

# Economic valuation of Nha Trang Bay Marine Protected Area (MPA) to suggest a sustainable financing mechanism



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# Background

## ***What is Marine Protected Area (MPA)?***

*“A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term **conservation** of nature with associated **ecosystem services** and **cultural values**’ (IUCN, 2008)”*

## **Importance of MPA**

**Fisheries regulator** + **Marine protector** + **Benefit generator (tourism)**

- World system of MPAs has increased

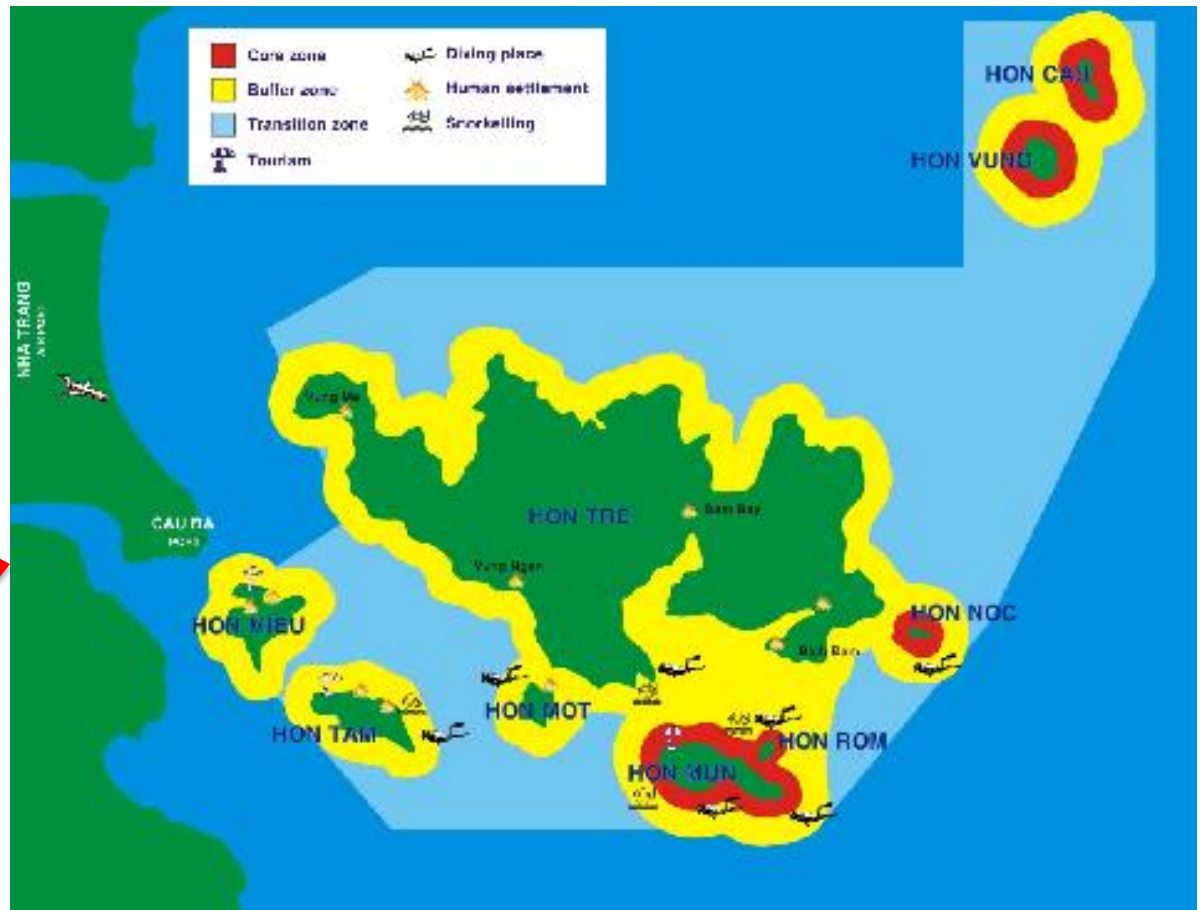
*(global MPA coverage: 3.2% of the world ocean, below the targeted 10% set by the UN Convention on Biological Diversity for 2020) Source: [www.marinereservescoalition.org](http://www.marinereservescoalition.org)*

## **But: Effectiveness?**

- Public awareness on MPA is limited
- Many MPA activities are subsidized by the government



# Study site



**Nha Trang Bay MPA** established in 2001

9 islands

Area: 15,000 ha

5,300 dependent inhabitants (main livelihood: fishing)

2.18 mil. visitors (20%: foreign tourists)

Revenue from tourism VND 2,256 bil. = USD 12mil.(2011)

No marine conservation fee

([nhatrang-travel.com](http://nhatrang-travel.com)),

# Attractions in Nha Trang bay

## High biodiversity

- **1<sup>st</sup>, biggest, and most diverse coral reef MPA in Vietnam**

*(Over 350 of hard coral species: 40% of world hard coral, Reef fish: ~ 230 species)*

→ swimming, snorkeling, diving, seeing coral by glass bottom boats



## Beautiful beaches and islands

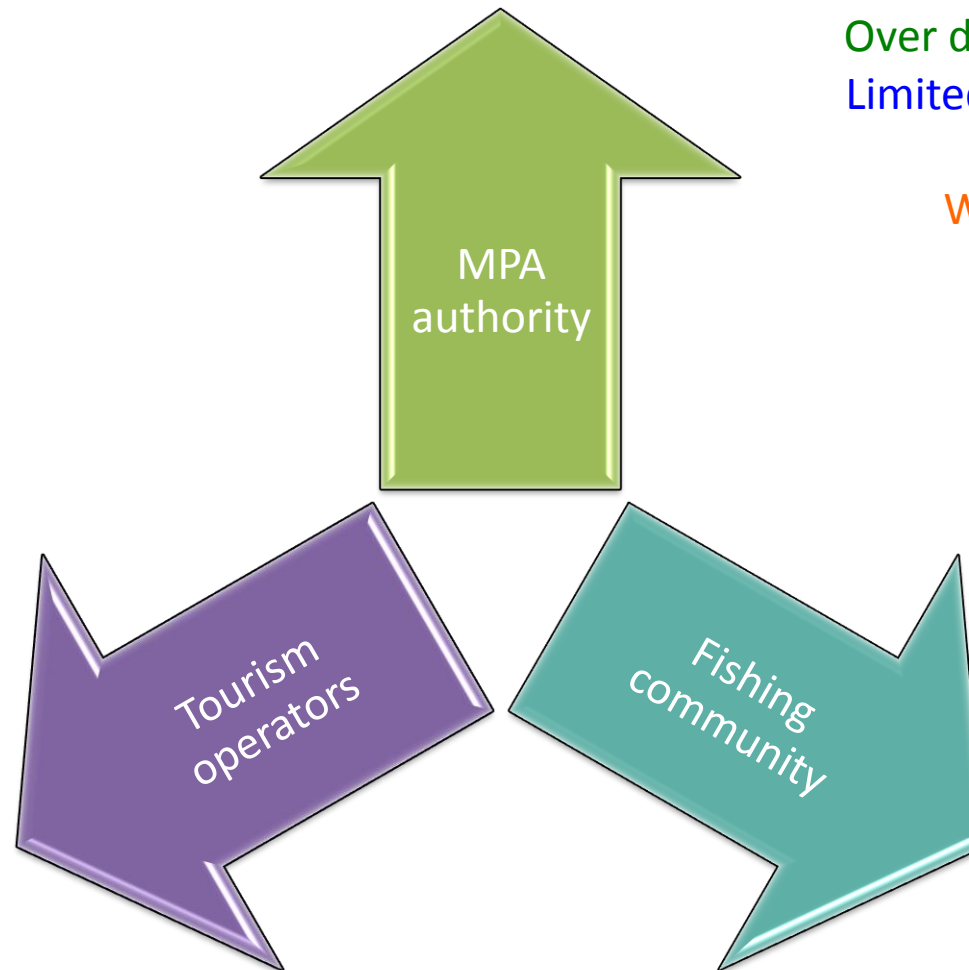
- Among the **most beautiful bays in the world**



**Tourism development:** key to **local economy** but **big threats** to the marine ecology

→ Tourism revenue must be a funding source for marine conservation

# Stakeholder relationship and conflicts



Poor management  
Over development of tourism  
Limited awareness on marine  
conservation  
Weak collaboration

# Objectives

## **OBJECTIVES:**

**Propose a sustainable financing mechanism for the Nha Trang Bay MPA from conservation fee**

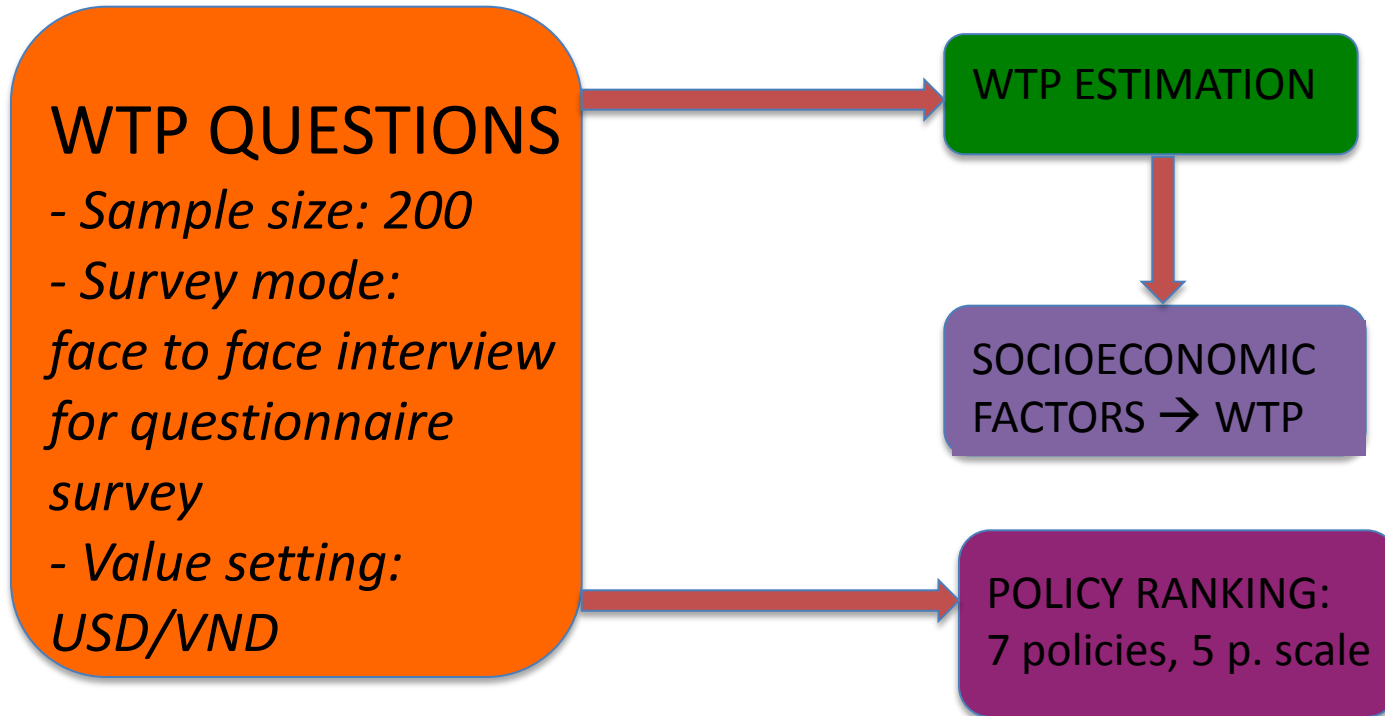
- To estimate the economic value of the MPA through the willing to pay of tourists to improve the biodiversity conservation activities and local support
- To propose a proper rate of marine conservation fee to the MPA
- To Identify policy support by tourists

## **HYPOTHESIS:**

- The tourists visiting Nha Trang Bay MPA are willing to pay more to develop the conservation activities and support local livelihood

# Analysis framework

for contingent valuation method and program ranking



# WTP question

Are you willing to pay USD3.0 as “**Conservation fee**”, given that your income will be deduced and you may have to scarify other demands. (Please make ✓ in the box).

<p>Yes <input type="checkbox"/></p> <p>Go to (A) below</p> <p>(A) If the “conservation fee” has increased to <u>USD5.0</u>, are you willing to pay?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>No <input type="checkbox"/></p> <p>Go to (B) below</p> <p>(B) If the “conservation fee” has decreased to <u>USD1.0</u>, are you willing to pay?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
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3 levels of bidding prices: USD 1.0, USD 3.0, USD 5.0 are put randomly in questionnaires



# Program raking

- a) Increase of live coral reef and seaweed cover
- b) Fish stock recovery
- c) Livelihood alternative program for local people
- d) Investment on waste treatment system in the MPA islands
- e) Environmental education and awareness raising on marine protection for local communities and tourists
- f) Development of village-based microcredit (small loans with very low interest rate)
- g) Promotion of sustainable tourism in Nha Trang bay



# ***Field works***



- ***Time:** August 9th – 20th*
- ***Place:** Mun Island, Boat trips to the marine areas of the MPA*
- ***Results:** 155 questionnaires have been collected (75 from domestic tourists, 80 from international tourists)*
- ***Advantages:** support from the MPA authority and tourists*
- ***Disadvantages:** poor knowledge of some domestic tourists on marine conservation issues, short time stay of tourists in Mun island and in snorkeling trips; time consuming and costly survey*

# References

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**Thank you for your attention**