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Dirty, not sexy: soils are in need of attention

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Bonn, 3 December 2012. Lo and behold, it's World Soil Day! So what? While the point of World AIDS Day (1 December), World Blood Donor Day (14 June) and International Women's Day (8 March) is more or less self-explanatory, the inflationary proclamation of world days, international years and UN decades is often greeted with no more than a shrug or a tired smile. Though aware of this, on 5 December the Food and Agriculture Organisation (FAO) is for the first time celebrating World Soil Day, hitherto observed only by soil scientists, and wants it recognised as an official United Nations world day.

Soils lack a lobby

In this way the tremendous importance of soils for human welfare is to be brought to the world's attention and tribute paid to the fact that healthy soil is, in the truest sense of the word, an indispensable basis for sustainable development. This notion is in fact far less trite than it might at first appear, since, unlike agriculture, mining companies or the construction industry, soil does not have a significant lobby in the political and commercial worlds. On the contrary: we take soils as much for granted as the air we breathe. This is precisely the problem to which World Soil Day is meant to draw attention. Contrary to the common perception, soil is not as abundant as "the sand of the sea": unlike the air we breathe, it is not only finite, but even scarce. And pollution, erosion and sealing are making it scarcer by the day.

Only in theory is soil a renewable resource: two centimetres of good, humus-rich soil take about 500 years to develop naturally. Human soil consumption is far more rapid. According to FAO figures, 24 billion tonnes of fertile topsoil are lost each year. That is more than three tonnes per capita of the world population! The UN Environment Programme (UNEP) estimates that soil ero-

sion alone results in the loss of up to five million hectares of agricultural land a year, which is equivalent to the area of Slovakia or the states of Vermont and New Hampshire taken together. Even though scientific estimates of the scale of global soil degradation vary with the method used, it is generally agreed that it is advancing rapidly throughout the world. In short, not only are we literally standing on soil: we are metaphorically treating it like dirt.

Entirely as a matter of course we are building more and more houses and streets, factories and shopping malls, planting and harvesting our basic foodstuffs and grazing our cattle on the soil of which our land consists; we drain it and pollute it with fertilisers, pesticides and toxic chemicals; and not least, we dig it up in search of precious natural resources. By now it should be clear that soil is neither dirt that can be easily replaced, nor is it in plentiful supply. What are known, not without reason, as "rare earths" – which include the elements gallium, indium, germanium and scandium, all important for high-tech industry – are perhaps the clearest example of this. The demand for these materials will far outstrip supply for the foreseeable future. In the global competition for these increasingly scarce and expensive raw materials, environmental and developmental considerations play virtually no part compared with hard-headed economic interests.

Critical link in the water-land-energy nexus

The direct relevance of soil to development becomes far more obvious as soon as its importance for global food security is considered. As the population of the world continues to grow, the fight against hunger and malnutrition calls for rising agricultural production, and fertile soil is an imperative for high-yield agricultural production. Any expansion of agricultural land – as through

the current dynamic conversion of rainforests and wetlands – must be ruled out, however, if only because of the need to protect the climate and biodiversity. The globally growing demand for food should therefore be met through the more intensive farming of the agricultural land already available. Accomplishing this without permanently damaging or destroying the necessary soil is thus one of the main challenges for future agricultural and development policy. A sustainable solution is hardly likely to be found unless agricultural products are used more efficiently and dietary habits change, especially in the industrialised countries and in the dynamically growing global middle classes.

The quest for sustainable problem-solving approaches does not become any easier when it is also realised that soil plays a functional role as a link between water and land resources and that the water-land-energy nexus gives rise to competition for land use. The growing demand for biomass sources and the consequent focus on the question “food or fuel?” are but one example of this. Complex interactions with biodiversity and climate change are another. They are evident from the frequently overlooked contribution that soils make to the conservation of important ecosystems, which form habitats for innumerable species

of flora and fauna, especially microorganisms, whose existential importance for such ecosystem services as soil fertility and water treatment is at best a matter of conjecture. Healthy soil also binds large quantities of carbon, which would otherwise escape into the atmosphere as a greenhouse gas in the form of carbon dioxide or methane. It is thus hardly surprising that the recognition of soil as a carbon sink is a highly controversial ongoing issue at the international climate negotiations.

Former German Environment Minister and UNEP Executive Director Klaus Töpfer has talked of a time bomb, given the dramatic global loss of soil. On his initiative, more than 400 representatives of the sciences, civil society, politics and development cooperation from 65 countries gathered in Berlin in late November 2012 for the first Global Soil Week. Its avowed objective was to raise public awareness of the irresponsible treatment of the Earth’s soils and to place soil protection and sustainable land use higher on the international political agenda. The soil lobby is thus beginning to become organised. Even if it succeeds in bringing the political decision-makers down to earth from the declarative heights of disappointing summit meetings, a great deal will still need to be done to ground the implementation of the global sustainability agenda.



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