Interactions between Global Climate Change and Traditional Lifestyle Initiatives of the Indigenous Peoples of Malaysia: A Bidayuh-Jagoi case study

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Malaysia

• Situational
  • SE Asia
  • Peninsular Malaysia
  • Sabah and Sarawak (island of Borneo)

• Socio-Economic
  • Middle income
  • Export-oriented

• Forests
  • Purview of subnational government (state)
    • Sarawak
      • Largest state
      • 61% forests
      • NCR
Indigenous Peoples in Malaysia

- Recognised in Constitution
- Malaysia – 15%
  - Peninsular Malaysia – 0.61%
  - Sabah – 60%
  - Sarawak – 70%
- Main philosophy of government policy
  - ‘The most significant challenge which besets Malaysia is lifting indigenous groups from backwardness and assimilating them into mainstream society. At the same time, the Government has given priority to help them preserve their traditional cultural heritage.’ (Malaysian Government submission to UN Universal Periodic Review 2008)
## Observations on Climate

| Rainy season | • Planting season used to be in May (when the rains came) but now the rain season in May does not come, so cannot plant on schedule  
|             | • Increased rain brings more landslides |
| Dry season | • Weather is hotter  
|            | • Heat makes it harder to work in the fields, easier to get sick (especially children)  
|            | • Harvest (for fruits and rice) is less  
|            | • Easier to have (out of control) fires, leading to haze  
|            | • Drought |
| Flood events | • Destroys crops  
|             | • Increased cholera outbreaks  
|             | • Disrupts daily routines (interferes with work etc) |
| Other | • Quality and quantity of fruit/harvest has decreased and many fruits are spoilt. Fertiliser is now needed to get higher yields.  
|       | • Cash crop harvests affected by changing seasons (rubber)  
|       | • Decrease in bumper crops  
|       | • Forest products no longer seasonal (e.g. petai / durian)  
|       | • Changes in the seasons affect traditions  
|       | • Emergence of new species, disappearance of others (e.g. udang galah and udang batu)  
|       | • More pests |
Case Study
Sarawak (south)

• Dayak-Bidayuh-Jagoi
• 8% of Sarawak population
• Population 193,000 (Bidayuh)
• Population est.10,000 (Jagoi)
• Jagoi territory – 20,000 ha
  • Cultivated (Tiboie, Damon, Umoh, Lison, Toyak)
  • Conservation (tu’an, obud, tinungan)
  • Kupuo
Climate Timeline

Ancestors of Jagoi, Krokok, Seremba, Bratak peoples inhabit what is now Southern Sarawak area

pre-1838 Jagoi move from Bung Bratak to Gunung Jagoi because of bad omen. Tembawang Jagoi established
1838 - Bung Bratak burns in attack by Skrang Iban
1840 - Tembawang Jagoi burns. Peoples of what now is called Tembawang Sauh (burnt Tembawang), divide into three. Makabang leads a group to Gunung Jagoi.
1910 - Group from Gunung Jagoi establishes Duyoh village in present location

1942-1945 - Japanese Occupation

2008 - Rice prices skyrocket 39% in June (Sarawak)

1998 - Sarawak Barrage commences operation
1990 - Jagoi I Oil Palm estate established in Duyoh

2003 - Floods reach Bau but not Duyoh
2004 - Floods reach Bau but not Duyoh
2008 - Floods reach Duyoh village.
Rains reported to be less than 2004
2009 - Floods reach Duyoh village

1840
1900
1950
1963 - Flood throughout Sarawak
1980
1997 - Haze blankets most of SE Asia
2000

Significant Historical and Environmental Events Observed/Remembered by Community

Significant Weather Events Observed/Remembered by Community

26 Aug 1883 - Krakatau erupts World temp decreases by 2C, Oral tradition recounts fire falling from sky.
Rice, Rain and Climate

• Rice harvest as indicator
• Staple food
• Culturally important
• Source of income
## Padi (Rice) Cycle

<table>
<thead>
<tr>
<th>Physical Action/Task</th>
<th>Adat/Spiritual/Cultural Action</th>
<th>Temporal Period</th>
<th>Conditions Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision making on land used</td>
<td>Omens to determine whether land is favourable for farming that year. (Bird calls)</td>
<td>March/April</td>
<td>presence of species</td>
</tr>
<tr>
<td>Cutting undergrowth</td>
<td>Omens guide individual farmers in whether the days are appropriate to go to the field or stay at home (presence of birds, animals). Bans on eating certain types of food as well as hunting animals in the area.</td>
<td>June</td>
<td>presence of species</td>
</tr>
<tr>
<td>Felling trees/bamboo</td>
<td></td>
<td>June/July</td>
<td>Dry period needed to dry undergrowth before burning (3-7 days)</td>
</tr>
<tr>
<td>Burning cut growth, clearing away remains, adding fertility to the soil and reducing pests</td>
<td>After burning, <em>nyipotih</em> may be made in reparation for destroying the spirits’ land</td>
<td>July/August</td>
<td>Dry period needed (at least 3 weeks) Plants for rituals</td>
</tr>
<tr>
<td>Planting seed</td>
<td>New seed is blessed <em>Gaweа Sowu, Gaweа Nyuluk</em></td>
<td>August/September</td>
<td>Little bit of rain, not overly dry</td>
</tr>
<tr>
<td>Fencing and building farm shelter (as necessary)</td>
<td></td>
<td>August/September</td>
<td>Timber from forest</td>
</tr>
<tr>
<td>Physical Action/Task</td>
<td>Adat/Spiritual/Cultural Action</td>
<td>Temporal Period</td>
<td>Conditions Needed</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Weeding and cutting grass</td>
<td>Gawea Pak may be performed in the period before ripening to limit the damage due to pests</td>
<td>October/January</td>
<td>Too much rain may affect in terms of pest, too dry may affect growth</td>
</tr>
<tr>
<td>Harvesting padi</td>
<td></td>
<td>March/April</td>
<td>Rain during this period may turn the padi mouldy</td>
</tr>
<tr>
<td>Threshing, drying and winnowing padi</td>
<td></td>
<td>March/April</td>
<td>Like harvesting, dry weather is best</td>
</tr>
<tr>
<td>Transporting padi from the farm huts to the village house and storing it</td>
<td>Gawea Pali Pu’un is performed before eating the new rice to ensure that the elders do not fall sick</td>
<td>March/April</td>
<td></td>
</tr>
<tr>
<td>Community rests</td>
<td>Gawea Sowa, communal rice harvest festival</td>
<td>June</td>
<td></td>
</tr>
</tbody>
</table>

- Increased pests
Graph of Rainfall (1960s-2008)

Rainfall (0 = no rain, 12 = floods)
Impact on forests & trees

• Durian
  • Erratic, year-round flowering
  • Yield decrease
  • Quality decrease

• Engkabang (illipe nut)
  • Bumper crop (every 3-4 years)
  • 1967
  • 2002
Impact on Vegetables

• Local vegetable harvests impacted by recent floods (chilli, long beans, green vegetables)
  • Impact on local communities and towns
  • Increase in price of vegetables (2-4x)
Strategies for adaptation
Multicropping

Biodiversity vs productivity

<table>
<thead>
<tr>
<th>Farm produce (Carbohydrates)</th>
<th>Importance (1 - Least, 5 - Most)</th>
<th>Most Planted (1 - Least, 5 - Most)</th>
<th>Eaten in the last month (November)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Padi</td>
<td>5</td>
<td>5</td>
<td>Y</td>
</tr>
<tr>
<td>Tapioca</td>
<td>5</td>
<td>5</td>
<td>N</td>
</tr>
<tr>
<td>Yam</td>
<td>3</td>
<td>3</td>
<td>N</td>
</tr>
<tr>
<td>Maize</td>
<td>4</td>
<td>5</td>
<td>Y</td>
</tr>
<tr>
<td>Bananas</td>
<td>3</td>
<td>1</td>
<td>Y</td>
</tr>
<tr>
<td>Sweet Potato</td>
<td>3</td>
<td>2</td>
<td>N</td>
</tr>
</tbody>
</table>
Strategies for adaptation
Increasing varieties

• Minimum number of padi strains grown in a farm – 2
• No. of padi strains grown/available in Jagoi areas – 7
• No. of traditional rice strains in Sarawak - 100
Strategies for adaptation

Rotational agriculture

• ‘complex system of land use and cultivation requiring sophisticated knowledge of the stability of soil types to crops grown, climatic variation and soil fertility’

• Decrease in fallow period
Strategies for adaptation
Social/Traditional worldview

• Topak & ieng
• Physical and spiritual world coexist
• Omens show when the time is right to do certain tasks
• Nyipoti and other ceremonies to bring the world back into balance (eg Gawea Pinganga)

• Concepts
  • For every action there is an equal and opposite reaction
  • Shared responsibility
Strategies for adaptation
Contemporary

- Securing tenure over land
- Mapping
- Replanting/Re-enriching etc
- Alternative energies (microhydro)
Summary

• Traditional
  • Multicropping, Diversity, Rotational agriculture, Spiritual

• Contemporary
  • Recognition of land tenure, Management strategies, Alternative energy sources, Alternative income sources
Insight #1

• Link between traditional knowledge and climate resilience
• Vulnerability is increased by loss of traditional knowledge and the space in which traditional knowledge lives
  • Padi knowledge
• Need to restore traditional knowledge
  • Answer in intersection of traditional and other knowledge bases
  • How to establish this in present ‘view’ of traditional knowledge
    • Disregards traditional knowledge
Insight #2

- Dynamics between forces of global climate change, local environmental changes and vulnerability/resilience of indigenous peoples
  - Disasters occur but are they a function of global climate change or local environmental destruction
    - How do these impact local communities
    - Loss of resources and livelihoods as a result of corporate pressure
    - Lessons from indigenous peoples response to local environmental destruction
  - Existing vulnerability is caused by external forces
    - Loss of traditional knowledge as a result of policy
Annex I countries

Logging, forest products
Demand for oils, fuels

Mitigation Schemes

Industrialisation

Forest destruction

IPs
AGROFUELS

• Impact land, environment, livelihood
• A global climate change mitigation proposal that destroy local environments
REDD

REDD Potential?

- Protected areas
- Areas of conflict
- FLEG experience
Recommendations
Indigenous Peoples

• Increased documentation on traditional resources, including traditional knowledge and oral history by indigenous peoples as a response to future climate changes (eg Krakatau)
• Facility for indigenous peoples to track data relevant to climate change (annual reporting, documentation on harvests)
• Indigenous peoples, even within a nation, have different capacities and vulnerabilities. Comparative studies on impact and vulnerability enable indigenous peoples to learn from each others’ experiences
Recommendations
Institutions, agencies and decision-making bodies

• Increased capacity building for decision-makers on the roles that indigenous peoples play in managing the environment, including the forest environment
• ‘Scientific’ reports should include human and social factors
• Consideration of the pre-existing rights and responsibilities of indigenous peoples within the planning and implementation of climate mitigation schemes
• Dissemination of information regarding the impacts of future climate change to local communities
• Protection of the rights of indigenous peoples at the highest possible level to provide, at least the foundation, for consideration of their rights both to land, resource and security of their lives
Acknowledgements

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