Environmental Effects of FDI in the Mining Sector
- some Latin American evidence -

Nicola Borregaard, Annie Dufey
OECD Conference on FDI and Environment
Paris, 7th and 8th of February 2002
The Content

- Mining in Chile and Peru
- Literature review, data recollection (on investment), interviews, survey (in Chile)
- Looking at scale effects, structural effects, technological effects, regulatory / policy effects
The Conclusions

• Mix in operations and trend to adjust environmental performance between domestic and foreign investors

• Four main issues come up:
  – On the overall positive side:
    • Interaction between FDI and domestic regulation and policy
    • Technological effects
  – On the overall negative side:
    • Sustainability, esp. at local level
    • Information (or the lack of it)
Investment Chile Mining

Copper Production by Company 1990-1999

- Production increase in 1990s goes hand in hand with increase in FDI
- Private production up from 400,000t in 1990 to 3 mill.t in 1999
- FDI between 60 and 80% of total investment in mining sector
- Concentration in some regions / dependence on mining FDI

Contribution of Mining in the FDI Materialised by Region, 1979–1999
Investment Peru Mining

Copper Production 1985-1997

- FDI primarily through acquisitions
- Increase in FDI from 44% in mining investment in 1992 to 76% in 1996
- Privatisation process important (state control decreased from 50% in 1990 to 1.5% in 1997)

Evolution of FDI in Peru 1992-1999
(millions of dollars)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining FDI</td>
<td>557</td>
<td>565</td>
<td>876</td>
<td>1.046</td>
<td>1.141</td>
<td>1.225</td>
<td>1.364</td>
<td>1.649</td>
<td>17.8</td>
</tr>
<tr>
<td>Total FDI</td>
<td>1.503</td>
<td>1.642</td>
<td>4.450</td>
<td>5.541</td>
<td>6.232</td>
<td>7.267</td>
<td>7.998</td>
<td>8.573</td>
<td>35.9</td>
</tr>
<tr>
<td>Mining FDI/Total FDI (%)</td>
<td>37,0</td>
<td>34,4</td>
<td>19,7</td>
<td>18,9</td>
<td>18,3</td>
<td>16,9</td>
<td>17,1</td>
<td>19,2</td>
<td></td>
</tr>
</tbody>
</table>

OECD Workshop, Paris, 7th and 8th of February 2002
## Environmental Impacts

- **On positive side:**

<table>
<thead>
<tr>
<th>Effects</th>
<th>Chile</th>
<th>Peru</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological</td>
<td>- Introduction of soft environmental technology (first EM and EP, then ISO)</td>
<td>- Significant change and investment into modern technology (primarily tailings and air contamination, e.g. case of Southern Peru),</td>
</tr>
<tr>
<td>effects</td>
<td>- efficiency in water use (recycling rate at 50% vs. 10% in domestic companies)</td>
<td>- but few local links and spill-overs, and</td>
</tr>
<tr>
<td></td>
<td>- less air contamination (Chagres was at CODELCO’s 2000 SO2 levels in 1980)</td>
<td>- increases in efficiency led to a reduction in employment</td>
</tr>
<tr>
<td>Regulatory</td>
<td>- Significant positive effects with regard to EIA,</td>
<td></td>
</tr>
<tr>
<td>effects</td>
<td>- enforcement and enactment of Decontamination Plans,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- today participation through Mining Council</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Environmental Impacts

• On negative side:

<table>
<thead>
<tr>
<th>Effects</th>
<th>Chile</th>
<th>Peru</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale effects</td>
<td>• Question of long term sustainability and local development unresolved;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Water use in desertic areas,</td>
<td>• Question of long term sustainability and local development unresolved;</td>
</tr>
<tr>
<td></td>
<td>• Lack of information on issues such as acid mine drainage, energy use, toxis</td>
<td>• Territorial effects, water rights and</td>
</tr>
<tr>
<td></td>
<td>• (minor effects: Increase in size of operation, increase in copper concentrate)</td>
<td>• Lack of monitoring;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of information on issues other than the main environmental problems</td>
</tr>
</tbody>
</table>
Local Sustainability

- Insufficient public sector policies
  - (in Chile, only about a 10% of tax income is channelled back to mining regions)
- Amounts spent are small
  - (in few cases over US$100,000,- for community priorities),
- and are spent mostly unsystematically and uncoordinated
  - (no records, lack of coordination with government and civil society)
- Paternalistic spending still prevails
  - (few long term agreements, low involvement of community)
- Lack of long-term view
  - Very few cases that ensure funding after operation’s life time
Key Aspect on Way Forward

- To potentialize positive and mitigate negative effects a close cooperation with civil society and local / national government is necessary