

Soil Biodiversity and Its Security: A Holistic Approach

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SOIL biodiversity and its security are important global issues nowadays. These issues have a great concern day by day under the changing universe. This significant concern comes from the relation between soil biodiversity and its security and soil productivity on one side and the global food crisis on the other hand. Therefore, great initiations have been adopted by some scientists like Diana Wall, Rattan Lal, Alex McBratney, Damien Field, Cristine Morgan, Lorna Jarrett, Johan Bouma and Andrea Koch. These initiations have resulted in the Global Soil Biodiversity Initiative and the book entitled "Global Soil Security". As well known, several serious environmental challenges face the humanity including the security of food, water, energy, climate changes and protection the global biodiversity. So, the journal of Environment, Biodiversity and Soil Security (EBSS) has been issued. This journal is an attempt to highlight on these environmental challenges and the suitable solutions seeking for a sustainable development.

Keywords : Soil biodiversity, Soil security, Global issues, Environment.

Introduction

Why Soil biodiversity and its security?!

No doubt that, the agroecosystem including soil, water, air and plants (or crops) is the main target for getting the enough food for the entire universe. These foods are mainly depends on the security of soils, water, energy and environment. Therefore, the scientists and researchers are needed to focus on the old and new dimensions for both soil security and biodiversity. The clear evidence for the importance of these global issues represents in establishing many global initiations such as Global Soil Biodiversity Initiative (<https://globalsoilbiodiversity.org/>) by Diana Wall, the first and the 2nd Global Soil Security Symposium (Texas A & M University, 19-21 May 2015 and Paris, 5-6 December 2016, respectively), and the publication of the wonderful book "Global Soil Security" by Field et al. (2017).

It is worth to mention that, the main target of all previous securities involves how to provide all population worldwide with enough, proper and

safe food, water, energy (Koch et al. 2012; Bouma and McBratney 2013; Koch et al. 2013; McBratney et al. 2014; Carré et al. 2017; McBratney et al. 2017; Field 2017; Lewis et al. 2017; McCarl 2017; Murphy 2017). Therefore, the soil security has defined based on the the rationale (McBratney et al. 2017), the soil dimensions (Field 2017) including the soil capability (Bouma et al. 2017), the soil condition (Lewis et al. 2017), the soil capital (McCarl 2017), the connectivity (Carré et al. 2017), and finally the codification (Koch 2017) as well as the securitisation (McBratney and Jarrett 2017). Soil security can be defined as "the maintenance and improvement of the world's soil resource to produce food, fibre and fresh water, contribute to energy and climate sustainability and maintain the biodiversity and the overall protection of the ecosystem" (McBratney et al. 2017). From this definition, a very clear link between soil biodiversity and its security could be distinguished.

Because of the soil is the main source for food, feed, fibre and fuel production, both soil

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and agriculture must be reconnected together to achieve different needs of the humanity. At the same time, there is an urgent need to enhance as well as to sustain the agricultural productivity, mitigation of global climate changes, restoration the soil and water resources quality and improvement of the global biodiversity (Lal 2008, 2009; Lal et al. 2016; Koch 2017). As reported by McBratney et al. (2014), soil security depends on the previous global environmental problems or challenges (security of water, food, energy, the abatement of global climate changes, global biodiversity protection and delivery of ecosystem service) through the main functions of soil including (1) the production of biomass, (2) storing, filtration and transformation of substances and nutrients as well as water, (3) acting as a carbon pool, (4) acting as a biodiversity pool, (5) acting as a physical and cultural environments, (6) acting as a source of raw materials, and (7) archiving of the geological and cultural heritage (McBratney et al. 2014). From these previous soil functions, a direct or indirect link between soil biodiversity and its security can be found and soil biodiversity should be considered one of the most parts of soil security.

Therefore, this journal will be a new window for the serious ideas and novel solutions for the security of both soil and the environment as well as their biodiversity.

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