SOCIO ECONOMIC STUDY OF THE VANATHAVILLU TUBE WELL IRRIGATION SCHEME

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ABSTRACT

The aim of this study was to investigate the functioning of a tube well irrigation system.

Field data were collected over two seasons (maha' 81/82 and yala '82). Data collection was by a structured questionnaire. Random samples were drawn from the settlers of all four tube well allotments (53) and the rainfed allottees (31).

The Cobb-Douglas production function, and a modified form of the same function with variable returns to scale, were used in analysis for individual crops as well as whole farms. Multicollinearity among the dependent variables was a severe problem, therefore these were aggregated.

Three index variables were used in analysing the Cobb-Douglas production function with variable returns to scale: Capital, labour and family labour intensity. Production relationships were estimated assuming the relationships between the index variable and the dependent variable to be linear and quadratic. When assumed to be linear, increasing the capital intensity index increased the partial production elasticity of land which resulted in greater returns to scale. When the above relationship was assumed to be quadratic there was no change in the partial production elasticities of the dependent variables. Increasing the labour and family labour intensity indices changed the partial production elasticities of the dependent variables and hence the scale returns, whether the relationship was assumed to be linear or quadratic.