

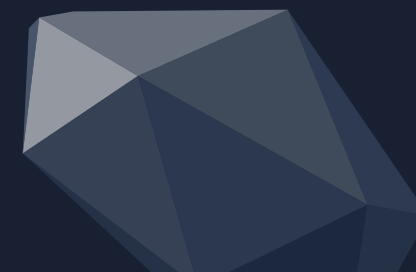
Environmental challenges of today -water and waste

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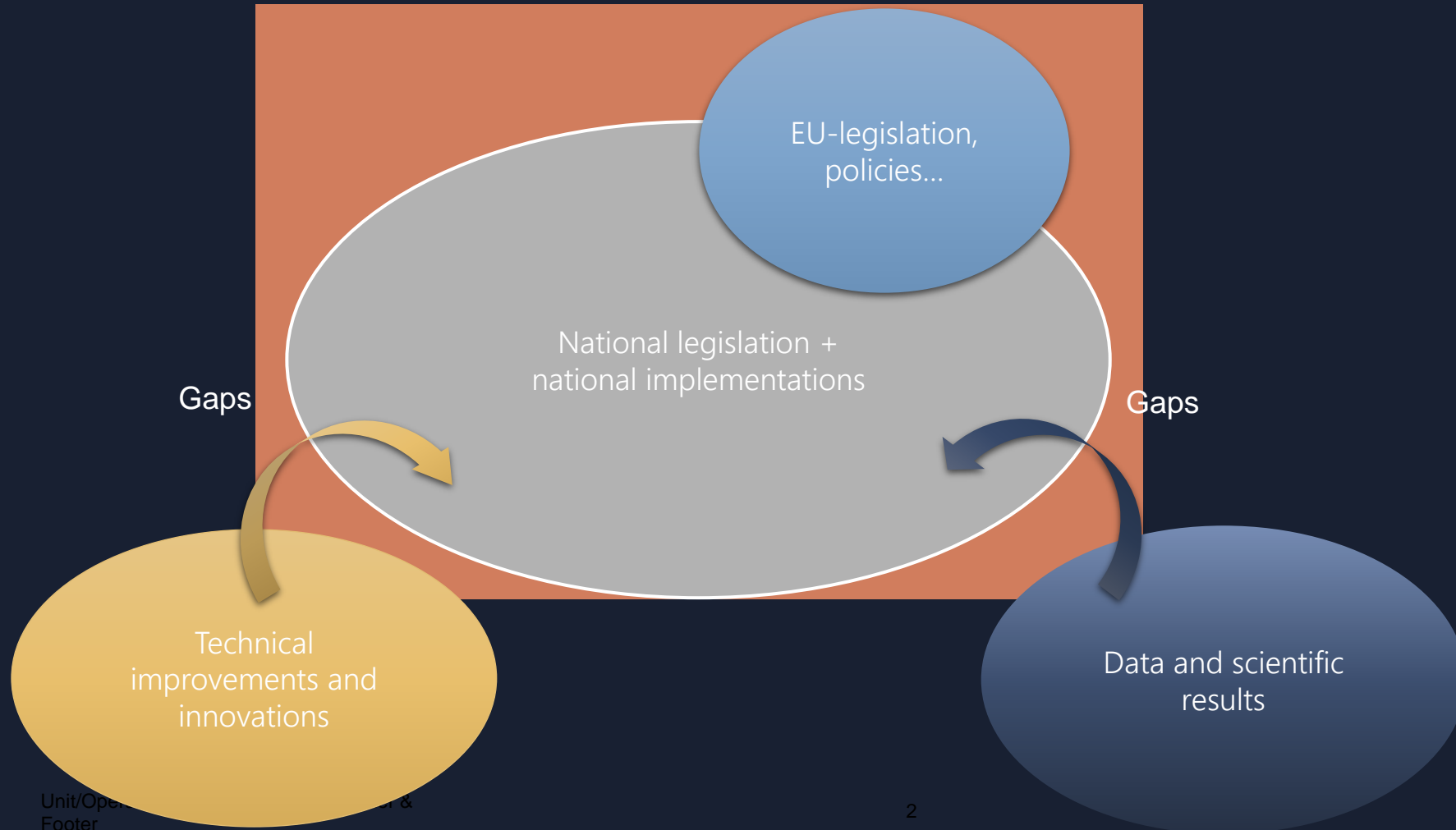
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The environmental framework

Climate change, water- and air pollution, biodiversity, etc... Are we able to see the whole picture?



The mining industry

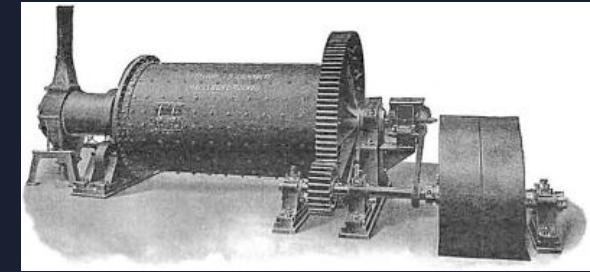


Interacting with surroundings
and nature

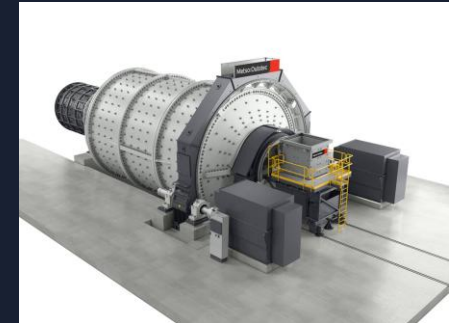
To adapt takes time....



Often large scale



1907



2023

A bit conservative?

Aiming for the future....

Today water is becoming more and more critical.
Both for the process performance
... as well as our ability to get necessary permits and
license to operate.





Future water management

Water must be considered as a resource together with the mineralisations

- Improving water management
- New flotations reagents

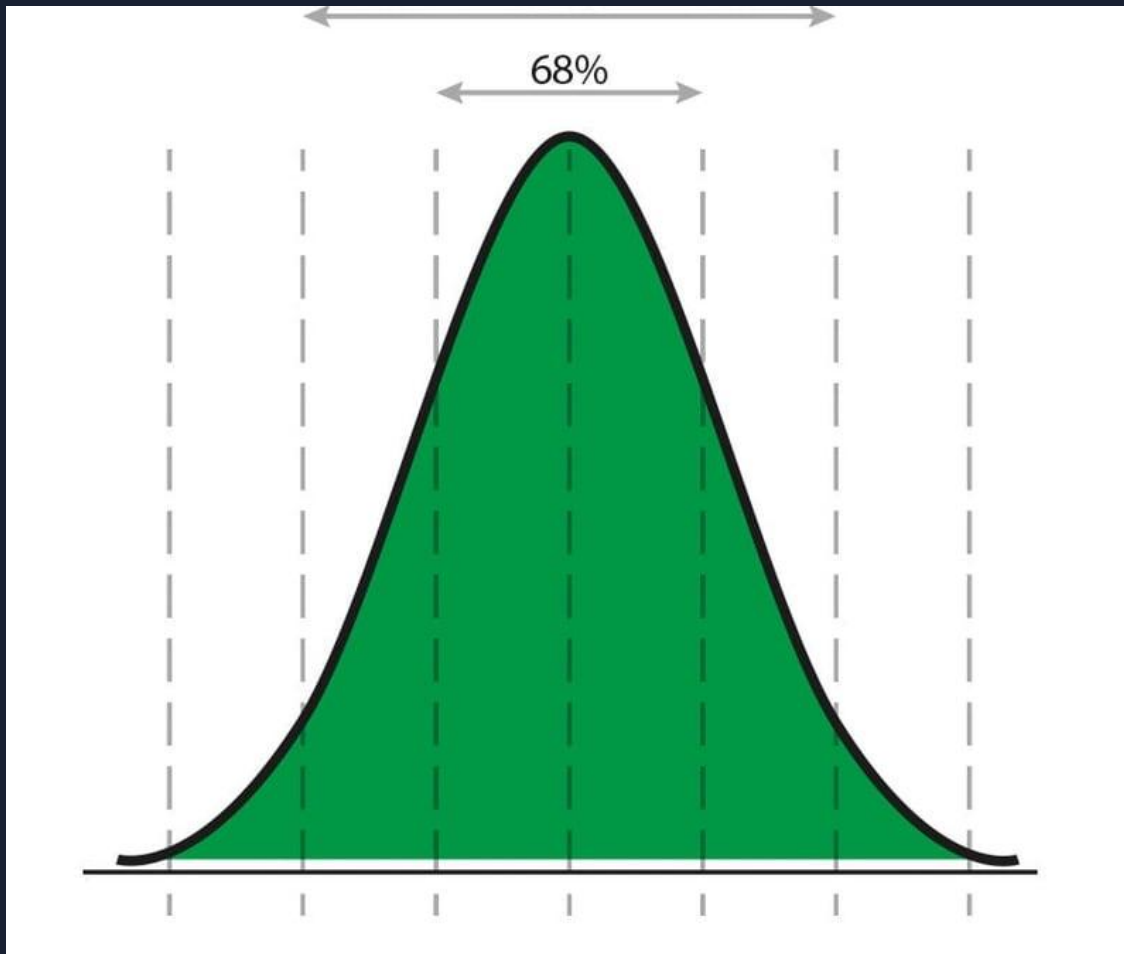
Treatment CAN solve essentially all water quality problems BUT not cost effectively and sustainable.

- Always the second-best solution
- Waste generation and long- term sludge stability
- LCA

Toolbox of sustainable treatment technologies + water quality understanding and control

- New types of water treatment
- Treatment within the process

Improved measuring technologies



What about waste?



Work through out the whole value chain in mining (ore sorting, geometallurgy, process optimization)

Novel processes

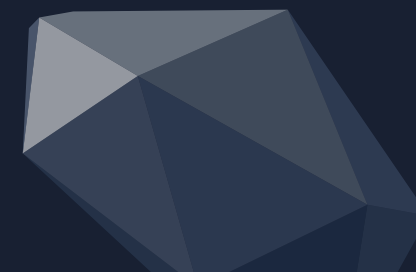
"Make something out of waste without producing even more waste"

Geochemistry, long term predictions- and modelling

With technology development

And by integrating environmental issues within
mining, mineral- and metallurgical processes

...difference can be made!



Thank you for listening

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