

# SOIL METAPHORS for inter- and transdisciplinarity

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**WE INVITE YOU TO CONTRIBUTE TO OUR COLLECTION OF SOIL METAPHORS BY SHARING YOUR METAPHORS ABOUT SOIL (YOUR OWN OR THOSE YOU KNOW)**

## A plurality of metaphors in science to share insights and reduce biases

A metaphor is a linguistic process used to understand one thing in the terms of another. It is a mental image. We can use a metaphor to explain your research or your results, or to help us think about things we don't yet know. Metaphors are great tools for research, not only rhetoric but also cognitive tools (Jamet 2003, Flannery 2009, Taylor and Dewsbury 2018).

A metaphor sheds light on certain dimensions of the reality it describes and masks others (Lakoff and Johnson 1980). The use of metaphors is frequent in science (Castellane and Paternotte 2018). It is little recognised by scientists, who tend to be wary of metaphors or even to be unaware that they are using metaphors. Others stick to a single metaphor, forgetting this image has limits in its analogy with reality (Perié 2014).

Therefore, we promote a plurality of metaphors and a kind of awakening of metaphorical mindfulness, about their influence on perception and their heuristic power.

We are collecting metaphors about soil in order to understand it better. By gathering elements of understanding about soils, we are aiming for a more complete knowledge of soils and proposals against its degradation.

## Examples of soil metaphors

### A battery

In his publications about soil pH and Redox, the agronomist Olivier Husson compares the soil to a battery recharged by plants, which act as solar panels

### A road

Zimbabwean farmers who met for a focus group discussion, told the soil is like a road that takes one to a desired destination

### A granary

In Senegalese agroforestry where the soil has been described as a granary, the tree is a pillar, which ensures the solidity of the construction depending on the spacing of the pillars. And the fallow period is the time needed to repair, build or rebuild the pillars

**ARE YOU AWARE OF METAPHORS IN YOUR RESEARCH? WHAT SOIL METAPHORS HAVE YOU USED OR COME ACROSS? HOW DO YOU LOOK AT SOIL OR LAND?**

FOR EACH METAPHOR WE WOULD LIKE TO SPECIFY WHERE IT COMES FROM (SOMEONE OR SOME PLACE IN PARTICULAR, A CULTURE, A SCIENTIFIC DISCIPLINE...), WHAT IT TELLS ABOUT SOIL, WHAT IT MASKS OR ELUDES.

## Why do we collect metaphors

Soil is at the crossroads of several disciplines and the focus of multiple policies affecting farmers. Soil is a complex and polysemic subject underpinned by a multitude of dynamics of different natures interrelated at different scales (Meulemans & Granjou 2020). Soil degradation, which interacts with these dynamics, is driving the increasingly urgent call for change and transformation.

### A need for deliberative process to prevent soil degradation

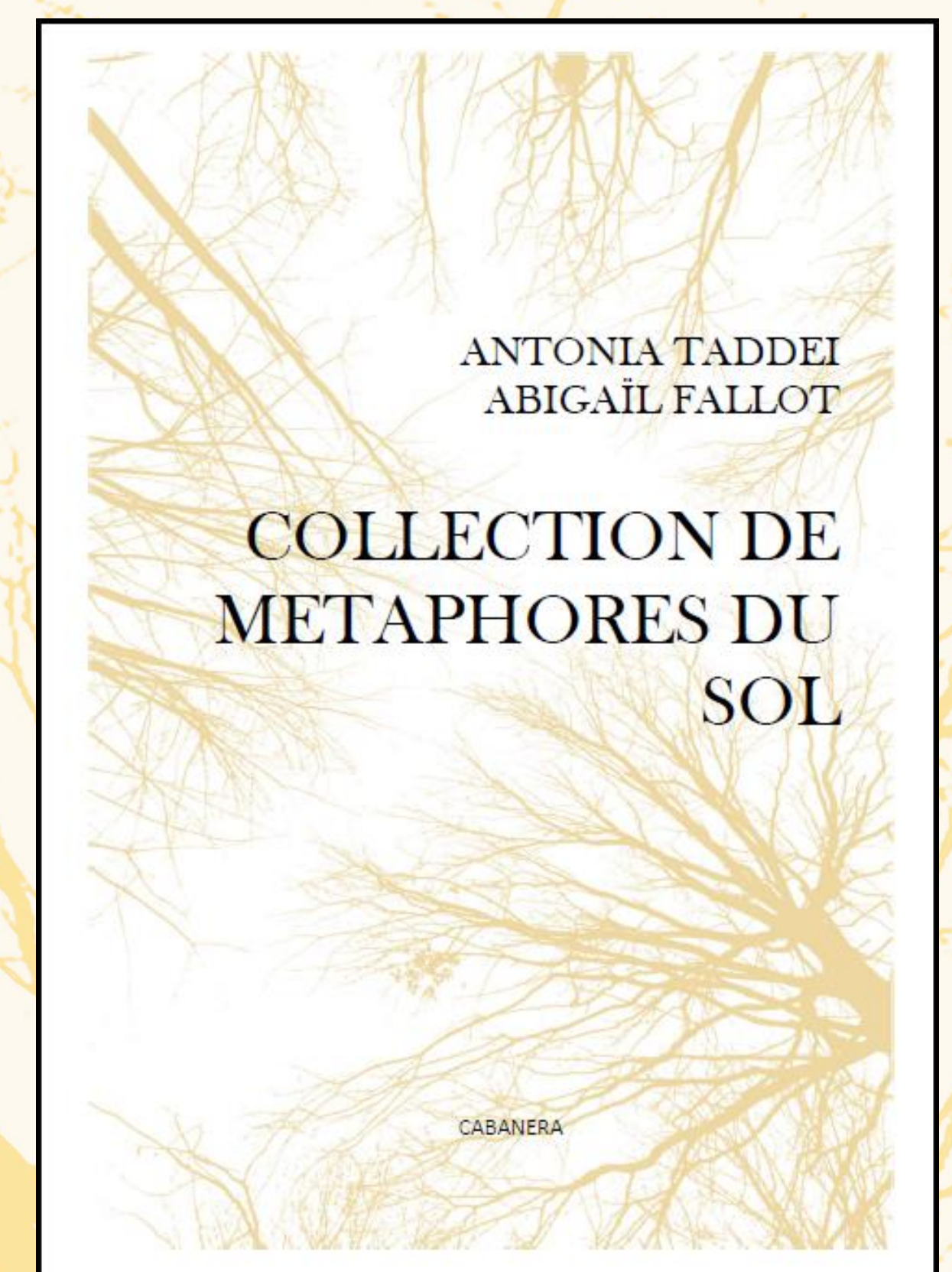
The implementation of such change requires 'breakthroughs' at several levels and the decompartmentalisation of expertise. Yet dialogue and understanding between different scientific disciplines and between researchers and practitioners such as farmers, are still often limited by a lack of interest, resources or arena in which to meet.

In this context, a metaphor can be a tool for dialogue as it 'speaks' to different audiences.

Our goal is to improve the practice of metaphors in science, to:

- write and discuss with peers
- help the creative research process
- facilitate multidisciplinary dialogue
- stimulate exchanges between science and society
- thinking about change (Inayatullah 1998)

**Exploring metaphors as mental images to be shared and investigated can feed a deliberative process amongst stakeholders with different visions, knowledges and sciences (Taddei & Fallot 2023)**



**Book in French**



**Booklet**

**'Metaphors to share knowledge about soils'**  
Workshop on the role of trees and fallows in Diohine on May 25<sup>th</sup> 2023'

## The context

DSCATT research on the dynamics of soil carbon sequestration articulates measuring and modelling at several nested scales (plot, farm, landscape) with a deliberative approach (Degeling et al. 2015).

We conducted a survey to identify the many metaphors used to describe soils and their ecosystem services.

After collecting metaphors in the scientific literature and its communication, we explored these metaphors in greater depth by interviewing soil researchers.

It confirmed the importance of cultivating a plurality of metaphors in order to integrate the different points of view.

In Senegal (Diohine) and in Zimbabwe (near Murewa), we presented the metaphors used by the researchers to farmers and found that they immediately appropriated the metaphors to represent issues relating to the concrete challenges of soil degradation that they encountered.

When the farmers presented their own metaphors, this revealed some of the underlying cultural representations that influence their visions of soil.

With now more than 150 soil metaphors that we grouped into several sets (heritage, living being, communities, source of knowledge...), our search continues and aims to involve scientists and farmers in an active process where mental images can be co-constructed in dialogue.

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