

Sustainable Intensification for Resource Conservation

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The term 'sustainability' is gaining wider recognitions due to an urgent need of resource conservation and its availability in present and future without affecting environment. Today, the practices of intensive agriculture destroy land sustainability, soil quality and health of biodiversity. High intensive use of chemical fertilizers and heavy mechanizations in agroecosystem affects the land and crop productivity. These practices not only destroy the health and productivity but also affect natural resource availability. Burgeoning populations necessitates global food requirement that leads to agricultural land expansions and intensive agroecosystem practices. These intensive practices and agroecosystem expansion leads to other resources depletions. Deforestation, illicit felling of timber, logging, industrial development, mining and other unsustainable land use practices affects our natural resources. Forest and soil are important natural resources that are interdependent to each other. There is a great links exist between forest and soil that makes a better ecosystem and environment [1,2]. No doubt, intensive agriculture enhance food productions but at the cost of environmental health. In this context, one question triggered my soul "how intensive land use practices affect environmental sustainability?" There is a two school of thought, first Intensive agricultural booms food productions but negatively affects our environment.

In this context, a sustainable and ecological oriented land use system systems such as agriculture, agroforestry, horticulture etc. minimize resource depletions along with environmental sustainability. "How sustainable intensification ensure resource conservation and ecological stability?" No doubt, various practices such as sustainable forest management (SFM), sustainable agroecosystem practices (SAP), and sustainable soil management practices (SSM) promise soil-food-climate security [3-5]. Climate smart agriculture, conservation agriculture, no-tillage practices, cover crop and mulching practices promotes soil and other resource

conservation. These practices enhance soil fertility by litter additions and its decomposition under the presence of soil inhabiting microbes. Integrating leguminous nitrogen fixing trees in agroecosystem maintains soil fertility, health and quality [6]. Thus, soil fertility enhancement, healthy rhizosphere biology, efficient and close nutrient cycling, resource use efficiency, nutrient availability, soil-water conservation and climate change mitigation are possible under sustainable based land use practices. Therefore, sustainable intensified agroecosystem maximize plant biodiversity that intensify ecosystem services for long time. These practices ensure higher productivity and profitability (for farmers) that make a pave for achieving the goal of sustainable development. A sustainable agroecosystem practice minimizes greenhouse gases emissions and makes a carbon balance into the atmosphere. Climate smart agroecosystem practices maximize biomass productions and carbon availability into the vegetations and soil as SOC pools [7,8]. Thus, a policy and good governance must be framed to promote sustainable land use practices and make awareness among farmers to adopt these practices for healthy environment. It is now clear that there is great synergy exist between sustainable intensification and resource conservation that ensure environmental sustainability and ecological stability.

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