



Willingness to pay for biodiversity conservation at Mount Apo Natural Park

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Outline

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Biodiversity

- Variety of life on Earth
 - variety within and between all species of plants, animals and micro-organisms and the ecosystems within which they live and interact (www.org.au)
- Variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part
 - includes diversity within species, between species and of ecosystems (Convention on

Biological Diversity)

Importance of biodiversity conservation

- Ecosystem services
- Biological resources
- Social benefits

Source: globalissues.org



Importance of biodiversity conservation: Ecosystem services

- protection of water resources
- soils formation and protection
- nutrient storage and recycling
- pollution breakdown and absorption
- contribution to climate stability
- maintenance of ecosystems

Source: globalissues.org



Importance of biodiversity conservation:

Biological resources

- food
- medicinal resources and pharmaceutical drugs
- wood products
- ornamental plants
- breeding stocks
- diversity in genes, species and ecosystems

Source: globalissues.org



Importance of biodiversity conservation:

Social benefits

- research
- education
- recreation and tourism
- cultural values

Source: globalissues.org



Philippine biodiversity

- The Philippines is one of 18 mega-biodiverse countries in the world
 - contains two-thirds of the earth's biodiversity and between 70% and 80% of the world's plant and animal species
- The Philippines is also one of the biodiversity hotspots in the world

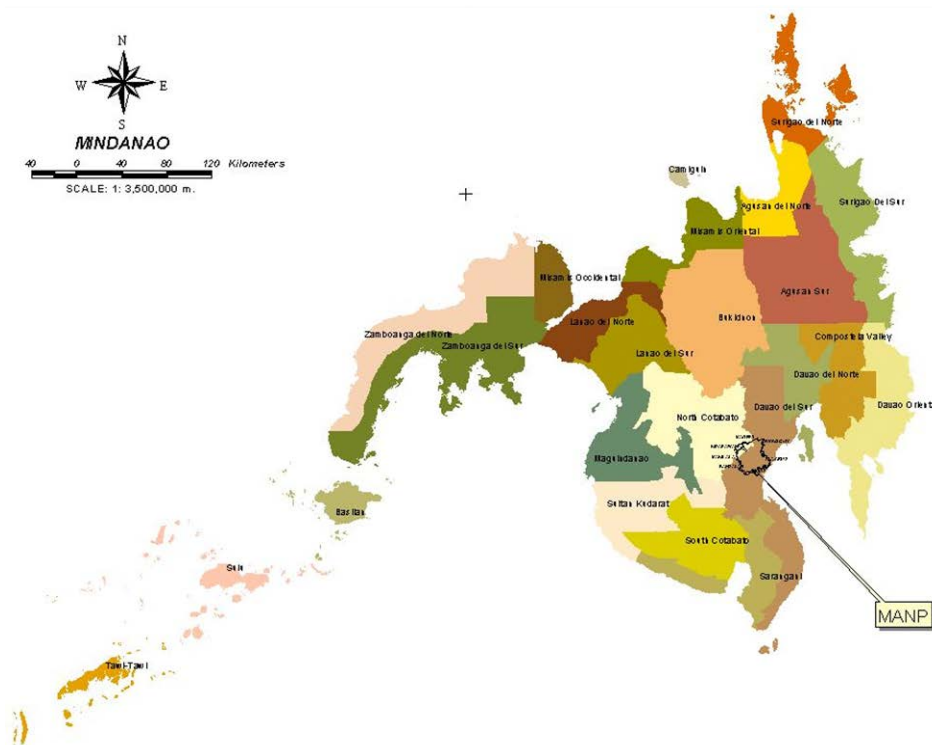
Threats to Philippine biodiversity

- Commercial exploitation
- Population growth
- Land conversion
- Natural calamities
- Climate change
- Introduction of invasive alien species
- Institutional problems of government agencies, e.g., lack of sufficient funds



Mount Apo Natural Park (MANP)

- About 64,000 hectares
- Priority conservation area in the Philippines; important bird area
- ASEAN heritage site
- Defining feature is Mount Apo, the Philippines' highest mountain
- Headwaters of 18 river systems in Mindanao
- Home to six indigenous groups in Mindanao
- Traverses through two provinces in two regions (Regions 11 & 12)
 - Davao del Sur: Davao City, Digos City, Sta. Cruz, Bansalan
 - North Cotabato: Kidapawan City, Makilala, Magpet



Where is the
MANP located?

Livelihood activities within the MANP



Photos by: Romy Greiner

Objectives:

- Estimate willingness to pay for biodiversity conservation in the MANP
- Determine if there is potential for designing payment for environmental services (PES) scheme



Methods

- Data collection
 - Two-stage sampling (probability sampling; stratified random sampling)
 - Face-to-face interview
 - 646 respondents across the MANP
 - Anchored-open ended bids
- Data analysis
 - Contingent valuation
 - Tobit regression analysis
 - NLogit



Results:

Socio-demographic characteristics

- 44% from Davao City
- 33% aged 16-25 years old
- 55.6% females
- 38% at least college graduate
- 36% had income below below PhP3,333



Results:

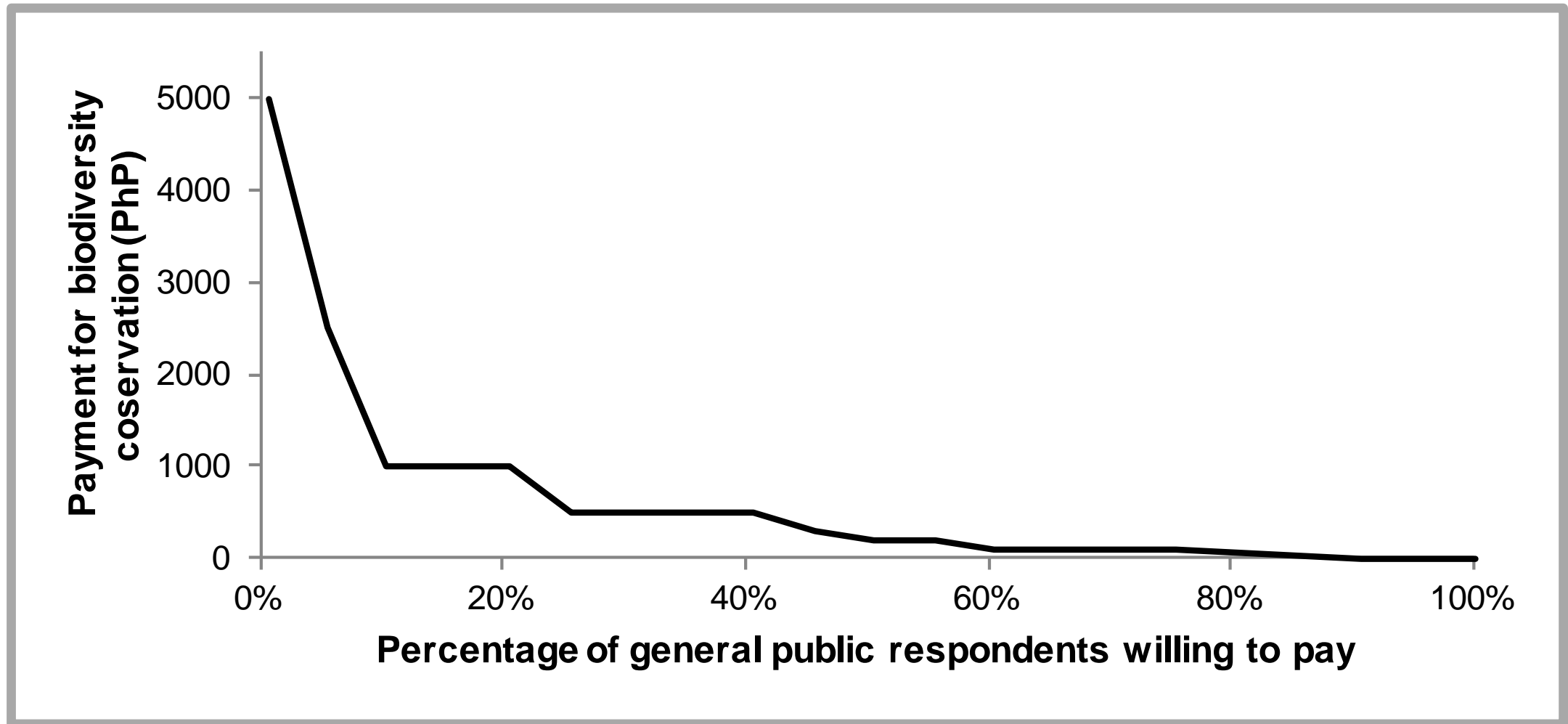
Awareness of the importance of the MANP

- 81% were aware of MANP as a water catchment area
- 15% had climbed Mount Apo
- 92% were aware that MANP is home to important plants and animals



Results:

Willingness to pay for biodiversity conservation



Results: Tobit regression

- Positive correlation between bid amount and nominated willingness to pay amount ($p=0.029$)
- Who were willing to pay higher amount? Respondents who were:
 - Younger ($p=0.005$)
 - Residents of either Magpet (North Cotabato) or Davao City ($p=0.001$)
 - Earning more ($p=0.001$)
 - Aware that MANP is home to important plants and animals ($p=0.029$)
 - Convinced that MANP is important for biodiversity conservation ($p=0.004$)

Results:

Tobit estimated willingness to pay

- At 95% confidence interval: PhP326.62 – PhP1283.67 per person
- Mean: PhP739.92 per person
- Median: PhP713.91 per person



Implications

- WTP results indicate potential for designing PES schemes for biodiversity conservation at the MANP
 - ? balance between food security and biodiversity conservation?
 - ? cultural practices of affected indigenous communities?



Challenges for the future

- Establishing sufficient baseline database
- Designing PES scheme that will address livelihood concerns and cultural realities of affected communities while conserving and managing biodiversity
- Conducting extensive information, education and communication campaign on the benefits of biodiversity conservation

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Thank you...

...let us all have safe journey home