

ISBN: 978-93-87973-28-2

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Need Based Sustainable Agricultural Production

Bishnu Prasad Mishra¹, *Banashri Rath and Aamlan Saswat Mishra*

SOET, **CUTM, Paralakhemundi**-761211, Odisha, India
Email: dean.soet@cutm.ac.in

Abstract

Never ending additional need of farmers have forced them to grow more cash crop along with crops used for the staple food. The prime crops as per the food habit, social need has to be produced in the respective locality. The micro planning for agricultural and food production has to be planned for different blocks of a district to meet above needs. The production planning has to be simulated first and programmed for trial production. After successful trail, the same has to be replicated in larger area. Mathematical model development approach is one of the solutions to predict the need of the people and plan production depending on the availability of the input materials like natural resources and other inputs. In addition to this food and nutrient security for the people living in those different areas are very important in present context. Global population is growing fast with 1.2% per annum. Feeding these people increases the responsibility of farmers for growing more crops without considering the soil health. Improper crop sequencing has resulted in imbalance in soil nutrient which results in unsustainable production of forth coming crops. Only crop rotation cannot address sustainability issue. Considering the environmental factor, social and economic factor of the area the crop production model must be prepared and implemented. Multiple goals with many constraints are the situation of sustainable crop production simulation. Judicious use of natural resources for crop production as per the need for survival of people of that area with priority has been considered. GOAL program has been formulated taking the Odisha agricultural production data and solved. The nutrient and natural resources consumed to produce the agricultural produces has been computed and balance nutrient remaining for future crop has been obtained.