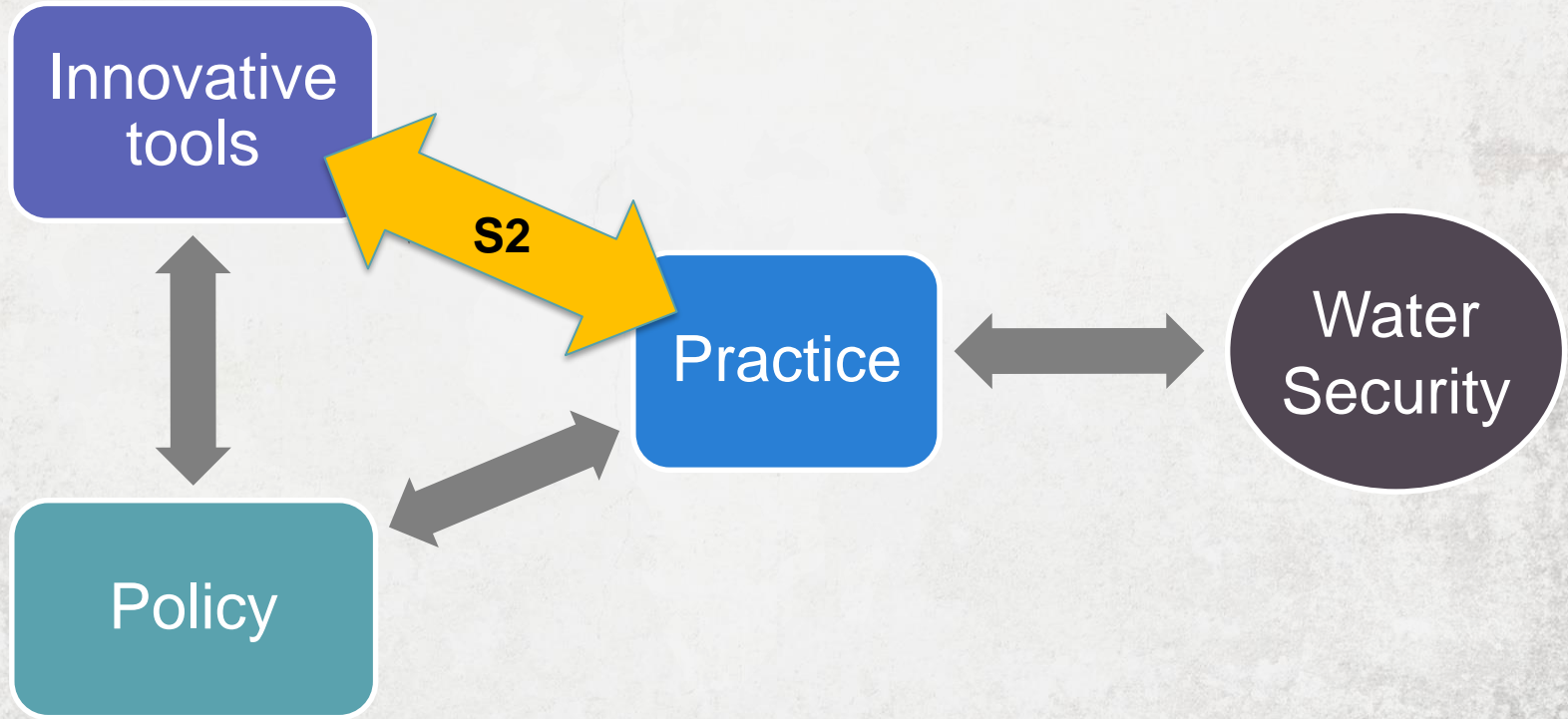


# **Ecosystem Based Water Management: Session 2**

Stockholm World Water Week  
30 August 2018



## INNOVATION TO PRACTICE, SESSION 2

# Building bridges from innovation to practice

### KEYNOTE SPEAKERS:

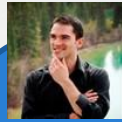
**Adrian Vogl**, Natural Capital Project: Challenges and opportunities to bridge innovation and practice

**Tom Gleeson**, University of Victoria: How much groundwater can we pump and protect environmental services?

## INNOVATION TO PRACTICE, SESSION 2

# Building bridges from innovation to practice

### WORLD CAFÉ



Building  
Capacity



Data  
Platforms  
(Regional)



Policy  
Support



System  
Tools



Stakeholder  
Engagement



Data  
Platforms  
(Global)



Ecosystem  
Services

# **ECOSYSTEM MANAGEMENT FOR WATER SECURITY:**

**Challenges and opportunities  
to bridge innovation  
and practice**

**Adrian L. Vogl**

Natural Capital Project, Stanford University

Seminar 4: Ecosystem Based Water Management: From Innovation to Practice

[avogl@stanford.edu](mailto:avogl@stanford.edu)

# GROWTH OF GLOBAL WATERSHED INVESTMENT

*Alliances for Green Infrastructure: State of Watershed Investment 2016. Forest Trends Ecosystem Marketplace.*

● Watershed investment programs

### Water risk severity

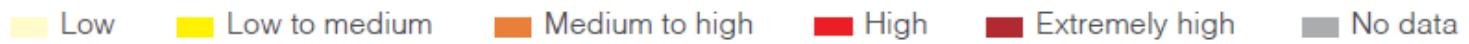
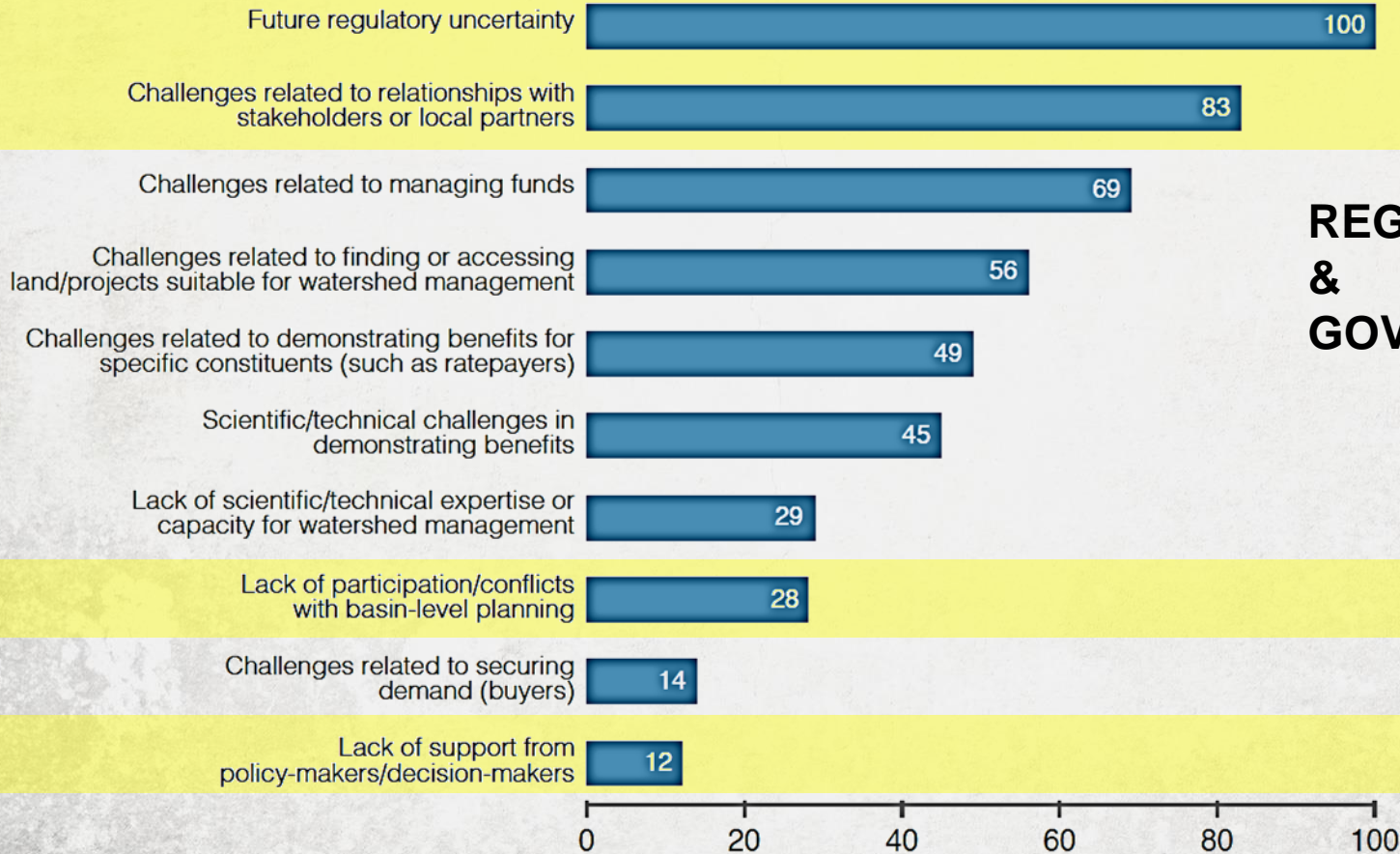


Figure 20: Barriers to Scaling up Watershed Investments Reported by Programs



*Alliances for Green Infrastructure: State of Watershed Investment 2016. Forest Trends Ecosystem Marketplace.*

Figure 20: Barriers to Scaling up Watershed Investments Reported by Programs



**REGULATIONS  
&  
GOVERNANCE**

*Alliances for Green Infrastructure: State of Watershed Investment 2016. Forest Trends Ecosystem Marketplace.*



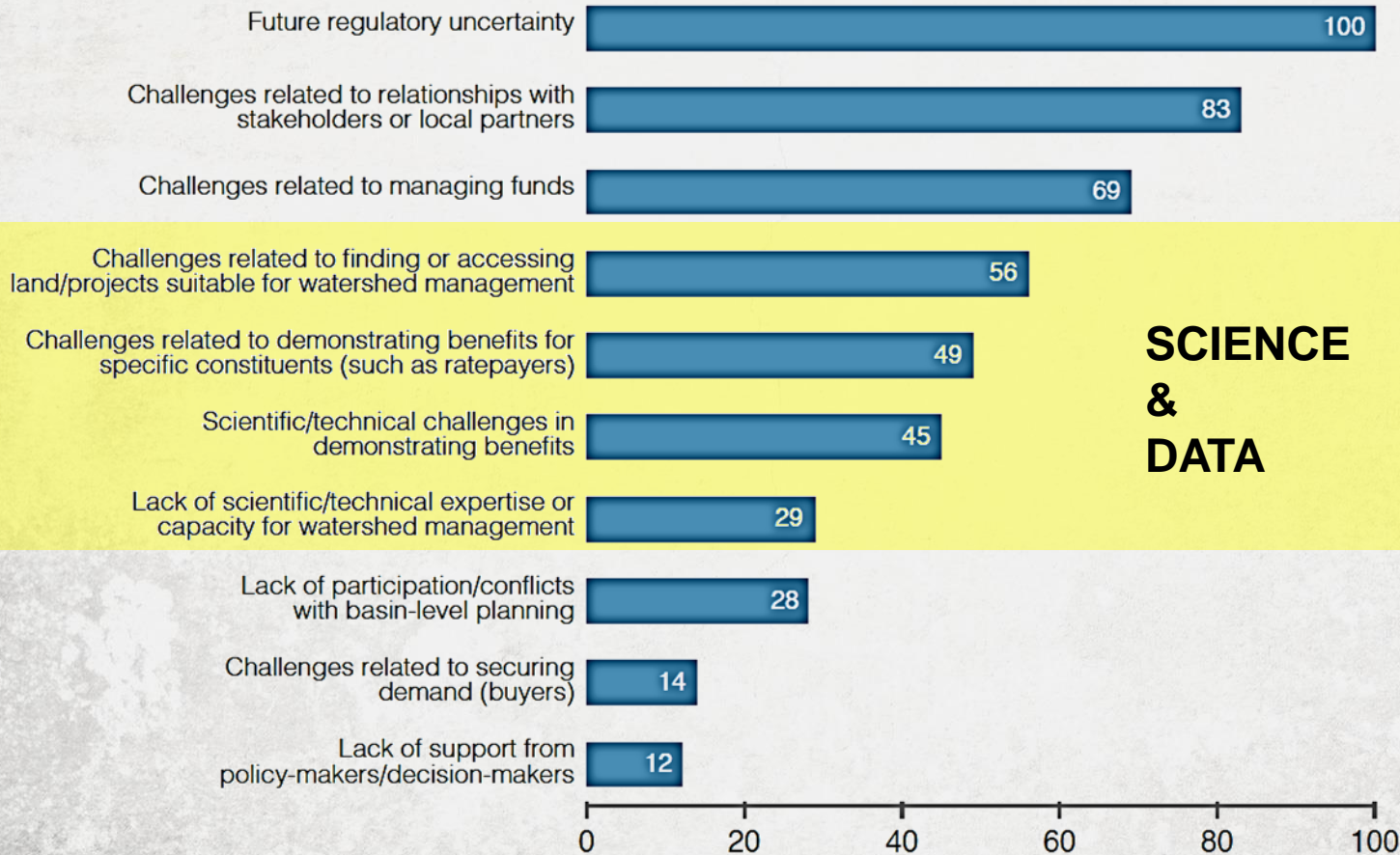
Figure 20: Barriers to Scaling up Watershed Investments Reported by Programs



**FINANCE**

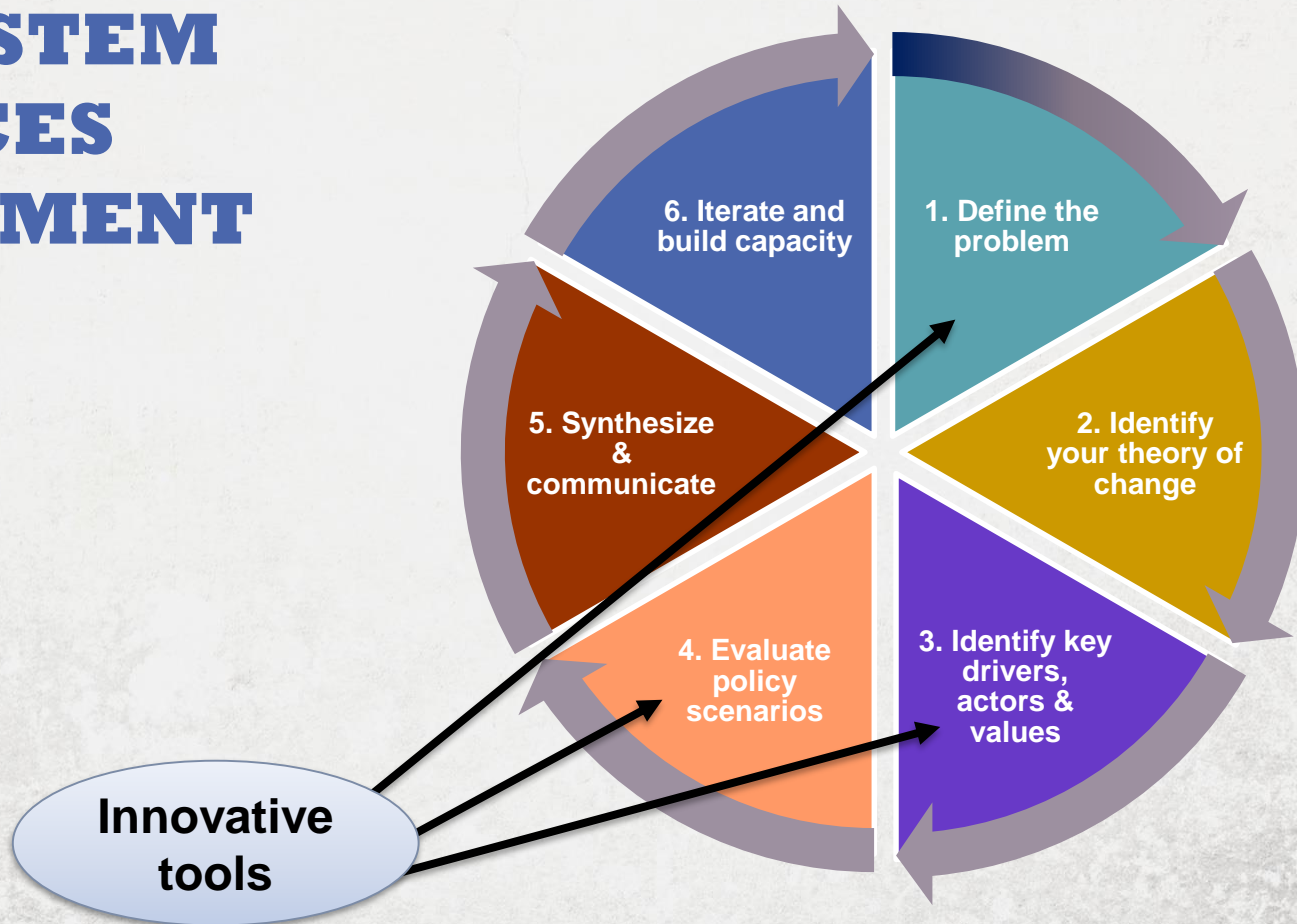
*Alliances for Green Infrastructure: State of Watershed Investment 2016. Forest Trends Ecosystem Marketplace.*

Figure 20: Barriers to Scaling up Watershed Investments Reported by Programs



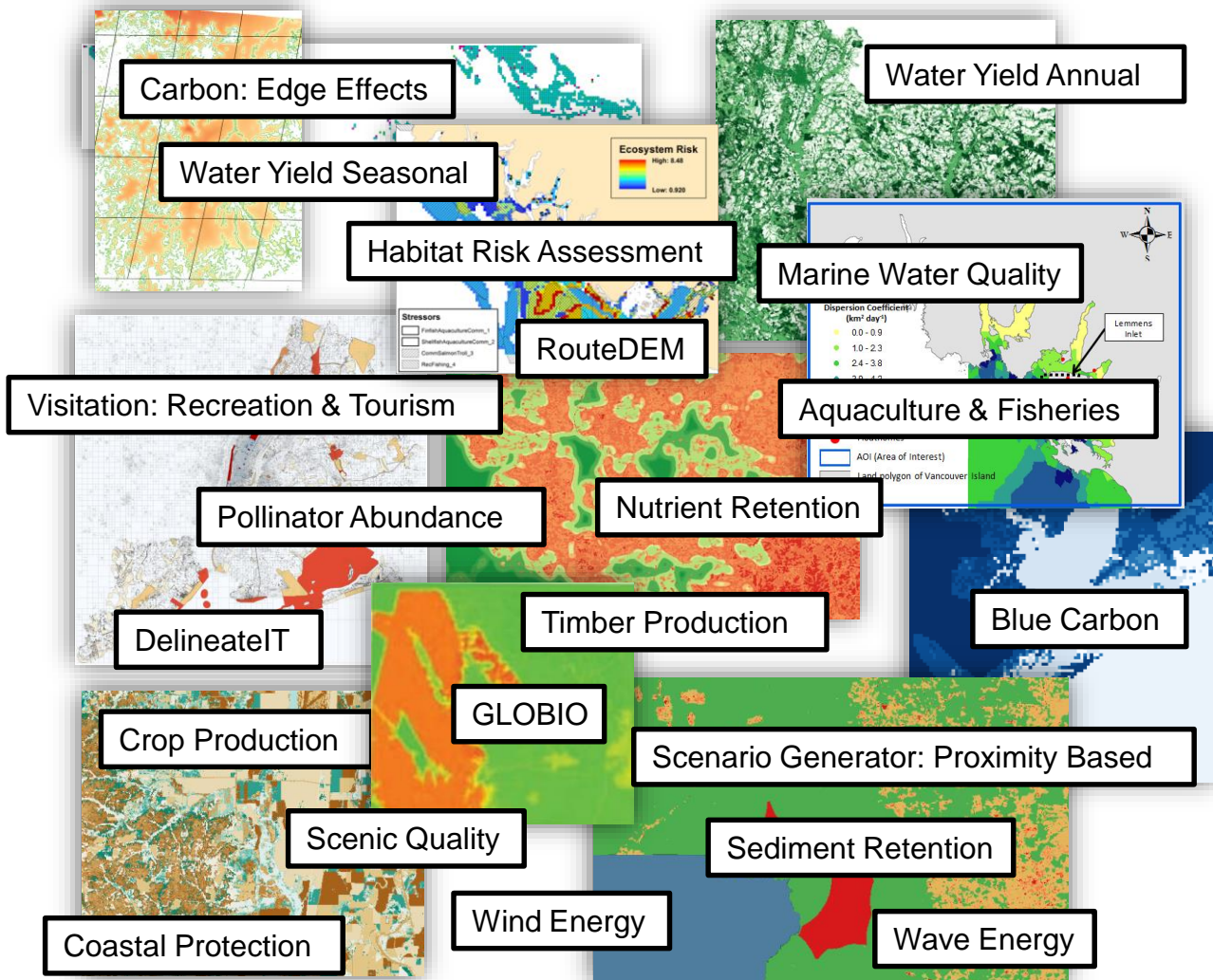
*Alliances for Green Infrastructure: State of Watershed Investment 2016. Forest Trends Ecosystem Marketplace.*

# PARTICIPATORY ECOSYSTEM SERVICES ASSESSMENT



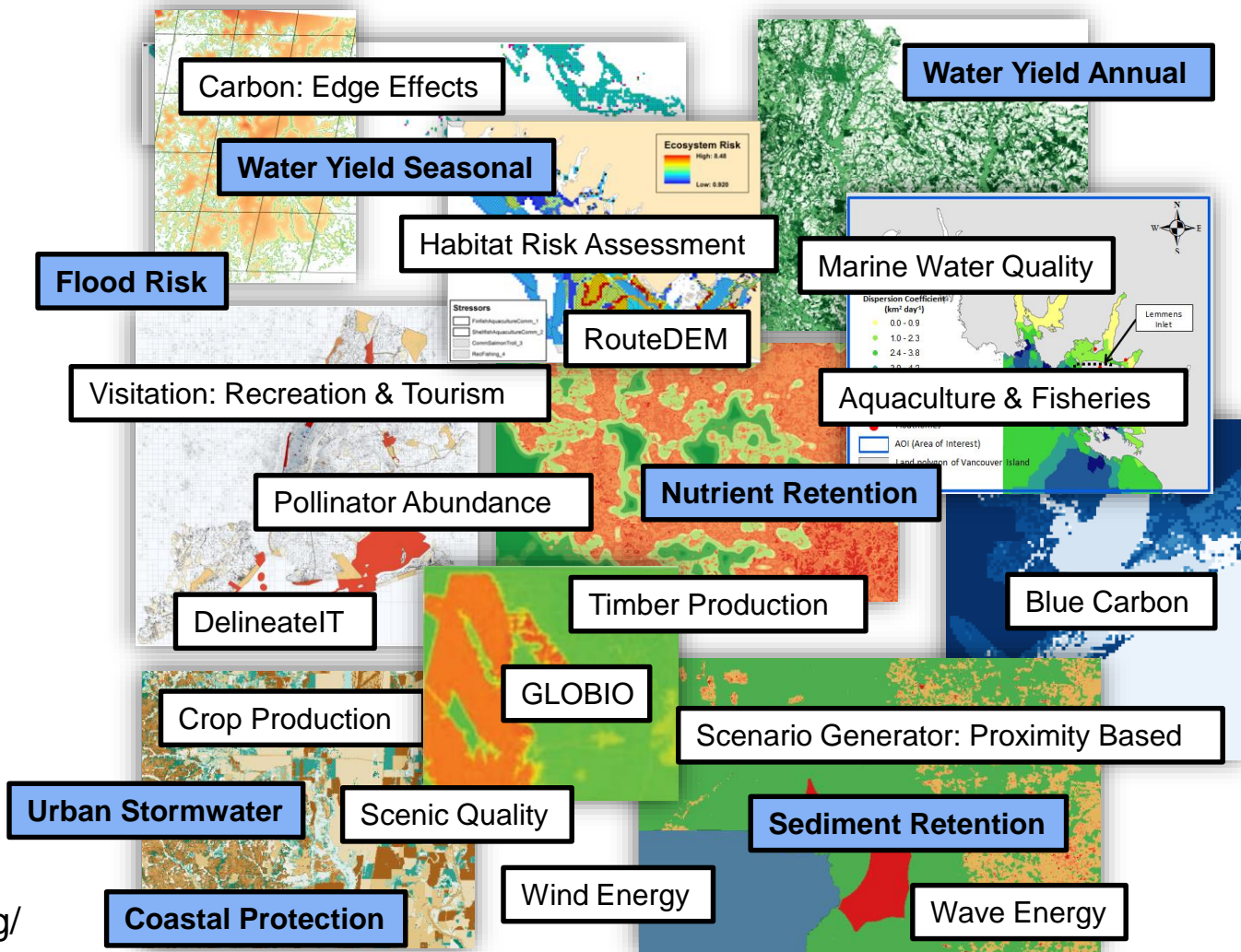


<http://naturalcapitalproject.org/>





<http://naturalcapitalproject.org/>

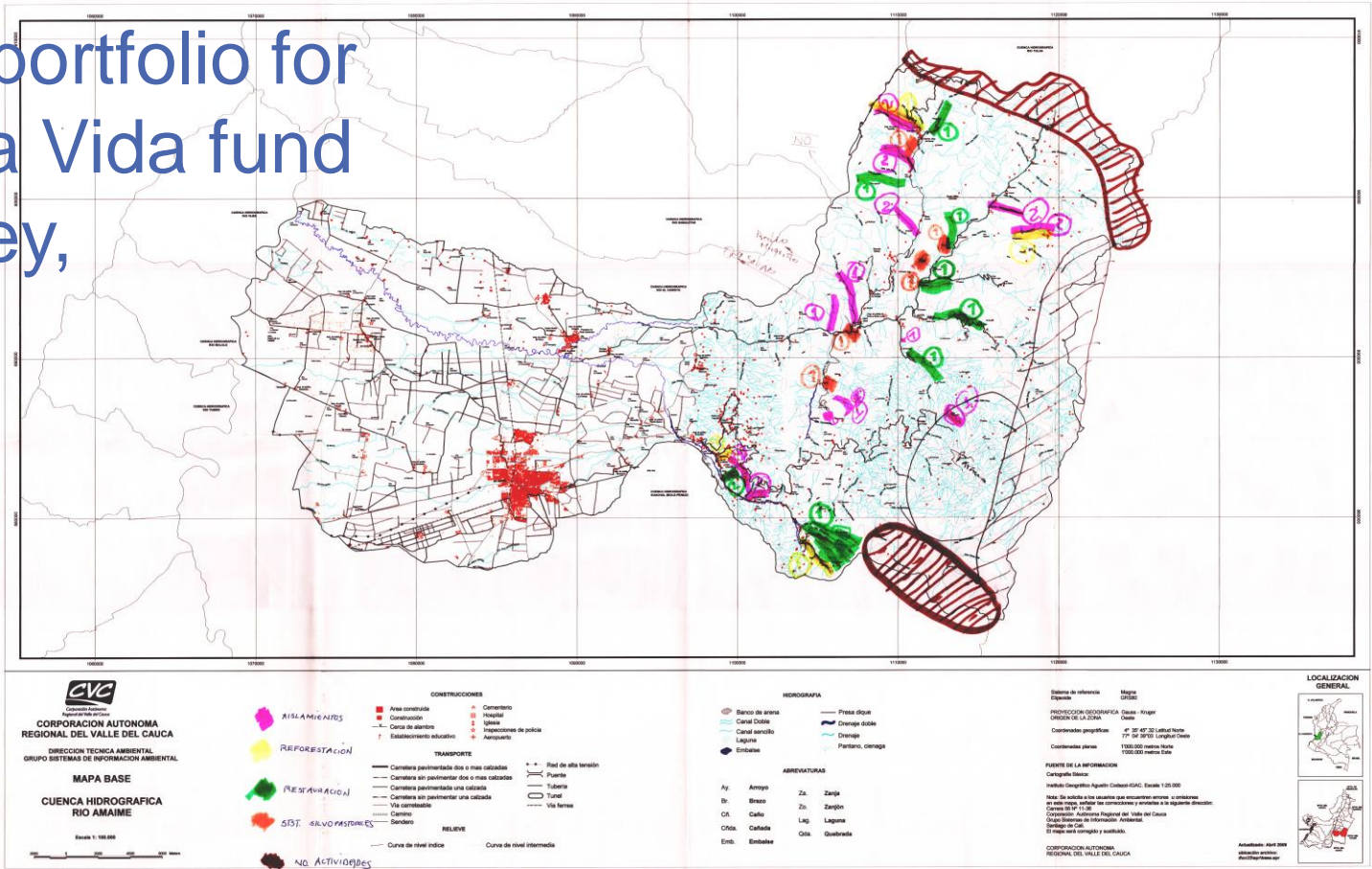


# HOW DO WE KNOW THIS “WORKS”?

Where do we invest our limited resources in green infrastructure for the biggest impact?



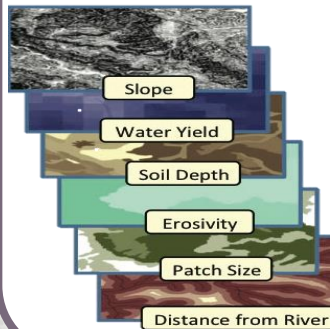
# Collaborative investment portfolio for Agua Por La Vida fund (Cauca valley, Colombia)





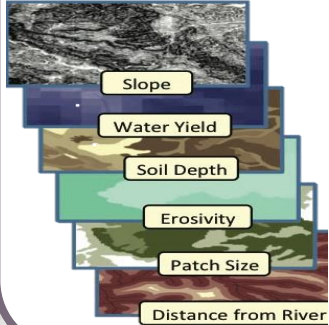
## Data

Collected environmental and cost data relevant to water fund objectives.



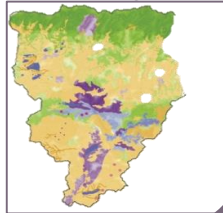
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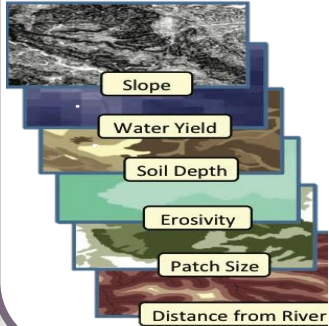
Analysis

Developed alternative investment options through estimated provision of:  
Water Supply Regulation  
Erosion Control  
Terrestrial Biodiversity  
Groundwater Recharge



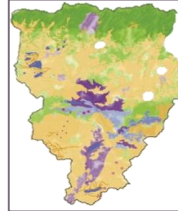
Data

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Analysis

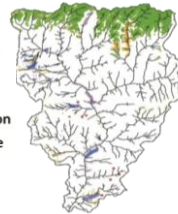
Developed alternative investment options through estimated provision of:  
Water Supply Regulation  
Erosion Control  
Terrestrial Biodiversity  
Groundwater Recharge



Insight

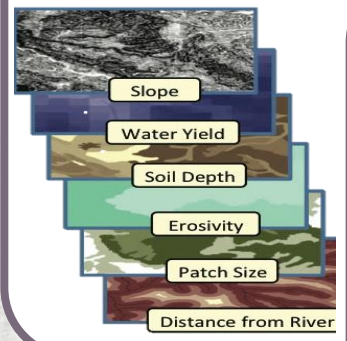
Ranking tool indicates optimal places and management activities for financial returns and biodiversity & ecosystem service (BES) provision.

- Enrichment
- Fencing
- Protection
- Reforestation
- Silvopasture



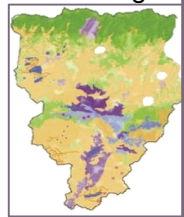
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Insight

Ranking tool indicates optimal places and management activities for financial returns and biodiversity & ecosystem service (BES) provision.

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Decision

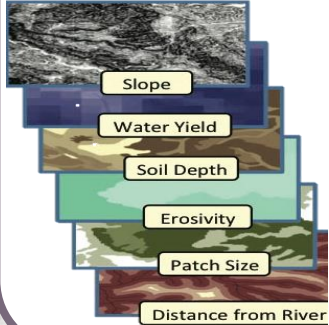
Budget allocation according to BES outputs, cost data, stakeholder preferences and investment amount.



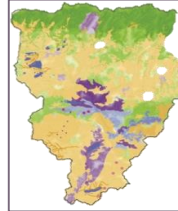


Data

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Analysis

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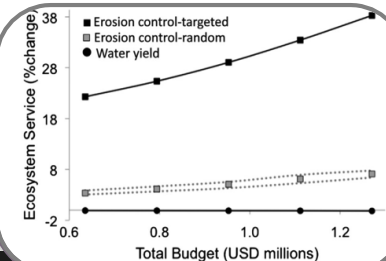
Insight

Budget allocation according to BES outputs, cost data, stakeholder preferences and investment amount.

\$3 million over 5 years

Decision

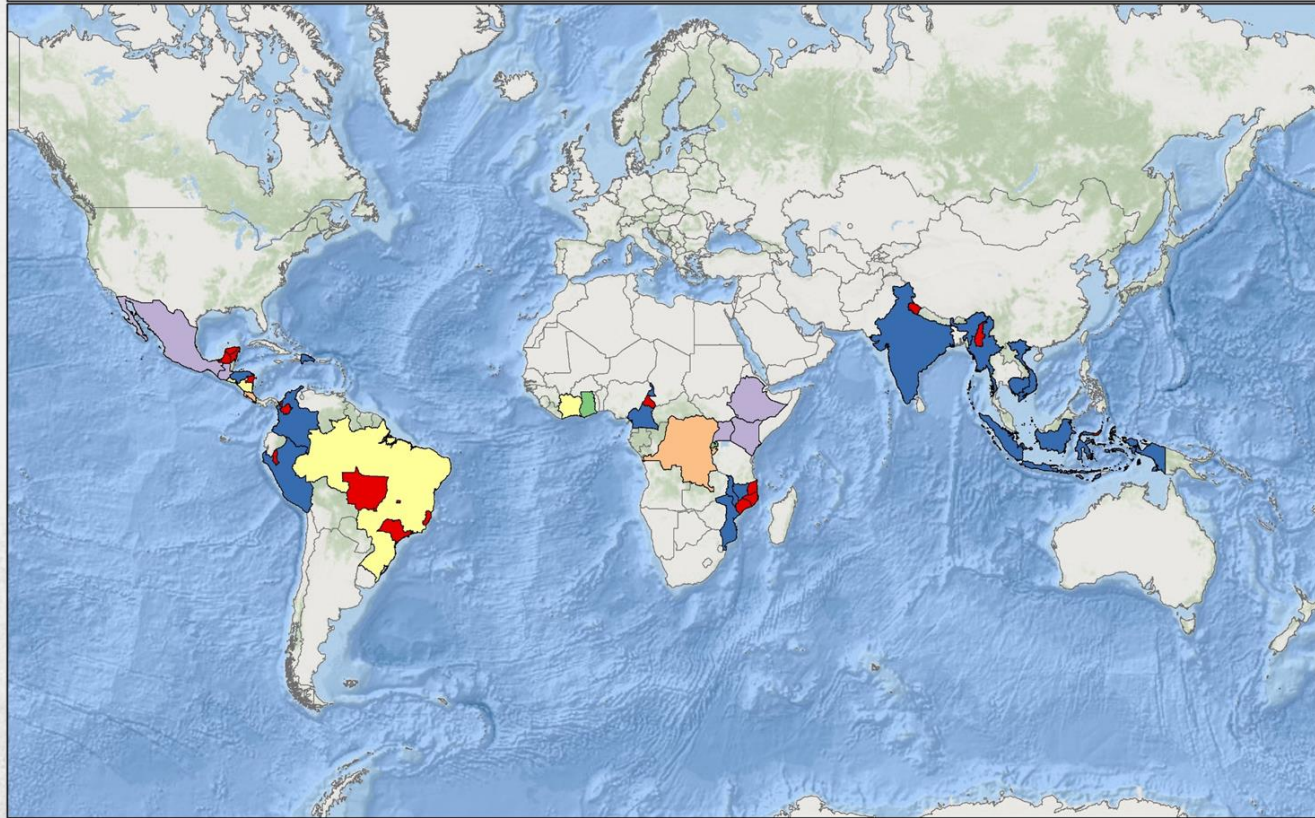
**Improved water supply and filtration.** Water improvements are between 40 and 200% higher than with ad-hoc investments.



Returns

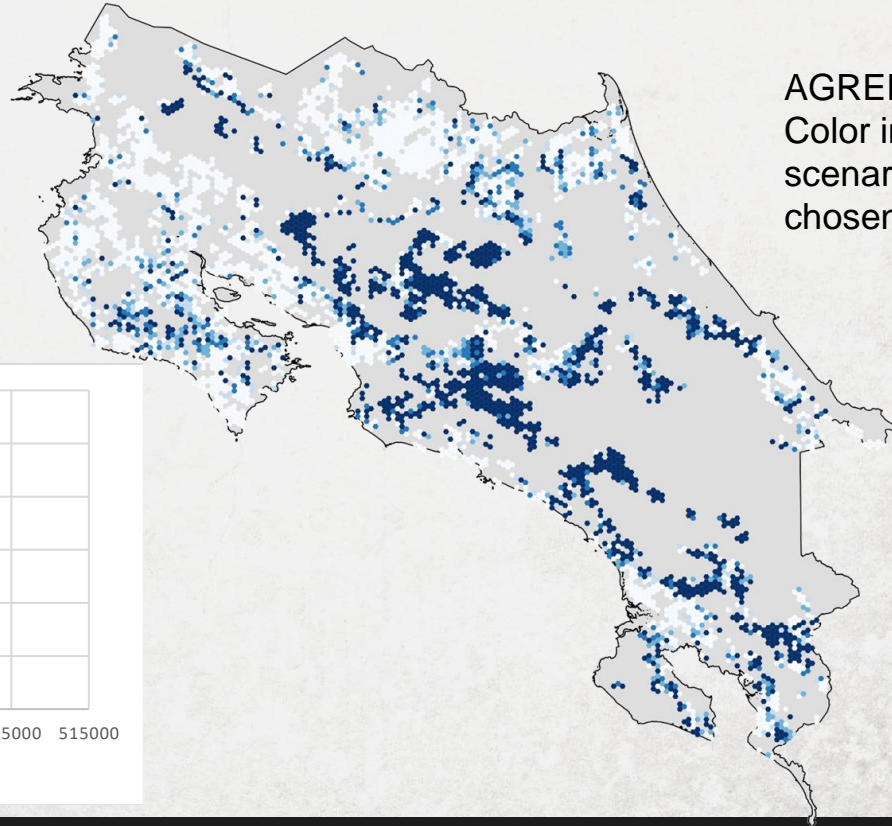


# ROAM Assessment Countries: 26 Countries, 39 Processes

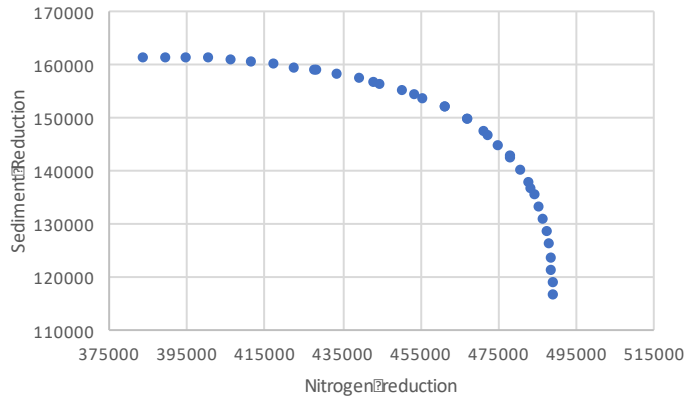


ROAM Initiated ■ 2012 ■ 2013 ■ 2014 ■ 2015 ■ 2016 ■ Subnational assessments

# A NEW TOOL FOR OPTIMIZING INVESTMENTS IN GI



AGREEMENT MAP:  
Color indicates number of scenarios in which area was chosen for restoration





# Landscapes, at your service

Applications of the Restoration Opportunities  
Optimization Tool (ROOT)

Craig R. Beatty, Leander Raes, Adrian L. Vogl, Peter L. Hawthorne,  
Miguel Moraes, Javier L. Saborío and Kelly Meza Prado

First edition



IUCN GLOBAL FOREST AND CLIMATE CHANGE PROGRAMME



<https://portals.iucn.org/library/node/47805>



# CO-DEVELOPMENT INCREASES RELEVANCE & UPTAKE!



# natural capital PROJECT



**Stanford** | Department  
of Biology



**Stanford**  
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INSTITUTE for the  
ENVIRONMENT



The Nature  
Conservancy



INSTITUTE ON THE  
ENVIRONMENT  
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