



Funded by



Led by



In partnership with





**Knowledge conclave cum workshop**

# NATURE-BASED SOLUTIONS(NBS) FOR WATER SECURITY

**Dates: 27 - 30 November, 2018**

**Venue: AAETI, Nimli, Rajasthan**

Organised by:



**AAETI**

In partnership with:



**UWE  
Bristol** University  
of the  
West of  
England

Funded by



Lloyd's Register  
Foundation

Led by



In partnership with



**MONASH  
SOUTH AFRICA**



Udall Center  
for Studies in Public Policy



# Is there a place for nature-based solutions in "hard-path-dominant" northern Mexico?

Nicolas Pineda

El Colegio de Sonora, Mexico

November, 29, 2018

Funded by



Lloyd's Register  
Foundation

Led by



In partnership with



Udall Center  
for Studies in Public Policy

# The problems of Mexico

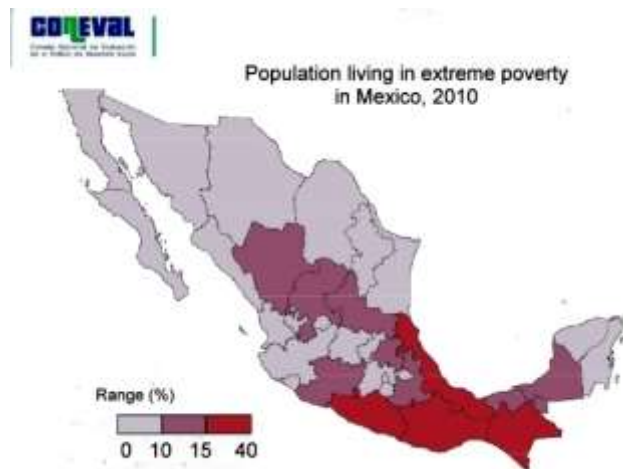
Poverty

(aprox. 40% of population)

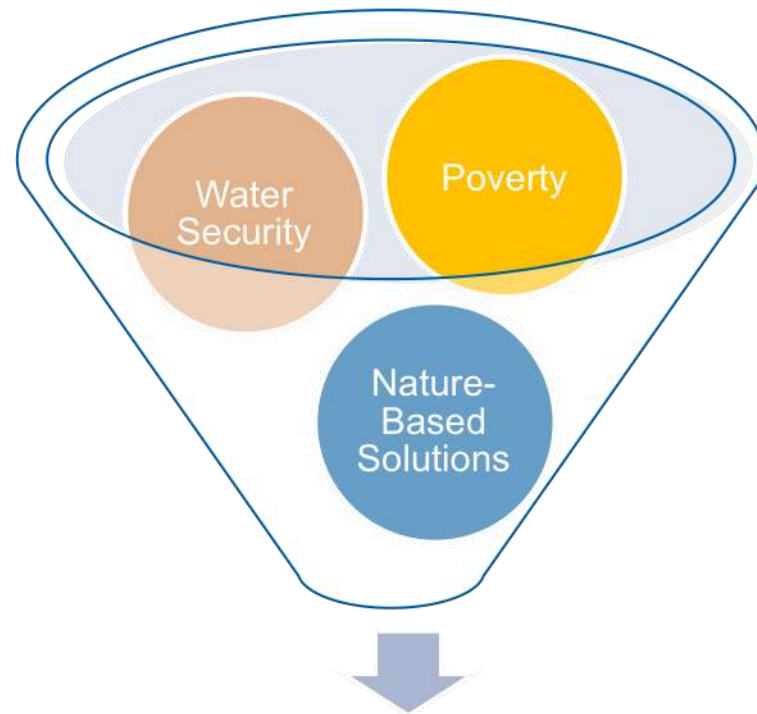
Arid lands & water scarcity

(aprox half of the territory)

Migration

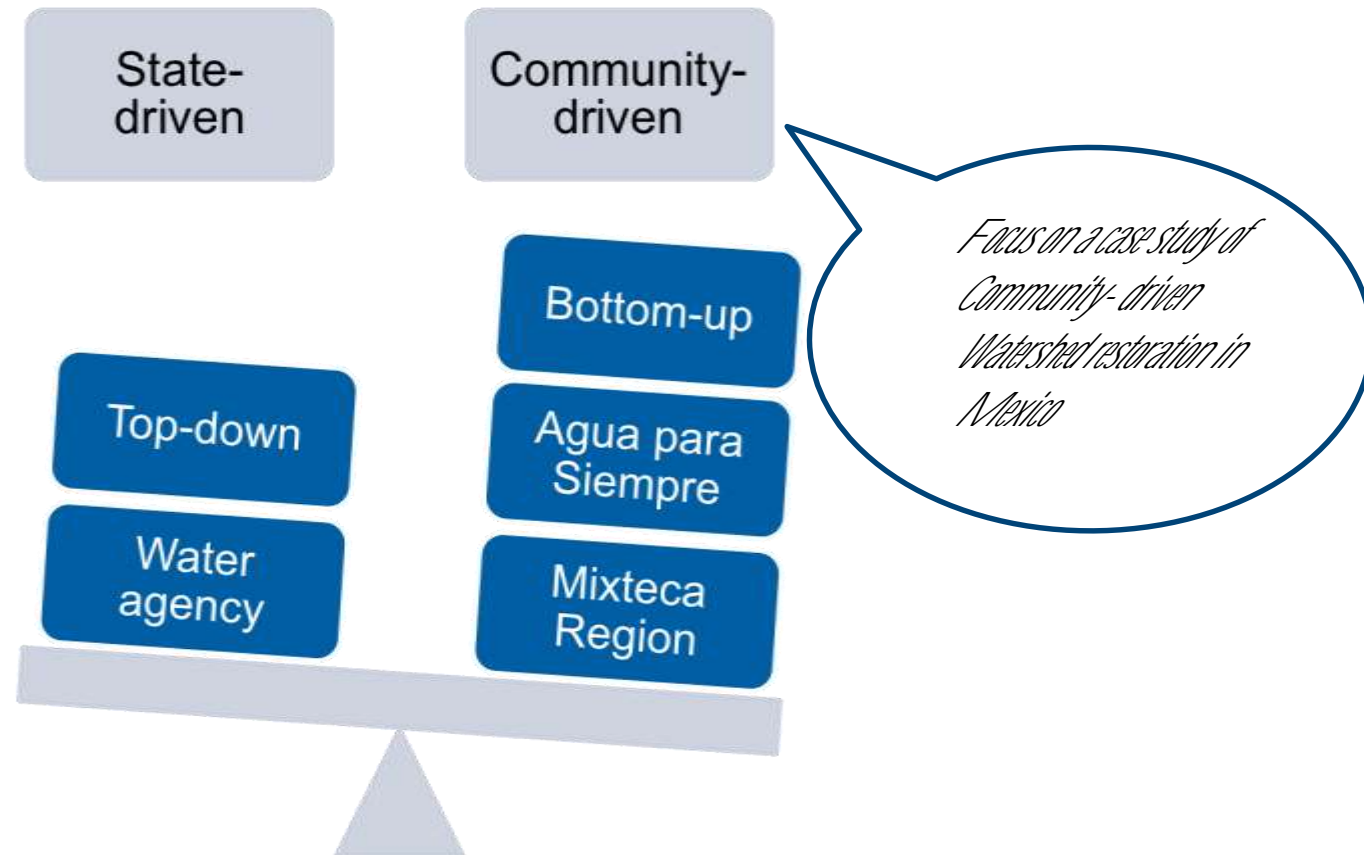


# Water Security, watershed restoration, and Nature-based solutions



Watershed Restoration

# Two approaches to watershed restoration



# Estrategia de desarrollo sostenible



# Sustainable Development Strategy

## Regeneración ecológica de cuencas

*Ecological Regeneration of Watersheds*

## Organización social para la producción

*Social Organization for production*

Formación de recursos humanos institucionales  
Human Resources Development at the Institutional Level

Agua para Siempre

Tecnología de retención de suelos y agua  
Soil and Water Retention Technology

Tecnología de aprovechamiento sostenible  
Technology of Sustainable Production

Formación de recursos humanos campesinos  
Human Resources development in the Rural Areas



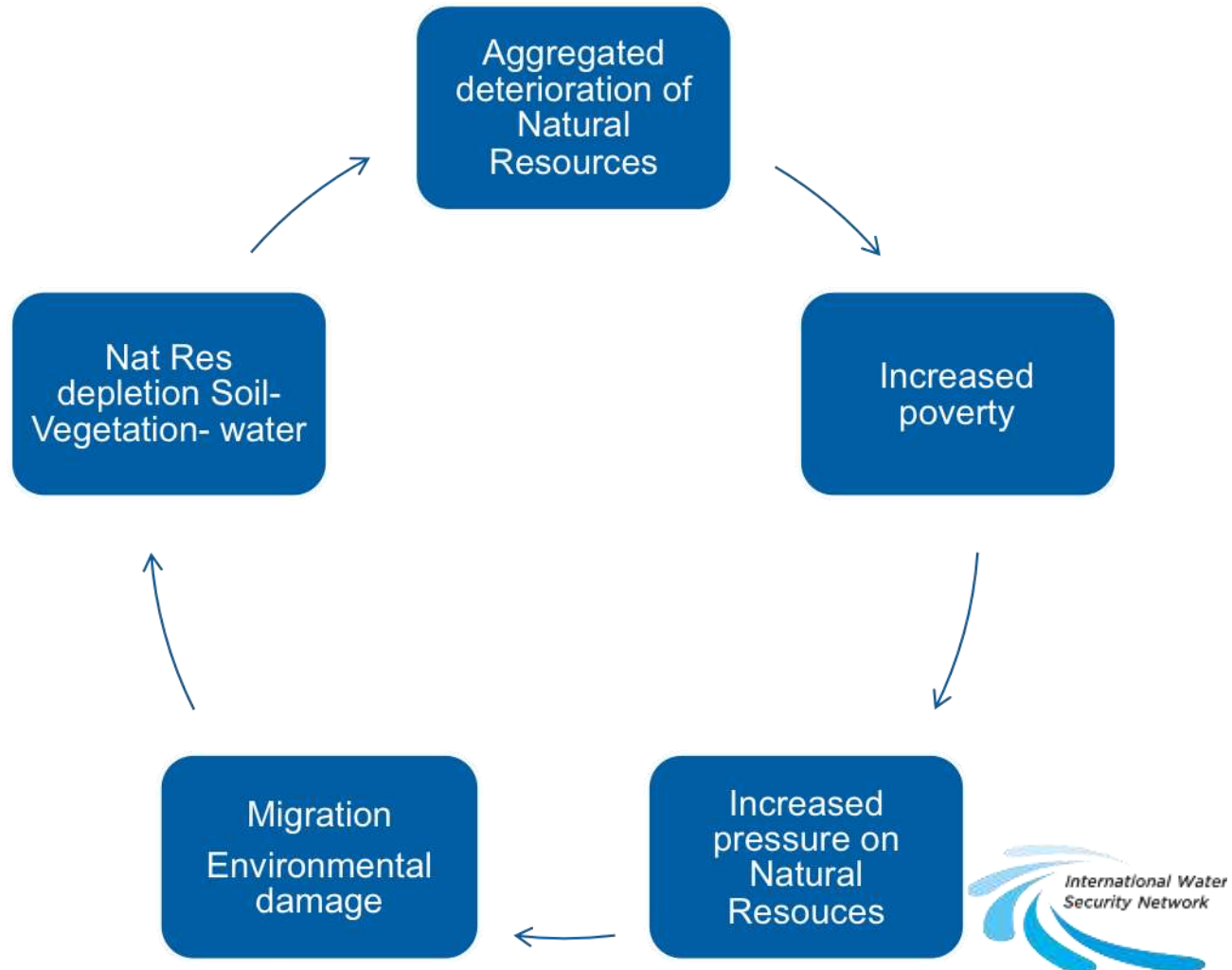
## Círculo perverso Deterioro de recursos naturales - Pobreza

### *Perverse circle: Natural resources deterioration - Poverty*



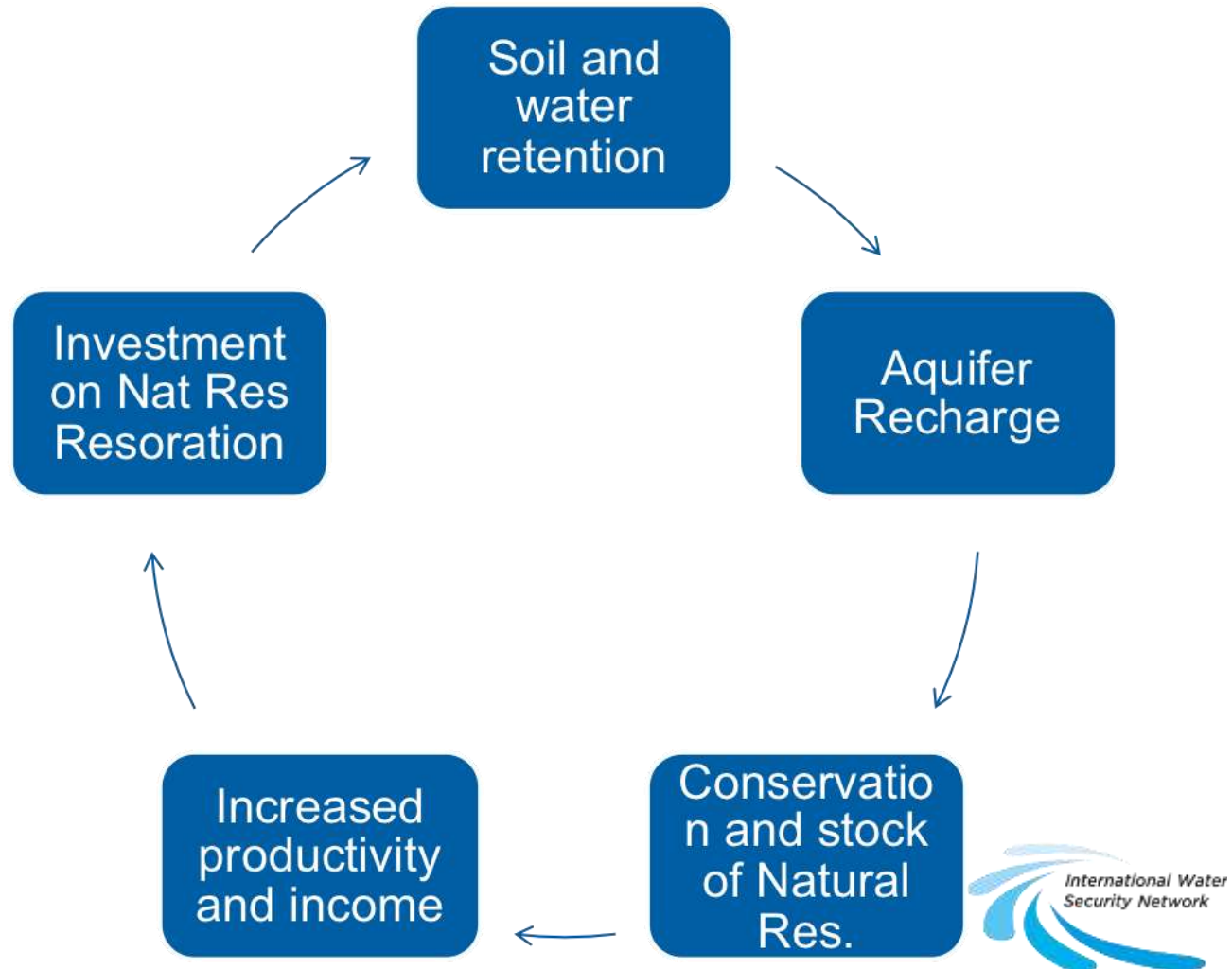
## Perverse circle:

**Deterioration of natural resources = poverty**



**Virtuous circle:**

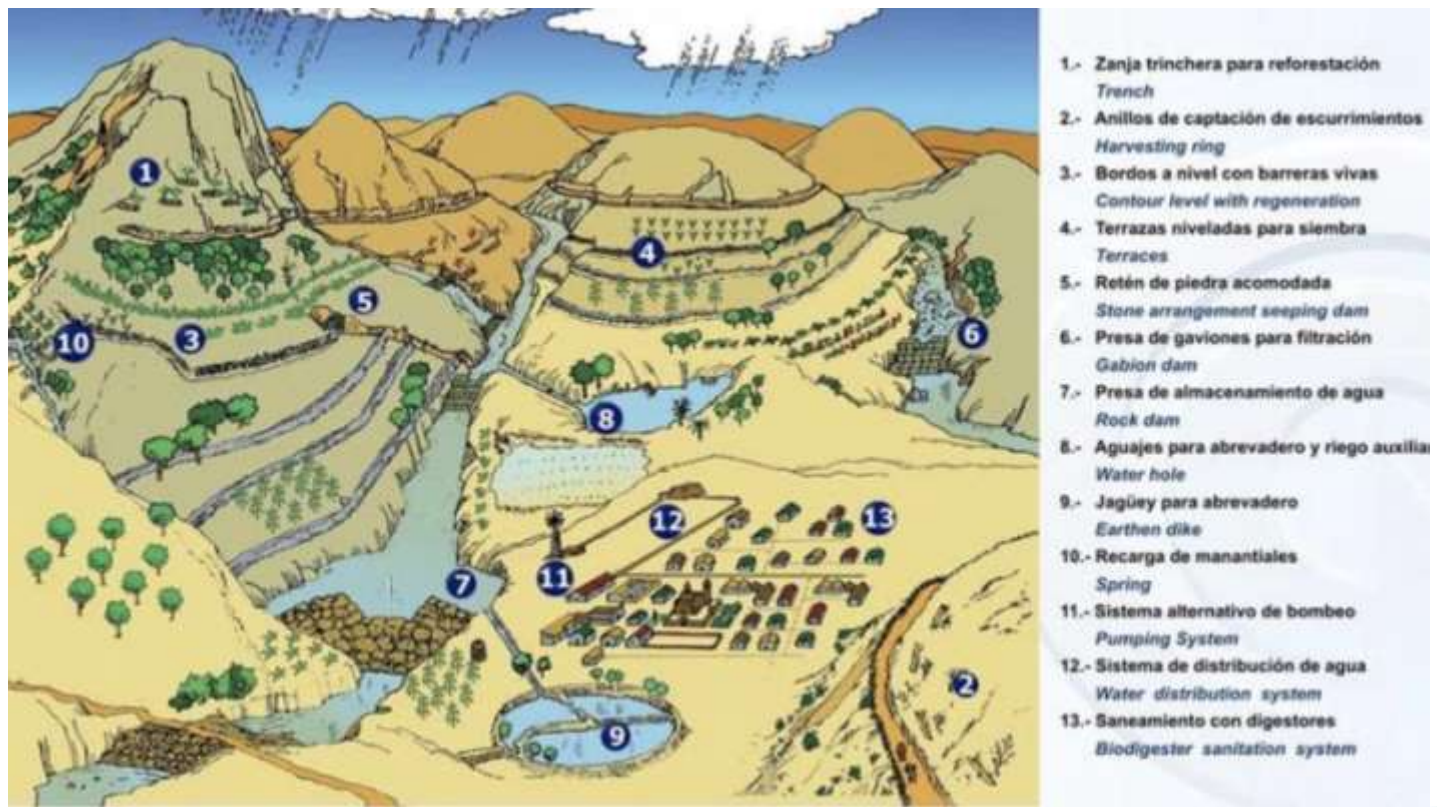
**Deterioration of natural resources = poverty**



**Rescuing Indigenous technologies and knowledge to decrease the speed of rain water runoff, keep it and protect the fragile soil**



## Strategy: Integration of local culture and the sustainability of the tributary watershed scope



## Aquifer and spring revival

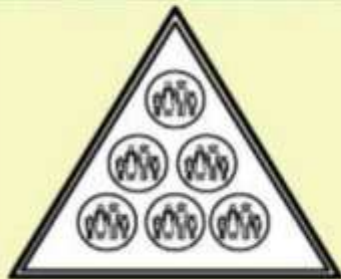


**Familias**



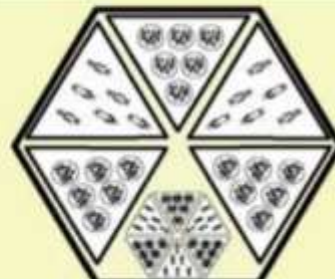
*Families*

**Empresas  
Sociales Locales**



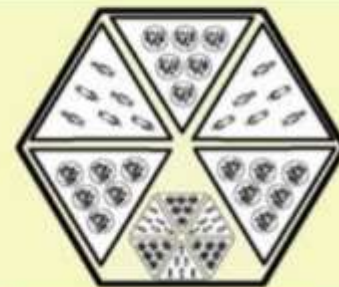
*Cooperatives*

**Transformación  
AgroIndustrial**



*Agro-industry*

**Comercialización**



*Marketing*

**Approach to regional & community  
development to overcome poverty**

Alternativas genera oportunidades	262	Personas con empleo formal permanente Permanent jobs      63 % hombres    37% mujeres
	50	Trabajadores eventuales Temporary jobs
	206,334	Habitantes beneficiados Beneficiaries
	197	Pueblos participantes Participant villages
Opportunities opened by Alternativas	56	Municipios de los estados de Puebla y Oaxaca Puebla and Oaxaca countries
	1,100	Familias de la región Mixteca Mixteca region cooperative members
	372	Capacitación certificada SEP Training certified by the SEP
	35	Cuencas Tributarias Tributary Watersheds

*Educational Promotion methodology*

*Water Forever Program*

Metodología de Promoción Educativa  
y Operación del Programa

**Agua  
para  
Siempre**

Marco de

Evaluación de la Participación

Promoción Educativa e  
Acción

Evaluación del  
Proceso de Regeneración

Ejecución de Obras y  
Acciones de Regeneración Ecológica

*Social Reality Transformation*

TRANSFORMACIÓN DE LA REALIDAD SOCIAL

*Environmental Reality Transformation*  
TRANSFORMACIÓN DE LA REALIDAD AMBIENTAL

Evaluación de la Etapa y  
planeación de las siguientes Acciones

**EVALUACIÓN CONTINUA**

Perfeccionamiento  
de la metodología

Regeneración  
de la base  
de recursos  
naturales

Profundización  
de la conciencia  
y fortalecimiento  
del proceso social

Orientar

# Final remarks

Nature-based solution is the base and necessary condition for the watershed restoration and poverty elimination

State-driven approaches are expensive and not very successful in Mexico

Community approach has been relatively successful, due to leadership and external support.

[www.watersecuritynetwork.org](http://www.watersecuritynetwork.org)  
[www.twitter.com/water\\_network](https://www.twitter.com/water_network)

### Acknowledgement

The International Water Security Network is funded by Lloyd's Register Foundation, a charitable foundation helping to protect life and property by supporting engineering-related education, public engagement and the application of research. For more information, see:

[www.lrfoundation.org.uk](http://www.lrfoundation.org.uk)

