



FROM THE DESK OF RATTAN LAL
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Sub: **“Sustainable Intensification: Producing More From Less”**

Fellow Soil Scientists,

With ever increasing demand for delivery of essential ecosystem services, there is a strong need for protecting and restoring the finite soil resources. Rather than bringing new land under agricultural production, by conversion of forest and savanna/steppes into agroecosystems, alternative options of meeting the global food demand which must be considered are the followings: reducing waste (30-40% globally), increasing access to food by addressing poverty and social/political issues, improving distribution, promoting the use of plant (pulse)-based diet, and enhancing agronomic production from existing lands. It is critically essential to **improve** agronomic production from land already appropriated for agricultural uses, **restore** degraded soils, and **enhance** the use-efficiency of inputs (e.g., water, nutrients, energy) through adoption of conservation-effective measures. Using options of sustainable intensification (SI) and restoration of soil health can spare agriculturally marginal lands for nature conservancy. The average cereal yield of 1 Mg/ha per year, in developing countries with predominantly extensive agroecosystems, can be easily tripled or quadrupled with adoption of recommended (proven) management practices. However, the strategy is to **reconcile high productivity with improved environment quality**. It is in this context that the term SI implies **“producing more from less.”** In practice, SI means producing more crops from: less land, less water, less input of amendments (fertilizers, pesticides), less use of energy, and less emission of greenhouse gases (especially N₂O and CH₄). The strategy is to minimize losses and enhance the use efficiency of essential resources (e.g., water, nutrients, energy). With adoption of SI, and judicious use of water and nutrients, it is possible to produce enough cereals from 500 million hectare (Mha) and pulses (legumes) from 250 Mha of croplands to meet the food needs of the present and future population. The goal is to protect, use, improve and restore soil resources both for human wellbeing and nature conservancy (e.g., other species which share the planet Earth with us). As Mahatma Gandhi said, mother Earth has enough for everyone’s needs, but not for everyone’s greed.

Sincerely,

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