The Bio Geosystem Strategy for Sustainable Irrigated Agriculture in Africa

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Abstract

The concentration of the soil solution is ideal for plant nutrition, and the stomatal apparatus of the plant is in a mode of regulation where there is no excessive transpiration, evaporation, or percolation of water from the soil root zone. By incorporating nutrients and soil-structuring materials such as dispersed industrial, agricultural, and biological waste, biochar, waste from the gasification of biological products, etc. into the soil, waste recycling is provided during the milling processing of the soil's illuvial horizon and intra-soil pulse continuous-discrete watering of plants. The bio-geosystem strategy is promising for agriculture, horticulture, viticulture, forestry, the spread and stability of the biosphere, the production of food, raw materials, and renewable biofuels. It also provides long-term stable high productive soil evolution, freshwater conservation, environmentally safe waste recycling, and expanded high-rate biological carbon phase in the biosphere. This review examines the adoption of the bio-geosystem strategy how effective it can be adopted to improve irrigated agriculture in Africa.

Keywords: Intra-soil milling processing, soil-structuring, bio-silicification, irrigation, plant nutrition