

BOOSTING CROP YIELD, ANIMAL HUSBANDRY ACTIVITIES AND NATURAL RESOURCES MANAGEMENT THROUGH INTEGRATED RESEARCH APPROACH FOR SUSTAINING SOCIO-ECONOMICAL STATUS OF TRIBAL FARMERS

AMARESH DAS¹, S T SHIRGIRE² & V R GHADAGE³

¹ Research Scientist, Department of Soil Science, National Agricultural Innovation Project-III,
Navsari Agricultural University, Navsari

^{2,3}Department of Soil Science, National Agricultural Innovation Project-III,
Navsari Agricultural University, Navsari

ABSTRACT

A study was undertaken in Dang district of Gujarat state (India) from 2008–09 to 2013–14 under NAIP-III with an objective for sustaining socio –economic status of tribal farmers by boosting crop yield, animal husbandry activities and natural resource management through integrated research approach covering interventions viz. use of improved/ high yielding varieties, diversification / replacement of crops, backyard vegetable farming, scientific animal husbandry, fish farming, natural resources management including harvesting and arresting rain water and their use, soil conservation, expansion of surface irrigation and introduction of micro-irrigation systems, value addition and other income generating activities. The results of various activities were compared with baseline data and in cases impact analysis was done. Pigeon- pea crop recorded the highest percent increase in yield followed by ground nut, paddy, chick pea, nagli (ragi), niger, black gram crop and gross income for all these crops significantly increased over those of initial year (2008–09). Crop diversification/ replacement with soybean, turmeric ginger and okra respectively in place of prior crops paddy & nagli, niger, paddy and vari exhibited significant increase in income. Land and soil conservation works increased area under cultivation (32.5 ha), average crop yield (17 - 22%), and soil moisture storage (19-20 %) with reduction (45 - 60%) in erosion. Use of harvested and arrested rainwater increased irrigated area (26.0 ha) and crop production around 210 kg/ha⁻¹.

The expansion of surface irrigation facility boosted crop yield around 28 - 33 % with an additional higher income of 40 - 45%. Average enhancement of net income under sprinkler and drip was Rs.4394/- and Rs 7172/-per ha respectively. Vermi-composting activity played a role in generation of additional income and reduction in use of chemical fertilizers. Increase in annual income under HF/Jersey breed cow /farmer over indigenous and local breed of cow and under Mehsana or Murrah breed buffalo /farmer over local breed were statistically highly significant (0.01 level of significance) at the end of the year 2013. Fish farming and backyard vegetable farming also proved to be income generating or household consumption sources. Sewing works by tribal girls fetched an additional income of Rs 2200 to 2500 / year / girl. Various on and off campus short and income generating trainings and exposure visits were conducted for tribal farmers / farm women and farm literature were distributed for their skill development, empowerment and knowledge enrichment. Results clearly indicated that integrated research approach including crop - production related activities, scientific animal husbandry, fish farming, natural resources management, value addition and other income generating activities were of equal importance for sustaining socio – economic status of tribal farmers of the study area.

KEYWORDS: Integrated Research Approach, Boosting Crop Yield, Animal Husbandry, Natural Resource Management, Socio-Economic Status, Tribal Farmers