



### **Value of soil biota**

Natural capital can be defined as the world's stocks of natural assets, including geology, soil, air, water and all living things. It is from this natural capital that humans derive a wide range of ecosystem services that make human life possible. Ecosystem services provided by soil organisms have been presented in previous Gold Nuggets. With financial capital, when we spend too much we run up debt, which, if left unchecked, can eventually result in bankruptcy. With natural capital, when we draw down too much stock from our natural environment we also run up debts which need to be paid back. Poorly managed natural capital becomes not only an ecological liability, but also a social and economic liability. **Ultimately, nature is priceless.** However, it is not valueless and there are many studies around the world that have tried to estimate our natural capital in financial terms. Since it is difficult to assign a precise economic value, different kinds of values can be assigned to soil biodiversity.

Many of the ecosystem services identified by the Millennium Ecosystem Assessment are driven by the soil biota, often resulting from the interactions between organisms or groups of organisms within the soil. Efforts have been made to place a monetary value on such services to give an indication of the cost that we would face should we have to perform these services ourselves. However, such efforts tend to overlook the fact that the vast majority of the services do not occur in isolation, but rather are intertwined, with some organism groups performing several different services, and many of the services culminating as the output of the interaction between several different groups of organisms. Soil-based ecosystem services are vital for our continued existence on Earth; without them we could not survive. Therefore, the value of such services is, for all intents and purposes, infinite. Here we focus on the value of soil biodiversity, which includes economic value but also covers a much wider scope. Soil biodiversity and its associated ecosystem services can be valued in different ways depending on the perspective from which they are considered, including the following:

- functional value. This relates to the natural services that the soil biota provides, the associated preservation of ecosystem structure and integrity and, ultimately, the functioning of the planetary system through connections with the atmosphere and hydrosphere.
- utilitarian value (i.e. 'direct use'). This covers the commercial and subsistence benefits of soil organisms to humankind.
- intrinsic value (i.e. 'non-use'). This comprises social, spiritual, aesthetic, cultural, therapeutic and ethical benefits.
- bequest value (i.e. 'option' or 'serendipic'). This relates to planetary functions for future generations. It concerns the unknown. The idea is that there is value in not depleting soil biodiversity so that future generations can benefit from the services it provides. This is true in terms of the ongoing survival of humans on Earth.

*To be continued...*

*Soil Lovers say: **Keep Building Your Soil Biodiversity***

Ref: A Global Atlas of Soil Biodiversity p114

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