Factors affecting local land use decision in a gold-rich community, the Heart of Borneo

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Purposes of this presentation

• To introduce our on-going research project on ‘the factors affecting local land use decision in a gold-rich community, the Heart of Borneo’
  • Describe how local people engage in motorized small-scale gold mining (MSGM) in Apo Kayan
  • Identify tentative research questions
  • Provide a brief overview of our field research up until now
  • Show tentative research results and
  • Implications for future analysis and discussion
Background

Apo Kayan

Map by Yosuke Sano

Source: Google map
Villages in Apo Kayan

Map by Yosuke Sano
Gold mining villages in Apo Kayan

Sungai Boh sub-district:
- Mahak Baru
- Dumu Mahak
- Long Top
- Data Baru
- Long Lebusan
- Agung Baru

Kayan Hilir sub-district:
- Long Pipa
- Long Sule

*’Data Baru’ people are working on MSGM in Long Lebusan.

Map by Yosuke Sano
What is motorized small-scale gold mining with an engine pump (MSGM)?
What is MSGM?
What is MSGM?
What is MSGM?
Contribution of MSGM to household economy
‘Forest destruction’ around riverbanks
Debris from illegal gold mining in the Gunung Botak area, Buru Island Regency, Maluku, Indonesia

Source: http://nasional.republika.co.id/berita/nasional/daerah/15/12/05/nyvzo6280-kader-golkar-diduga-jadi-bos-tambang-emas-illegal

[c.f.] Forest destruction caused by extensive MSGM

Gold mining with an enin pump (Kato) in Rarowatu, Bombana Regency, Sulawesi Tenggara

Source: https://iqbalputra.wordpress.com/category/pengalaman/
Changes in the river environments (e.g., water siltation, soil sedimentation)
Negative impacts on river fisheries

MH village (Sep. 2017)

MH village (Aug. 2018)

MH village (Aug. 2018)
Aims of this study

• Assess how MSGM contributes to the household economy
• Explore how the locals perceive the impacts of MSGM on the local environment and their subsistence activities (especially river fisheries)
• Clarify how the locals do or do not try to mitigate negative social and environmental impacts from MSGM by leveraging the adat law system.
• Discuss the factors and conditions that would enable the local people to avoid choosing socially and environmentally destructive land uses (e.g., large-scale gold mining and unregulated extensive MSGM) in future.
Overview of field research

Research site:

- Population (as of Oct. 2016):
  - MB village: 686 people (174 families, 131 households)
  - DM village: 423 people (166 families, ? households)

- Ethnicity:
  - Kenyah Bakung, Kenyah Lepoq Tau, etc.

- Origin of the village:
  - Established in 1967 by migrants from LP village, Kayan Hulu district

- Subsistence activities (uses of land and resources mainly for subsistence purposes):
  - Shifting cultivation (main crop: upland rice), collection of forest products (rattan; timber for construction, wooden boat materials, etc.; edible wild plants such as ferns; etc.), hunting and fishing

- Money-earning activities (main income sources):
  - Rubber and cacao cultivation
  - Gold dust collection/panning and MSGM
  - Transportation or sales of goods (rice, vegetables, other necessities) around Tiau (illegal gold mining sites)

Duration of research:

- Preliminary research (Sasaoka & Sano: 21 Sep - 25 Sep. 2017)
<table>
<thead>
<tr>
<th>Data collection method</th>
<th>Informants</th>
<th>Time</th>
<th>Notes (collected data etc.)</th>
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</thead>
</table>
| 1 Key informant interviews | Adat law organization (‘Lembaga adat’) members, village administrative staff, Village council staff etc. | Aug. 2018  | - History of MSGM  
- Plan for large-scale gold mining development and local responses to the plan  
- Rules made by the adat law organization about limiting the MSGM operation area, collecting royalties from it, etc.                                                     |
| 2 Household surveys on household economy (semi-structured interview using a questionnaire) | 38 households selected by stratified sampling after wealth ranking | Aug. 2018  | - Annual income of each household (between ‘nuggal’ 2017 and ‘nuggal’ 2018)  
- Income structure  
- Preferred money-earning activities (ranking)                                                                                                        |
| 3 Separate interviews with villagers on their perceptions of river resources (fish, snails, etc.) | 38 households mentioned above | Aug. 2018  | - What river resources are perceived as important (5 most important resources were chosen)  
- Perceptions of the following:  
  - Change in the amounts of the resources  
  - Factors affecting the resources  
  - Impacts of MSGM on the resources                                                                                                                   |
| 4 Separate interviews with the persons who own engine pumps used for MSGM (mesin sedut: MS) | 13 MS owners and 1 leader of a MSGM group (non owner) | Aug. 2018  | - General information on MS (when and why it was purchased, price, capacity etc.)  
- Amount of gold collected by his group and resulting profit, composition of the group (members, relation between each member and MS owner/group leader), how profits are distributed among members, etc.  
- Perception of the impacts of MSGM on the river environments  
- Future plans for MSGM operation  
- Payment of the royalty, locally called ‘pi’                                                                                                          |
Ratna Purba
(Mulawarman University)
## Research activities (2/2)

<table>
<thead>
<tr>
<th>Data collection method</th>
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</table>
| **5 Resource utilization & food intake surveys** (self-administered sheet surveys) | 16 households *randomly selected from among the responding households of the 'households surveys’* | 16 -28 Aug. 2018 and 7-19 Mar. 2019 | • Diet of informant and his/her family had (food items, land types where those food items are harvested, etc.)  
• Forest products they collected/caught, and the purpose of harvesting those forest products (for sale or self consumption)  
• River products they collected/caught, the purpose of the harvest, places, methods (fishing methods) |
| **6 Surveys on local aspirations for future land use & development** | 38 households (43 persons) *includes 31 out of the 38 households responding to the 'households surveys’* | Mar. 2019 | • Ranking exercise. The following 5 scenarios of future land use & development plans were ranked:  
   - A: MSGM controlled by the adat law organization  
   - B: Free MSGM uncontrolled by the adat law organization  
   - C: Large-scale gold mining developed and operated by a company  
   - D: Large-scale gold mining developed and operated by a cooperative managed by villagers  
   - E: Oil palm plantation developed by a company through PIR  
• Perceptions of the strengths and weaknesses of each scenario |
| **7 Surveys on making a decision about future land use & development** | 43 persons (32 men, 10 women) | Mar. 2019 | • Perceptions on  
   - Ways to make a decision about future land use & development in the village  
   - Whether the adat law organization has tried to make decisions about land and resource use by involving all of the affected parties in the village  
   - Political efficacy |
2. Hasil sungai
Apakah anggota keluarga Pak/Ibu tangkap ikan dan udang sungai hari ini? Kalau Ya, kolong catat semua nama jenis yang ditangkap!

<table>
<thead>
<tr>
<th>Hasil sungai</th>
<th>Tujuan penangkapannya</th>
<th>Di tangkap di mana?</th>
<th>Babinsa atau caranya untuk tangkap hasil sungai tersebut?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jual batelo</td>
<td>jual konsumsi sendiri</td>
<td>LAUT JAGAP (G)</td>
<td>NYIKAP</td>
</tr>
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<td></td>
<td>jual dan konsumsi sendiri</td>
<td>SINGAI SAEKT (G)</td>
<td>PECAN PUYAT (nakut sungai)</td>
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<tr>
<td>Jual baike</td>
<td>jual konsumsi sendiri</td>
<td>SINGAI BEMBERAN (G)</td>
<td>Mesi (mencing)</td>
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<td></td>
<td>jual dan konsumsi sendiri</td>
<td>SINGAI BEMBERAN (G)</td>
<td>Mesi (??)</td>
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<td>Jual padel</td>
<td>jual konsumsi sendiri</td>
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<tr>
<td></td>
<td>jual dan konsumsi sendiri</td>
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</tbody>
</table>

Diagram:

- Pemukiman Desa Mahak Baru
- S. Mahak
- S. Wei
- S. Boh
Tentative research results (1)

**Brief history of small-scale gold mining in Apo Kayan**

<table>
<thead>
<tr>
<th>Time</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early 1980s</td>
<td>People from Batu Majang (West Kutai Regency) began to engage in MSGM in the Ugah River.</td>
</tr>
<tr>
<td>Mid 1990s</td>
<td>Exploratory gold mining with a ‘katoq’ (a relatively large engine pump) was conducted by an outside entrepreneur in the upper Mahak River.</td>
</tr>
<tr>
<td>Circa 1994</td>
<td>The adat law organization decided that only panning is allowed for collecting gold (Imang et al., 2009).</td>
</tr>
<tr>
<td>2003</td>
<td>The head of MH village issued a Village Chief Decree (SK Kepala Desa No. 03/2003) stipulating that the use of an engine pump (mesin sedut or katoq/dompeng) for gold mining is prohibited, and if someone use it, the machine will be confiscated (Imang et al. 2009).</td>
</tr>
<tr>
<td>Circa 2011</td>
<td>A villager, ‘E’, started MSGM in ‘LM’, a stream tributary of the Boh River. He was the first person to conduct MSGM around MH village.</td>
</tr>
<tr>
<td>2014</td>
<td>A Chinese entrepreneur proposed a relatively large-scale gold mining project (proposed operation area: the upper Mahak River). The villagers rejected the proposition.</td>
</tr>
<tr>
<td>Circa March 2017</td>
<td>Several groups started MSGM operations in ‘SB’, a stream tributary of the upper Mahak River (a part of ‘tana ulen’, the communal forest reserve).</td>
</tr>
<tr>
<td>2017</td>
<td>The adat law organization gave its retroactive approval for the MSGM operations and decided that (1) villagers can engage in MSGM only in the SB area, and (2) each MS owner/MSGM group leader has to pay a royalty of Rp. 250K per collection trip to the adat law organization</td>
</tr>
<tr>
<td>As of August 2018</td>
<td>At least 11 persons own a MS and 16 MS are used for MSGM.</td>
</tr>
</tbody>
</table>
Rules made by the adat law organization are not strictly enforced

‘SB’ area where villagers are allowed to collect gold using a MS

Settlement of MH and DM villages

MSGM operation sites (March 2019)
Tentative research results (3)

- Households with a member who engages in MSGM have relatively high income levels → MSGM attracts more and more people to participate in this new money-earning activity (?)

- Highly dependent on river fish. Some villagers perceive MSGM operation to be one of the factors contributing to the decline of fish population → a potential conflict between those who profit from gold mining and those who don’t.

- Most respondents gave a relatively high rank to option A (MSGM controlled by the adat law organization) and gave a lower rank to the option causing destruction of river environments (Large-scale gold mining developed and operated by a company) and the option incompatible with shifting cultivation (oil palm plantation developed by a company).

- Most respondents regard a “decision by majority vote” or “decision through careful deliberation” as the best way to make a decision on public issues. Only a few respondents prefer an arbitrary decision by village leaders.

- Many respondents recognize that the adat law organization has tried to make decisions about land and resource use by involving all of the affected parties in the village
Hypothetical implications:

• Most villagers prefer a livelihood option that enables them to earn some money while sustain shifting agriculture as well as a healthy river environment.

• It is unlikely that a few village elites could promote and enact a development project against local will based on their arbitrary decision → The will and aspirations of local people may greatly affect future land use in this area.

• MSGM: attractive money-earning activities for villagers because it brings a relatively high profit and is compatible with shifting agriculture and river utilization.

• It is uncertain whether more people will engage in unregulated extensive MSGM against the rules enacted by the adat law organization. However, considering the current situation, there is a possibility that this scenario will happen.

• It is probable that expansion of unregulated MSGM operation will destroy the river environments and change local livelihoods that depend on river resources. In addition, it will probably breed conflict between people who profit from gold and people who don’t.

• One of the most important factors affecting whether people can avoid or overcome these problems seems to be people’s ability to build a well-structured MSGM practices through adat law enforcement.

→ The abovementioned are still hypothetical implications and need to be scrutinized through analysis of the data collected in our field research.
Thank you!

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