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RESEARCH ARTICLE :

Functional analysis of productivity change in precision tomato cultivation in North West region of Tamil Nadu

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SUMMARY : The study was conducted in North West region of Tamil Nadu in May 2015, to investigate the technological change in tomato production in the selected two districts in Tamil Nadu using the output decomposition analysis approach. The study adopted a descriptive research design, based on a cross-sectional survey strategy. The study involved 216 sampled tomato farmers (108 adopters of the precision farming and 108 non-precision farming) using a two-stage stratified random sampling and one stage purposive sampling method involving operational areas, revenue villages and farmers. Data were collected by pre-tested questionnaire by the researcher. The Cobb-Douglas production and a modified decomposition analyses techniques were used to decompose the sources of productivity differences between the precision and non-precision tomato cultivation. Total sample size was 216. Resulted that the observed productivity difference was 46.41 per cent and the estimated productivity difference was 37.13 per cent of the precision and non-precision tomato cultivation. The total estimated difference in the productivity between the precision tomato and the non-precision tomato was 37.13. Of this, technical change contributed 34.75 per cent. The neutral technical and non-neutral technical changes revealed at 31.39 per cent contribution in the scale parameter (*i.e.*, neutral technical change) and 3.36 per cent contribution from the slope parameters (*i.e.*, non-neutral technical change). The Study concluded that appropriate extension strategies (institutional linkage) and capacity building are needed to improve the resource use efficiency of the farmers to increase productivity. Also, the promotion of technology dissemination processes should be integrated with an effective input supply and credit supply systems to enable farmers' adoption and subsequent uptake of precision farming for enhanced productivity.

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