End-of-life tire management in Colombia: Challenges in implementing the extended producer responsibility in an emerging market

Jooyoung Park, Nohora Diaz, Santiago Mejia
Universidad de los Andes
Extended Producer Responsibility, EPR

• *Producers* have the responsibility of managing end-of-life products (e.g., take-back, treatment, and disposal)

• To achieve greater environmental outcomes and economic efficiencies
  – To internalize costs of waste management and promote waste prevention and eco-design
  – To improve investment in consistent infrastructure and technology
The national policy on hazardous waste (Decree 4741 of 2005) adopted the principle of EPR.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pesticide containers</th>
<th>Lead-acid batteries</th>
<th>Pharmaceutical waste</th>
<th>Small batteries</th>
<th>Tires</th>
<th>Light bulbs</th>
<th>Computers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resol.</td>
<td>693, 1675</td>
<td>0372, 0361</td>
<td>0371</td>
<td>1297</td>
<td>1457</td>
<td>1511</td>
<td>1512</td>
</tr>
<tr>
<td>Collect.</td>
<td>1</td>
<td>0</td>
<td>8</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Indv.</td>
<td>2</td>
<td>60</td>
<td>50</td>
<td>22</td>
<td>8</td>
<td>12</td>
<td>40</td>
</tr>
</tbody>
</table>
Our study: EPR for **tire waste**

- To investigate the governance and performance of the EPR system on tire waste
  - Resolution 1457 of 2010
  - End-of-life tires from automobiles, buses, trucks

- Documentary investigation and interviews
  - EPR reports, legal and government documents
  - Interviews with director/coordinator of the tire EPR program, ANDI, ANLA, MADS, recyclers
EPR system for tire waste

End-users
- sell products

Retailers/dealers
- ask for space
- provide space

Waste managers
- report
- contract
- provide permits

5 Collectives
- approve, monitor
- pay fees

220 Importers
- report

ANLA
- authorize, monitor

MADS
- feedback

Governments

EPR system
- 87 Retreaders
- 179 Collection points
- 4 Processing system

Retreaded tires
Waste tires
Provide service
Transportation system
Provide service

Governments report
EPR system for tire waste
The case of Rueda Verde

• One of the five PROs among tire importers
• 84 member companies, covering 92% of the market share (as of 2015)
• Overall program management
  – Collection and transportation (45%)
  – Processing of tire waste (37%)
  – Public outreach and education (5%)
Performance of the EPR system

- Colombia (2015): 38,000 tons, 35% collection
- Portugal (2009): 90,000 tons, 103%
- Spain (2010/2011): 177,000 tons, 54%
- EU28 (2015): 3.87 million tons, >90%
Environmental effectiveness

• No evidence for waste prevention and eco-design
• Insufficient material recycling: mechanical crushing only, low demand, lack of capacities
• Very low level of energy recovery
• Unauthorized processing (e.g., regrabado), uncontrolled disposal and illegal burning
Responsibilities and incentives

- End-users have lower level of awareness and interests in returning products
- Distributors are not subject to legal requirements and do not have economic incentives
- Waste management service providers suffer from unstable profit
- Municipalities/local governments provide limited support only for outreach
Monitoring, regulations, transparency

• ANLA assumes complex responsibility of monitoring and enforcement with limited resources
• Regulations and policies do not support the innovative uses of tire waste
• Lack of complementary policies
• A lack of background investigations and information management systems