

# Metaphors about soil

## An interdisciplinary investigation to reveal biases, inconsistencies and foster action for soil conservation

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# There are many metaphors to talk about soil

Metaphors are often only suggested

Need for development to understand how metaphors act

A series of interviews with researchers dealing with soil

- in France and in Senegal
- from different disciplines

Metaphors of each group

- provide insights on soil issues
- leave in the dark some aspects of soil reality

➤ Metaphors influence research and policy recommendations about land management

# Soil as a heritage to be protected and transmitted

The result of accumulation and transformation of organic matter

- Short term: a bank account

Overexploitation would lead to a degraded soil, like an overdrawn account

Measurements and calculations of carbon, the 4/1000 Initiative

- Long term: a historical monument

An ancient construction to be preserved: 1cm soil requires several hundred years

Can be destroyed quickly by aggressive agricultural practices

Main limit: ignore the living aspect of soil.

# Soil as a reactive body or an organ

Highlights the vital aspect of the soil, the matrix of all life on Earth

- Soil as a living body

Old metaphor, still used and now renewed

Has a personality

Needs diversified food as well as clothing

Generating a better understanding of the functioning of the soil, creating empathy

- Soil health

An emerging property of complex systems

Measure the functions of the soil

# Soil as a multitude of different communities

- A house
- A city
  - Interactions of communities, network
  - The nematode as the bus, with preferential paths, buildings, material reserves...
- A village
  - Human and non-human communities
- Different human cultures
  - The value rests on the coexistence of those different communities that are co-creative

The different telluric communities may be better able to adapt than human

# First results

Metaphors complement each other, sometimes overlap

Soil as a living body complements soil as a heritage

A heritage could be a monument housing a multitude of communities

Interdisciplinarity

Researchers from different disciplines share their knowledge on soil and grasp the limit of what can be explained by only one metaphor

➤ We need a plurality of metaphors

Interdisciplinary workshop

# Method

For a given metaphor, we propose to invite soil scientists together with experts about the image used for the metaphor.

For example, for soil health: soil scientists & human health experts

# Objective

- Enrich the metaphor and raise new questions
- Broaden the scope and help to think « out of the box »



# Workshop on soil health

With 2 soil scientists

- A microbiologist: Alain Brauman (IRD)
- A pedologist: Rabbah Lahmar (CIRAD)

For human health

- An immunologist: Leila Perié (Institut Curie)
- A mid-wife: Donata Hoesch (University College London Hospital)
- A nurse and anthropologist: Sylvie Demoulin

# Comparing the actors

## Of human health...

- The individual himself, how he reacts and cures himself
- People around
- The physicians
- The nurses...

## and of soil health

- The soil, how she reacts and cures herself...
- Life in the soil
- The tree?
- The micro-organisms?

# The cultivated soil as a pregnant woman

A dialogue between a mid-wife and soil scientists

A pregnant woman

- In full health
- Mental well being fundamental
- Need for continuity of care

A cultivated soil

- In full health
- Needs to express herself and to be listened to
- Need for continuity of care

**The high level of pressure** of midwives and peasants are comparable and makes them **unable to fulfil their mission of care entirely.**

➤ **« Bottom up » process is required to improve protection**

# A major interdisciplinary challenge

The relation between soil and human health

30 % of new infectious diseases are caused by land use change (IPBES, 2020)

- An invitation to look at the coherence of the policies  
for health and soil

# Second results

## **Revealing inconsistencies**

Incoherence in the policies are striking

- Lack of prevention for both human health and soil
- Neglect of the impact of soil degradation on human health

## **Foster actions, both**

### **– At a global level**

require a central role for soil health in all global health programs

### **– In bottom up processes**

look at the actual situations of peasants, to understand the pressure that they face, and suggest solutions for soil preservation that could help to release their difficulties

# Metaphors are like...

- Mushrooms in the forest
- Spotlights on a stage

Metaphors use for interdisciplinarity is like gymnastics

Flexibility: ability to combine research from different disciplines

Strength: capacity to change paradigm with deeper metaphorical exploration

Thank you for your attention

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