Methane Super Emitters

Project SCOPE

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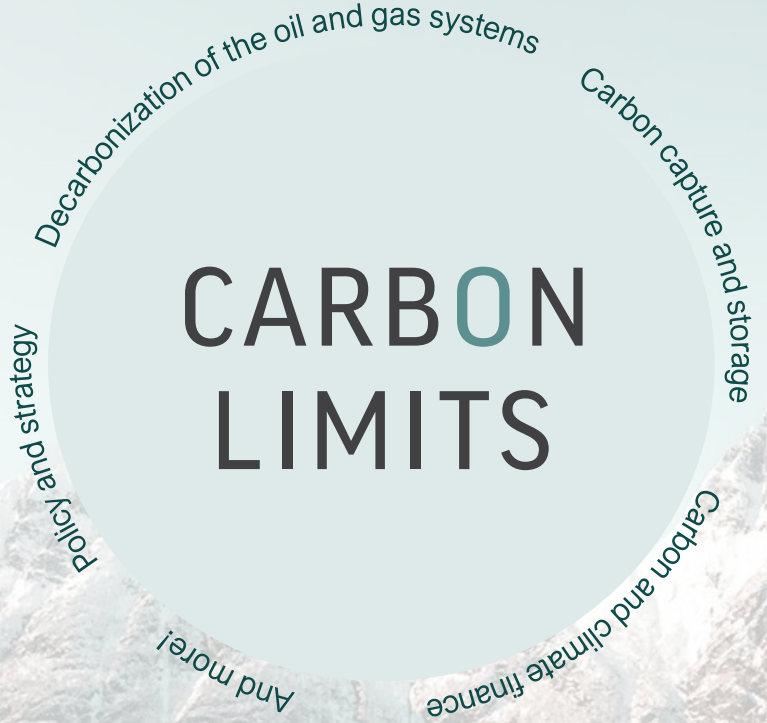
Agenda

1. Introduction and acknowledgements
2. Project and workplan
3. Methodology
4. Identified emission sources
5. Limitations & Implications
6. Next steps

Introduction and acknowledgements



With special thanks to:

GHGSAT

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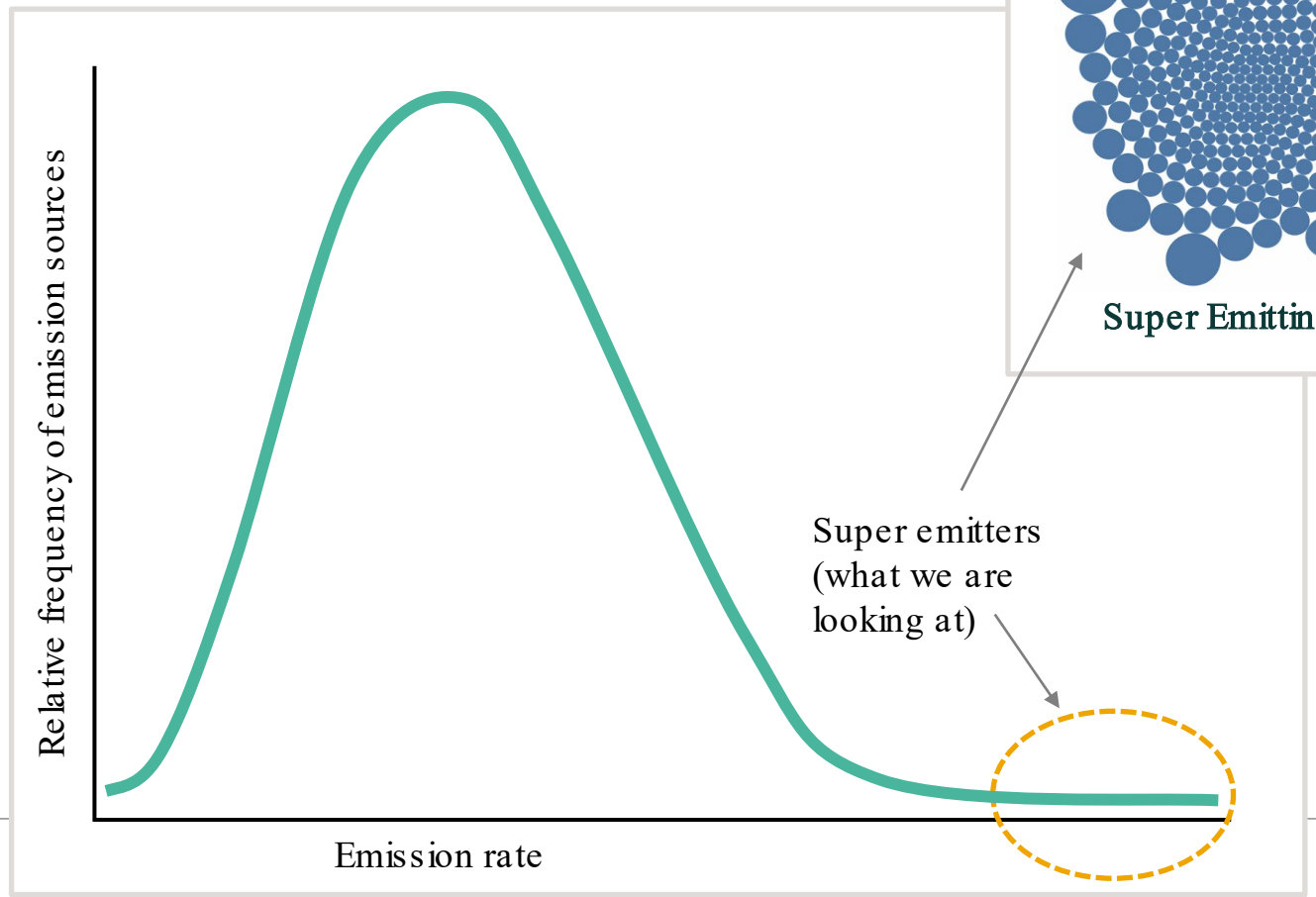
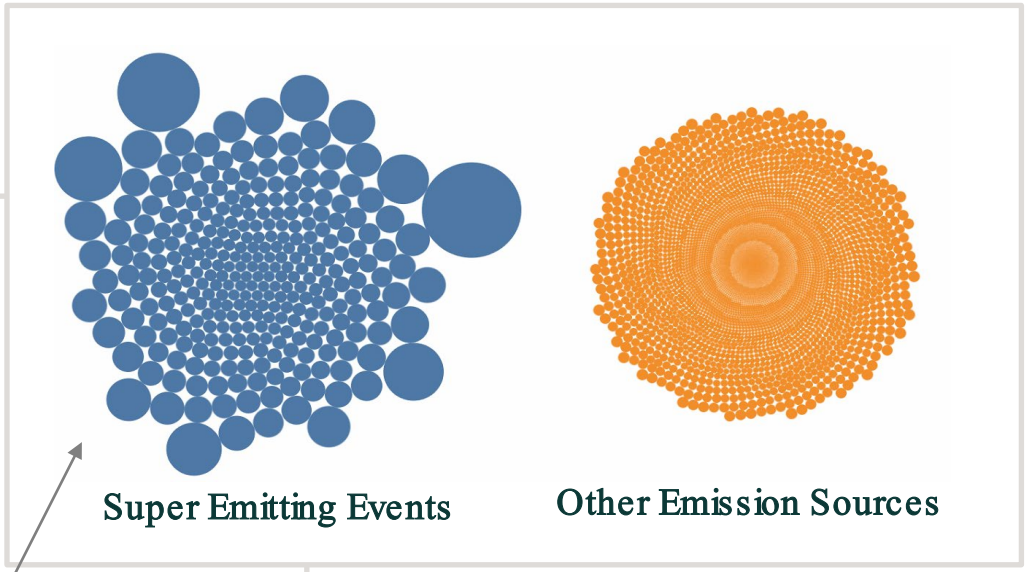
Project – why do super emitters matter?

- Small percentages of events
- Significant percent of total emissions
- Low-hanging fruit for mitigation





Workplan

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GHGSat imagery with:

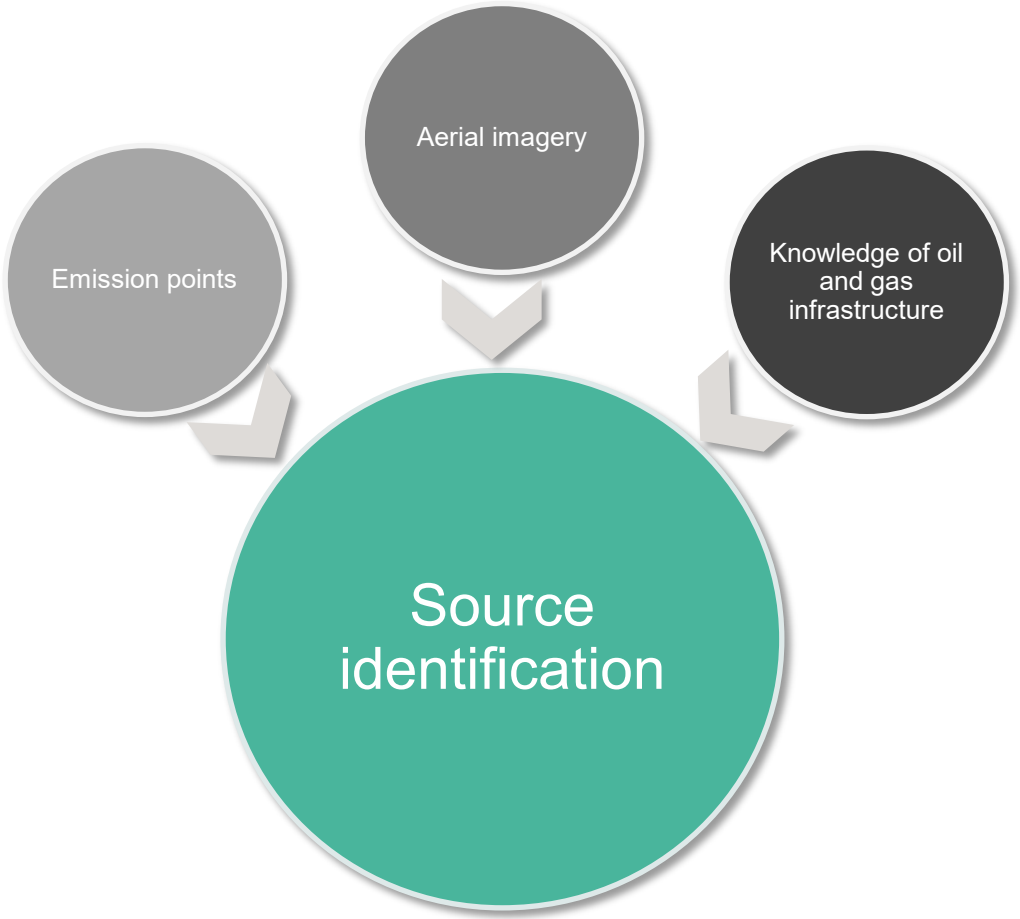
- Almost **global** coverage
- **Hundreds** of unique O&G sites
- **Two years** of observations

?

1. *What are global sources of super emitters?*
2. *What would it cost to mitigate them?*

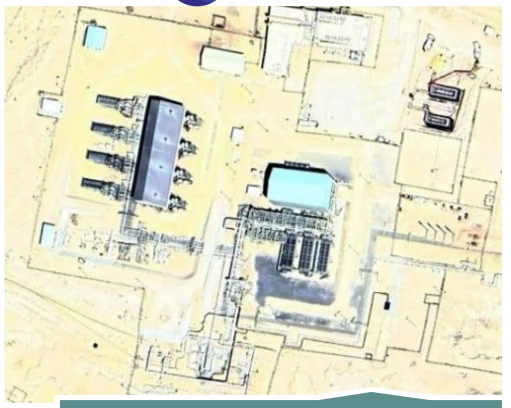
Several project limitations – these will be discussed later

Methodology – Source identification



(Inherent uncertainty is involved in this analysis – some sources are easier to identify than others)

Floating roof tanks



Compressor station

Ground flare

Takeaway: we <u>can</u> identify source types for most of the emission sources

Methodology – Annual Emission Rate Calculation

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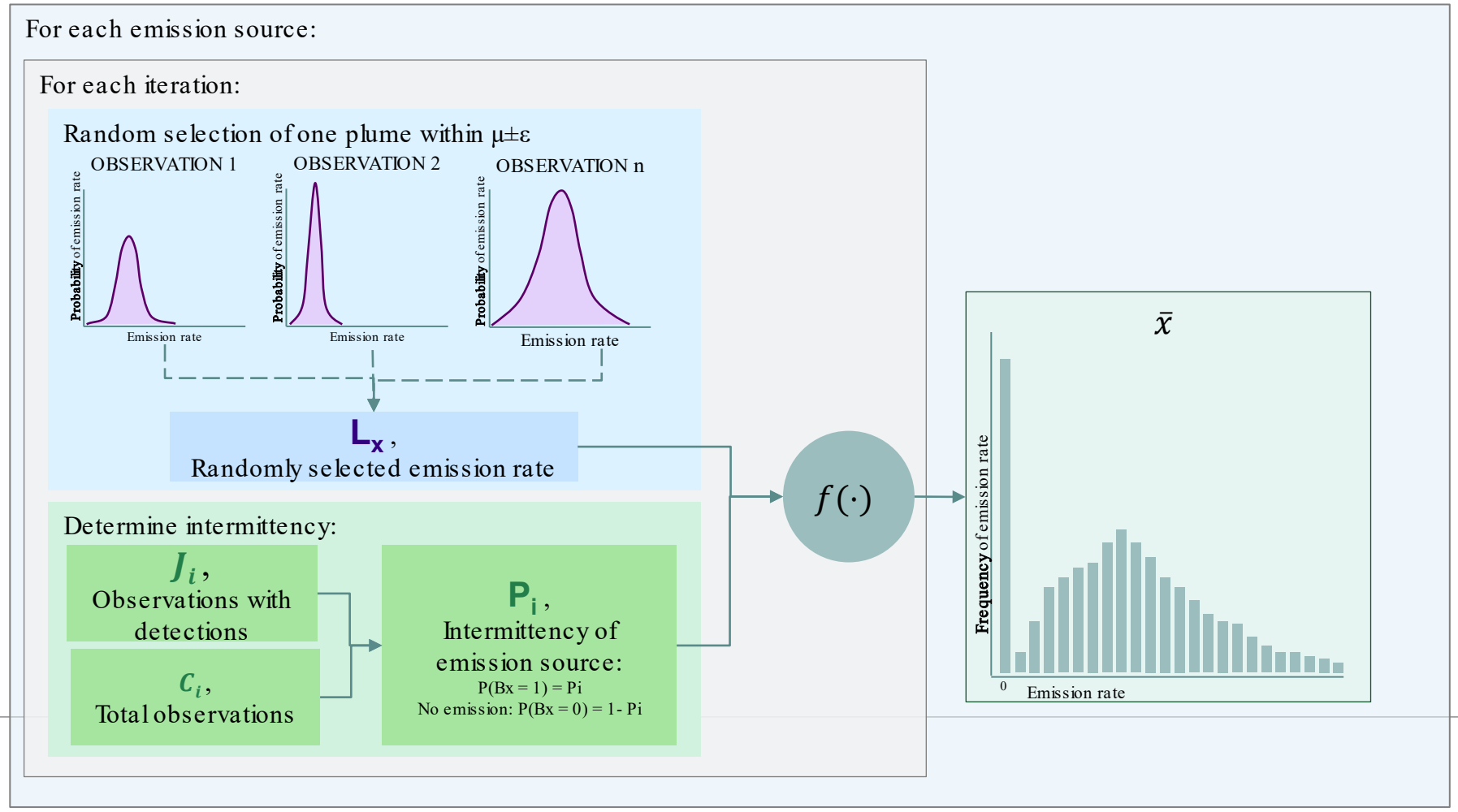
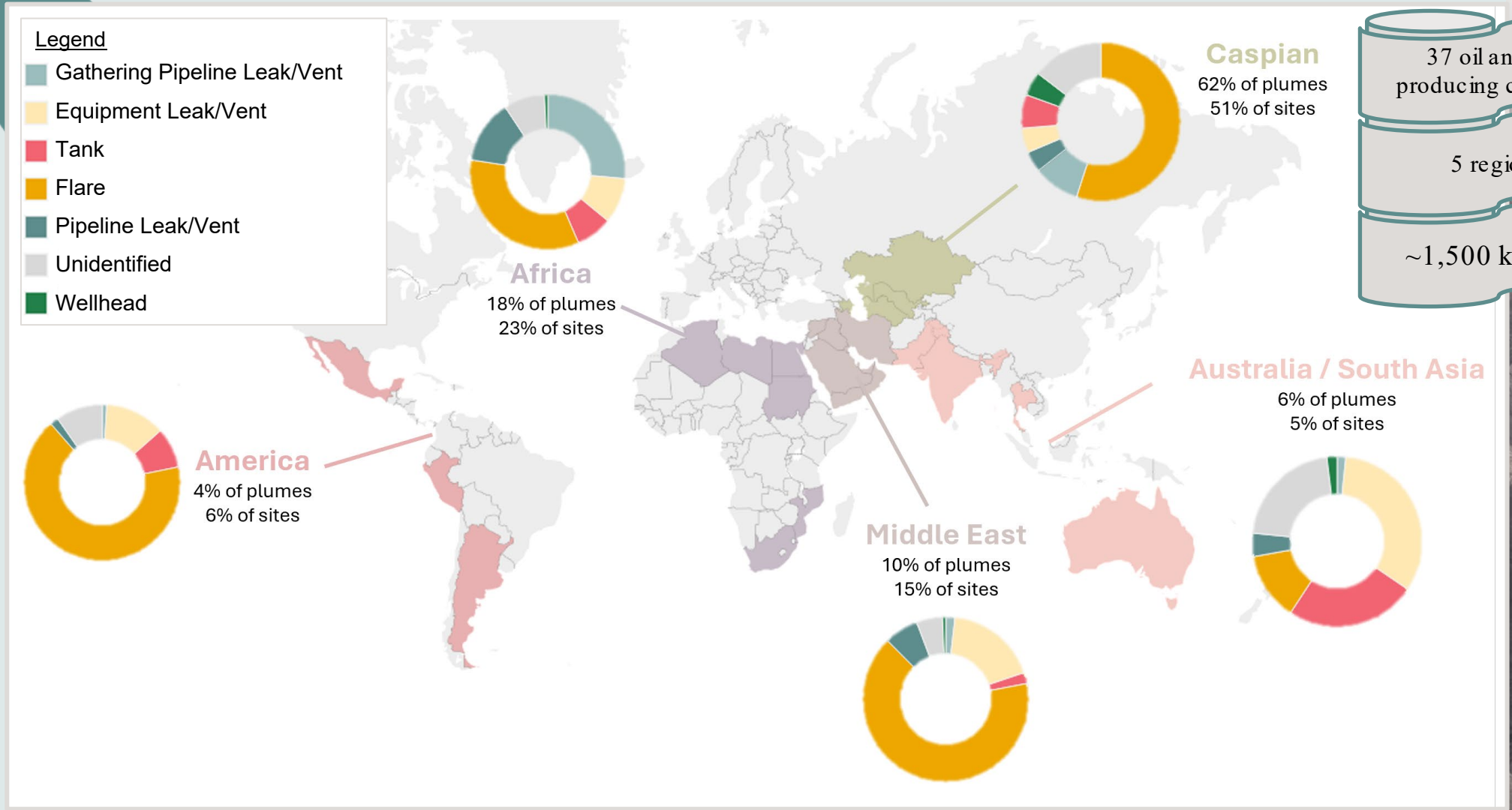
Observations with detections + Total Observations + Emission rates

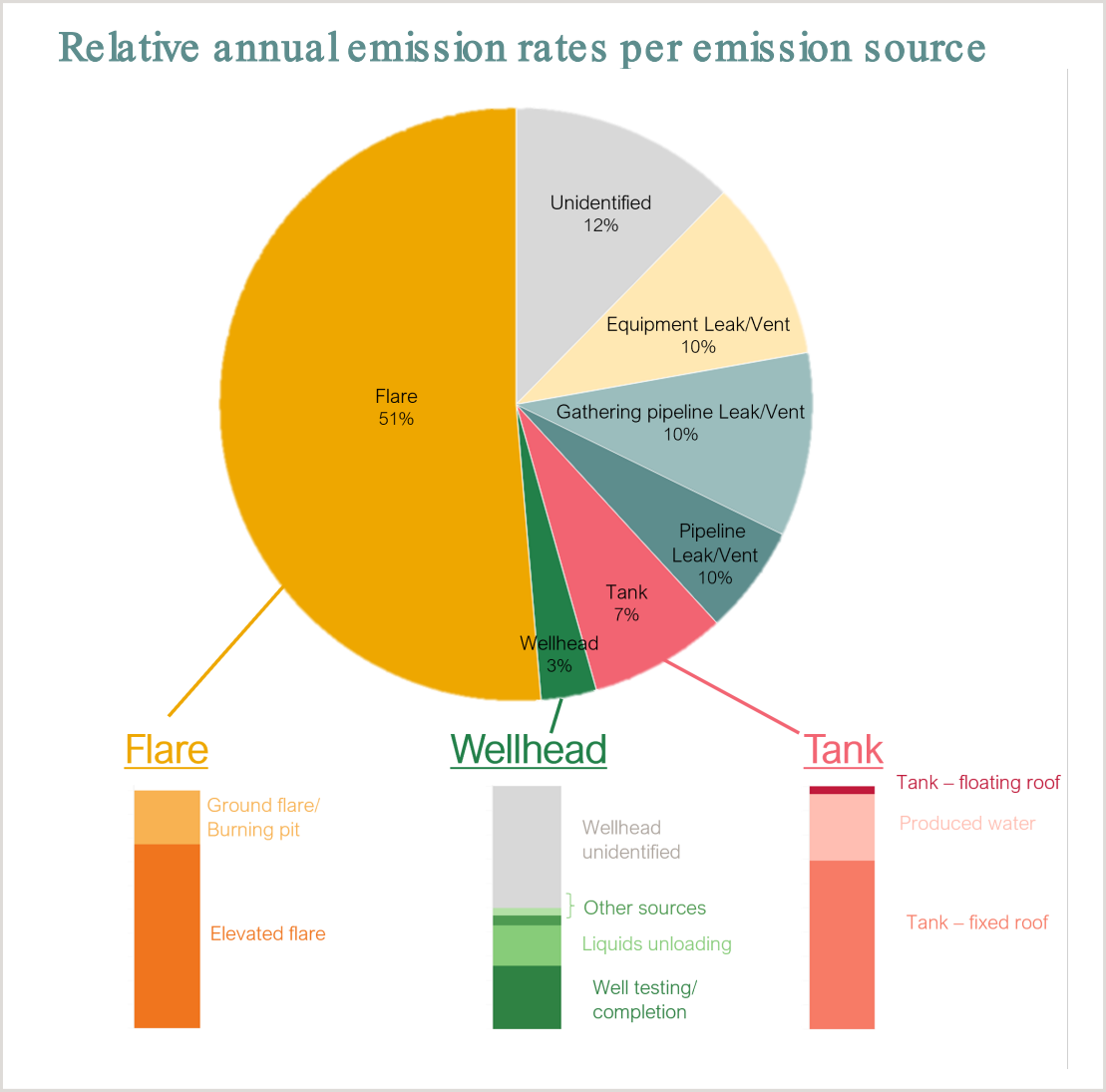


Results - Identified emission sources

- Emission profiles vary from region to region
- Design & implement emission reduction strategies individually



Results - Identified emission sources



- Flares represent just over half (51%) of annual emissions from analyzed super emitting events
  - The majority of these are elevated flares
- Gathering and transportation pipelines (16%) in remote areas
- A non-negligible number of sources are still not identifiable via desktop analysis!

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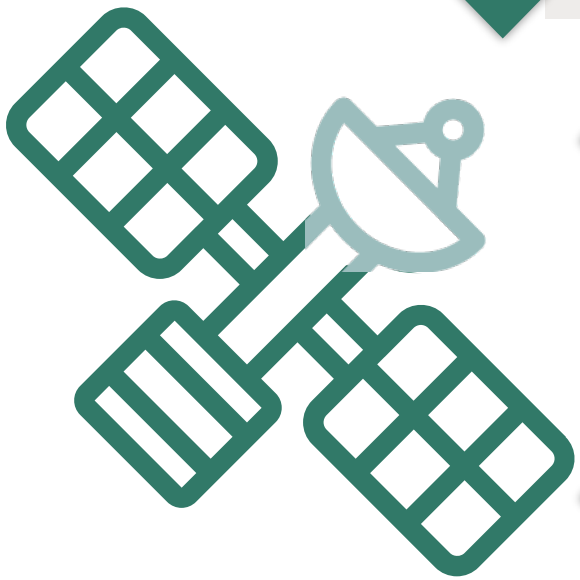
Limitations & Implications



1. **Coverage**: We can only analyze where GHGSat observes
2. **Visibility**: Limitations with clouds, reflectiveness, etc.
3. **Sensitivity**: Super emitters are one piece of the mitigation puzzle
4. **Attribution**: Higher equipment density is more challenging
5. **Operator input:** not included as part of this analysis

Increasing coverage and satellite capability

But they are a significant piece!

Effective mitigation requires on-the-ground knowledge

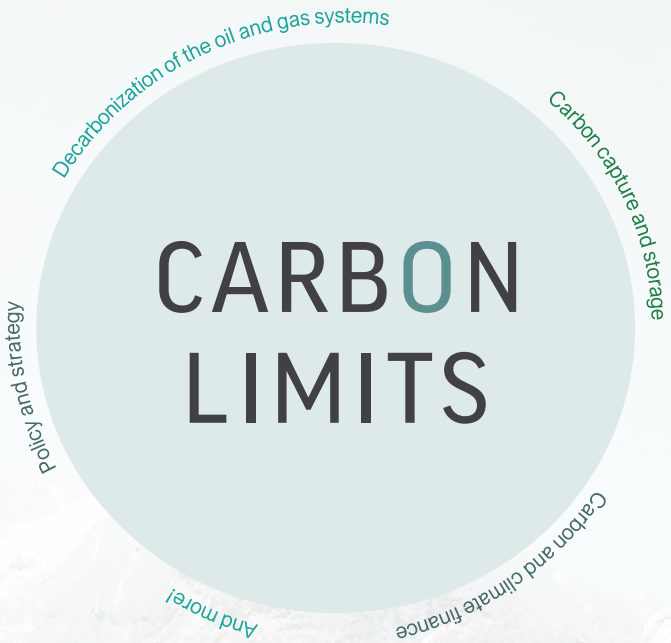
Next Steps

Mitigation **is available** for each emission source type – **what are the costs?**

Analysis and abatement cost of **additional sectors**

White papers coming– stay tuned!

Thank you



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