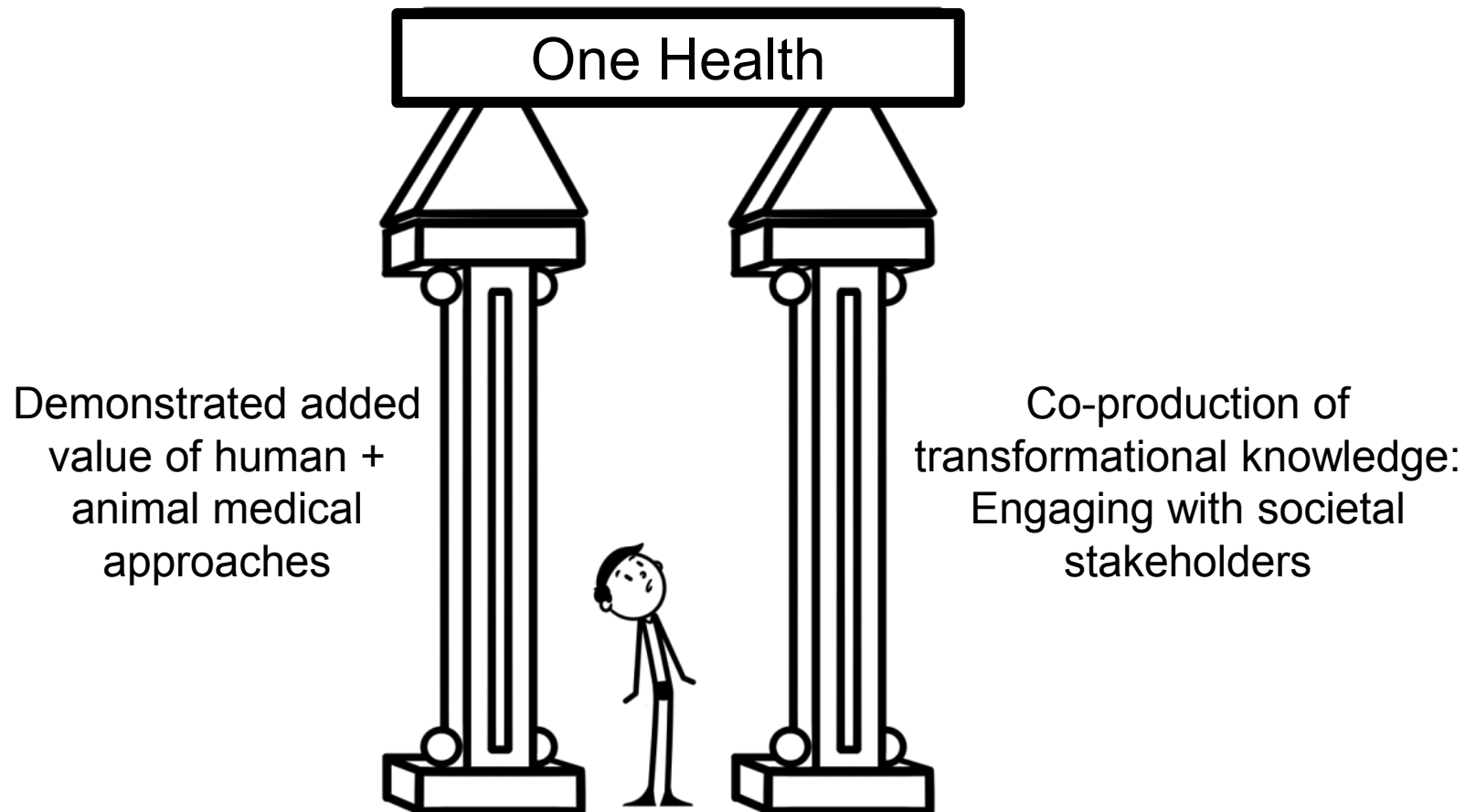Swiss TPH Winter Symposium 2018

**One Health: Zoonoses Control in Humans and Animals
– Taking Stock and Future Priorities**

# Trans-Disciplinary Approaches to Zoonoses Control

Mónica Berger

# The two pillars of a One Health approach



One Health

Demonstrated added value of human + animal medical approaches

Co-production of transformational knowledge: Engaging with societal stakeholders

# As an orientation in research, Transdisciplinarity is…

- About effective collaboration to address a complex problem amongst diverse societal stakeholders with different interests, backgrounds, knowledge systems.



Knowledge System: networks of actors, organizations and objects that bridge knowledge and know-how, with action (McCallough & Mateson, 2010).

They encompass specific world views that shape mental models of reality, define expectations, preferences and influence behavior.
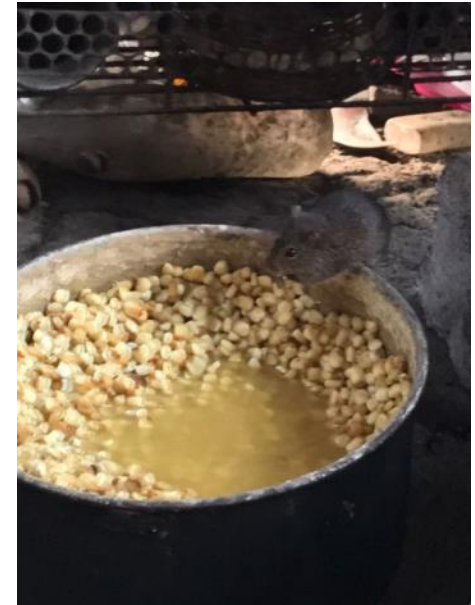
- TD needs to provide **ROBUST solutions** (Scholz, 2011):
  - Scientifically robust: state ot the art
  - Societally robust: potential to attract consensus (understandable by all stakeholders), product of knowledge co-production with integration potential, acknowledges uncertainty, is context-specific (addresses limitations)

# Surveillance and response to zoonotic disease in Maya communities of Guatemala: A case for One Health

## Aim –r4d-

Fill the gap of unknown zoonotic diseases affecting rural populations in areas with low access to official health care services, and to understand the local Maya explanatory models for these diseases to support correlation to biomedical models. Implement a participatory surveillance and response system. Translate into recommendations for policy and action.

## Three main project phases

Cross Sectional Epidemiological Study

Community Syndromic Surveillance

Transform Results into Policy and Action

**Completed (Year 1)**　　**Completed (Year 2)**　　**Ongoing (Year 3)**

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## So….  We are going to have a participatory "dialogue"

## Where do we start?

# Reflexivity 101: Understanding and Acknowledging Diversity

- Who is in this dialogue?

- Who should be in this dialogue?

- Who do they represent?

- What interests do they have?

- What knowledge systems to they bring along?

- How is this knowledge important to the problem we are addressing? (Not "if")

-How many Disciplines?

-How many Languages?

-How many 'Cultures'?

-How many Belief Systems?

-How many ways of understanding the problem at hand?

-How many value systems?

Government off.

Midwife

Maya Elder

Public health off

Env. engineer

Nurse private

Epidemiologist

Veterinarian

Maya Healer

Community Mayor

Medical Doctor

Company rep.

Anthropologist

Linguist

Swiss TPH

**Understanding diversity, values, preferences and drivers does not happen on its own…**

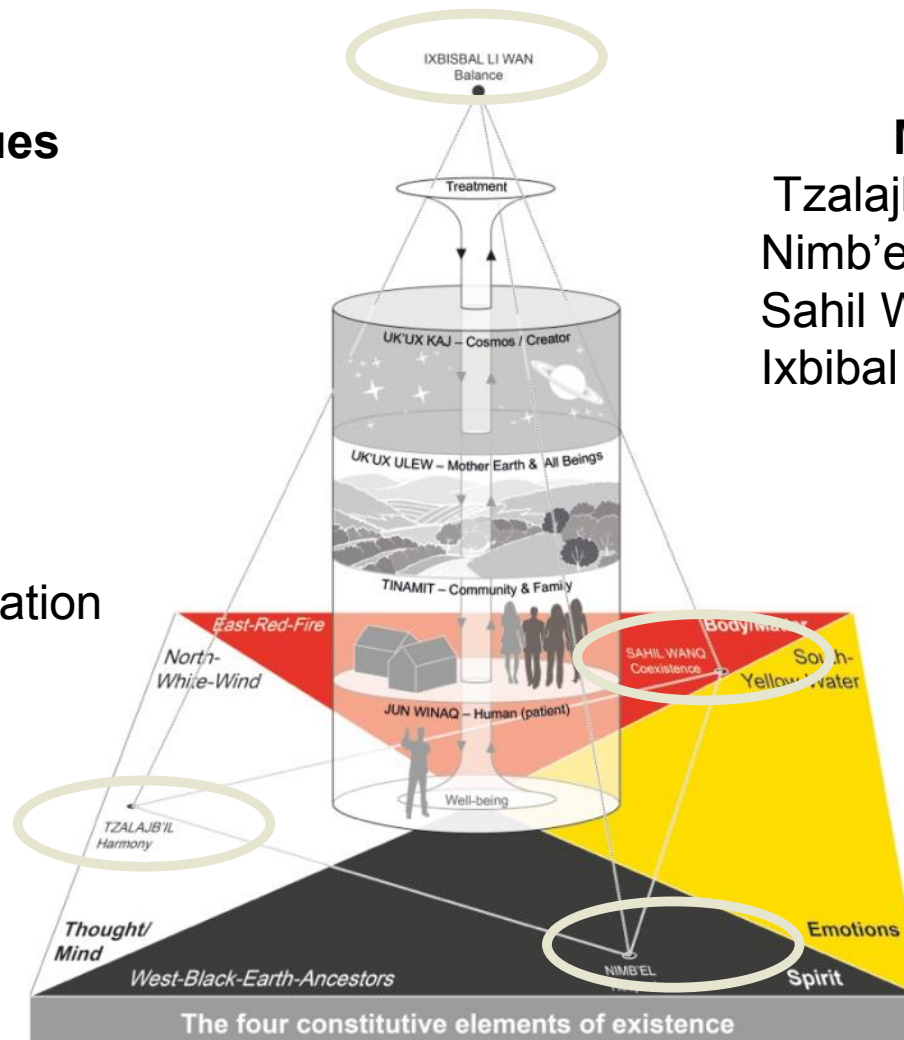**It needs to be designed and 'facilitated'**

Tools, tools, tools!

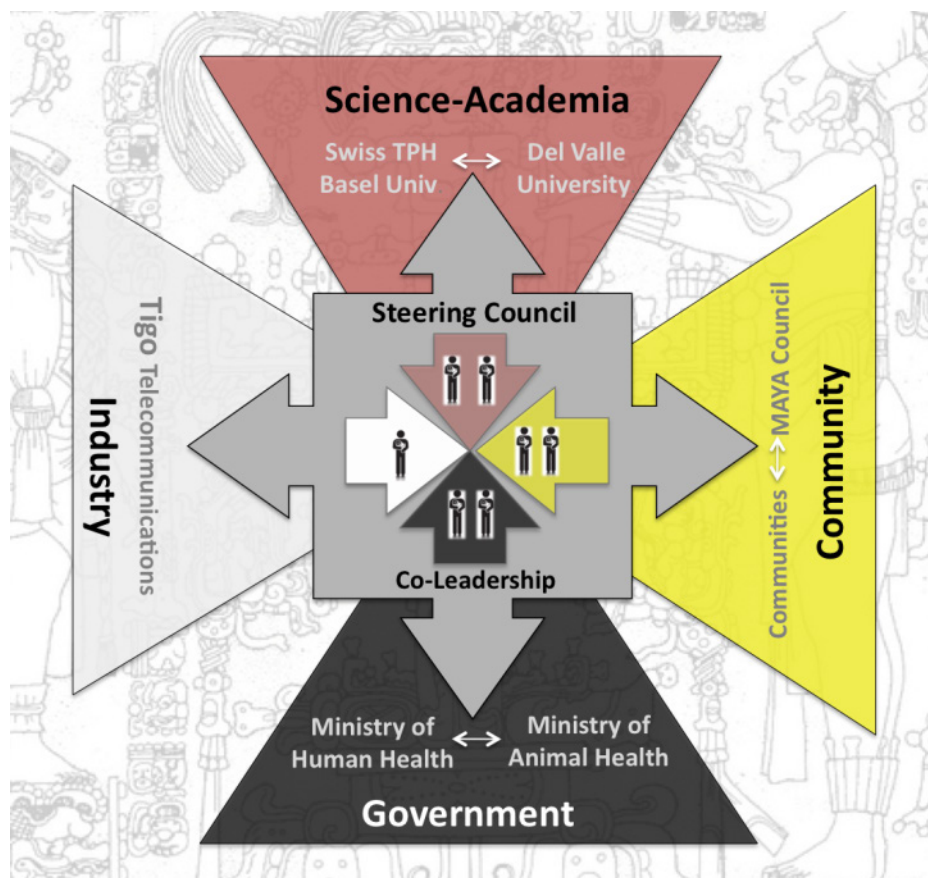# 'Rules for engagement': Whose Values?

**Academic Values**

Science Protocol
Objectivity
Reliability
Time management
Evidence
Deliverables
Transparency
Democratic participation

**Maya Values**

Tzalajbíl, Harmony
Nimb'el, Respect
Sahil Wanq, Co-existence
Ixbibal li wan, Balance

# Formalize the partnership

# Understand beliefs, taboos, curve our 'cultural ignorance'

Objective 2. Estimate the prevalence of selected infectious and emerging zoonotic disease for the region under study

- **Cross Sectional Study:** 31 communities selected out of 99 (total pop. 57,685), 6 households randomly selected in each community, two adults (m/f) sampled in each home, plus one animal from each spp present.

  - Study from March 14 -July15, 2017

  - 290 residents distributed in 176 households and 31 communities: 43% women and 57% men, and 98% consented to provide a blood sample.

  - Adittionaly, 143 animal samples were collected: 65% dogs, 21% pigs, 9% bovine, 6% rodents, and 1% other selvatic animals.

  - 5 rodent traps per house, one night.

- Human Samples: ELISA results show 15 (6.0%) Brucella and 1 (0.4%) Leptospira sero-positive.

- Animal samples: 7 (4.4%) Brucella and 12 (7.5%) Leptospira sero-positive.

# Co-design the approach

Objective 3. Design a community-based syndromic surveillance platform for rapid detection and response.

- Swiss TPH: cell phone base (participatory surv)
- Community: build healthpost (passive surv)
- Del Valle Uni: household visits (active surv)

-Linguistic Analysis of terms for Syndromic Surveillance: Is "fever" an unequivocal category?
-Literacy level
-Gender differences in tech use
-Validated graphic representations

¿Cómo pedir ayuda si alguien está enfermo?

LLAMA desde tu celular TIGO al número:
* 8 8 4 #

BIENVENIDO al proyecto "UNA SALUD POPTÚN"

ESCRIBA EL CÓDIGO DE SU FAMILIA:

¿Quién está enfermo en su casa?

¿Qué tiene el enfermo?

¿Qué animal tiene el problema?

¿Cuál es la emergencia?

La plataforma "UNA SALUD POPTÚN" solamente funciona desde celulares TIGO

# Comparison of Leptospira cases IgM per surveillance type

| | NATIONAL Surveillance | VICo | VICo | One Health Poptun | Coatepeque |
|---|---|---|---|---|---|
| Level of surveillance | Health Services | Health Services | Health Services | Community & Health services | Community |
| Type of surveillance | passive | active | active | active / TD participatory | active |
| Study Area | national | Santa Rosa Department | Nueva Santa Rosa Municipium | Poptun, 3 sites | Coateqpeque, 2 communities |
| Period | 2001-2017 | 2008-2017 | 2008-2017 | oct 17–nov 18 | nov 15–apr 18 |
| Number of cases | 206 | 38 | 26 | 13 | 17 |
| People-year | 228,073,576 | 2,852,840 | 334,680 | 1,011 | 2,640 |
| Incidence (per 10,000 people-year) | 0.009 | 0.13 | 0.78 | 128 | 64 |

# Reflexivity 201: Addressing Power

- Partners at "equal footing" is not a given, leveling the ground is often a methodological design.

- Ask the question: what creates power differentials that mute the capacity of some stakeholders to really participate in the TD process?

  - LANGUAGE barriers between participants

  - CONTEXT: Historical, Structural

  - ACCESS  (Geography, Formal Education, Information)

  - SOCIOECONOMIC constraints

# Case Context
## Poptun, Guatemala

Understanding power and
conflict between stakeholders



- 21 Ethnolinguistic Maya Groups
- Partnership: 5 languages
- 0.38 HDI (0.51 National)
- 56% Poverty, 42% Extreme Poverty
- Maya Q'eqchi' and Mestizo Population
- Armed conflict
- High Exclusion Rates
- Poor public health services (8 health posts f 43,000 people)
- Medical Pluralism in inequity

- Expect Diversity
- Budget translators & equipment
- Extreme poverty: budget stipends (cover opportunity cost)
- Understand history of mistrust and racism
- Prepare for Historical Trauma manifestations
- Expect underrepresentation, prepare to balance gender, indigenous, rural participation.
- Prepare for inefficient conditions in advance
- Mutual learning is not a given: prepare

# Intersectionality

Aanalytic framework which attempts to identify how interlocking systems of power impact those who are most marginalized in society (Cooper, 2009).

Intersectionality considers that various forms of social stratification, such as class, ethnic background, sexual orientation, age, disability, and gende rdo not exist separately from each other but are interwoven together.

# Have the "uncomfortable conversations" before things happen in the TD process:

Undoing Racism
Microagressions
White Privilege

Being aware of these conditions

- Within your academic team
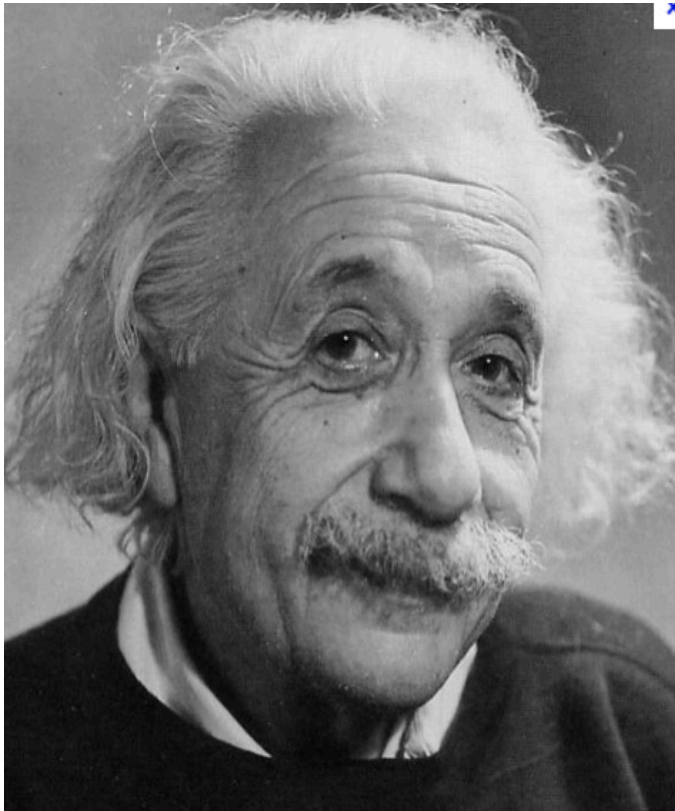
- Within groups of stakeholders

- Between stakeholders

CBPR for Health (Minkler and Wallerstein, 2008)

# Reflexivity 301: Watching out for Ethnocentric Bias
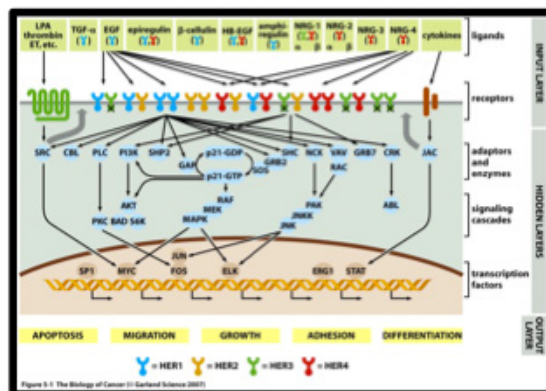
*Superior* Knowledge Systems?

'Scientist'                    'Elder'
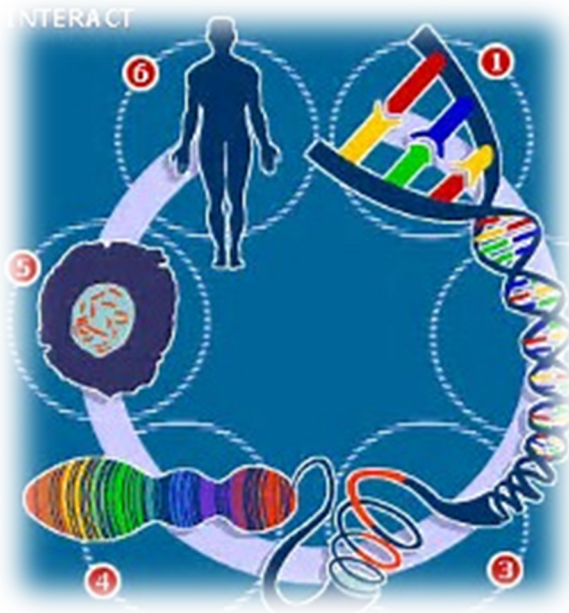
# *EMIC* and *ETIC* Constructs



# From whose perspective are you describing 'reality'?

# Example: perception of the basic constitutive elements of life and the human body

**Biomedicine**
Material systems

**Maya Medicine**
'Energetic' systems



$$E=MC^2$$

## Disciplines and Cultures as Epistemic Systems

We speak of Socioepistemic Systems as a way to reduce loaded terms that pave the ground for ethnocentric behavior.

## Epistemic Relativism: dialogues at equal footing

"…there are non-relative or absolute standards of justification, thus only those relative to the local acceptance of a culture or society. Therefore, if there are two differing systems of such standards deriving from different societies or cultures, there is a faultless disagreement as to whether a given belief is epistemically justified. With acceptance of these standards there is no possibility for the user of the one system to show to the user of another that her own system is epistemically superior" (Seidel, 2014:26-27)

# CASE/ Researching ALL emic constructs around zoonosis showed that:

- Obj. 1: Maya models of zoonoses are based on an energetical understanding. 'Benevolence' of nature precludes seeing pathogens of animal origin.



Modelo explicativo de transmisión humano-animal en medicina tradicional maya
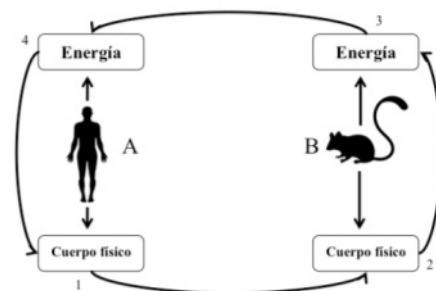
1. El cuerpo físico A ofende al cuerpo físico B
2. El cuerpo físico B transmite a la energía B la ofensa
3. La energía B enferma a la energía A
4. La energía A enferma al cuerpo físico A

- Local biomedical models of zoonoses are often "wrong".
- There are 'in-between' models that bridge the Maya and Biomedical explanations, own rationale, majority.
- Maya emics are closer in practice to the theory of One Health than the emics of all other participants, including most academics.

The One Health Triad

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# Still… did we advance mutual learning?

# Reflexivity 401: Identifying "Boundary Objects" – Bridging Opportunities

- Boundary management: societal divides that are not crossed naturally

- Tangible elements upon which diverse socioepistemic systems can 'converse' from their own perspective.

- Facilitates mutual learning

- Paves the road for co-production of knowledge: innovation, acceptability, sustainability.

# Example: patient with Leptospirosis and Brucellosis

Diagnosis in each medical system

Joint discussion of etiology: reveals mental models

-Fever, lethargy.. Lab tests said Lepto
- Ask questions about risk exposure

-Symptoms like dengue, but old disease from animals.
-A bat was involved
-Prior "Susto" caused weakness

# Mutual learning amidst medical pluralism– Improved patient care

Discussion of treatment options per system

Patient chooses (tendency to integrate easily)

Joint follow up of outcomes

**In case you want to see a bit more…**

[https://youtu.be/IfVQnsqLbas](https://youtu.be/IfVQnsqLbas)

# Societal stakeholders buy-in?

Education & Communication
Campaigns (local levels)

National One Heath Workshop:
binding the central level

TD as a reflexive process builds **Cultural Humility,** a precondition for real *mutual learning* and the *co-production of knowledge* for <u>robust societal responses.</u>

**Questions?**

**Thank You
Gracias
Bantyox**

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