



The View from the Field: Informing Policy, Accounting for Development

PHILIPPINES: Wealth Accounting and Valuation of Ecosystem Services



Philippine Statistics Authority



THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

Outline of the Presentation

I. Phil-WAVES Background

- a. Components and Expected Outputs
- b. Pilot Sites

II. Laguna Lake Ecosystem Accounts

- a. Policy Issue
- b. Ecosystem Accounts
- c. Findings and Policy Implications

III. Southern Palawan Ecosystem Accounts

- a. Policy Issue
- b. Ecosystem Accounts
- c. Findings and Policy Implications

I. A. Phil-WAVES Components vis Outputs

Component

Expected Output

1. Macroeconomic indicators

Enhanced macroeconomic indicators (i.e., ANS, ANI, PC, and CW)

2. National Accounts for priority sectors

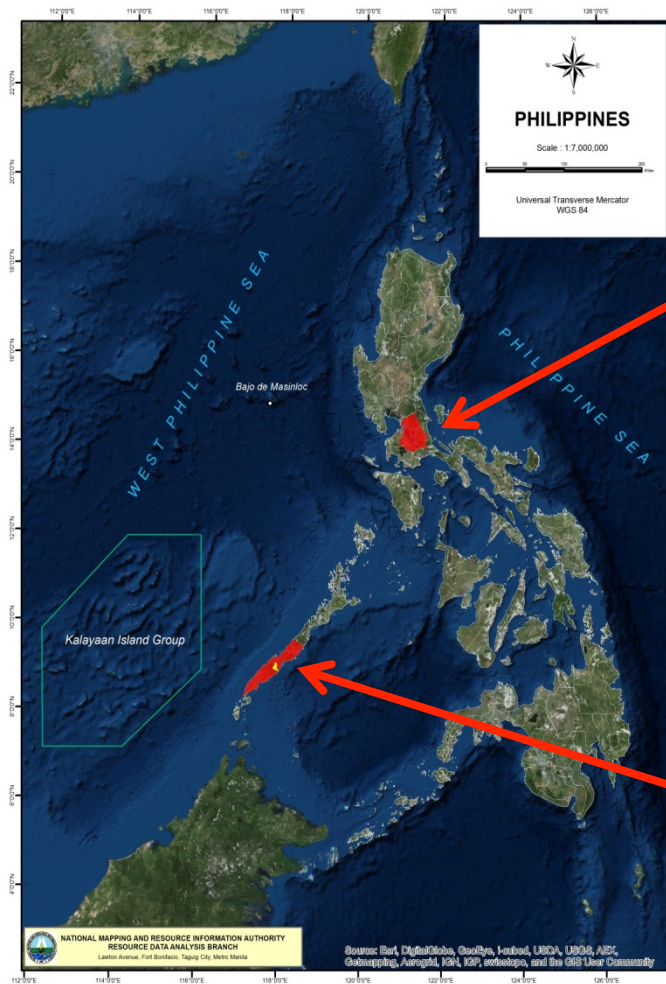
National Asset Accounts for Minerals
National Asset Accounts for Mangroves

3. Ecosystem Accounts

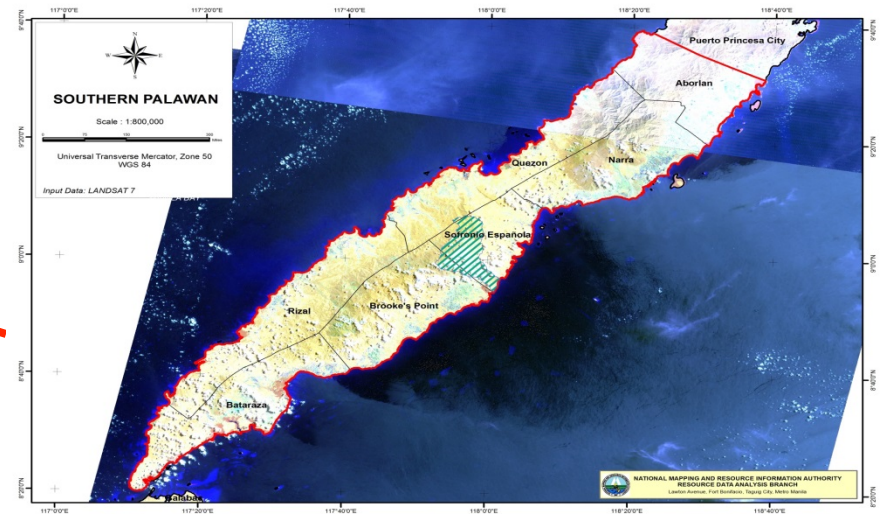
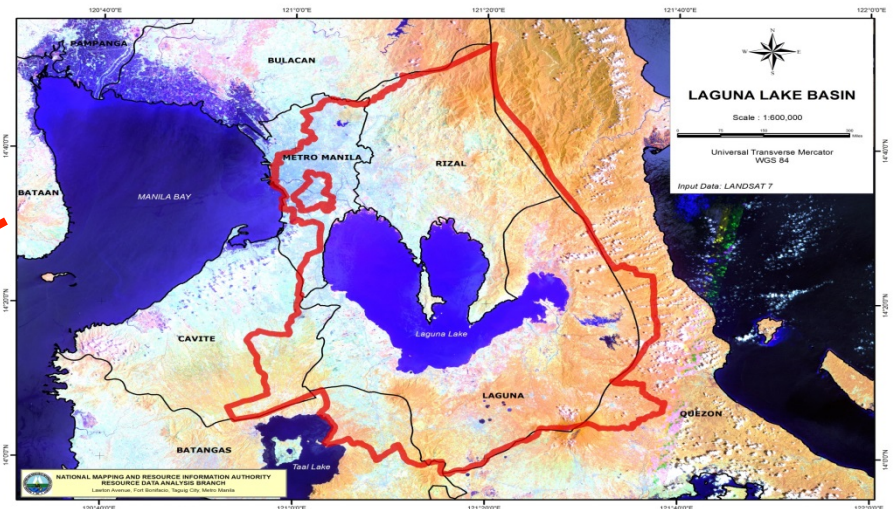
Ecosystem Accounts for **Southern Palawan** and **Laguna Lake** (physical and monetary)



I. B. Pilot Sites



LEGEND:
Phil-WAVES Pilot areas



II. LAGUNA LAKE ECOSYSTEM ACCOUNTS

A. Policy Issues

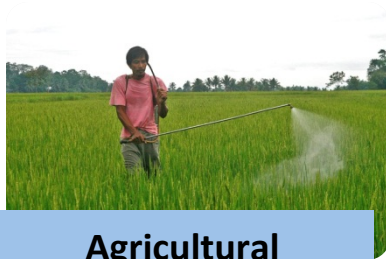
Pollution



Domestic



Industrial



Agricultural

Siltation



...link to Flooding

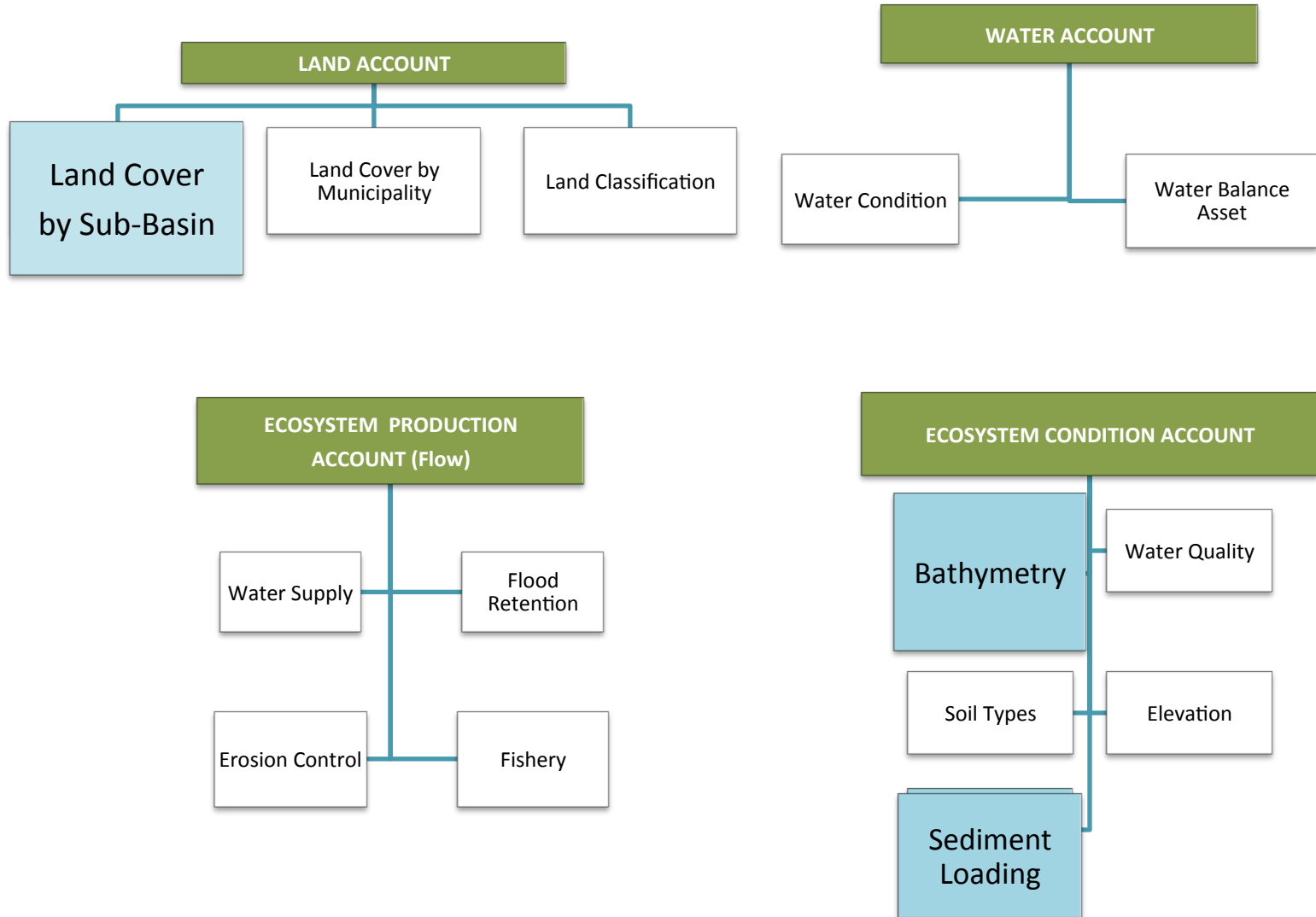


... effects to Fishery & other uses



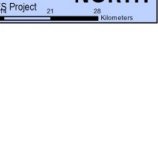
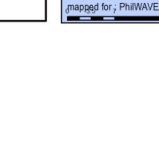
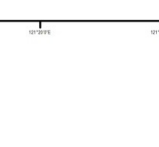
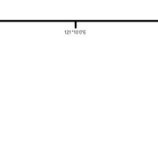
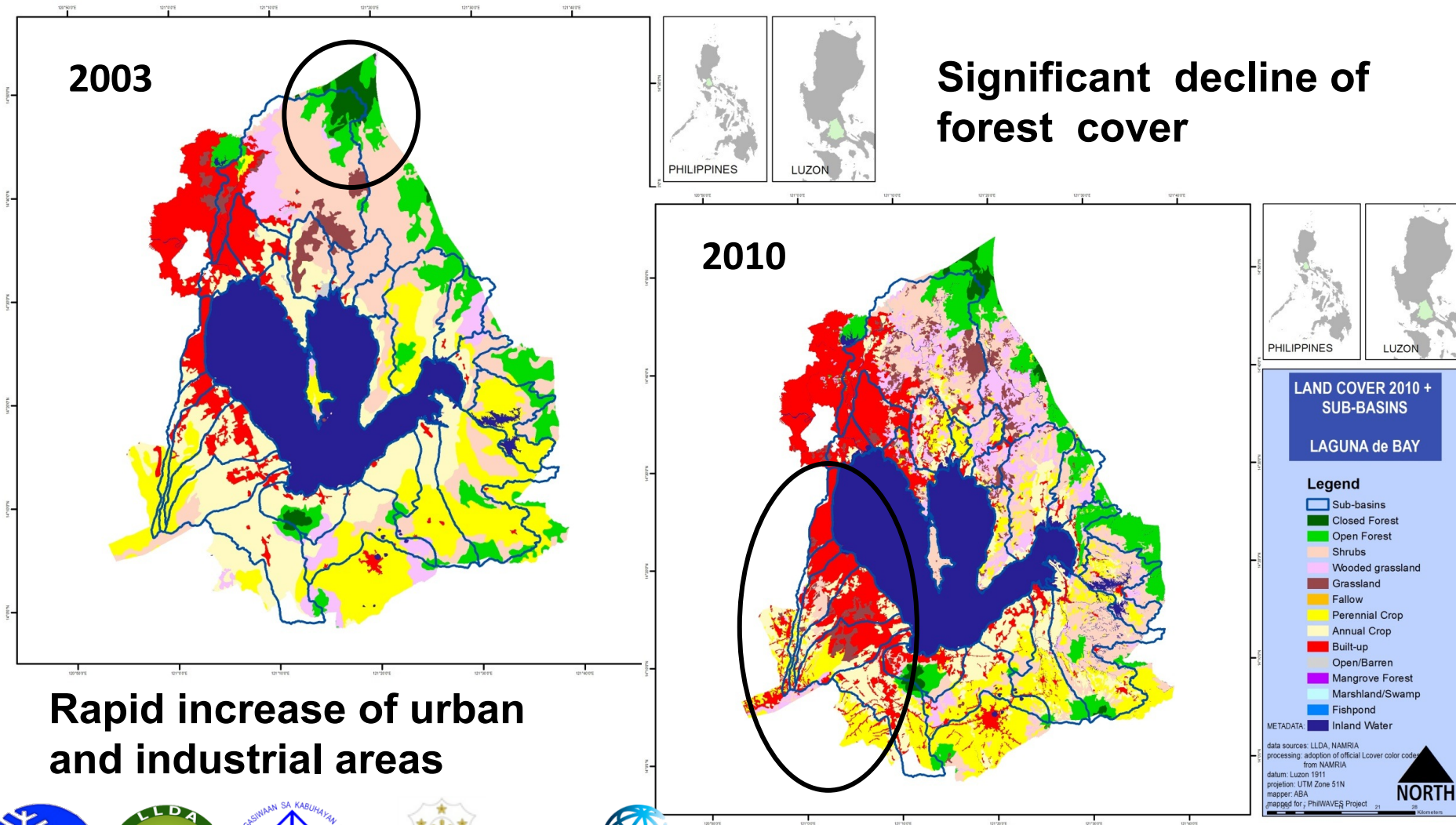
II. LAGUNA LAKE ECOSYSTEM ACCOUNTS

B. Accounts

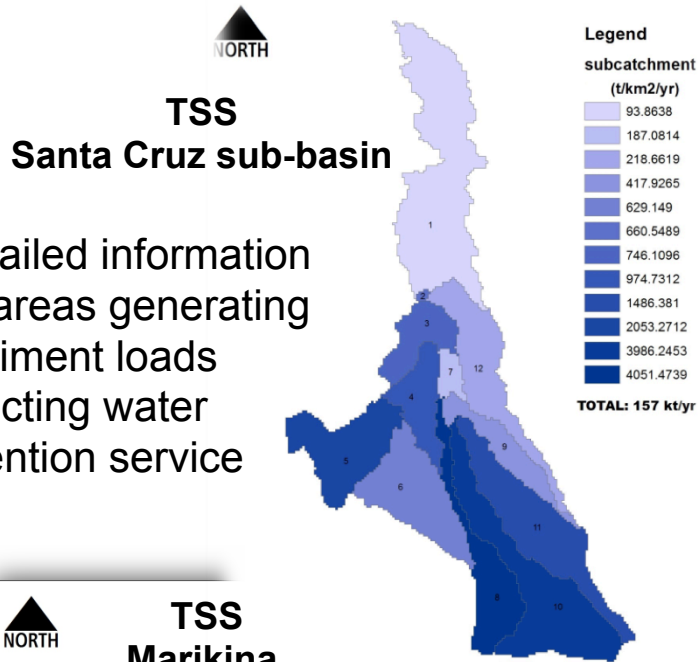


II. LAGUNA LAKE ECOSYSTEM ACCOUNTS

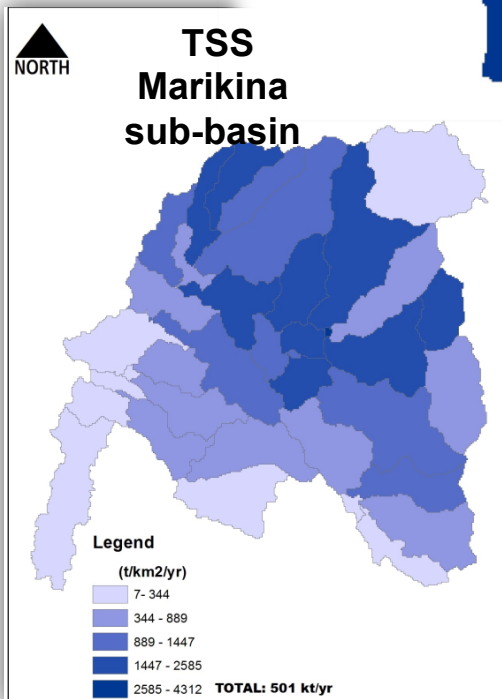
C. Findings



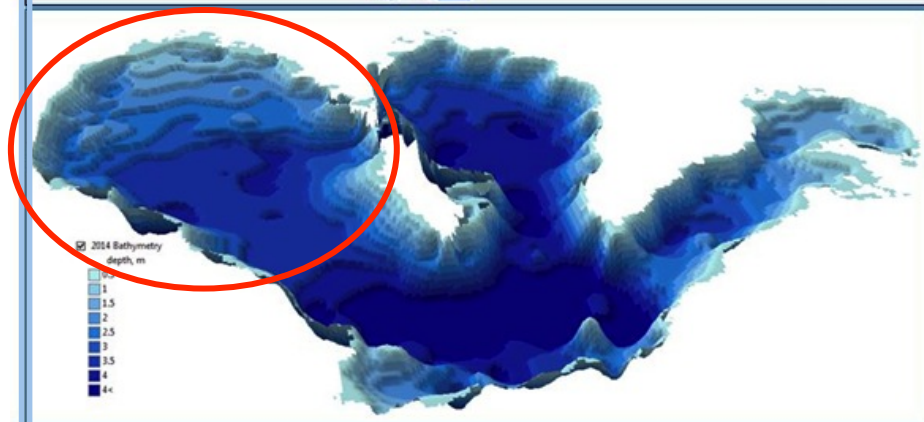
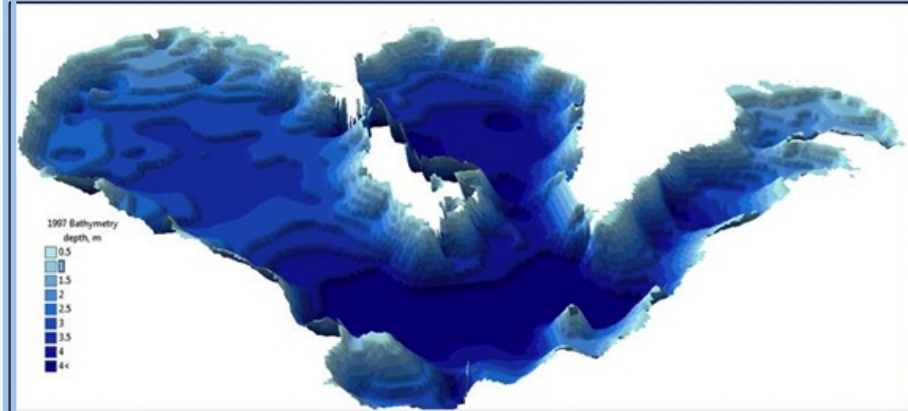
Sedimentation loads per sub-watershed



- ❑ Detailed information on areas generating sediment loads affecting water retention service



Change in Bathymetry



- ❑ Sedimentation is decreasing the areal surface of the lake
- ❑ Declining flood (or water) retention capacity

II. LAGUNA LAKE ECOSYSTEM ACCOUNTS

D. Policy Implications

Land

1. Align land conversions with development plans or planning laws,
2. Improve soil erosion control services (reforestation)

Water

3. Prioritize preferential use of water (aquaculture, drinking water, power supply, irrigation)
4. Centralized waste treatment facilities for households

Vulnerability

5. Improve water retention capacity to reduce flooding

III. SOUTHERN PALAWAN ECOSYSTEM ACCOUNTS

A. Policy Issues

A. Land use conflicts (Mining, Quarrying, etc.)

1. Illegal logging, timber poaching, wildlife harvesting and trading
2. Shifting cultivation on steep uplands, conversion of forest to other uses
3. Encroachment on mangroves from logging and aquaculture

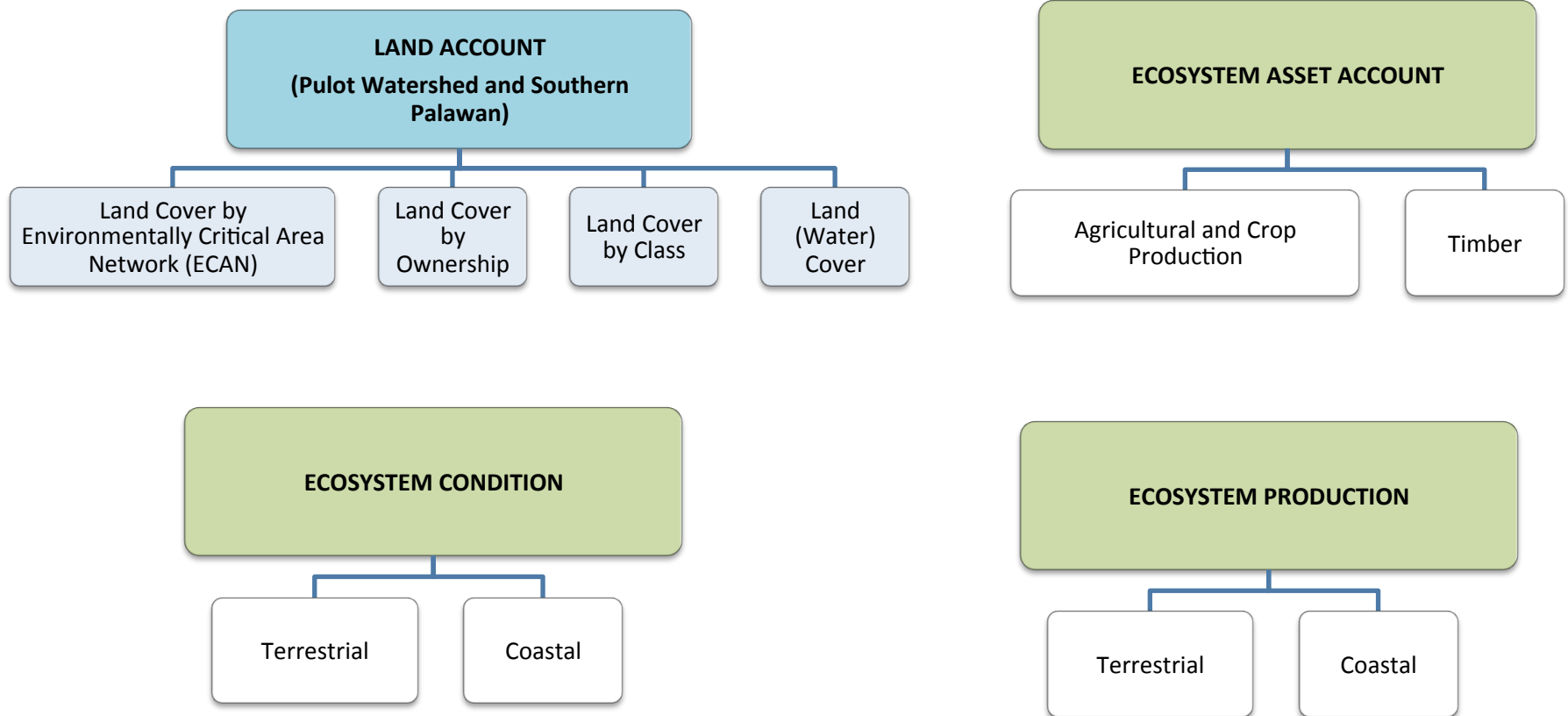
Conservation vs. allowing sustainable use of ecosystem resources

1. Tan barking of mangroves, Destruction of coastal resources
2. Industrial plantations
3. Illegal fishing practices, Overfishing



III. SOUTHERN PALAWAN ECOSYSTEM ACCOUNTS

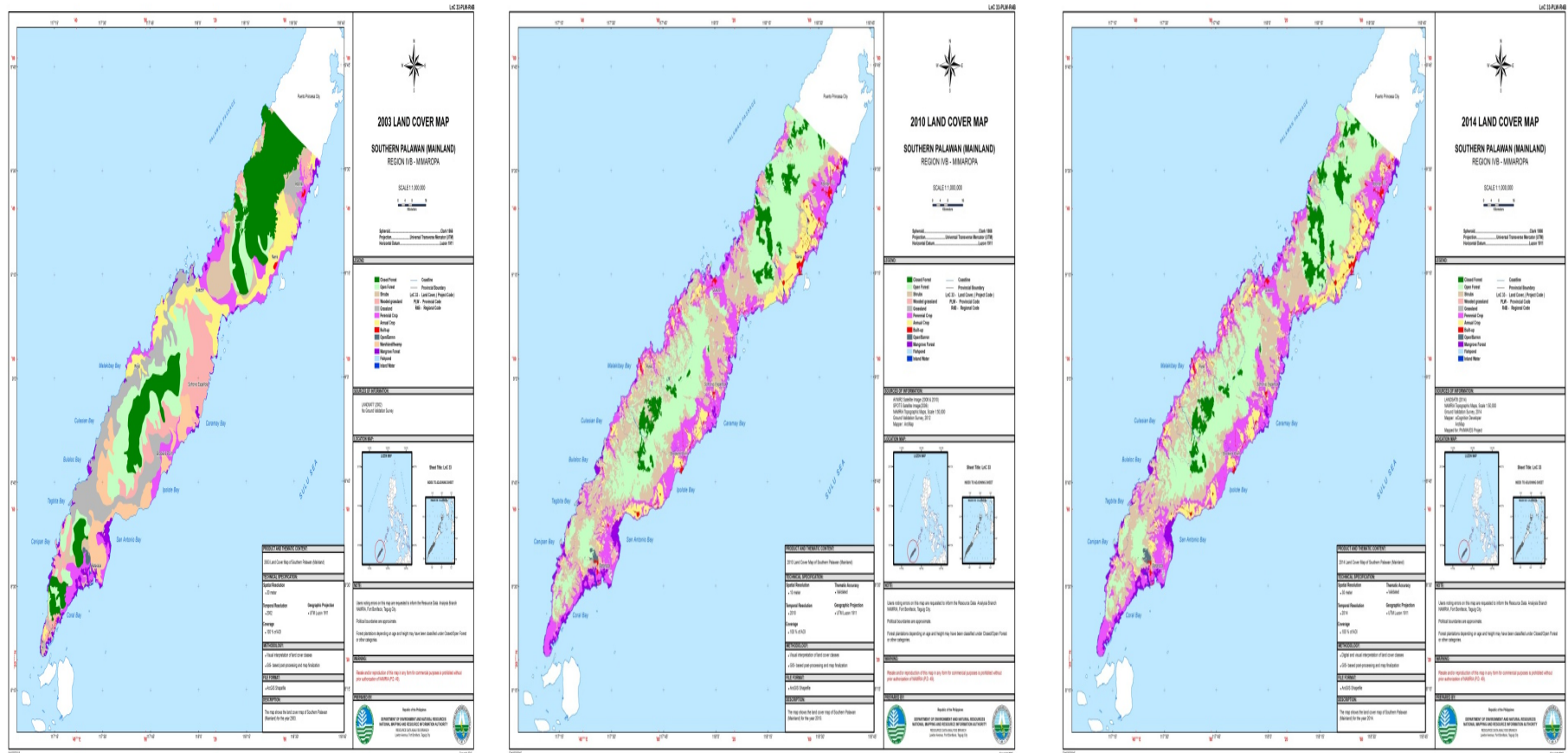
B. Accounts



III. SOUTHERN PALAWAN ECOSYSTEM ACCOUNTS

C. Findings

2003, 2010, 2014 Land Cover Change

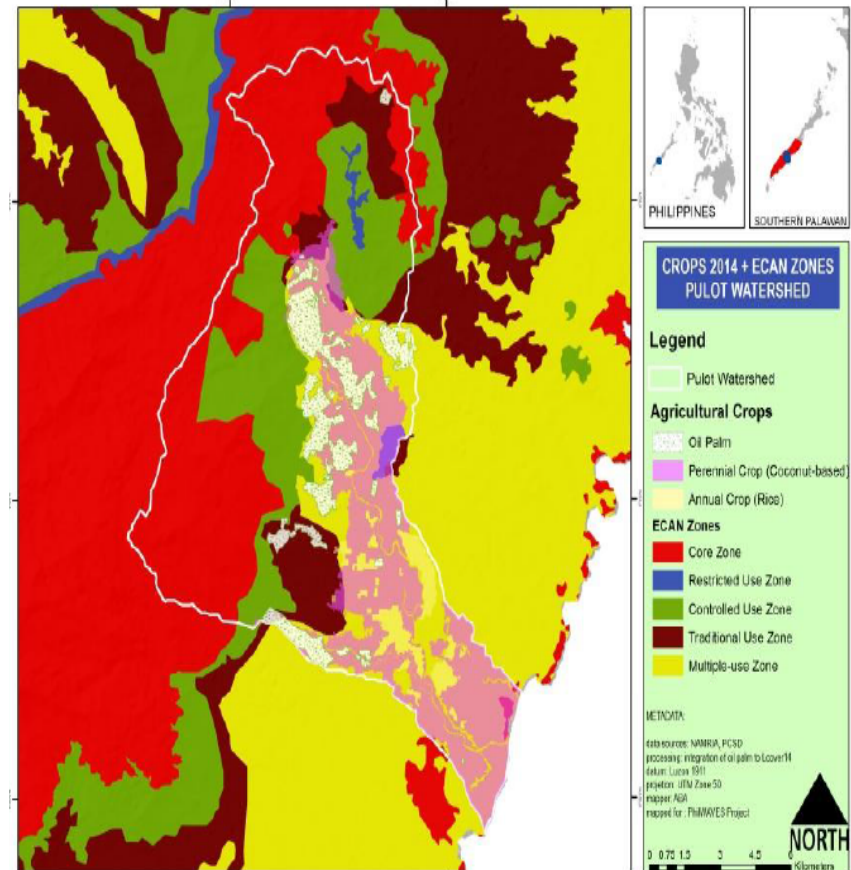
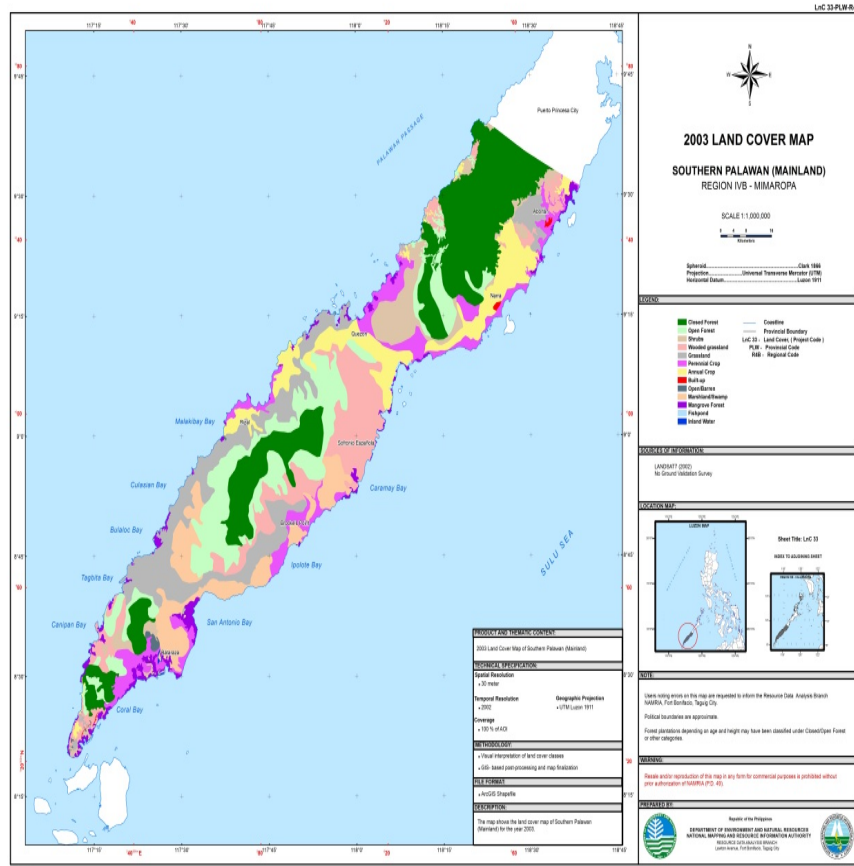


The deforestation in Palawan, that seems to have occurred in the period 2003-2010, has been reduced and reversed in the period 2010-2014.

There has been a strong expansion of oil palm plantations in the watershed in the past decade caused by the establishment of a palm oil mill.

III. SOUTHERN PALAWAN ECOSYSTEM ACCOUNTS

C. Findings



In Pulot Watershed, perennial crop areas have expanded from 45,939 in 2003 to 113,394 in 2010.

The Land Cover map specific for agricultural crop areas indicated that coconut and oil palm plantations that did not exist in 2003 have expanded

III. SOUTHERN PALAWAN ECOSYSTEM ACCOUNTS

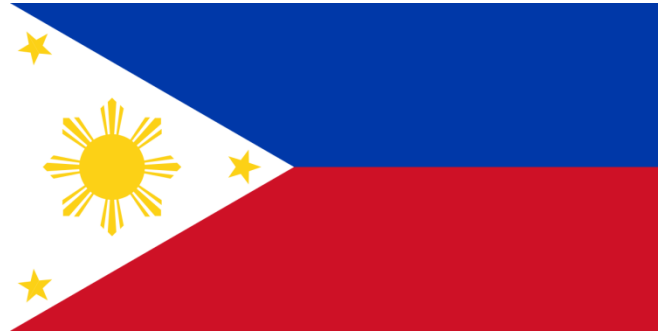
D. Policy Implications

A. Land

1. Proper enforcement on land regulations
2. Impact analyses on water quality caused by mining
3. Regulate inconsistent land use laws and overlapping boundaries
4. Project identification for streamlining with the Phil-WAVES

B. Coastal

1. Development of the account to be linked with the existing Environmental Monitoring System
2. Establishment of Fishery Stock
3. Monitor key water quality indicators
4. Capacity Building for local partners on Ecosystem Accounting



Thank you!





IMAGE VIEW

MAP VIEW

ALL IMAGES

select a region



**65,000 hectares
Metro Manila**

**95,000 hectares
Laguna Lake**





STATE of FLUX

images of *CHANGE*

GLOBAL CLIMATE CHANGE

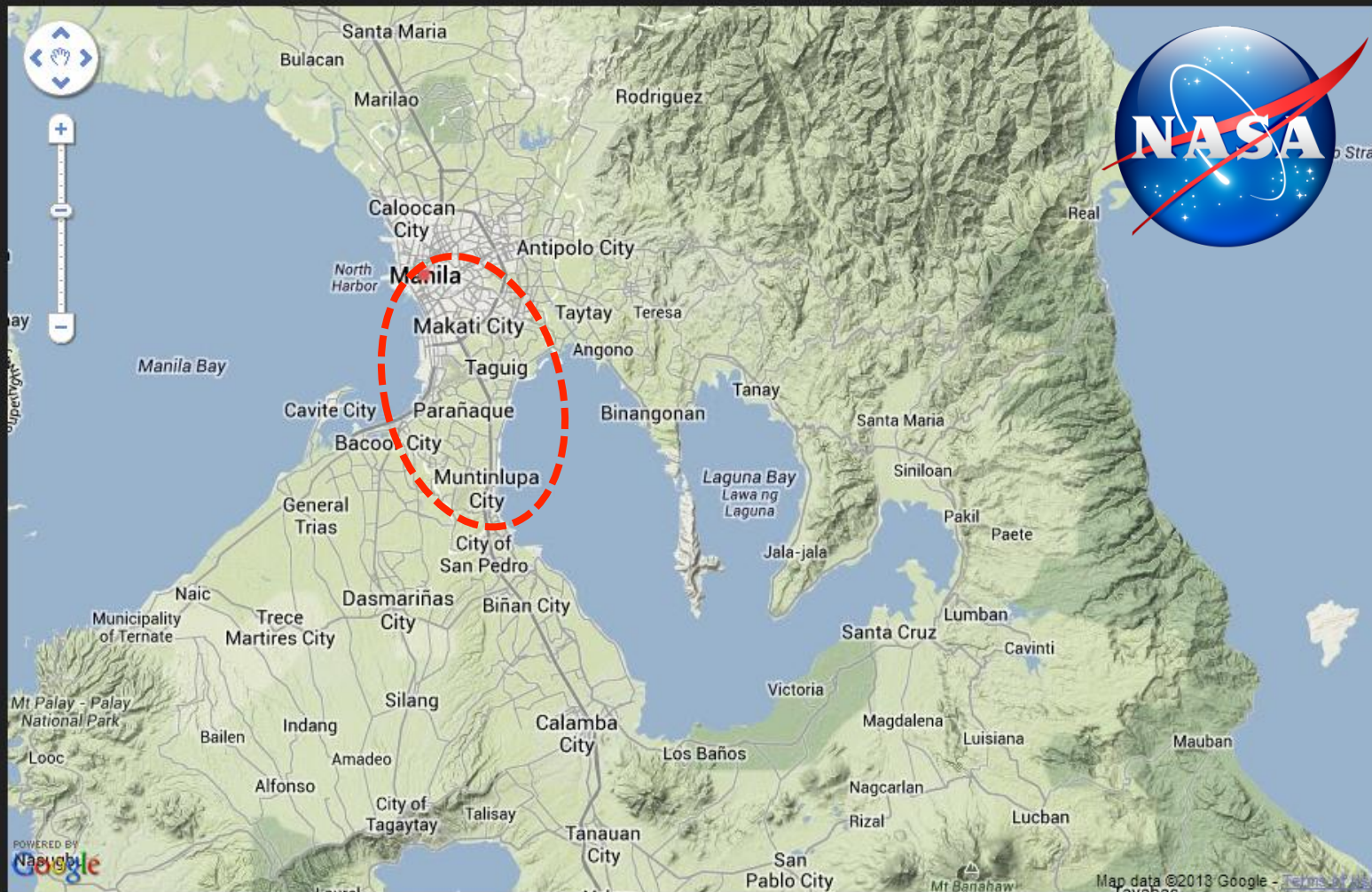
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IMAGE VIEW

MAP VIEW

ALL IMAGES

select a region



ALL - CITIES - EXTREME EVENTS - ICE - HUMAN IMPACT - WATER - LAND COVER - TOP PICKS



STATE of FLUX

images of *CHANGE*

GLOBAL CLIMATE CHANGE

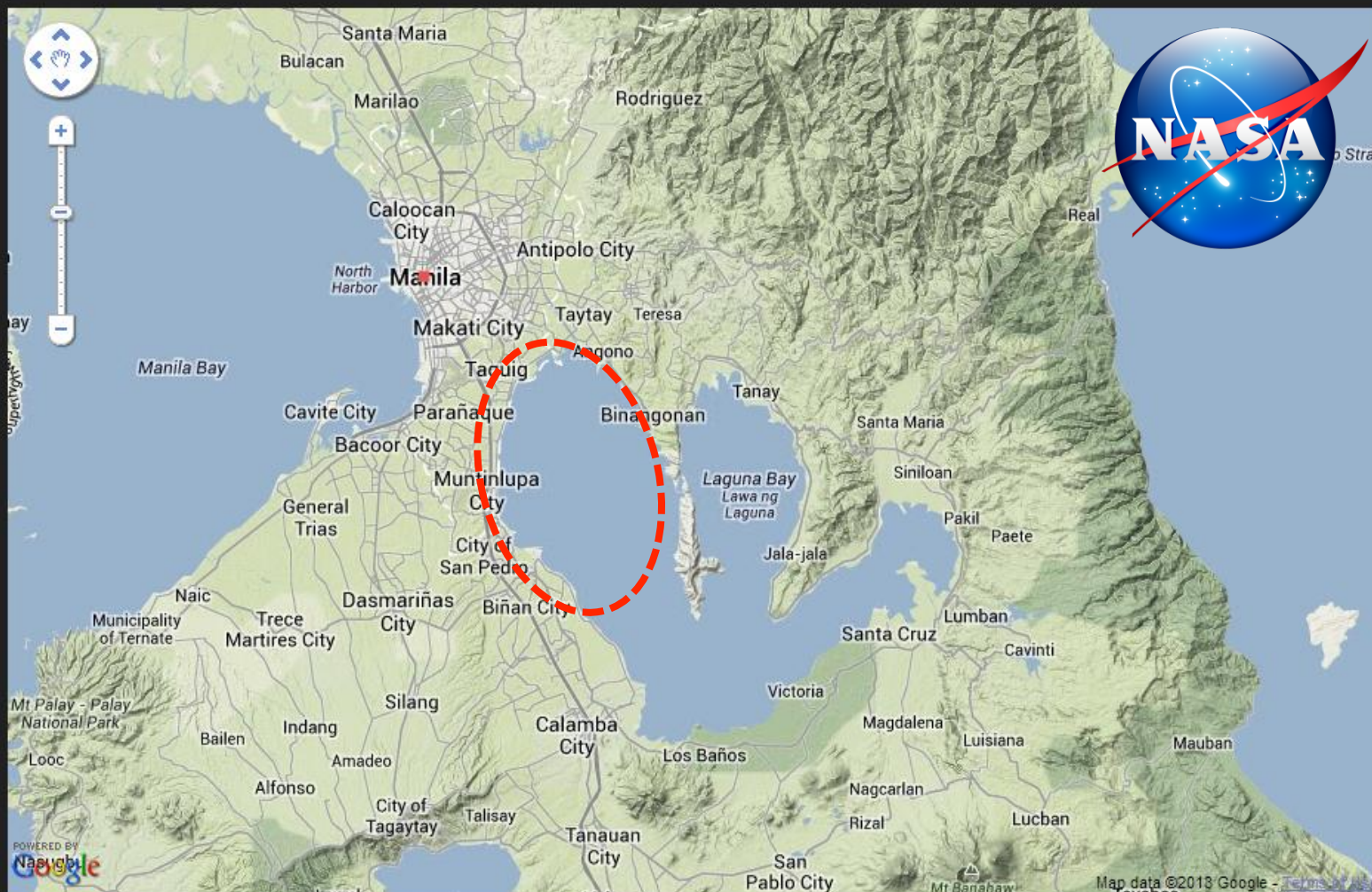
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IMAGE VIEW

MAP VIEW

ALL IMAGES

select a region



ALL - CITIES - EXTREME EVENTS - ICE - HUMAN IMPACT - WATER - LAND COVER - TOP PICKS

65,000 HECTARES

The greater Metro Manila area covers 246 square miles (638 square kilometers) and hosts a population of over 15 million.

- These satellite images illustrate how much the city has expanded in little more than two decades, bringing significant infrastructure and environmental challenges.

Images taken by the

- The Thematic Mapper sensor which cuts through the urban area, is one of the most polluted rivers in the world. The Enhanced Thematic Mapper Plus sensor onboard Landsat 7.

Source: Geological Survey Landsat Mission



6 MILLION 15 MILLION





STATE
of FLUX images of CHANGE



GLOBAL CLIMATE CHANGE

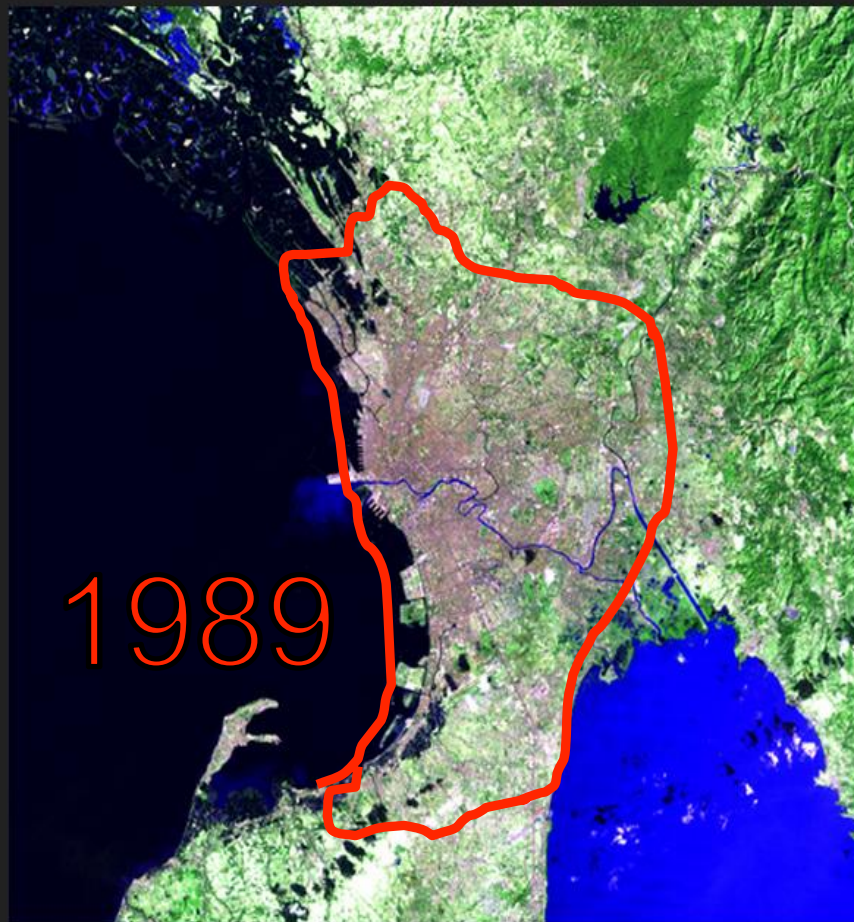
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IMAGE VIEW

MAP VIEW

ALL IMAGES

1 of 34



1989



2012

NEXT

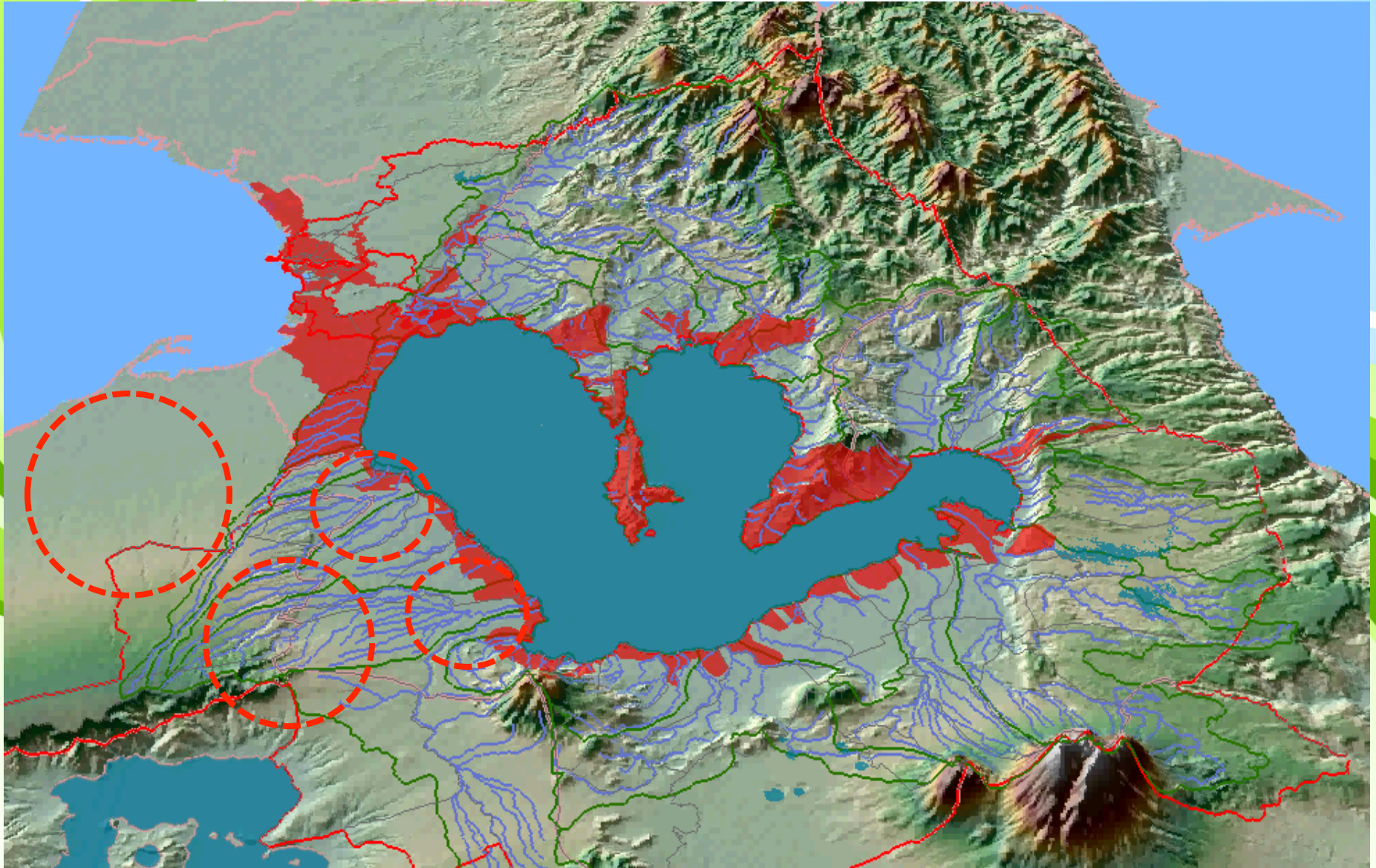
CORY AQUINO

April 14, 2012

NOYNOY AQUINO

METRO MANILA

FLOOD HAZARDS



DENUDED SUB- WATERSHEDS



CONFLICTING WATER USES



DETERIORATING WATER QUALITY

