

PLANNINGforclosure 2018

2nd International Congress on Planning
for Closure of Mining Operations

Mine Closure Costs Peru Case

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gecamin.com/planningforclosure

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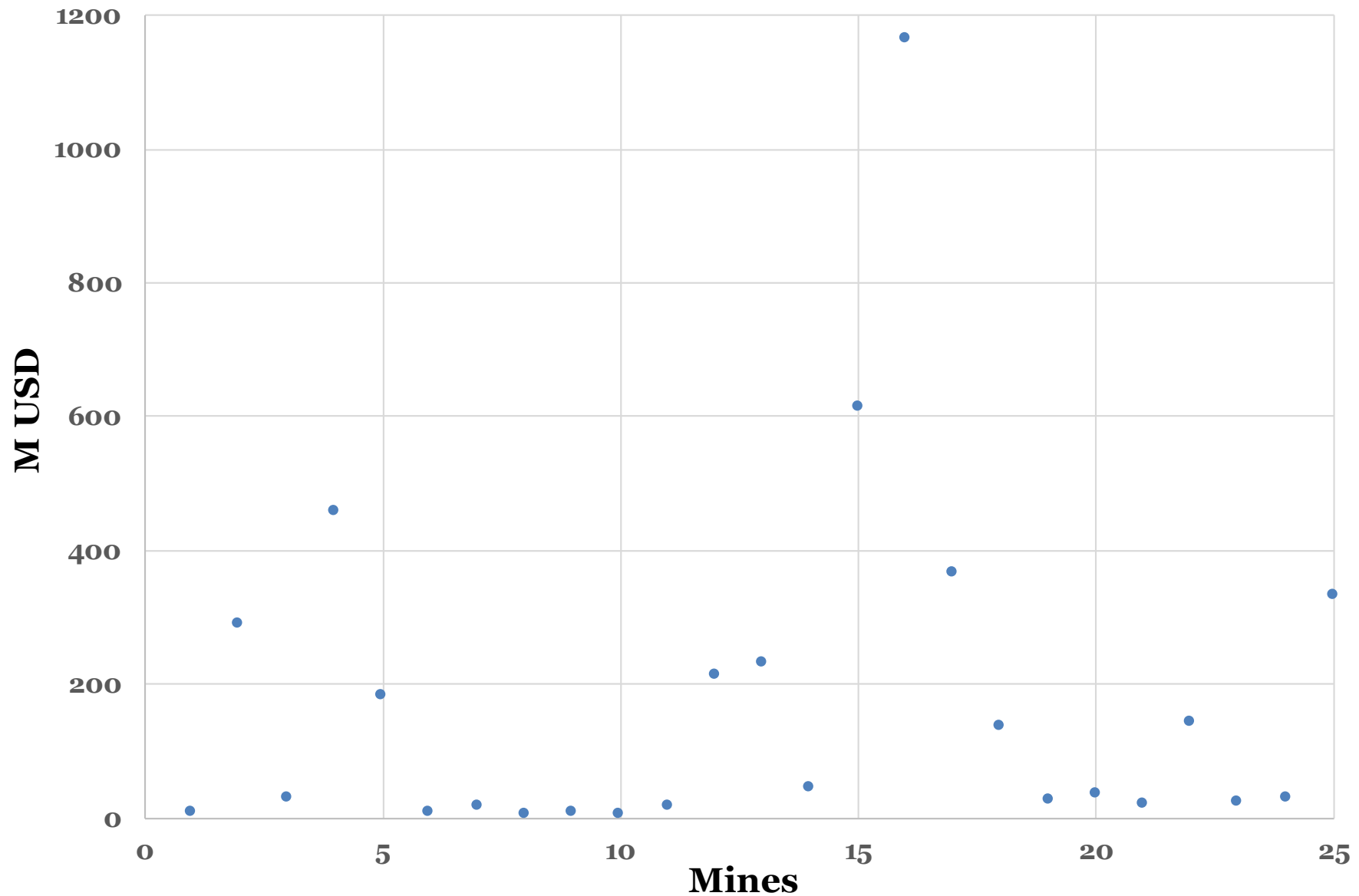
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Questions

1. Can we know if the proposed closure cost is right?
2. How do closure costs develop through the life of mine?

Closure Costs Peru



Data Source

Peru Mine Closure Act (Oct 13th, 2003)

Mine Closure Act Regulation (Aug 16th, 2005)

- Closure Plan had to be submitted by Aug 2006
- Update every 5 years
- Modification:
 - Modification EIA
 - Owners necessity
 - Request of authorities

Public Information Access Act

Climate Considerations



- Three big regions
- Most of the mines are in the Highlands (over 3500 masl)

Precipitation:

- Rainy and dry season
- Rains between December and April
- 80% of precipitation during rainy season

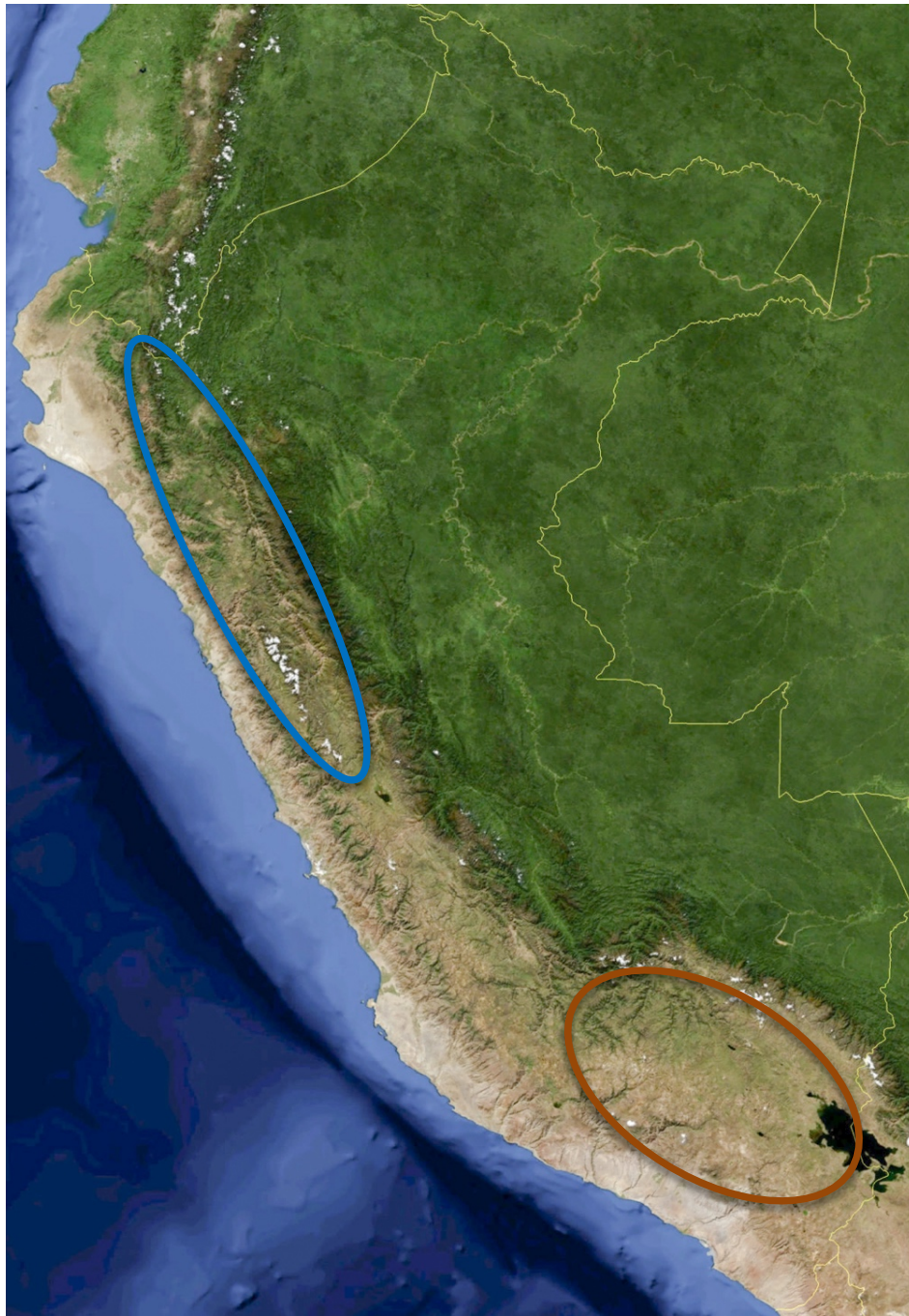
Precipitation

Precipitation in the Highlands varies from North to South

North: wet
between 1000 – 1600 mm/year

South: dry

- Could be less than 300 mm/year
- Conditions similar to north of Chile



Classification

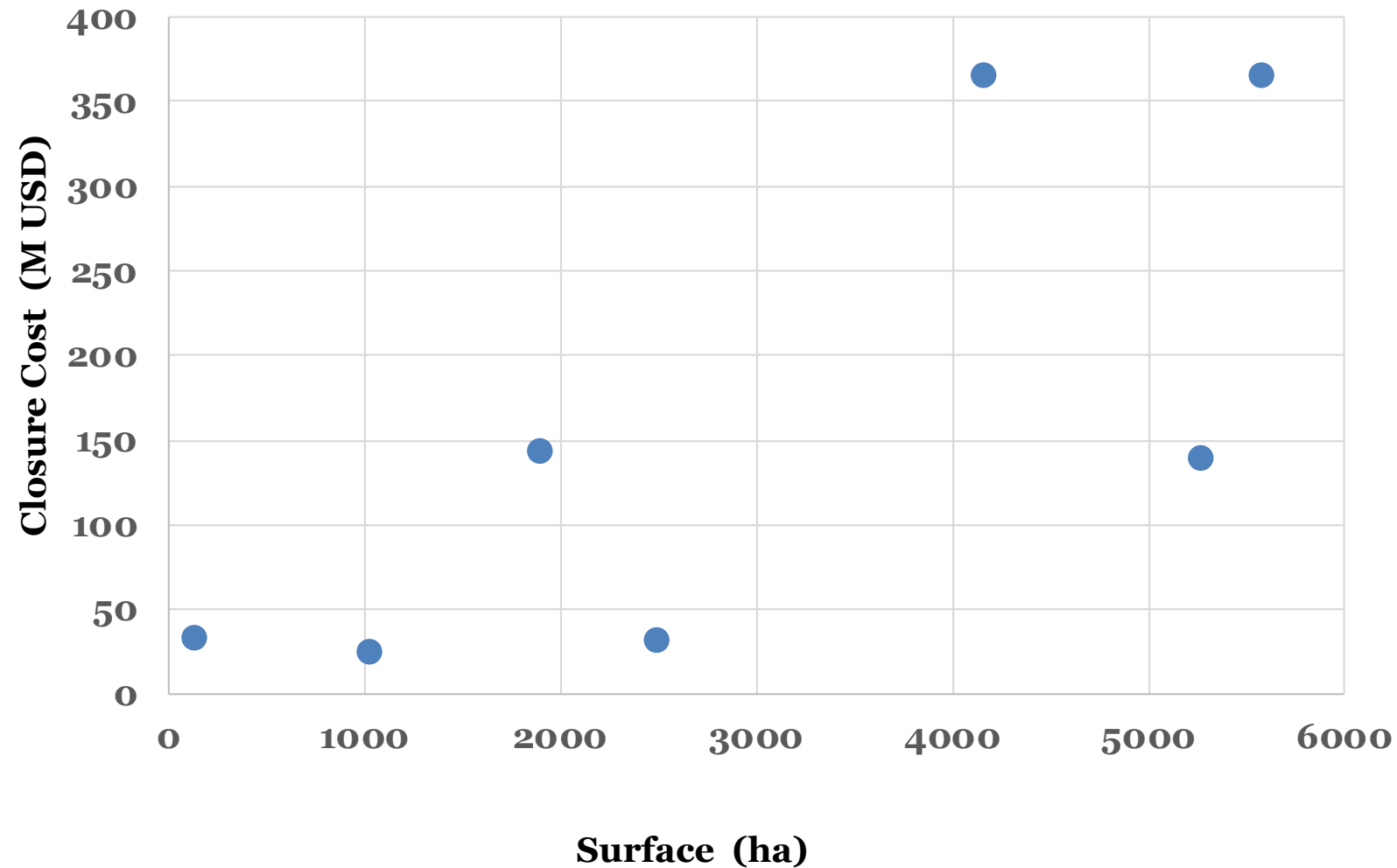
Precipitation:

- Covers
- Water treatment costs

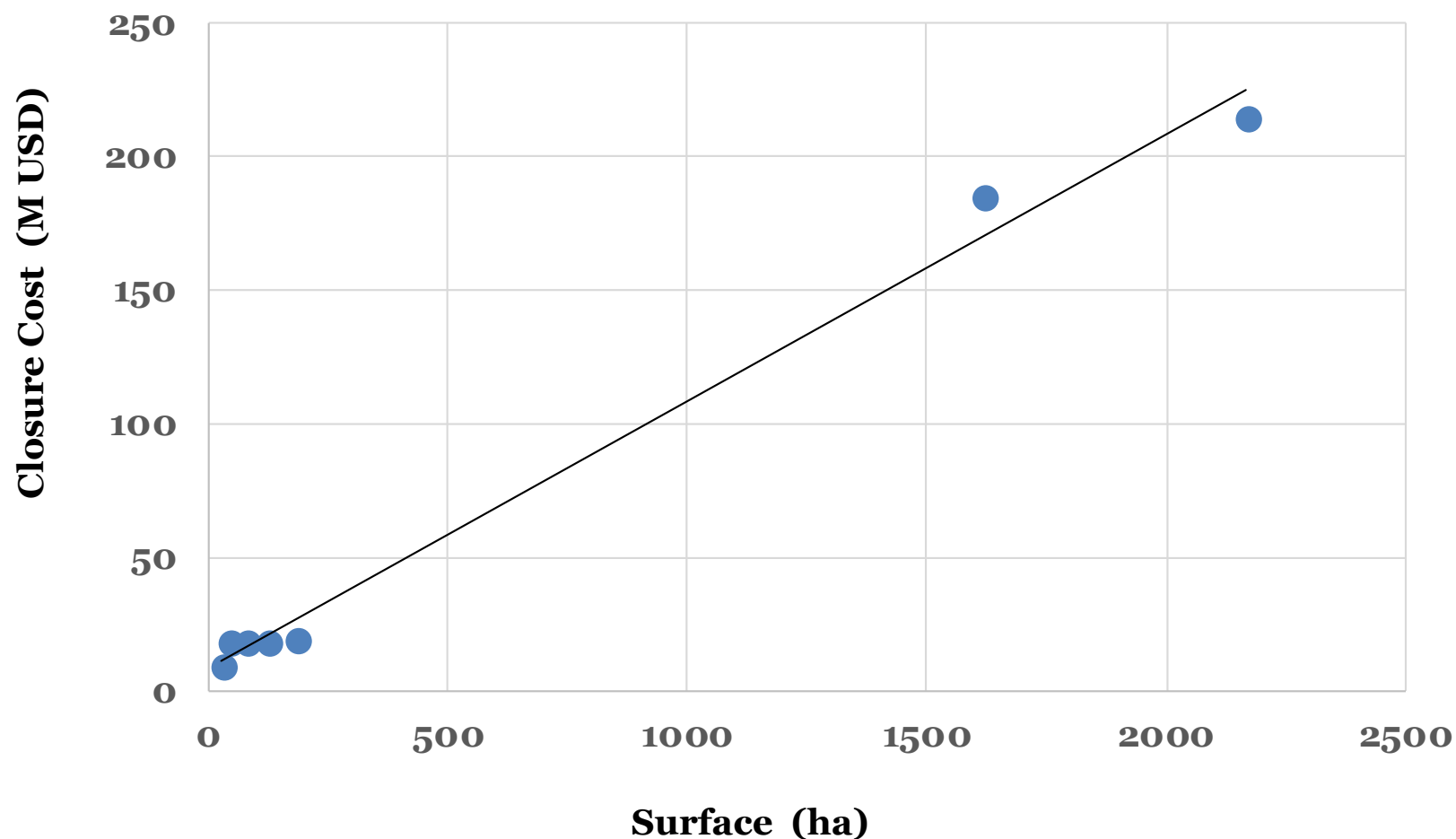
Criteria:

1. Annual precipitation less than 300 mm
2. Annual precipitation between 300 mm and 800 mm
3. Annual precipitation higher than 800 mm

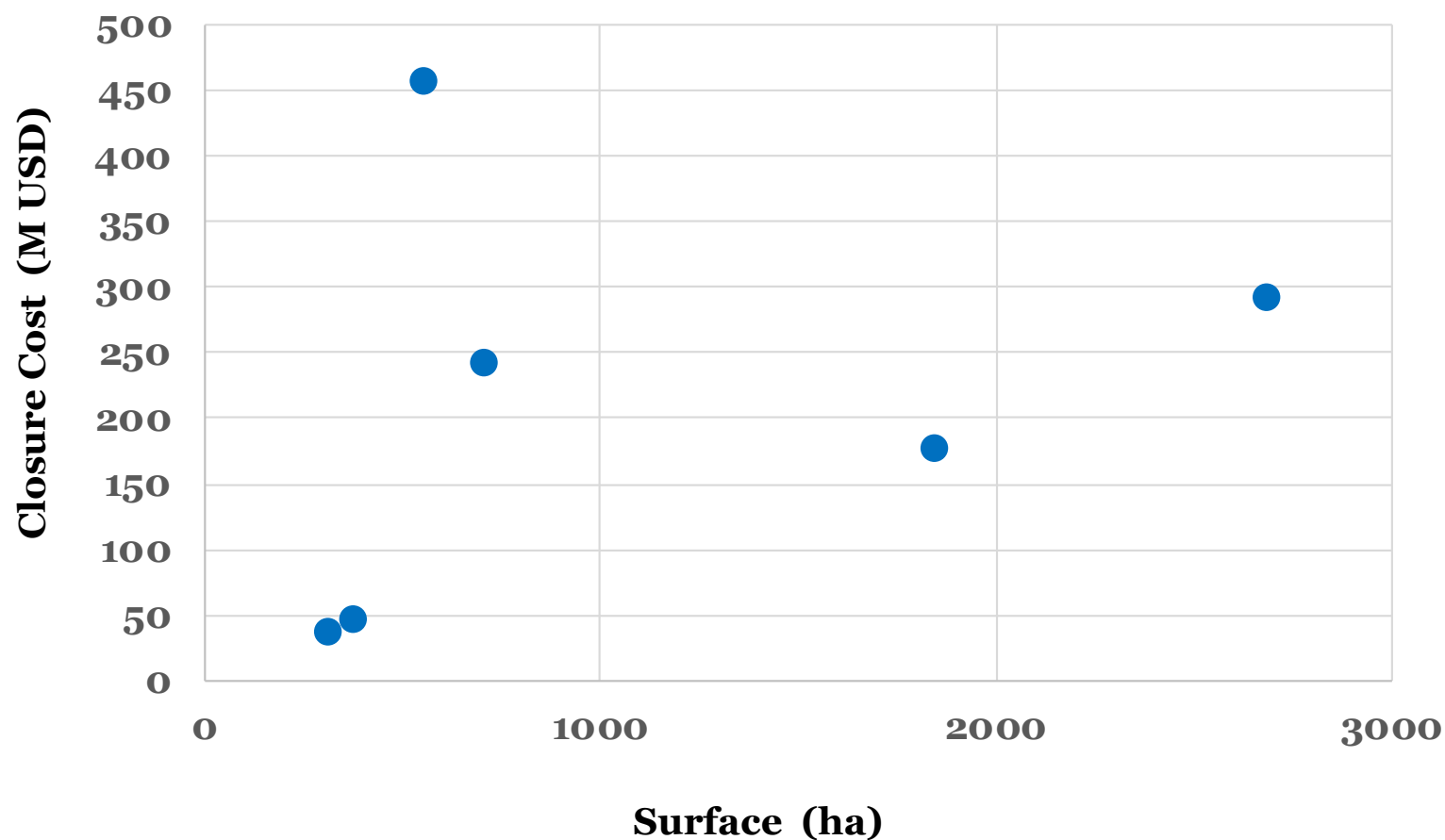
Sites with Precipitation < 300 mm



Sites with Precipitation between 300 mm and 800 mm



Sites with Precipitation > 800 mm

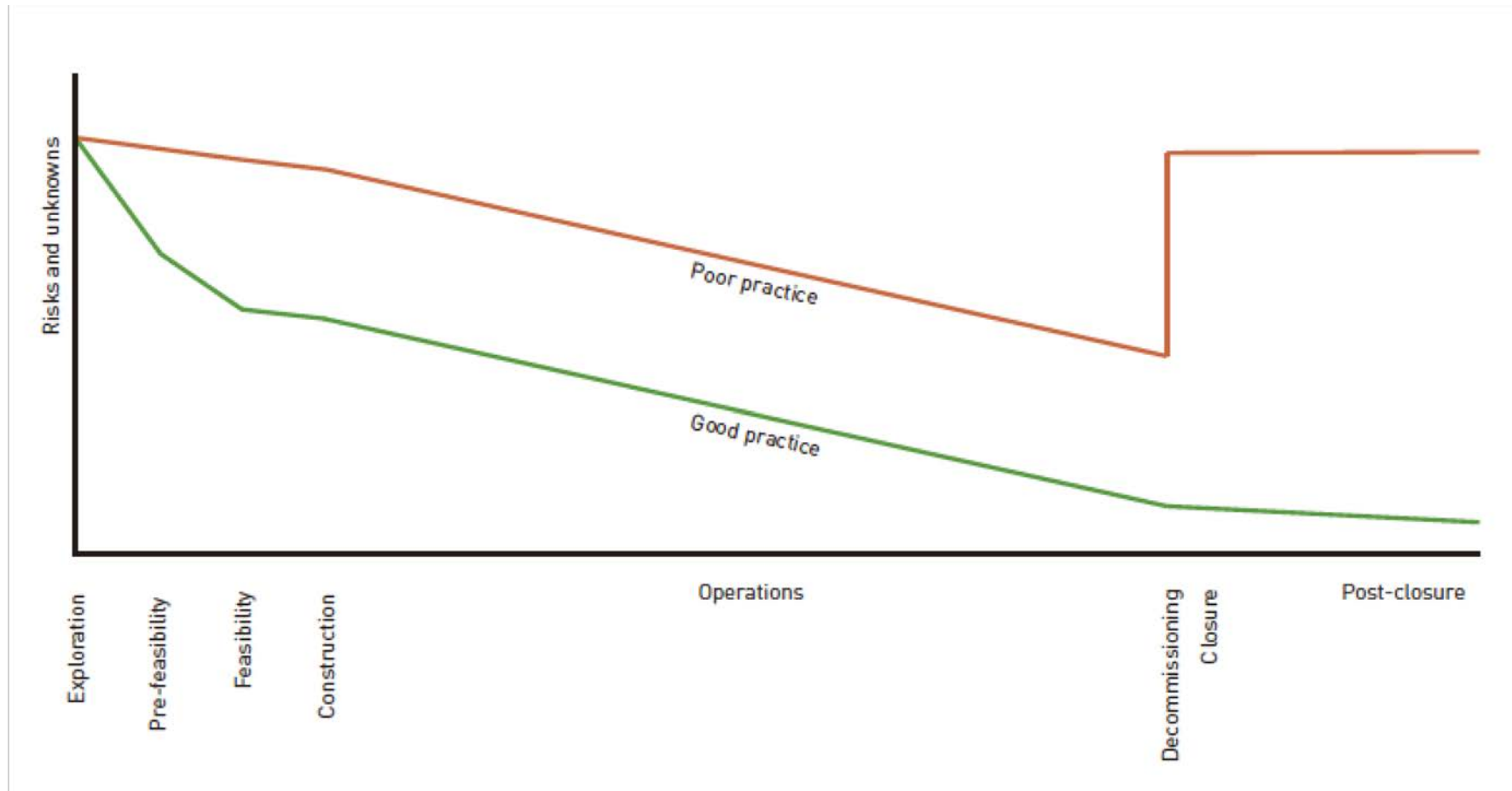


Closure Costs Through the Life of Mine

Changes due to:

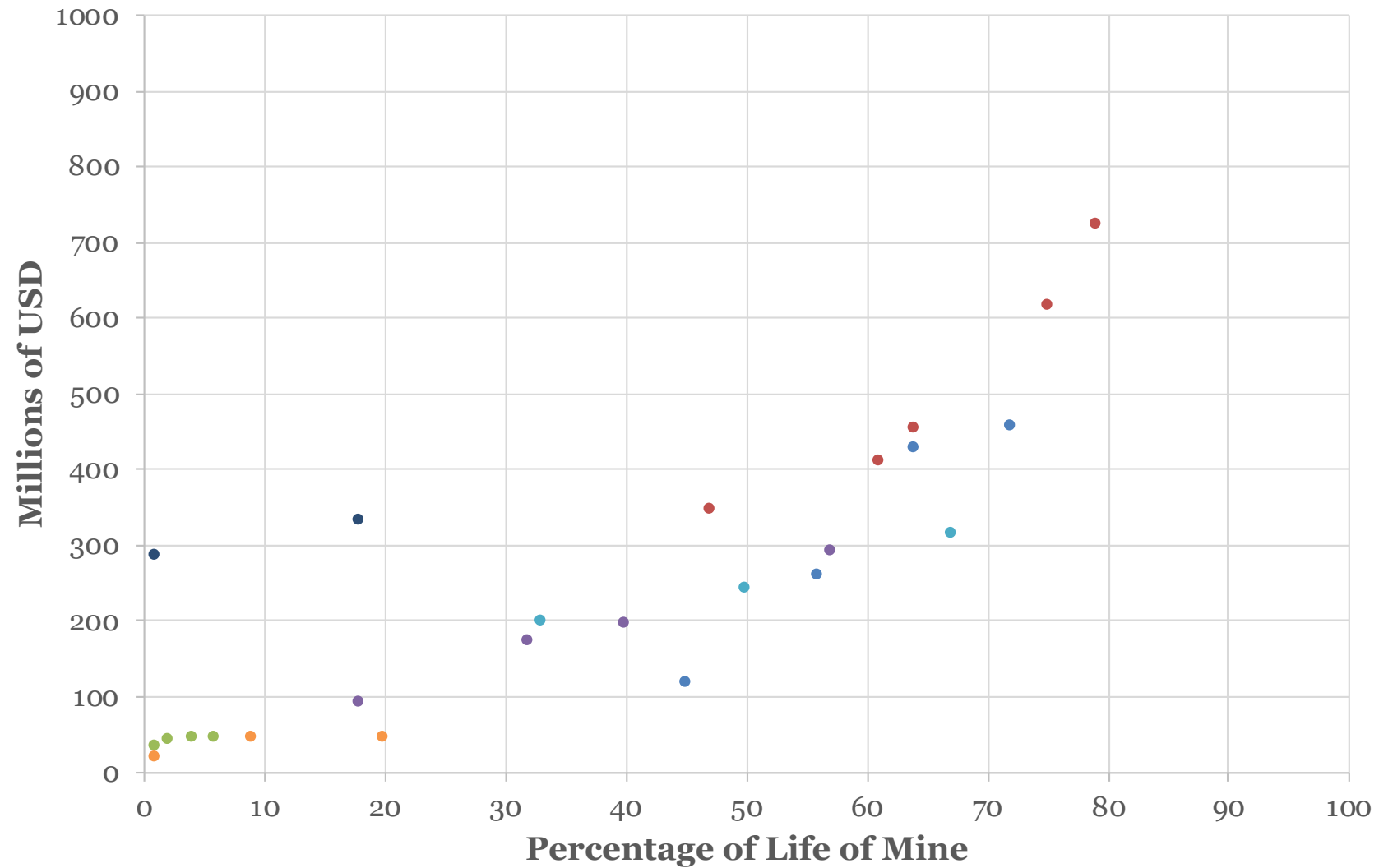
1. Expansions
2. Update of unit costs
3. Better knowledge (studies)
 - Environment
 - Long term behavior of mine facilities
 - Reduction of uncertainties

Reduction of Uncertainties

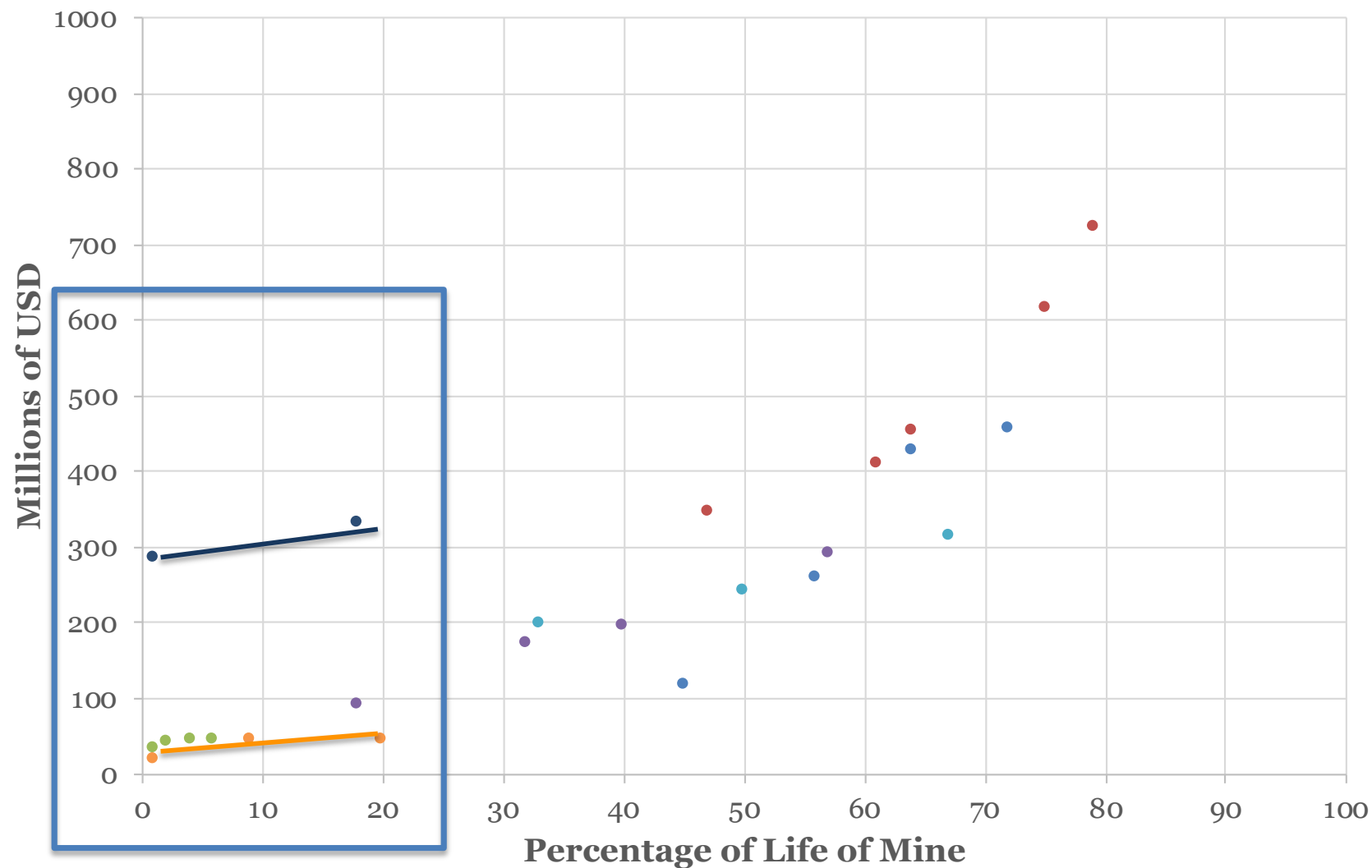


Planning for Integrated Mine Closure: Toolkit
ICMM

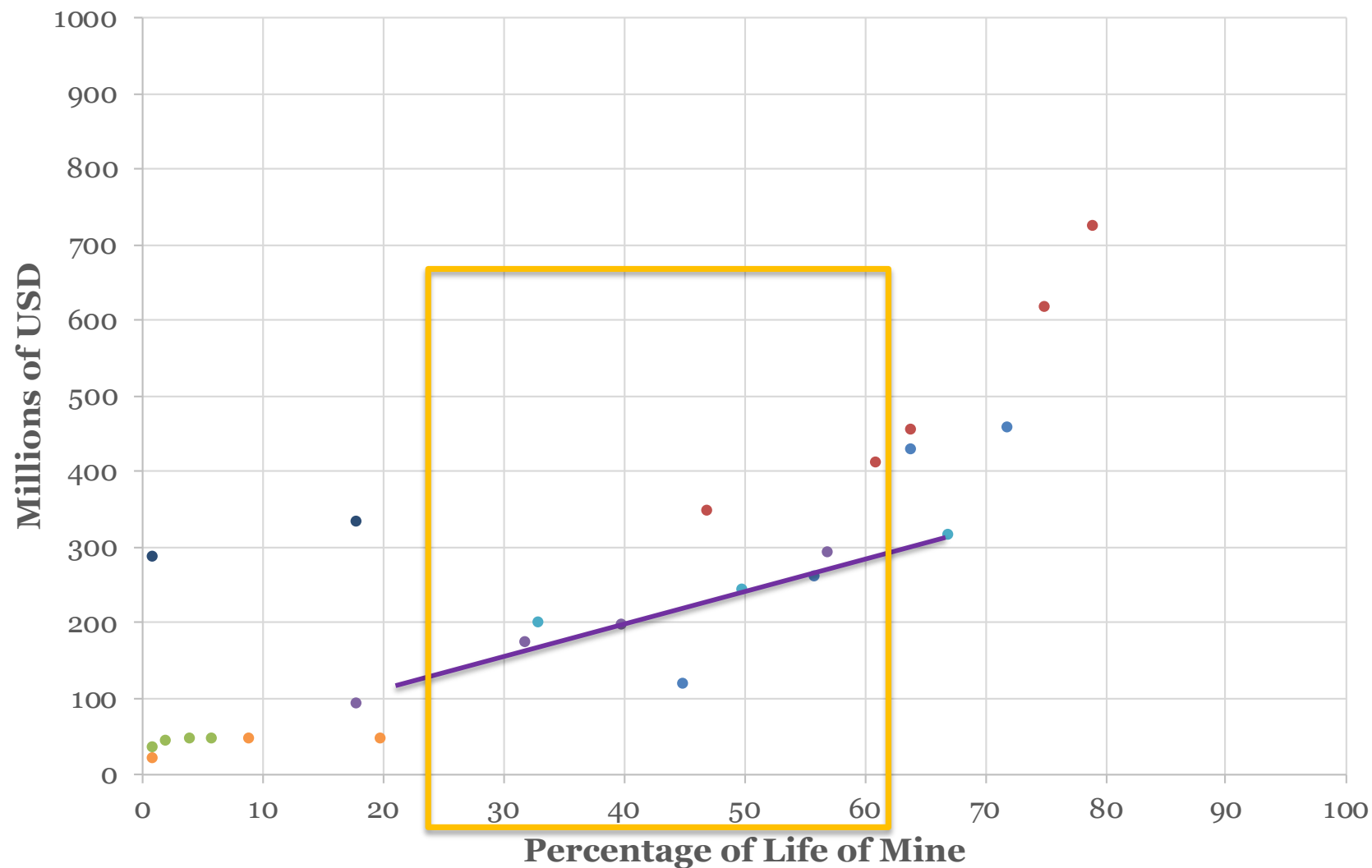
Closure Costs Through Life of Mine



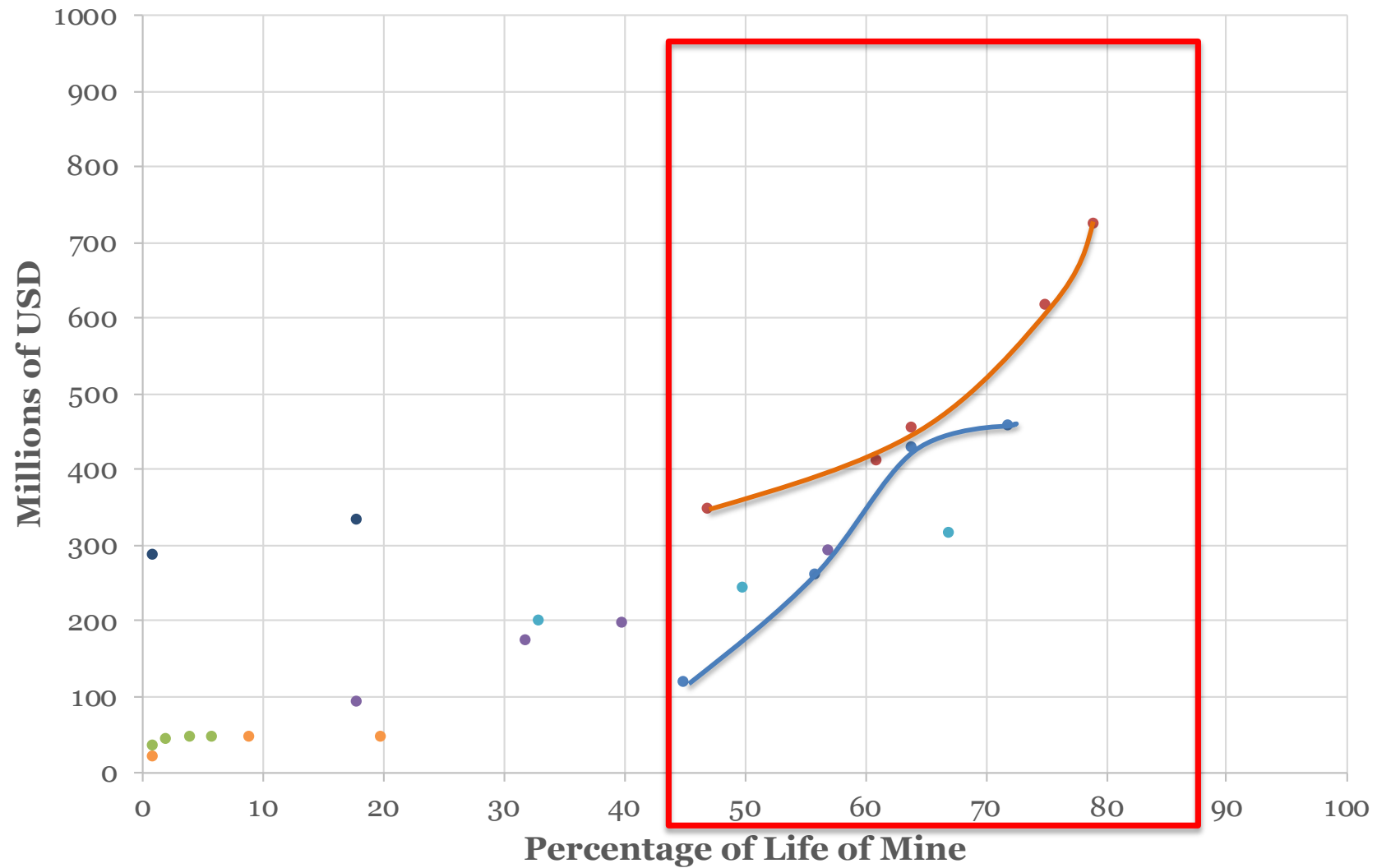
Closure Costs Through Life of Mine



Closure Costs Through Life of Mine



Closure Costs Through Life of Mine



Conclusions

1. Closure costs may be compared considering surface in sites located in areas with annual precipitations between 300 mm and 800 mm.
2. The review of the stated closure costs shows significant increases of the costs when the operations reach 60% of the life of mine.
3. Graphs of costs vs percentage of life of mine is a tool to follow up the development of the closure costs of operations.



Thanks
Gracias

EnvPhys 

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