

Perception of soil by society

Christian Feller (France), chair of IUSS Division 4, 2014-2018

Nikola Patzel (Germany), chair of working group

“Cultural patterns of soil understanding”



International Union of Soil Sciences

More than 90% of humanity's food depends on fertile soils. Its importance for humankind is equal to air and water, but much less perceived and known by modern human societies. Soil-plant systems provide terrestrial ecosystems with water household and climate regulation, and with many remedies for the whole food chain.

The word “soil” is often perceived rather as a technical term, whereas people are more touched by words like earth, ground, land, dirt, etc.

If scientists want society to care more about the soils of the earth, ways of communication are needed which integrate scientific and cultural knowledge, outer facts and inner images, in an appealing and respectful way.

But what is the perception of soil by society? Some major societal framings of soil perception are:

- *Ecological*: The great pioneer of soil science (pedology) Vasilii Dokuchaev considered soil as a “natural body”, that is, a natural entity (or system) at the interface of air (atmosphere), water (hydrosphere), rock (lithosphere), and life (biosphere), created by soil life and chemo-physical forces fueled by sun energy. This is the “soil” of most soil scientists, agro-ecologists etc. It is the role of scientists to try and share soil ecosystem science with society by using simple words. Teaching such soil knowledge from primary school to university is very important, and farmers, NGOs, politicians and other decision makers are most important partners and have to be addressed in ways which acknowledge their standpoints and knowledge, their languages and concerns.

- *Economic*: Soil as a production factor. Generally, from this functional perspective soil is mainly valued for its productive potential (agriculture and forestry) in terms of output and money, for its “surface” value with regard to urban development or transport (soil sealing!) etc. In this view, all benefits which don't show immediately on the economic balance, and that holds true for most “ecosystem services”, are generally neglected. These factors have to be internalized into the economic balance, in order to prevent soil depletion and destruction.

- *Cultural*: Soil as a cultural entity. In all societies around the world, soil is perceived in a cultural context. This is a symbolic web of meaning given by religious and secular myths and beliefs, which also act as (positive or negative) orientational knowledge for human soil relation. “Mother Earth”, “Holy Mary”, Adam and Eve “created from soil”, “soil as a vessel for plant nutrients” are examples for that. Cultural perceptions can be in line or in conflict with scientific views as well as with “development projects”. The symbolism of “tilling” vs. “no till” is an example, the often strong connotations of soil with “dirt” or even “death” are others. If soil communication is to succeed, it has to outweigh “dirt” by the “wonder beneath our feet” Not only certain farmers, also artists can be allies in that perspective, and ambassadors for soil.

Soil scientists need to talk about soil with society also as a discourse on culture, and considering all mentioned factors. Their task is not only to produce specific types of knowledge, but also to deal with different sources and types of knowledge. The learning about soil, and extending soil awareness and care, can only work through dialogues.