STRATEGY TO ACHIEVE THE MERCURY REDUCTION TARGETS AND THE LESSON-LEARNED FROM THE planetGOLD INDONESIA PROJECT

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Mobile Application “JARI EMAS”

- Objectives: to monitor the mercury avoided from the Hg-free processing units within the project locations and ASGM sites in Indonesia

- Data inputs:
  1. Cooperative/miner name
  2. Processing plant coordinate
  3. Processing date
  4. Ore weight

Dashboard: www.jariemas.menlhk.go.id

Available on Google Play!
How much is mercury used by the miners?

Based on field data collection in 3 project sites and the National and International references

HYPOTHESIZE 1

1 tromol (processes 10 kg ore) uses 250 gram Hg
Equal to 25 kg of Hg usage per 1 ton ore

HYPOTHESIZE 2

1 ton ore processed by the non-mercury system will be avoiding 0,16 kg Hg

RESULT

• 99,35% from the Hg residue will be re-used by the miners
• 0,65% of Hg is released to environment

RESULT

Estimated ratio Hg:Au → 6.857:1
(1 gram of gold produced, nearly 7 grams of Hg is released to environment)
The Calculation of Mercury Usage & Gold Production

<table>
<thead>
<tr>
<th>Number of Sacks</th>
<th>Total ore processed (tonnes)</th>
<th>Total Hg feed (tonnes)</th>
<th>Total Hg avoided loss to environment (tonnes)</th>
<th>Total gold produced (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>5.2</td>
<td>0.13</td>
<td>0.0008</td>
<td>0.123</td>
</tr>
<tr>
<td>85</td>
<td>3.4</td>
<td>0.085</td>
<td>0.0005</td>
<td>0.073</td>
</tr>
<tr>
<td>1150</td>
<td>46</td>
<td>1.15</td>
<td>0.0075</td>
<td>1.094</td>
</tr>
</tbody>
</table>

**Validation:** 1 sack in average produces 1 gram of gold (data from miners)

**Variable Constant:**
- 130 sacks → 123 gram gold = 1.05
- 85 sacks → 73 gram gold = 1.16
- 1150 sacks → 1094 gram gold = 1.05
Lessons-learned of Mercury-free Technology Intervention
Alternatives of Mercury-free Technology
Lessons-learned from Mercury-free Technology Intervention

Lessons-learned

1. The miners’ experience shall be taken into consideration in the designing process of mercury-free technology.
2. Female miners can be equally benefitted from the technology interventions.
3. Access to finance will allow the miners decide the technology (e.g., capacity, design).
4. Formalized the miners in mining cooperatives will increase their responsibilities in technology shifting.
5. It is important to ensure the local government’s support in the establishment process of the technology (e.g., land provision, permits, asset handover).

Way Forward

1. The miners shall be well informed on the Project’s expected outcomes and involved in the pre-design of the DED.
2. R&D sessions involving the miners are planned prior to the delivery (after fabrication).
3. Optimalizations are expected ahead of the establishment.
4. The role of female miners in post-technology interventions shall be identified in advance and communicated during the introduction.
5. LVGA is a good modality to accommodate the miners’ technology choice.
6. Encourage the miners to participate in the cooperatives and have access to technology.
7. Good coordination with local stakeholders.

Formalized the miners in mining cooperatives will increase their responsibilities in technology shifting.

It is important to ensure the local government’s support in the establishment process of the technology (e.g., land provision, permits, asset handover).
Adopting Gender Responsive Approach to Support Mercury-Free ASGM
WEAK ENABLING FACTORS AND CONSTRAINTS DURING IMPLEMENTATION GENDER MAINSTREAMING

Gender Issues

1. A lack of awareness & leadership on gender equality of local staff & mining communities lead the resistance to incorporating gender issues into the ASGM business process & technology.

2. Cultural berries & double burden limiting women's miner participation and leadership in activities and organizations can also pose barriers.

Project Interventions on Gender

1. Taking gender mainstreaming has a significant role in reducing the gender gap and promoting mercury-free in ASGM sector, i.e. The project has established 1 women miner cooperative as a platform of women voices and also as a pioneer to access the permits for ASGM formalization.

2. Building the awareness on equal access to technology, finance and knowledge on the danger of mercury use. Putting gender responsive approach as important element of project has advancing the achievement of project goal to reduce/eliminate mercury releases from the Indonesian Artisanal and Small-scale Gold Mining (ASGM).