Sustainable tourism development in Marine Protected Areas

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Motivation
Sustainability and tourism development
Private and social optimal strategy in MPAs
A case study of Nha Trang Bay MPA
Lessons learned from NTB-MPA
Tourism as an "alternative development" for SGs
Tourism as a national development strategy

10% GDP

1/10 jobs (direct, indirect and induced)

US$1.4 trillion in exports (direct, indirect and induced)

7% of world's exports

30% of services exports

Why Tourism Matters

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TOURISM DEVELOPMENT & SDGs (14)

**DEFINITION (WTO)**

sustainable tourism as “tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities”

**SOLUTION (SBE)**

*promotes economic growth while improving human well-being and protecting the environment*
Positive vs Negative Impacts

**Figure:** Pan et al (2018)

Positive: jobs ↑, inter-sectoral linkages for promoting growth
Negative: tourists ↑ ⟷ the risk of negative impacts ↑
Unexpected and unforeseeable events
WHY SUSTAINABLE TOURISM MATTERS IN MPAS?

2017: MPAs cover about 6% of the ocean
Targets: 10% in 2020 and at least 30% in 2030

Least developed countries
Small island developing states
World

2000 2010 2018
Sustainable tourism development in MPA?

Sustainable tourism is the concept of visiting a place as a tourist and trying to make only a positive impact on environment, society and economy.

- MPAs often have multiple objectives and offer tourists many opportunities.
- Sustainable Tourism requires to meet **sustainable local communities, natural resources and economic activities**.
Tourism development as a game

- Protected areas (PA) remain a cornerstone of global conservation efforts
- Negative impacts on environment & communities
- Existing issues/equity: sustainable population level/use of fishery resources

Fact

Conflict between residents and tourists, residents with authorities/investors

Definition

Tourism carrying capacity means that tourist economic growth has to be responsible towards local society, natural environment and other traditional economic activities

Problem

How to achieve sustainable tourism in MPAs (i.e. sustainable blue economy equilibrium)?
### A Model Framework

<table>
<thead>
<tr>
<th>Residents</th>
<th>Strategies</th>
<th>Keep EMP/Support</th>
<th>Not EMP/support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Strategies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involve EMP</td>
<td></td>
<td>$R_{ph}, A_{ph}$</td>
<td>$R_{pl}, A_{pl}$</td>
</tr>
<tr>
<td>Not participate</td>
<td></td>
<td>$R_{nh}, A_{nh}$</td>
<td>$R_{nl}, A_{nl}$</td>
</tr>
</tbody>
</table>

**EMP**: Environmental management performance (i.e. social benefit or blue ocean strategy)

*Tourism development is sustainable* iff $R_{ph} = \max\{R_{ij}, \forall i, j\}$ and $A_{ph} = \max\{A_{ij}, \forall i, j\}$

- If authority could gain more & resident less at Nash equilibrium $\Rightarrow$ conflict $\uparrow$ (prisoner’s dilemma)
**Nha Trang Bay MPA**

NT-MPA established in 2002, 14 islands, 3 zones: 250 km² : 38 km² land, 212 km² waters

- **Population declines** (5647 to 4793). **Tourists increase** (200%). **Residents depend on fisheries** (30%)
### Sample surveyed in 2014

140 households (12%), 4 communities in NTB-MPA

<table>
<thead>
<tr>
<th>Place</th>
<th>Involve in tourism</th>
<th>Not involve in tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Respondents</td>
<td>Rate (%)</td>
</tr>
<tr>
<td>Vung Ngan</td>
<td>5</td>
<td>14.29</td>
</tr>
<tr>
<td>Tri Nguyen</td>
<td>10</td>
<td>28.57</td>
</tr>
<tr>
<td>Bich Dam</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Main land*</td>
<td>20</td>
<td>57.14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>
# Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>SD</th>
<th>Involve in tourism Mean (n=35)</th>
<th>SD</th>
<th>Not involve in tourism Mean (n=105)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>41.10</td>
<td>8.80</td>
<td>36.46</td>
<td>7.92</td>
<td>42.60</td>
<td>8.56</td>
</tr>
<tr>
<td>Gender</td>
<td>0.11</td>
<td>0.32</td>
<td>0.23</td>
<td>0.43</td>
<td>0.08</td>
<td>0.27</td>
</tr>
<tr>
<td>Gender (male: 1; female: 0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>0.10</td>
<td>0.30</td>
<td>0.31</td>
<td>0.47</td>
<td>0.03</td>
<td>0.17</td>
</tr>
<tr>
<td>Education (high level: 1; low level: 0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>0.06</td>
<td>0.24</td>
<td>0.23</td>
<td>0.43</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Support (support: 1; otherwise: 0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>2.17</td>
<td>1.05</td>
<td>1.54</td>
<td>0.70</td>
<td>2.39</td>
<td>1.07</td>
</tr>
<tr>
<td>Location (low difficulty to high difficulty in accessing the tourism areas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job category</td>
<td>0.65</td>
<td>0.48</td>
<td>0.37</td>
<td>0.49</td>
<td>0.74</td>
<td>0.44</td>
</tr>
<tr>
<td>Job category (employer: 1; employee: 0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive effect</td>
<td>1.14</td>
<td>0.79</td>
<td>1.49</td>
<td>0.78</td>
<td>1.03</td>
<td>0.77</td>
</tr>
<tr>
<td>Positive effect (higher income, better infrastructure)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative effect</td>
<td>1.31</td>
<td>0.91</td>
<td>1.00</td>
<td>1.06</td>
<td>1.41</td>
<td>0.84</td>
</tr>
<tr>
<td>Negative effect (sex worker, high price, lack of labour force, migration, poor living environment)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Involve or Not Involve in Tourism

<table>
<thead>
<tr>
<th>Employee</th>
<th>Participates in tourism</th>
<th>Does not participate in tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participates in</td>
<td>102.71; 274.37</td>
<td>114.40; 352.36*NE</td>
</tr>
<tr>
<td>tourism</td>
<td>(10.46; 76.27)</td>
<td>(105.23; 96.87)</td>
</tr>
<tr>
<td>Does not</td>
<td>71.87; 90.45</td>
<td>64.27; 108.14</td>
</tr>
<tr>
<td>participate in</td>
<td>(5.17; 38.5)</td>
<td>(4.07; 8.12)</td>
</tr>
<tr>
<td>tourism</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Support**: government or investor, not both.
- **NE (114.40, 352.36) is optimal** ⇒ unstable tourism development
- **Employer**: better is not to involve
- **Employee**: better is to involve
FINDINGS FROM NTB-MPA

- job opportunities:
  inequality vs supports
- gender: for women or who are young and living in the same island
- government supports low educated people
- tourism investors support higher educated people
- support does not secure a better income
- lack of commitment and transparent policy

- tourism has yet improved the local people wellbeing in NTB-MPA
Tourism plays a vital role in drawing attention to MPAs but needs to consider the consequences of tourism development.

Investment plays an important role for improving local communities.

*Sustainable Tourism requires commitment by all individuals*
CONCLUDING REMARKS

- Tourism impact on development through multiplier effects: direct & indirect

\[
E_{\text{develop}} = E_{\text{grow th}} + O_f
\]

\[
E_{\text{grow th}} = I_R + T_R + G_R + O_f
\]

Given other factors \(O_f\), if tourism (q) \(\uparrow \iff I_R\) (income), \(T_R\) (revenue from trade), \(G_R\) (government revenue) \(\uparrow \iff E_{\text{grow th}} \uparrow \iff E_{\text{develop}} \uparrow\)

- The perception of tourism effects on society and environment plays a key role in communities living adjacent to MPAs.
- Social-benefit interaction as a game between corporate and civil advocates
- *Every journey is an exchange, not a commodity*
- *Key factors require to achieve sustainable tourism in MPAs: capacity development (education), collaboration of all stakeholders, community involvement, acceptance and support*
REFERENCES


- Pham-Do, KH., & Pham, TTT. (2019a). Does Tourism Improve the Community’s Well-Being in Marine-Protected Areas?. International Advances in Economic Research

- Pham-Do, KH., & Pham, TTT. (2019b) Tourism in Marine Protected Areas: A view from Nha Trang Bay, Vietnam (under revision)

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

THANK YOU FOR YOUR ATTENTION