

Mining and Water

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Mining and Water

IWA-IDB INNOVATION CONFERENCE
ON SUSTAINABLE USE OF WATER:
Cities, Industry and Agriculture

Outline

1. Mining Industry
2. Use of water in Mining
3. Best Practices in Mining Industry
4. Water Solution in Mining
5. Challenges in Mining and Water
6. Conclusions



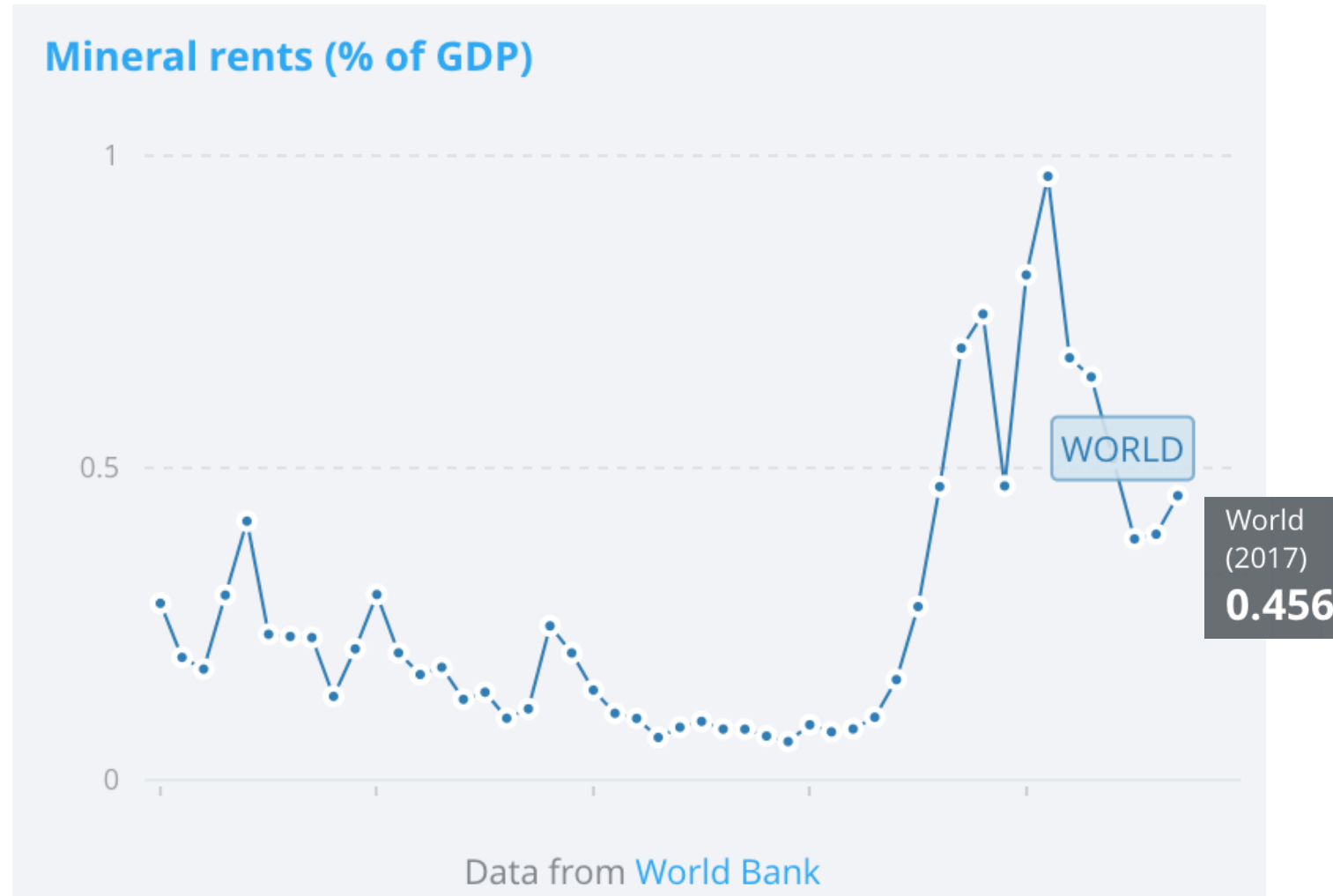
Mining Industry

Mining load with a dirty past, which still cannot be overtaken

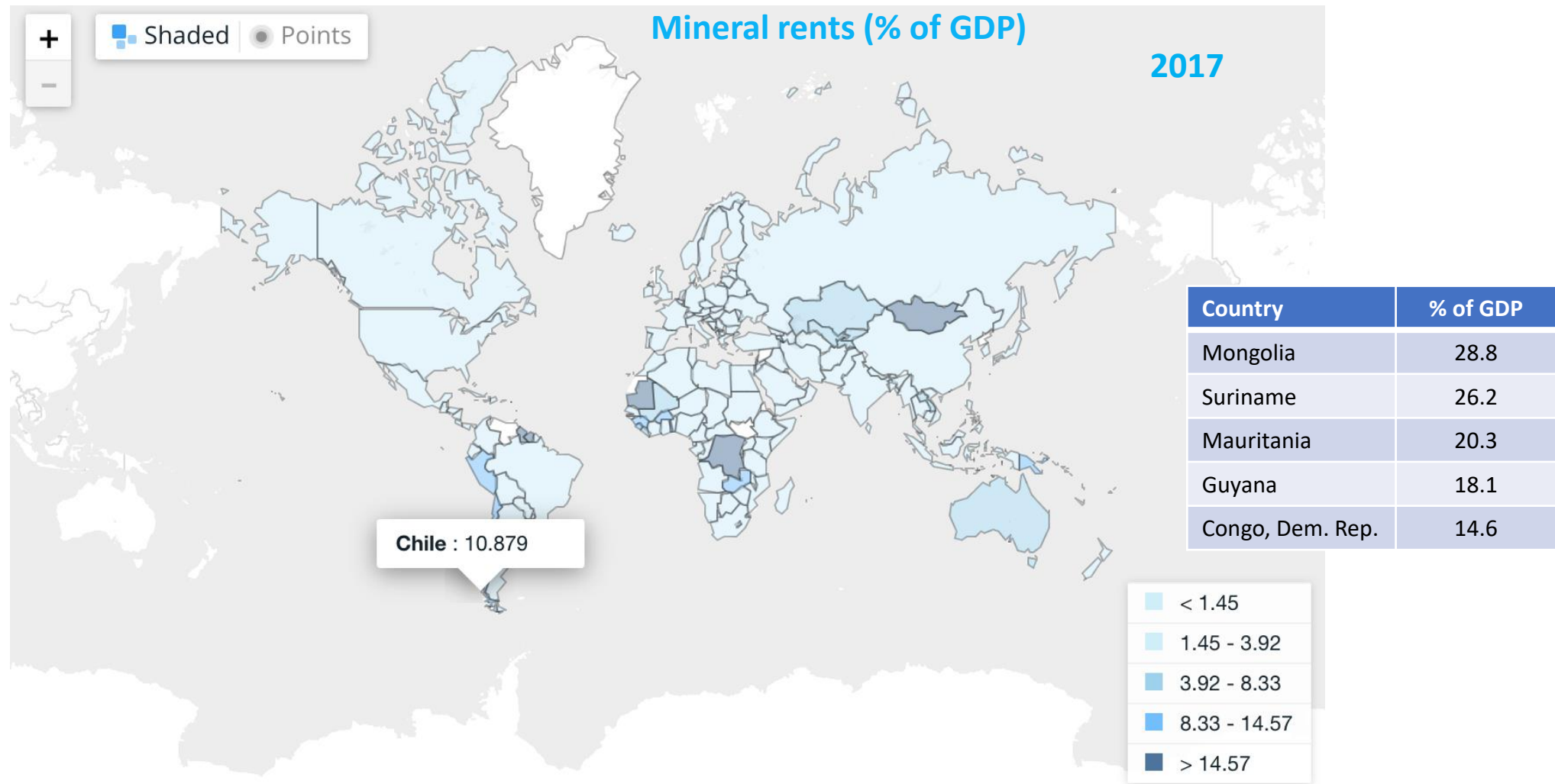
- Water consumption with environmental impact
- Discharges and infiltration of pollution solutions and contact water.
- Environmental disasters. Tailing dumps collapses.



Mining Industry



Mining Industry



Data from [World Bank](#)

Scarcity and flooding are the most
water issues to Mining Industry

Use of water in Mining

- ✓ Irrigation roads Mine
- ✓ Control of dust in Crushing
- ✓ Metallurgical processes



Hydrometallurgy



Flotation



- ✓ Smelting and Refinery Processes
- ✓ Services



Use of water in Mining

Water Management

Purpose:

- Sustainable management of aquifers and ecosystems that may be affected.
- Reduction of the amount of water used.
- Effluent impact control.

Tools:

- Corporative Policy
- Measuring and analysis. Technology
- KPIs for water consumption



Best Practices in Mining Industry

On the other hands,...

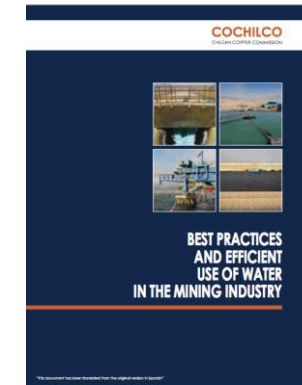
...Big Mining is a world reference on good practices and adaptation to stricter environmental regulation.



<https://www.icmm.com/>



<https://www.icmm.com/water-stewardship-framework>



https://www.cochilco.cl/Research/best_practices_and_the_efficient_use_of_water.pdf

Best Practices in Mining Industry

For instance,

- **Water reclamation from tailings.**
- Use of smart controllers in tailings thickeners discharge.
- Replacement of conventional thickeners by Hi-Rate, which increase the concentration in tailings weight.
- **Measurement and use of consumption indicators for water.**
- **Recycling of solutions and water.**
- **Use of seawater (with or without desalination)**

Water Solution in Mining

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Currently,...

... the big Mining pays expensive solutions for its water issues.

Water Solution in Mining

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But,...

... many times these expensive solutions don't solve the watershed issues.

Conclusions

- Mining must align its actions and indicators with the strategy of sustaining water use.
- Categorizar the water issue in scarcity, pollution/remediation, and flooding.
- The water issue is transversal for all Industry. (mainly, what is referred to as economics earnings).
- This problem that is solved with infrastructure look for public-private solutions.

Thanks...

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Challenges in Mining and Water

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- Advance in remediation
- Watershed scientific studies are required
- Improve the knowledge about water dynamic behavior in the watershed
- Searching for holistic solutions for all users
- Transparent and public water information of a basin