

Oct 28-30

*Vulnerability Indexes in Groundwater assessment
The case of the GOD index in Mexican aquifers and
its relationship with mine tailing projects*

*Theme I: Groundwater Natural Resources Assessment under
Climate Change*

Created by
M.Sc. Carolina Martínez Salvador
Dra. Norma Patricia López Acosta

**Geotechnics,
II-UNAM
Mexico City**

Presented by: Carolina Martínez

Oct 29, 2020

19:35hrs CET

14:35 hrs. CDMX

Mexico City, Mexico

What we did and why?

1 Mining sector and its economical relevance

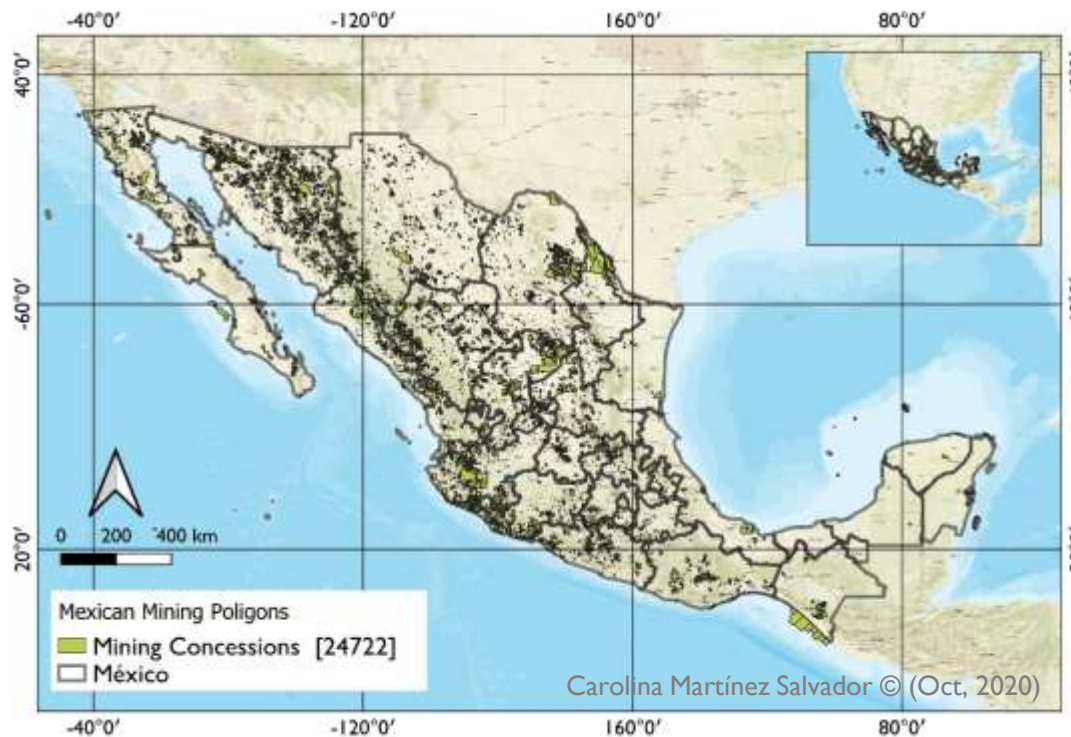
2 1st place on mining related socioecological conflicts in Latin America

3 Project aims to understand relationships between mining, pollution and aquifers

4 Collected Public access information databases

5 GOD estimation, Vulnerability to Climate Change, Water stress and overexploited aquifers

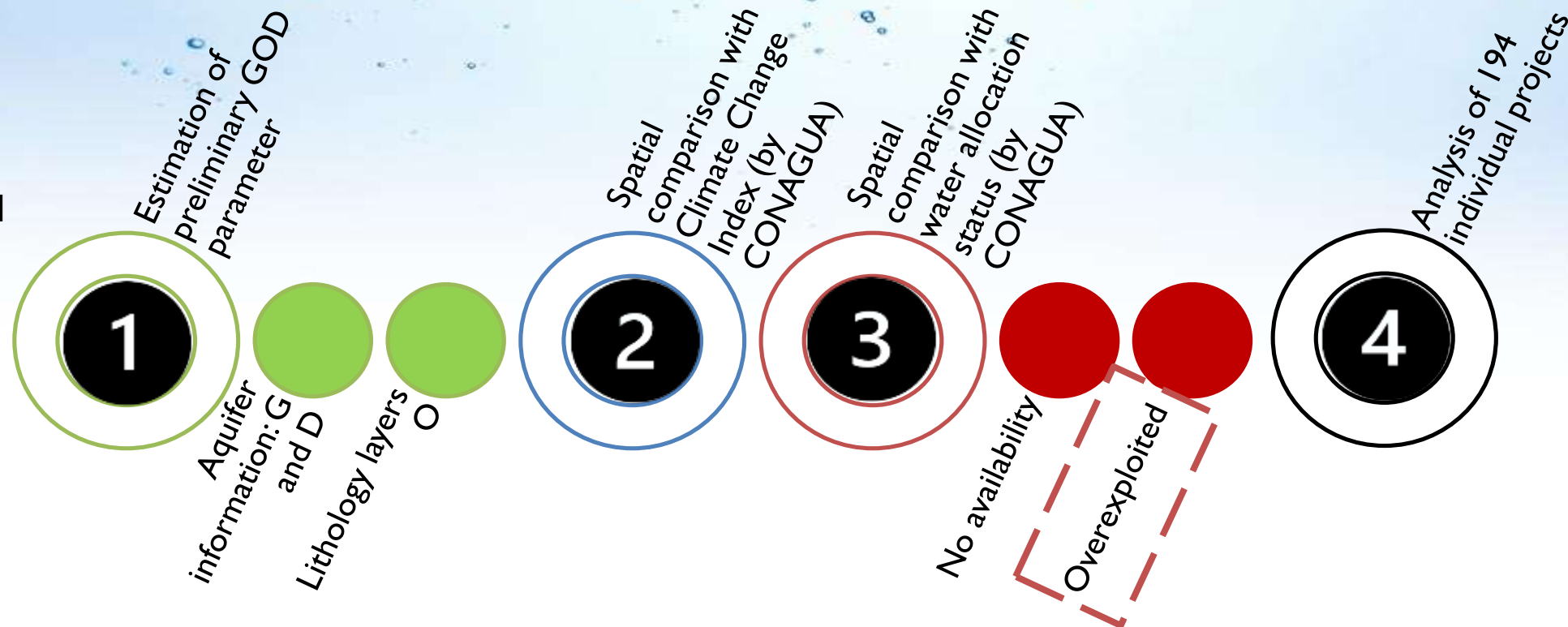
6 Mine Projects analyzed



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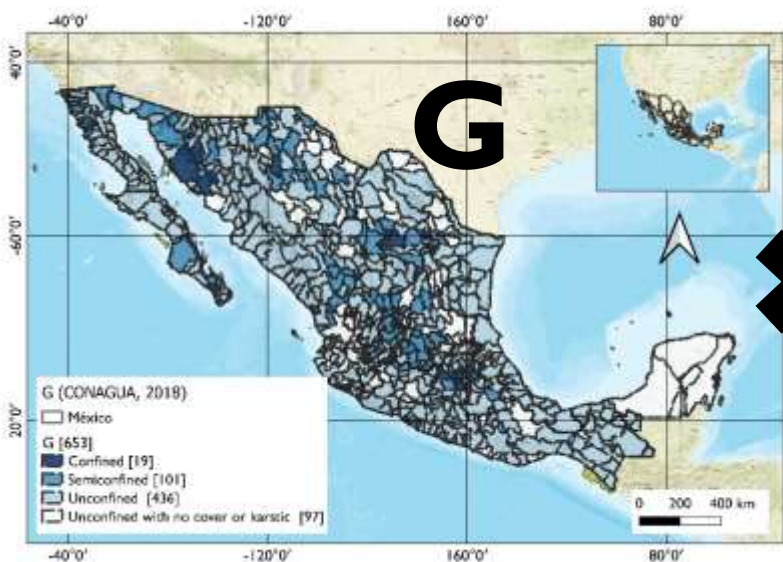


GOD is the tool for aquifer vulnerability defined by the national **legal framework**

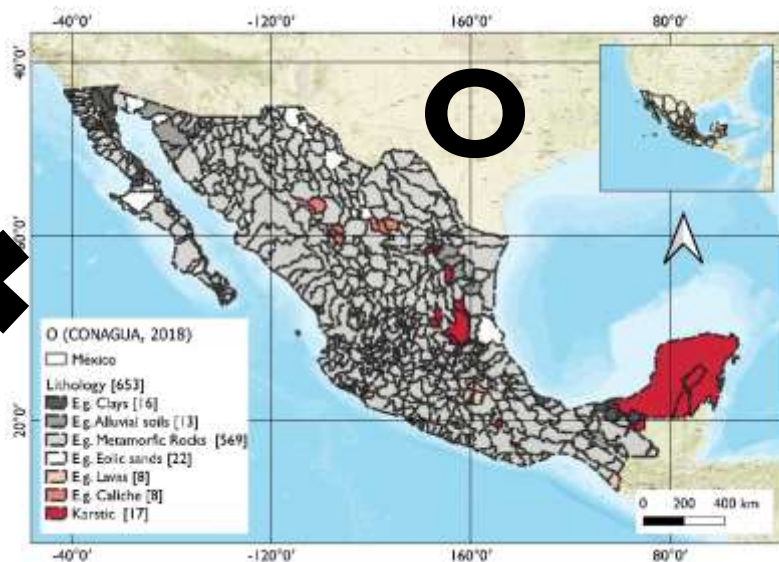


All information was gathered from **public accessed databases**, available to the public or accessible throughout formal request, in order to **create information remotely**, given the limitations of the global **sanitarian emergency**.

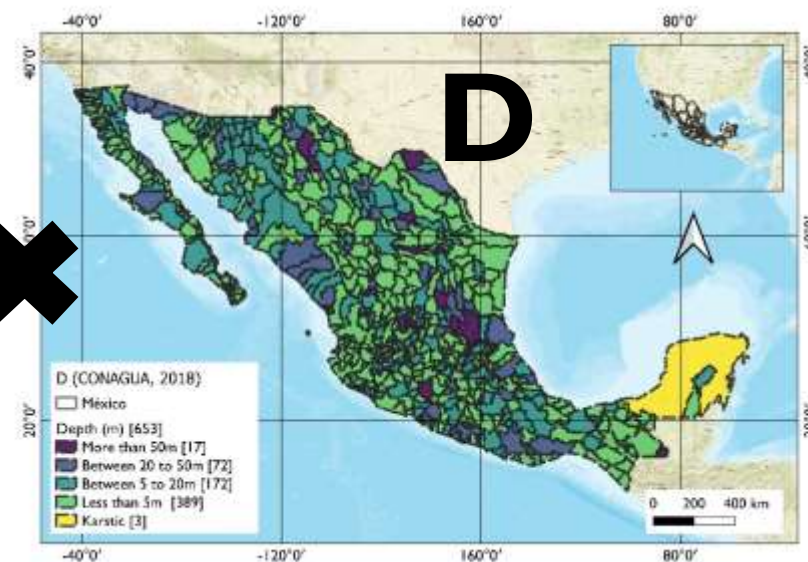
What are the results: GOD Index ?



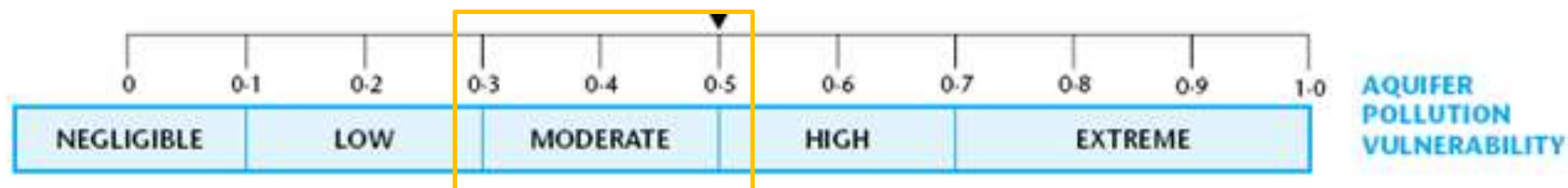
67%
Unconfined



87%
“0.6 class”

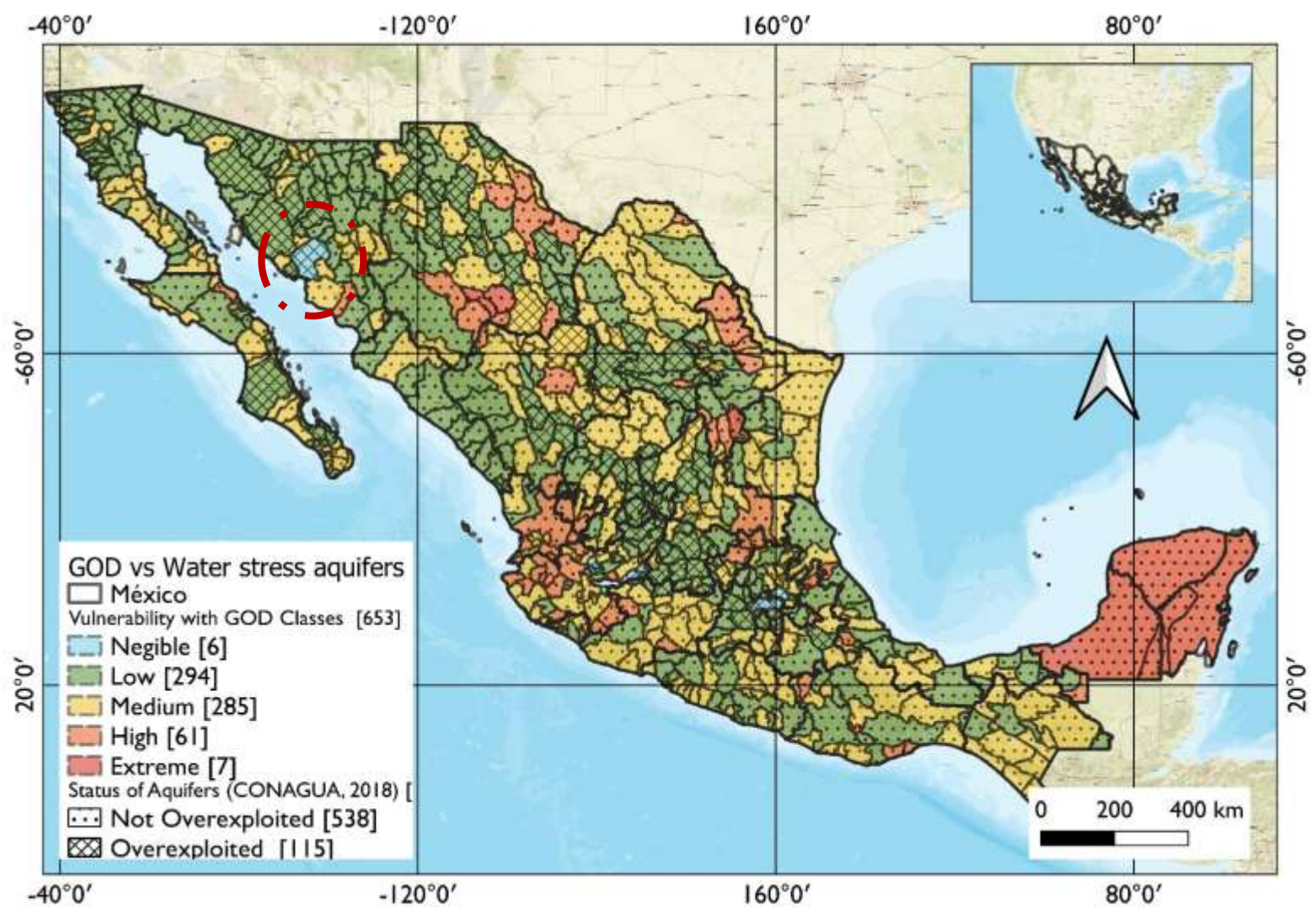


60% Less than 5m Depth



Source: CEPIS-Foster/Hirata 1988.

What are the results: GOD Index water stress?

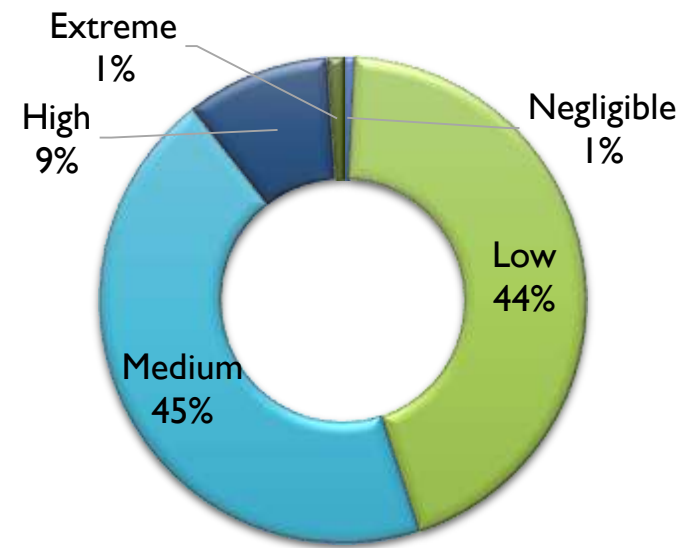


1

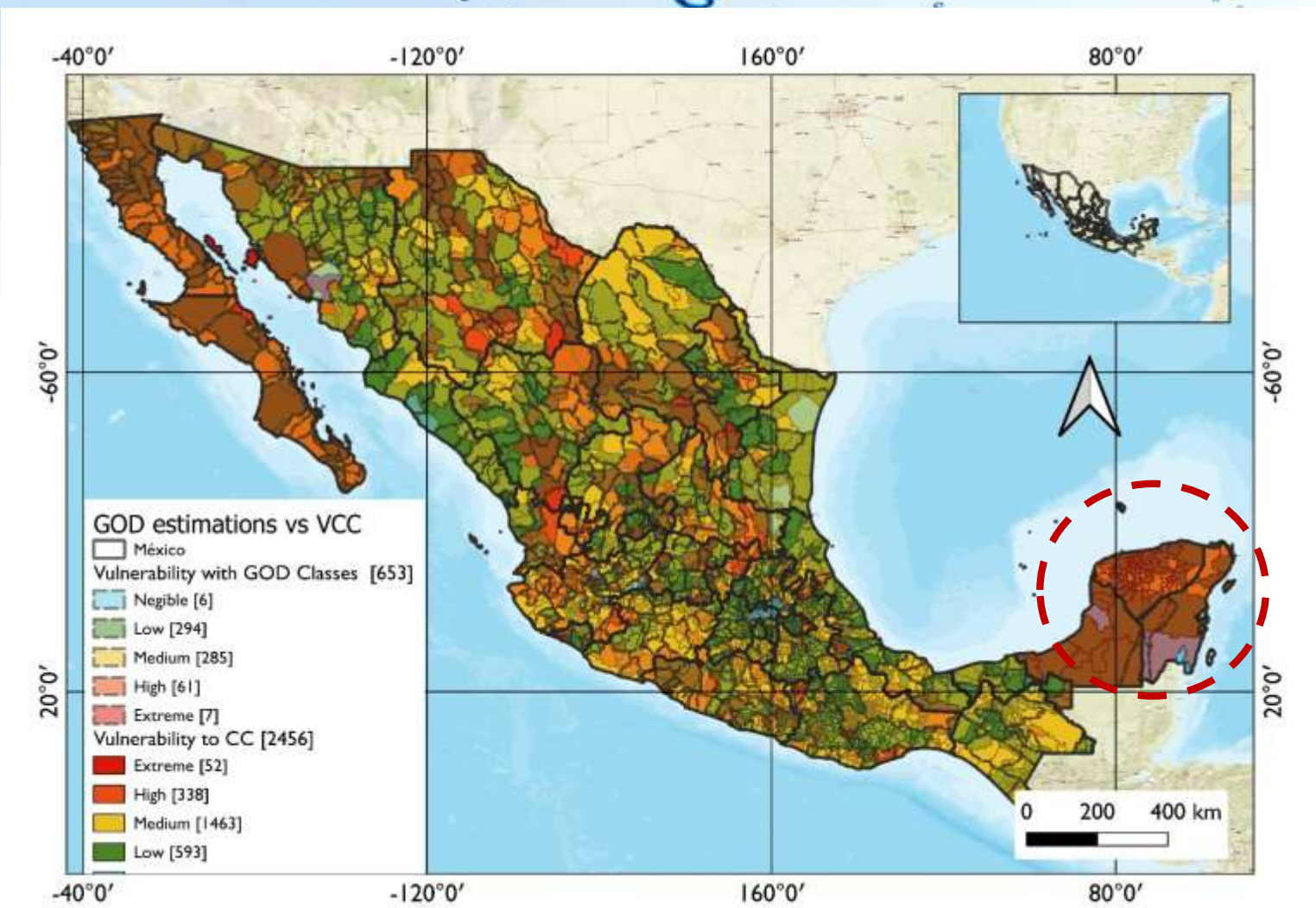
Overexploitation leads to “Less” vulnerable aquifers, given the **GOD design**

2

Most aquifers ranked “Medium”



What are the results: GOD Index and VCC ?



1

VCC is estimated at a Municipality level. 60% ranked "Medium"

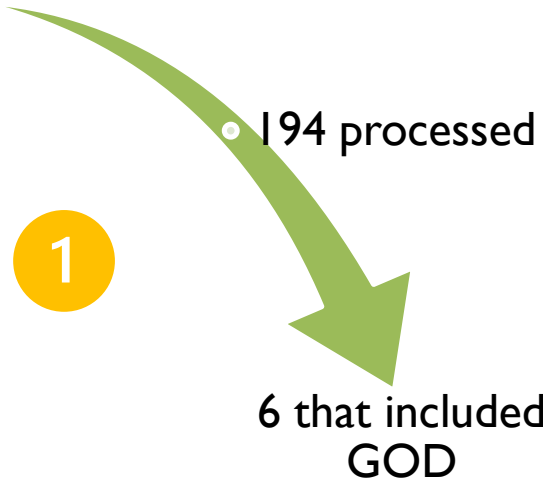
2

Most aquifers ranked "Extreme" or "High" GOD vulnerability are in Municipalities with "High" to "Medium" VCC municipalities

Noted exception: Yucatán Aquifer located in majority of Low VCC municipalities

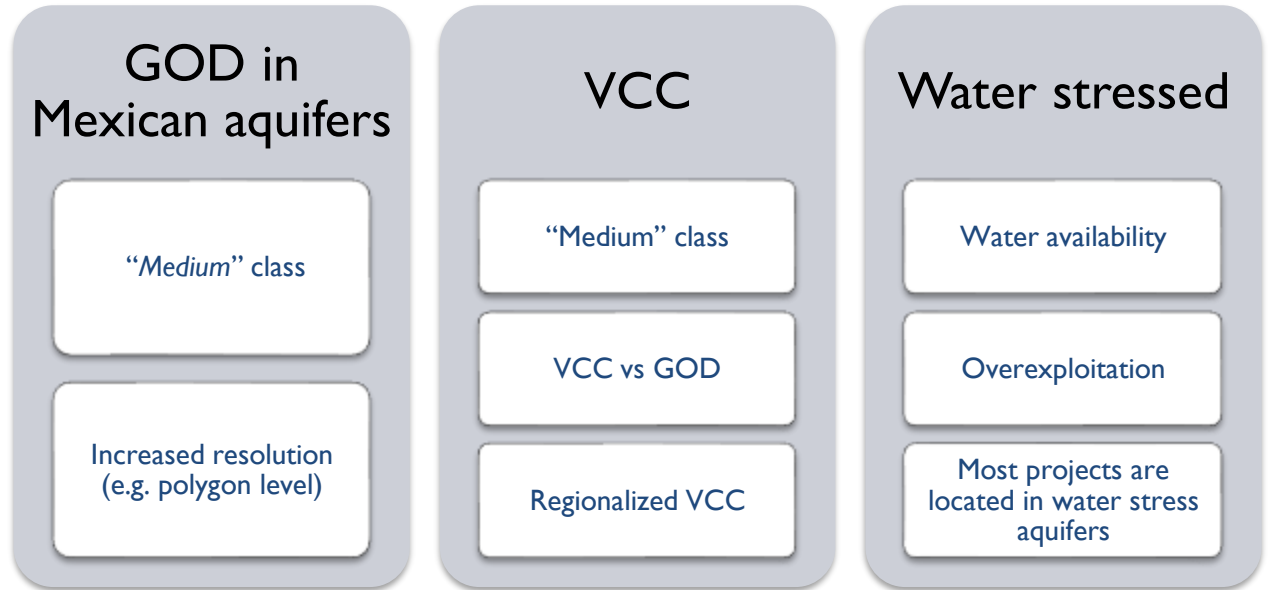
Some thoughts and further steps

Environmental Assessment Reports

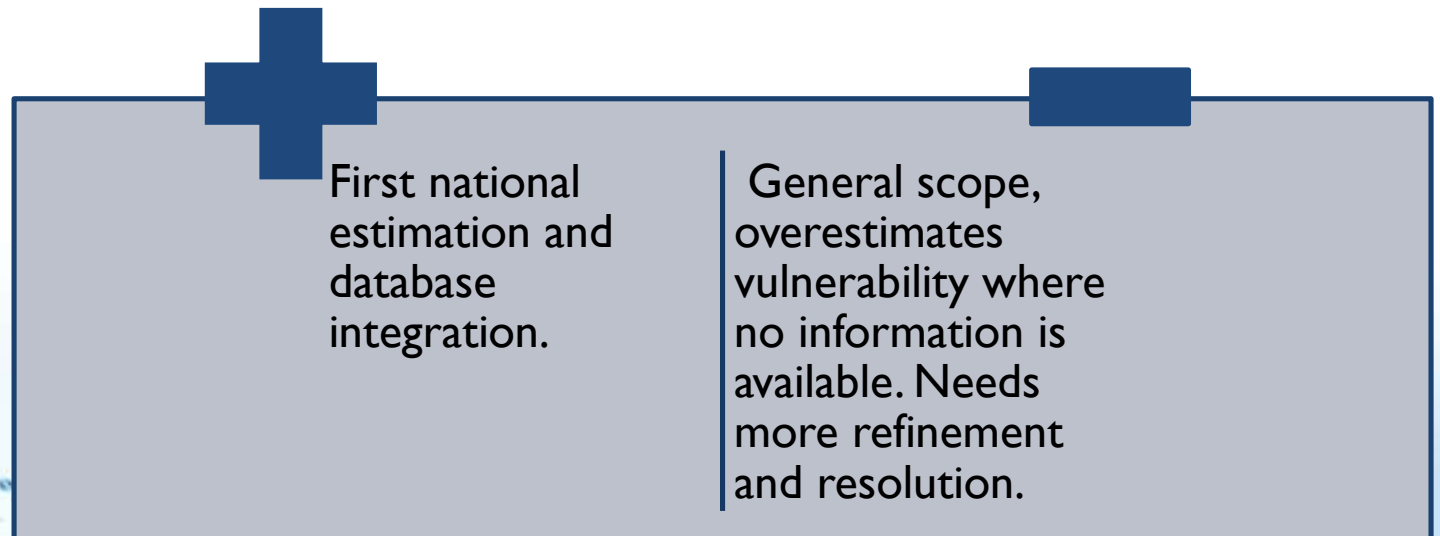


GOD not commonly used to assess aquifer vulnerability at the stakeholder's level

2



3

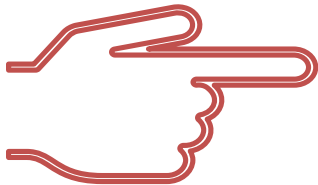


M.Sc. Carolina Martínez Salvador
Geotechnics Department
II-UNAM, (Engineering Institute)
Mexico City, Mexico

Thanks



CMartinezS@iingen.unam.mx
cmsiingen@gmail.com



GitHub Repository coming soon:

<https://github.com/CMSiingen/IWRA>

Datasets, maps, QGIS data and a detail
list of REFERENCES and relevant sources