1st October, 2018

Sub: Global Food and Nutritional Security

Dear Fellow Soil Scientists,

FAO (2018) report "The state of food security and nutrition in the world" indicates that the prevalence of undernourishment (PoU) increased to 821 million in 2017 compared with 804 million in 2016 and 795 million in 2015. Further, PoU affects -21% (>256 million people) of the total population in Africa and 5.0 % in South America. Almost 300 million people are prone to undernourishment in South Asia, of which about 200 million are in India. Between 2005 and 2017, PoU has ranged from 24.3% to 23.2% in sub-Saharan Africa, 21.5% to 14.8% ibn South Africa, and 9.1% to 6.1% in Latin America and the Caribbean. In contrast, adult obesity is also worsening and increased from 11.7 % in 2012 to 13.2 % in 2016 and affecting 672 million people in the World. An inadequate access to healthy/nutritious food contributes to undernutrition and obesity. There exists a direct link between soil health (soil quality and functionality) and healthy nutritional status of the food (plants, animals) grown on it. However, Effect of soil properties on human health can be both positive and negative. The widespread problem of soil degradation and desertification, affecting almost 23.5 % of the Earth's land area, is widely considered to be an important cause of the problem of human malnutrition. Above all, a large proportion of the world population is also prone to hidden hunger, or more than one form of malnutrition. A healthy food grown on agricultural soils must contain seven macro-elements (Na, K, Ca, Mg, S, P, Cl) and seventeen micro-elements (Fe, Zn, Cu, Mn, I, F, B, Se, Mo, Ni, Cr, Si, As, Li, Sn, V, Co). Human food produced through plants and animals grown on nutrient-poor soils is deficient in these essential nutrients and adversely affects human health and wellbeing. Therefore, bioavailability of these elements must be enhanced in soils of agroecosystems through judicious management of soil physical, chemical, biological and ecological properties. Eco-nutrition, another relevant strategy towards enhancing the nutritional value of food produced on soils, is based on the concept that there exists a strong link between the health of soil and human on the one hand and environmental health and economic development on the other. Therefore, improving soil health through restoration of soil organic matter content by integrated soil fertility management can also enhance micronutrient, vitamins, and protein contents through bio fortification in the soil-plant–animal-food systems. William A Albrecht, president of the soil science society of America in 1937, stated "**unless America makes a concerted effort to restore the health of the soil, it will suffer a slow extinction from the 'hidden hunger' of mineral–poor foods.**" John Alexander (1952) opined "**the fact is, there is only one major disease- and that is malnutrition.**"

Sincerely,

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