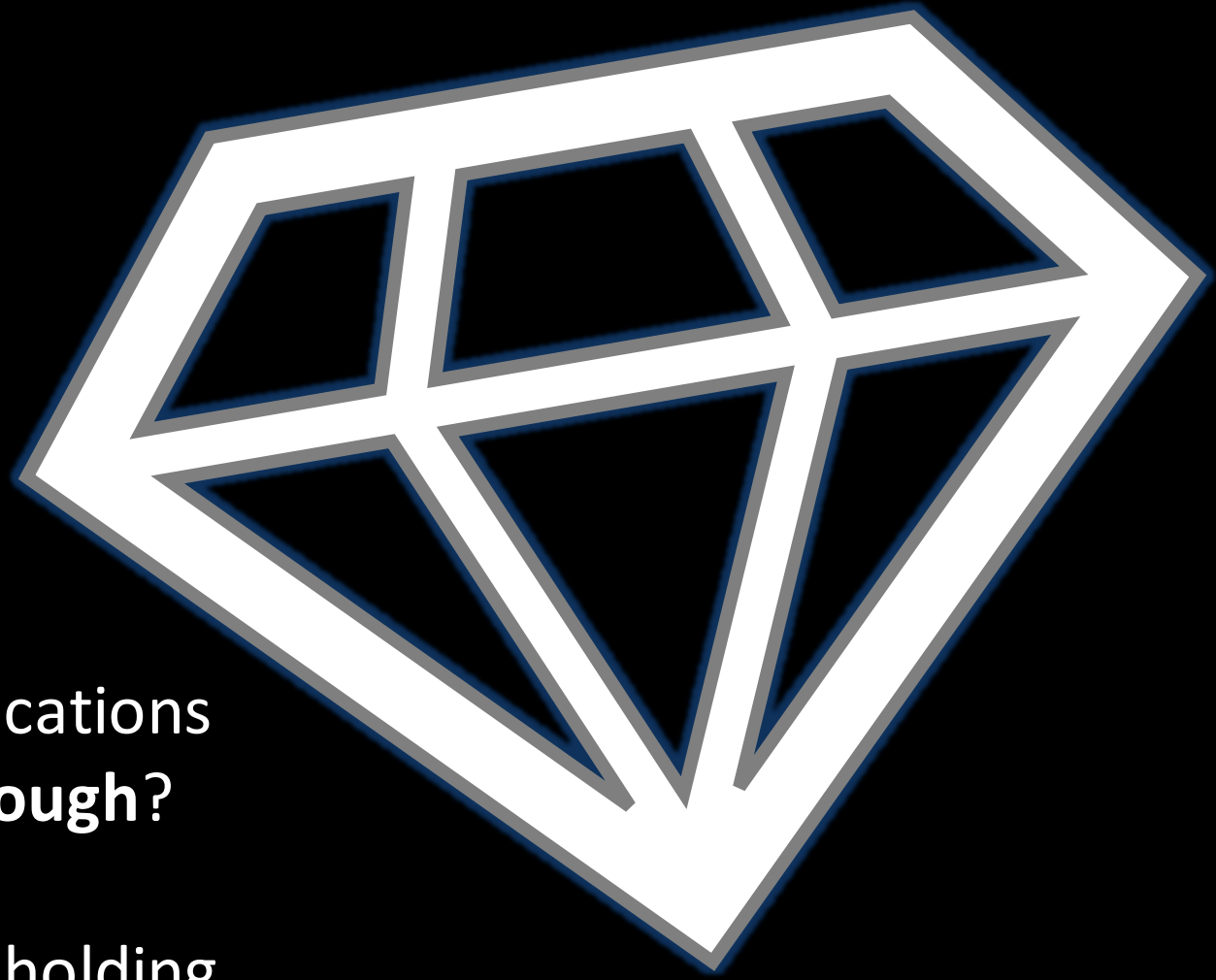




# Direct use of geothermal energy: Central America

Program for Promoting Geothermal Energy in Central America  
Geolac 2019 | Santiago, Chile



Are direct use applications  
a **diamond in the rough**?

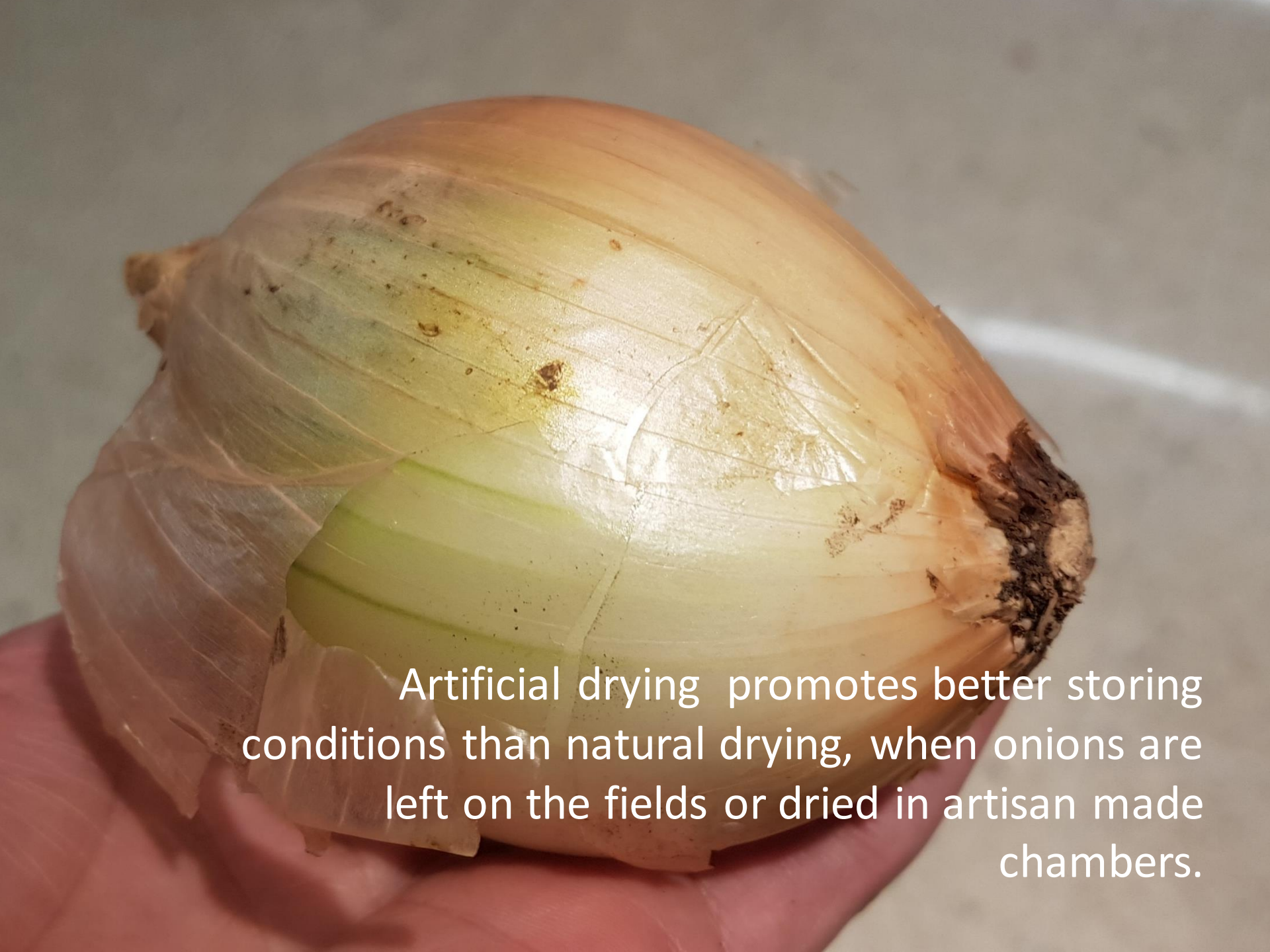
And if so ... what is holding  
us back to use this resource  
at it's most?



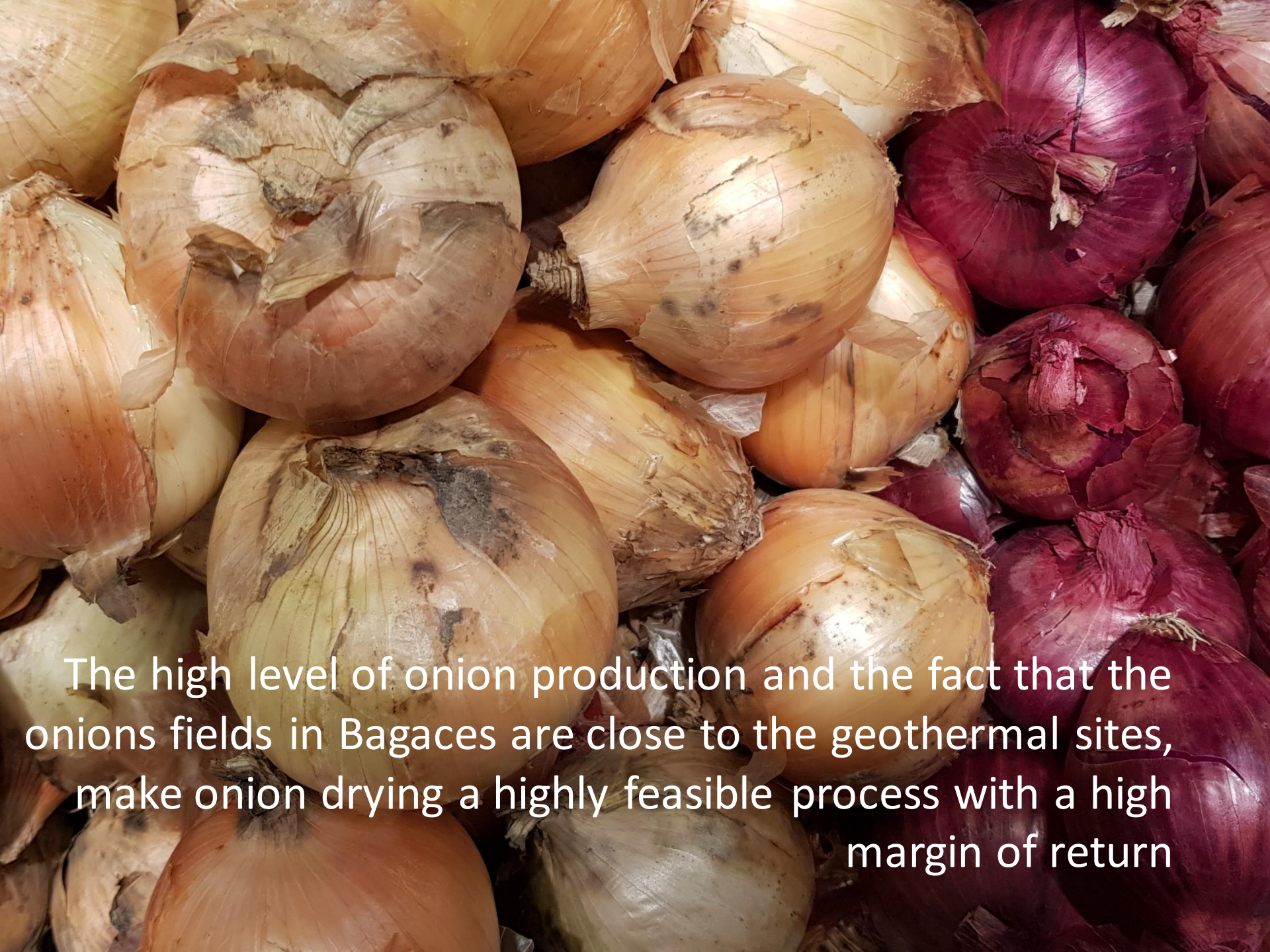




This is Julio



Artificial drying promotes better storing conditions than natural drying, when onions are left on the fields or dried in artisan made chambers.



The high level of onion production and the fact that the onions fields in Bagaces are close to the geothermal sites, make onion drying a highly feasible process with a high margin of return



So, instead of having to let the onions dry in the field, the heat source could easily produce enough heat to power a frying chamber and improve storing conditions.



“

# Program for Promoting Geothermal Energy

To improve the climate for investing in geothermal energy projects in  
Central America

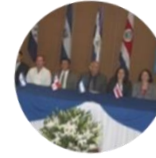
*Main Goal*

”

## 2016-2020

### Promoting geothermal energy in Central America

improve the climate for investing in geothermal energy projects in Central America.



## 2010-2013

### 4E Program : Phase I

Improve the regulatory framework and introduce new renewable energy technologies as well as energy efficiency

## 2014-2017

### 4E Program : Phase II

Improve the regulatory framework and develop technical capacities to transfer success projects on renewable energy and energy efficiency to 3 new countries

## 2018-2020

### 4E Program : Phase III

Improve the energy efficiency market in at least 3 technical fields and promote the integration of more renewable energy sources to the central american electric system.

# Tech & Financ cooperation









HANNA

67.9 °C  
40.7 °F

CLR  
ON/OFF

HL  
HOLD

CAL  
°C/°F

T-20  
Próxima calibración: Julio  
2019



PHOENIX Geophysics  
System 2000i net  
Model V6 --e-ft

SSEM



DANGER 150V  
SSEM  
PHOENIX Geophysics  
System 2000i net  
Model V6 --e-ft









# Priority Areas



Legal and regulatory  
framework conditions for  
geothermal use

---



# Technical workshops

San José 2019 | Costa Rica



# Grupo CEL

DESARROLLO DEL PAIS LLEGA HAS... LLEGA LA ENERGIA



**TANJA FALLER**  
Directora regional del programa de GIZ para el  
LaGeo desarrollo de la Geotermia en C.A. giz



**DAVID LÓPEZ**  
Presidente de CEL giz

# Memorandum of Understanding

El Salvador 2010 & 2018

# Priority Areas



Demonstrating the technical  
feasibility and profitability of  
geothermal use technologies,

---



# Research & data gathering

San Gerardo de Chicué | Irazú Costa Rica.



# Coffee dryer (prototype)

LaGeo | El Salvador.





Gracias  
por visitar  
el  
"Centro de Usos  
Directos de LaGeo"

# Products developed with geothermal prototypes

LaGeo | El Salvador.

# Priority Areas



Developing institutional and  
technical capacity

---



# ToT training on direct uses

LaGeo 2019 | Bochum, Germany



# I & II Modules on direct uses

LaGeo 2019 | El Salvador

175  
people



*goal: 300 !!*

# Priority Areas



Promoting a network of experts  
that provide information and  
advise for geothermal  
investors

---



INICIO

# Taller Regional de Geotermia sobre Sostenibilidad del Recurso Geotérmico

Bajo el apoyo conjunto de:



**GRUPO DE TRABAJO**



**TALLERES PRESENCIALES**



**WEBINAR**



# III TALLER REGIONAL SOBRE GEOTERMIA Sostenibilidad del Recurso Geotérmico

Del 24 al 26 de abril 2019 / El Salvador





**And finally ...**

# Prioritary Areas



Supporting national and  
regional dialogue processes

---

AC 2018

S GRACIAS

**GEOLAC 2018**  
THE 5<sup>TH</sup> GEOTHERMAL CONGRESS FOR LATIN AMERICA AND THE CARIBBEAN



# Regional Dialogue

TAF GEOLAC | Mexico City 2018 |

#GEOLAC  
2018



# Discussion panel

**Rosa Escobar**  
Engineering Manager  
LaGeo, El Salvador

**Leonardo Deras**

Viceminister of Environment  
Honduras.

**Werner Vargas**

Executive Director

General Secretariat for the Central  
American Integration System



# Open questions

Como empresa federal, GIZ brinda apoyo al gobierno alemán en el logro de sus objetivos en el área de la cooperación internacional para el desarrollo sostenible.

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(SICA)**

