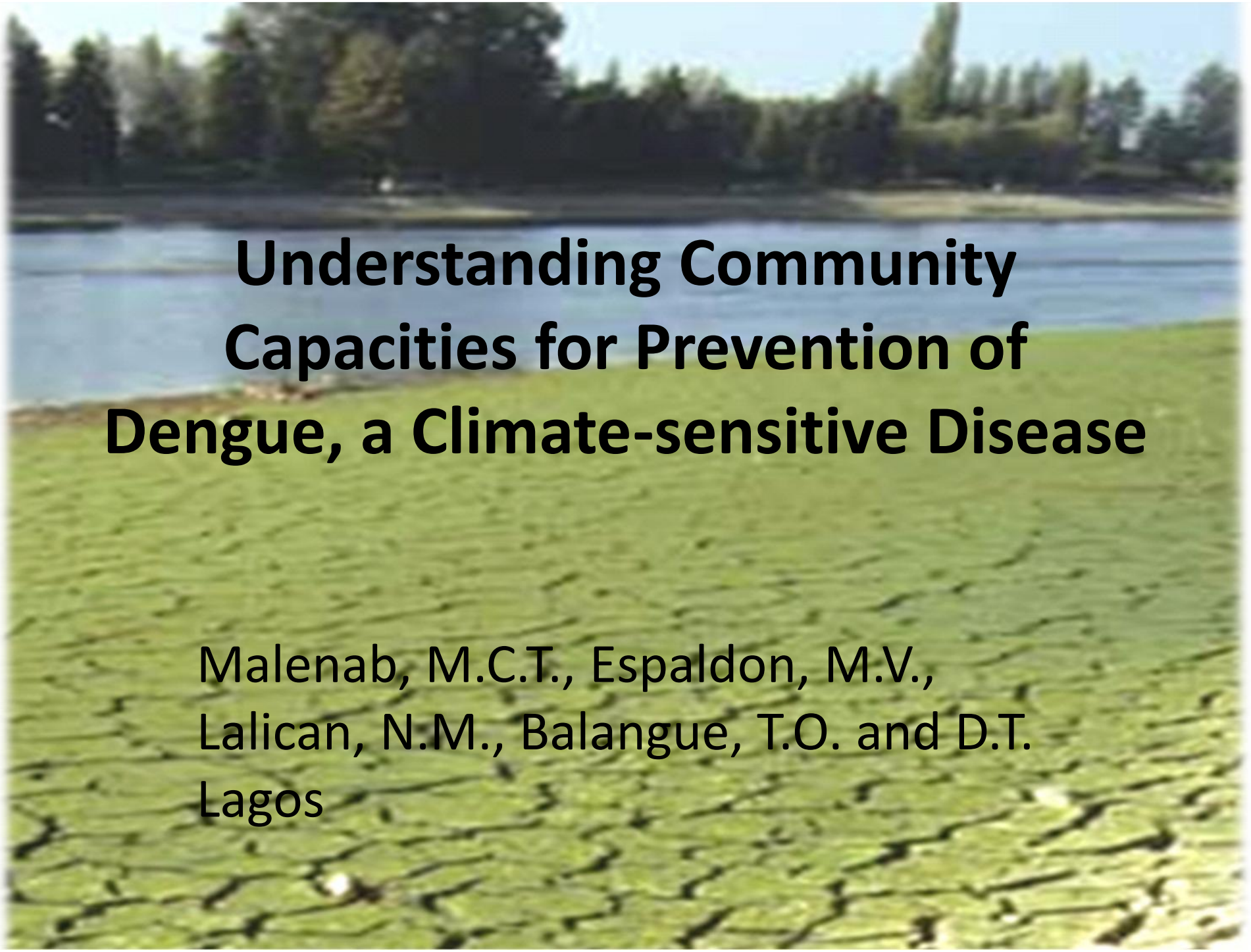
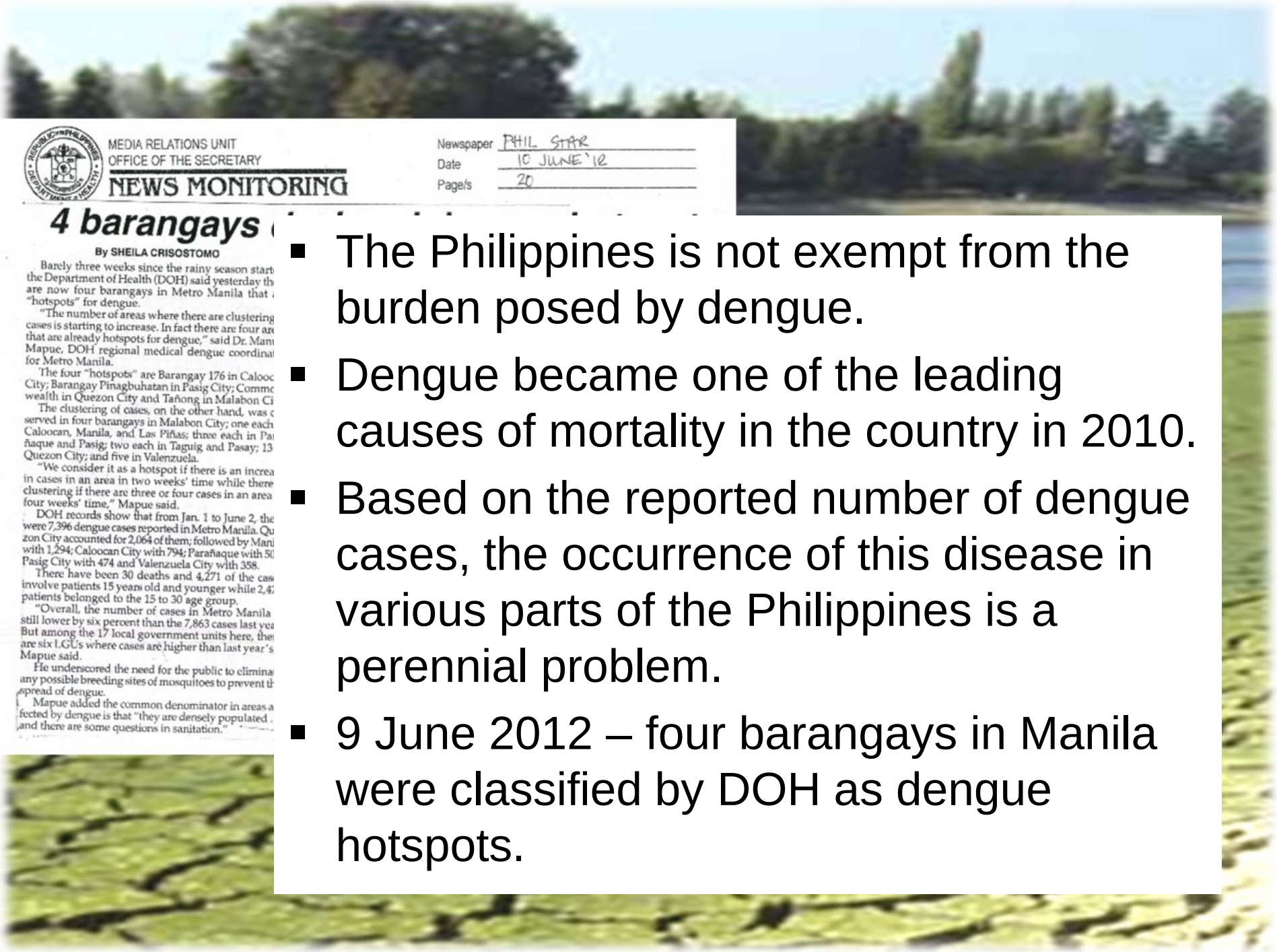


Understanding Community Capacities for Prevention of Dengue, a Climate-sensitive Disease

Malenab, M.C.T., Espaldon, M.V., Lalican, N.M., Balangue, T.O. and D.T. Lagos

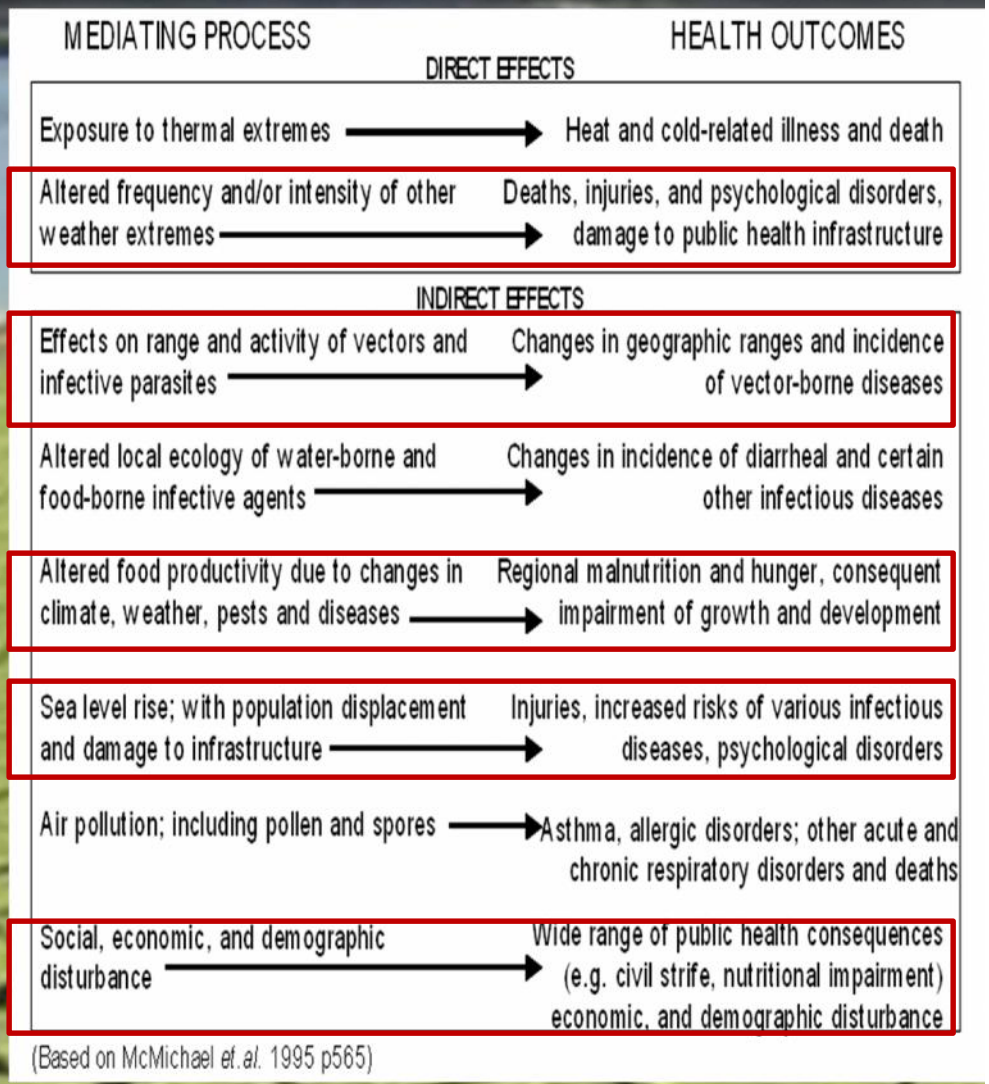
DENGUE FEVER AS AN INTERNATIONAL PUBLIC HEALTH PROBLEM

- At present, dengue is considered as a major global public health concern.
- Dengue fever is endemic in more than 100 countries
- Dengue is considered as the most common and most prevalent arthropod-borne viral infection of today (Hales et al., 2002; Focks and Barrera, 2006).
- About 2.5 billion people all over the world are now at risk from dengue as they reside in areas where the disease is transmitted or can be transmitted (WHO, 2012).



- The Philippines is not exempt from the burden posed by dengue.
- Dengue became one of the leading causes of mortality in the country in 2010.
- Based on the reported number of dengue cases, the occurrence of this disease in various parts of the Philippines is a perennial problem.
- 9 June 2012 – four barangays in Manila were classified by DOH as dengue hotspots.

CLIMATE CHANGE and HUMAN HEALTH



- Climate change is now recognized as one of the defining challenges of the 21st century (WHO, 2009).
- There are diseases, commonly known as climate –sensitive diseases, that are associated with the variability in the climate.
- Climate change is a hazard that is leading to other hazards.

CLIMATE CHANGE ADAPTATION

- According to Hales et al., (2006) and Sia Su (2009), climate is one of the fundamental forces behind an epidemic and its effect becomes evident if adaptive measures/actions falter or cannot be extended to all populations.

RESEARCH PROBLEM AND OBJECTIVE

- The results of previous studies relating the effect of rainfall to the occurrence of dengue fever are contradicting.
- In the Philippines, there is only one study on the relationship of the changing rainfall patterns to dengue incidence in Metro Manila only (Sia Su, 2009). And the relationships of other climatic factors to dengue fever occurrence were not studied.

Thus, the research was conceptualized in order to examine the following questions:

1. What is the effect of climatic factors (monthly total rainfall, monthly average minimum and maximum temperature and monthly average relative humidity) on the occurrence of dengue fever at the Los Baños – Makiling Microwatershed (LBMM), in the province of Laguna from 2001 to 2009?
2. What is the strength of relationship between the climatic variables and recorded dengue cases?
3. What are the adaptation responses employed at the municipal and city level in order to prevent dengue fever occurrences?

CASE SITUATION IN LOS BAÑOS MAKILING MICROWATERSHED

- The province of Laguna experienced an increase in the number of individuals affected with dengue fever in 2010.

- An increase of 2,960 dengue fever cases were recorded from 2001 to 2007. (Laguna Provincial Health Office Database, 2007)
  - five-fold increase in the annual count of recorded dengue cases
  - Calamba city was declared as a dengue hotspot

DISTINCT FEATURES OF CALAMBA

- Average income of a family of five to six members= approximately 6 USD / day
- Urban environment – important modern industrial center
- Disaster experience – prone to flooding

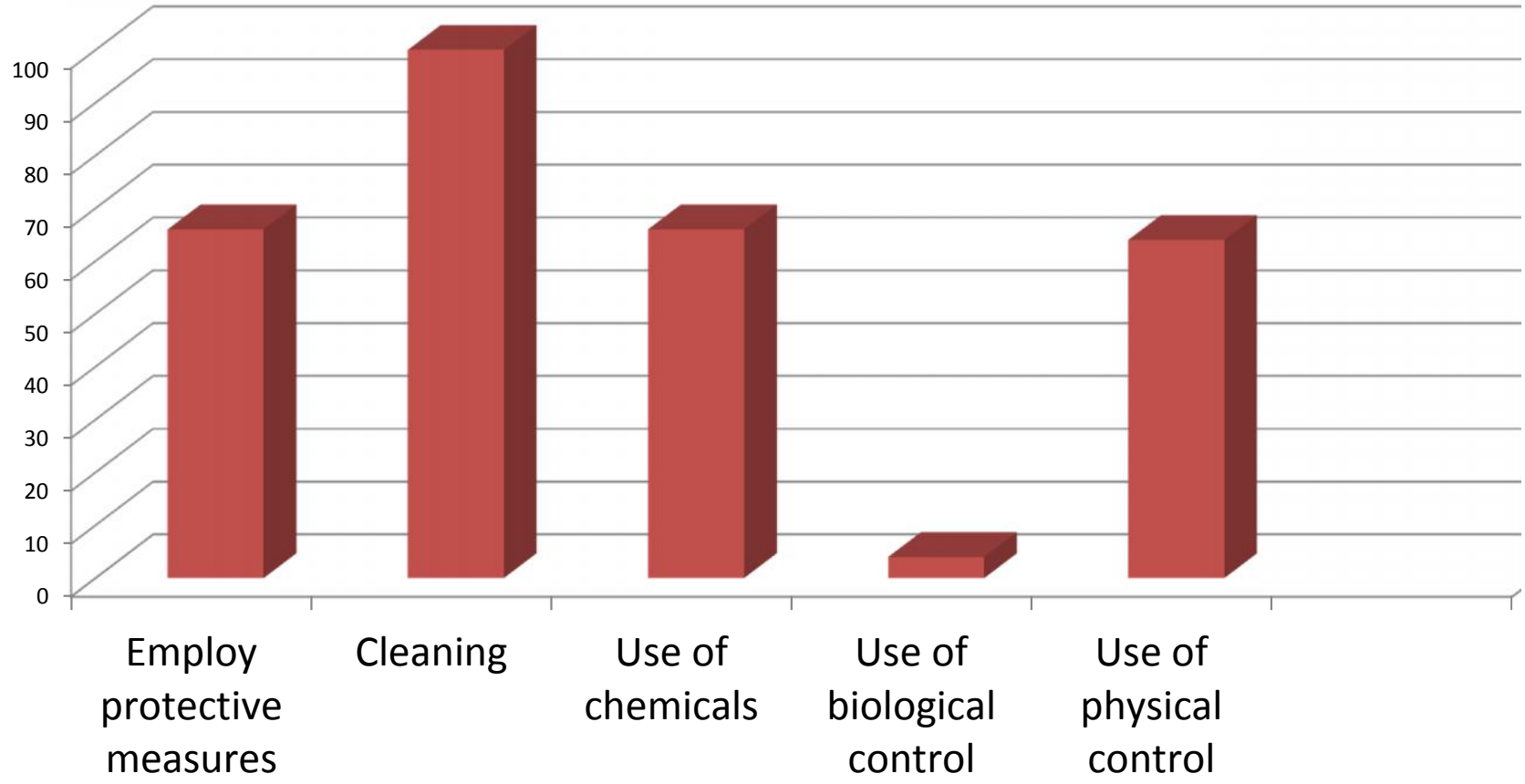
SIGNIFICANCE OF THE STUDY

- The results of the study can provide insights of the adaptation conducted by low income communities in a developing country.
- The results will contribute to the improvement of adaptation practices in similar areas.


RESULTS AND DISCUSSION

WHAT ARE THE ACTIONS UNDERTAKEN?

Adaptations employed by the communities in Calamba City to prevent the occurrence of dengue fever



CAPITALS AND RESOURCES

- Physical capital
  - Presence of hospitals
  - Presence of health clinic
- Human capital
  - Sufficient number of doctors in hospitals
  - Sufficient number of nurses in hospitals
  - Sufficient number of doctors in health clinic
  - Sufficient number of BHW's
- Social capital
  - Presence of immediate help
  - Presence of municipal-wide programs
  - Presence of health assistance

OTHER ADAPTIVE CAPACITIES

- Presence of knowledgeable CHO
- Strategically located, near to the hospitals
- Health office has computers and printers for data archiving and trend monitoring
- Larger amount of IRA, higher budget for health needs
- Acquired three misting machines and ovi/larvi trap
- Capacity building and trainings for barangay health workers (BHW)

OTHER ADAPTIVE CAPACITIES

2.Ovicide/ Larvicide Trap (invented by DOST-PAGASA in cooperation with DOH, Philippines)

A. strip of lawanit board (where mosquitoes will lay their eggs)

B. organic pellet (attracts mosquitoes, but kills eggs and larva)

C. black tumbler that attracts mosquitoes (should be filled with 250ml clean water)

OTHER ADAPTIVE CAPACITIES

3. The formulation of the City Environment and Surveillance Unit was a big step taken by the city to ensure that the lessons learned from the outbreak will be shared to the community and to ensure that the lessons will be applied so that dengue fever occurrences will be minimized, if not eradicated.
4. Trainings and action plan

CONCLUSION

- Households who perceived themselves to have substantial adaptive capacities in terms of awareness and knowledge about dengue and necessary capitals, recognized the potential and/or perceived risk of dengue to be manageable.

- But the residents who perceive that they lack the necessary adaptive capacities fear this disease as they believe that it can lead to death.

- The adaptation strategies that were implemented take root on the various type and forms of adaptive capacities

REFLECTION

- The capacities of communities are seen during some disasters.
- The communities need to employ proactive problem solving process to effectively prepare for and respond to the current and projected climate change scenarios.


THANK YOU!
MARAMING SALAMAT PO!