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Status quo: A SRI LANKAN PERSPECTIVE OF SOIL BIODIVERSITY

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Soil is the prime habitat of the world's biodiversity. Soil biological communities play an indispensable role in various soil functions providing a driving force to enormous number of soil-based processes. The diversity of these soil based processes provide the basis of the functions required in past, present and future. However, in contrast to the other habitats, water and air, soils have long been ignored. Soils contain a very high, but mostly unknown biodiversity, and soil biology remains as a less traversed topic among the scientific community, let alone the general public. However, with the available evidences, scientists are in the opinion that most soil inhabiting biological species are yet to be identified. Further, there are also gaps in the knowledge and lack of awareness about the relationships among soil, soil organisms and ecosystem services. This invaluable resource is threatened by a number of anthropogenic activities such as agriculture and other intrusive developmental processes which have led to degradation and erosion, contamination, overexploitation, the impacts of these activities are easily to be seen in our own country and all over the world. This has been leading to irrecoverable changes to the country's climate patterns which in turn deplete the soil biodiversity. Thus, soil biodiversity is passing a stressful situation in large parts of the island and in certain areas it is in the verge of decline.

The Convention on Biological Diversity has recognized the importance of soil biodiversity and, in 2006; it adopted the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity. Since soil plays a vital role in the fundamental processes of life on planet Earth, similar to the water and carbon cycles, ecosystem management activities (such as sustainable agricultural practices and soil management) could help to achieve the national ambitions set by the Framework Convention on Climate Change, the Convention to Combat Desertification and the Convention on Biological Diversity.

The formation and variation in the climate system of the planet earth are not new and it is a continuing process since the birth of the earth. These variations have been transforming the earth into a habitable condition in the earth for millions of life forms. The distribution of biota on the planet is led by the climate and it is evident from the current geographical distribution of plants and animals of the world. It is obvious that climate of our planet is not static and is naturally changing with its own pace. Under this condition, the cycling of material and energy has been maintained in an equilibrium for millions of years. However, immergence of man, expansion of his knowledge and activities has directly or indirectly affected the natural phenomena of cycling of materials and energy equilibrium has shifted drastically which causes unexpected changes in the climate system which is referred to as climate change or global warming. Climate change, as scientists believe, reduces the biodiversity through changing the habitat conditions of particular organisms and favoring the other. The knowledge of the above ground-biodiversity has been well- documented and belowground biodiversity has received little attention form the world scientists. The soil is the major substratum which is rendering benign service to the biota. However, knowledge on the relationships between the changing climate and the soil biodiversity is yet to be understood. Soil organisms perform a variety of functions leading to soil physical and chemical properties which are crucial in maintaining a healthy soil.

The change in the climate undoubtedly changes the soil environment making it unfavorable for living organisms and soil becomes dead. Dead soil supports no life. Preserving this precious resource with its biodiversity will secure the food supply to the ever growing population of the earth, meanwhile creating a habitable substratum for all living organisms in the world.

The national symposium on the soil biodiversity organized by the Biodiversity Secretariat (BDS), Ministry of Environment and Renewable Energy will, no doubt, give an opportunity to explore the knowledge on the soil biodiversity and identify the gaps in the knowledge on the soil biodiversity in the Sri Lankan context and expand the awareness of the present situation of the soil biodiversity.