GOVERNMENT EFFORTS AND COMMUNITY PARTICIPATION IN THE ELIMINATION OF MERCURY IN ARTISANAL AND SMALL SCALE GOLD MINING (ASGM)

Ministry of Environment and Forestry
The Republic of Indonesia
2018
She asked me to visit Paningkaban Village in Central Java

Siti Nurbaya Bakar. Siti Nurbaya Bakar the Minister of Environment and Forestry, The Republic of Indonesia

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Initial Engagement With Mercury Transformation In Paningkaban Village: A Pilot Project Started in 2018

Paningkaban Village, Banyumas Regency, Central Java
Widespread Mercury Contamination Across Paningkaban Village
The use of mercury in the traditional gold mining process in Paningkaban Village as an amalgam for separating gold from ore.

Tailings (solid waste) from mines are re-mined by villagers.
Poverty in Paningkaban village and wider employment opportunities abroad have driven many villagers to seek work abroad. The highest figure for the number of migrant workers abroad reached 5% of the entire population of the village. Migrants who return have influenced changes in the behavior of the villagers.

**1980 - 2000**

The discovery of gold reserves in 2000 has raised the hopes of the community that it could earn more income. Villagers flocked to work as illegal miners in the mine pits and the river. At its peak, no less than 1000 people were involved in extractive activities. The social life of the community changed. As many villages earned a higher income, they became increasingly consumeristic. Many of them began to leave their social traditions.

**2010 - 2015**

In the processing stage, mercury has been used in large quantities and is carried out continuously. As a result, within 15 years, no less than one third of the village area is polluted, including its water, land, rice fields, plantations and settlements. The impact of contamination for humans has also been identified.

**IN THE NEXT 10 YEARS**

In the next 10 years, it is predicted that one third of the village area will no longer be safe for human activities, especially for residential and farming purposes. Now, there are at least two areas of settlement in the village that are no longer safe due to mercury contamination.
ASGM locations: 72
- 22 Provinces
- 50 Regencies/Cities
(Source: MOEF, 2018)

In 2011, Indonesia had around 850 ASGM hotspots across the archipelago (Ismawati 2011).

1. Across Indonesia, artisanal and small-scale gold mining activities provide livelihoods to more than one million people, spanning 27 provinces (Balifokus, 2015).

2. Yet, national news media coverage in Indonesia has stressed that ASGM “costs the nation millions” (Nainggolan, 2015), highlighting ecological and health consequences of toxic contamination (Adopted from Samuel J. Spiegel, et.al, 2018).

3. In 2010, about 280 tons of illegal mercury were imported to Indonesia for ASGM. This figure was doubled in 2011 (Ismawati 2011 quoted in BaliFokus et.al, 3 January 2013).

“After exporting less than 20 tonnes of mercury in previous years, in 2015 Indonesia documented mercury exports of 284 tonnes (mostly to Hong Kong, Switzerland, Singapore and Viet Nam).” (UNEP, 2017, p. 8)

Table 2. Mercury exports to all countries, 2010-2015, as reported by Indonesia

<table>
<thead>
<tr>
<th>Year</th>
<th>Value (US$)</th>
<th>Quantity (kg)</th>
<th>Price per kg (average, US$)</th>
<th>Price per flask (average, US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>$42,687</td>
<td>14,370</td>
<td>$2.97</td>
<td>$102</td>
</tr>
<tr>
<td>2011</td>
<td>$9,610</td>
<td>19,467</td>
<td>$0.49</td>
<td>$17</td>
</tr>
<tr>
<td>2012</td>
<td>$8,530</td>
<td>16,250</td>
<td>$0.52</td>
<td>$18</td>
</tr>
<tr>
<td>2013</td>
<td>$1,929</td>
<td>6,978</td>
<td>$0.28</td>
<td>$10</td>
</tr>
<tr>
<td>2014</td>
<td>$255</td>
<td>810</td>
<td>$0.31</td>
<td>$11</td>
</tr>
<tr>
<td>2015</td>
<td>$2,615,999</td>
<td>283,767</td>
<td>$9.22</td>
<td>$318</td>
</tr>
</tbody>
</table>

Law Enforcement Efforts

Indonesia police and local governments closed down Small Gold Mining in Botak Mountain, Buru Island in 2017 and re-enforced it again recently in October 2018.

Last year, in December 2017, police and military joined forces to ensure that illegal mining activities in Hitu Mountain, West Seram, Maluku, was curbed. This area has been suspected as a major source of cinnabar illegal production. See photos below.
WHAT TO DO?

Artisanal miners prospecting for gold at a small-scale mining site in Indonesia. Photo: Reuters

President Joko Widodo:
The use of mercury in artisanal mining should be banned

Instructions from President Joko Widodo, 9 March 2017, regarding the use of mercury in the mining sector:

1. **Review the governance** of artisanal mining and small-scale gold inside and outside the forest area.

2. **The use of mercury in artisanal mining should be banned.**

3. **Enact Minemata Convention agreements** regarding the use of mercury in artisanal gold mining but also in medium and large-scale mining practices.

4. **Regulate the trade and distribution** of mercury including the tightening of mercury importation supervision.

5. **Educate miners** about the dangers of mercury to humans and the environment.

6. **Find solutions; not only curb illegal mining practices but also look for alternative livelihood for miners.**

7. **Communities contaminated by mercury must be given immediate medical attention.**
Government and Community Efforts

Existing conditions

Remove the dependence on mercury

- Reduction and Elimination of Mercury in 2025

- Transfer of Gold Processing Technology

- Strengthening of National Regulations, Policies, and Institutions

Social and Economic Transformation

- Formalization

- Technology for non-mercury gold processing

- Institution Building

- Exploring the Potential of Alternative Natural Resources and Local Wisdom

- Community Empowerment

- Creative Economy Enterprises (Entrepreneurship)
<table>
<thead>
<tr>
<th>No</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Strengthening of National Regulations, Policies, and Institutions</td>
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<tr>
<td></td>
<td>Drafting Presidential Regulation on National Action Plan for Reducing and Eliminating Mercury</td>
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<tr>
<td></td>
<td>Revision of Government regulation concerning Hazardous and Toxic Management (GR No. 74 year 2001)</td>
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<td></td>
<td>Committee on Mercury Research and Monitoring</td>
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<tr>
<td>2</td>
<td>Mapping the source of supply and use of mercury</td>
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<tr>
<td></td>
<td>Mapping the source of supply and use of mercury at 8 regencies (Kotawaringin Barat, Dharmasraya, Merangin, Wonogiri, North Minahasa, Bolaang Mangondonw, West Lombok, Palu)</td>
</tr>
<tr>
<td>3</td>
<td>Transfer of Gold Processing Technology</td>
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<tr>
<td></td>
<td>Institutional Strengthening</td>
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<tr>
<td></td>
<td>Technology for non-mercury gold processing</td>
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<tr>
<td></td>
<td>• Gravitational process (in North Sulawesi Province)</td>
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<td></td>
<td>• Leaching process in Banten Province</td>
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<tr>
<td>4</td>
<td>Transfer of Livelihood (Social and Economic Transformation in Paningkaban Village, Banyumas Regency, Central Java)</td>
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<td></td>
<td>Exploring the Potential of Natural Resources and Local Wisdom</td>
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<td>Community Empowerment</td>
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<td>Creative Economy Enterprises (Entrepreneurship)</td>
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<tr>
<td>5</td>
<td>Public Awareness Raising</td>
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<td>“STOP MERCURY” Campaign</td>
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<td>6</td>
<td>Recovery of Contaminated Sites</td>
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<td></td>
<td>Pilot project on Phytoremediation</td>
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<tr>
<td>7</td>
<td>Law Enforcement</td>
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<td></td>
<td>Seizure of illegall mercury distribution and illegall cinnabar mining by local police</td>
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</table>
Lessons Learned from Paningkaban Village

Taking Action is much more difficult than Talking Action....
**4 AREAS OF PARTICIPATORY TRANSFORMATION**

**ECONOMIC TRANSFORMATION**
- Facilitate the creation of alternative jobs for miners
- Improve skills and create new market

**SOCIAL TRANSFORMATION**
- Strengthen social capital by encouraging the growth of village social organizations

**LAW ENFORCEMENT**
- Law enforcement with a prime target of mercury suppliers, investors, and other main offenders.
- Formalization of ASGM under strict compliance (not applicable for mining in settlement areas)

**ENVIRONMENTAL TRANSFORMATION**
- Build awareness of the dangers of mercury contamination
- Rehabilitate contaminated areas (need help for effective technology)
- Build free zones of mercury contamination
Participatory socio-economic and environmental mapping is the most important stage to begin the transformation program. It identifies economic, social, cultural and environmental conditions of the area.
Guiding Principles:
1. Start with existing business activities
2. Promote environmentally friendly businesses
3. Select new potential businesses

ECONOMIC TRANSFORMATION

• Empower potential existing businesses within the community.
• Develop ecotourism programs as an alternative job for miners and other citizens.
• Establish a community learning center for developing new economic skills
• Involve socio-business entrepreneurs
Create Drivers of Change

Drivers of village change is a group of active villagers that currently consists of 115 people representing men, women, youth, and also miners.

Establish Integrated Database

Guiding Principles:
- Select agents of change and strengthen
- Grow a good climate for change
- Strengthen social capital

SOCIAL TRANSFORMATION

Strengthen social capital and village institutions
Establish a strong network of environmental activists, educators, and health workers.

Empower local government institutions to create a healthy political climate
Create Contamination-Free Zones

The establishment of contamination-free zones is done by strengthening existing traditions and social agreements. The community reached a consensus not to perform the gold mining and processing activities in the western area of the village.

This informal community agreement will be strengthened through local village laws and regulations.

Protection of Springs and Settlement Zones

Protection of springs and settlement zones was introduced by encouraging gold miners using mercury to move out from the area around the springs and settlement.

This process requires a strong social force.
Guiding Principles:

- Building a deterrent effect for the perpetrators of the offence
- Mainly targeting mercury suppliers, investors, and other main offenders
- Formalization of ASGM under strict compliance (not applicable for mining in settlement areas)

LAW ENFORCEMENT

- Build an understanding of environmental LAW violations
- Start to coordinate with the Indonesian police and law enforcement officers from the Ministry of Environment and Forestry
CULTURAL APPROACH
SOCIAL CONSOLIDATION
UTILIZATION OF SOCIAL MEDIA
ENVIRONMENTAL AWARENESS CAMPAIGN
EMPOWERING SOCIAL GROUPS
EMPOWERING ECONOMIC GROUPS
Strengthening economic skills and searching for an alternative livelihood
Introducing Integrated Socio-Economic Activities
Initiate Center of Learning
THANK YOU