

Resource productivity and resource use efficiency in pulses production on medium farm in Marathwada

MOHD. ASMATODDIN*, S.V. JAWALE, J.N. GHULGHULE AND J.B. TAWALE

Department of Agricultural Economics and Statistics, Marathwada agricultural University, PARBHANI (M.S.) INDIA

ABSTRACT

The study of resource productivity; resource use efficiency and optimum resources used with respect to various explanatory variables in pulse crops pigeonpea and green gram was undertaken on medium farm during agricultural year 2005-06 in Marathwada region of Maharashtra. The data was taken from cost of cultivation scheme Marathwada Agricultural University, Parbhani the sample of 100 medium farm size farmers throughout the zone was tabulated and analyzed by appropriate statistical tools. The result revealed that, in case of pigeonpea area and bullock labour was positive and significant at 1 and 5 per cent level, respectively. Coefficient of multiple determination was (R^2) 0.70 which indicated 70 per cent variation in independent variable, the sum of elasticity was 0.83 which indicated that decreasing return to scale. With regard to green gram area was positive and significant at 1 per cent level, the sum of elasticity was 1.01 per cent which indicated increasing return to scale coefficient of multiple determination was 0.86 which indicated that 86 per cent variation in explanatory variable.

Key words : Pigeonpea, Green gram, Production function, Resource use efficiency.

INTRODUCTION

Agricultural sector, at present provides livelihood about 65 to 70 per cent of the total population. The sector provides employment to 58.4 per cent of country's workforce and is the single largest private sector occupation. According to agricultural census (2000-01), percentage of area of medium farm to total farm in India is 25.35 per cent, in Maharashtra 32.74 per cent and in Marathwada region a land holding under medium farm is 27.7 per cent.

The geographical area of India is 329 million hectares which contributes 2.4 per cent of the world area in which 141.10 million hectares under net sown area. The geographical area of Maharashtra state is 30.76 million hectares at which 22.25 million hectare under agricultural which contributes 72.40 per cent. The geographical area of Marathwada region is 6.44 million hectares. Out of which 6.13 million hectare area is under agriculture.

Pigeon pea is one of the food legumes grown and consumed extensively in South Asia, Africa and Latin America. India accounts for about 90 per cent of world production of pigeon pea. The total production of pigeon pea in India during 2001-2002 was 2.37 million tones and area under pigeon pea was 3.46 million hectares. (Singhal, 2003).

The crop productivity is largely dependent upon the resource use efficiency. However, resource use and productivity in one or the other way are related to farm size. The relationship between farm size and productivity is dependent upon many factors like fertility, tenurial arrangement, managerial efficiency, cropping pattern, type of soil, intensity of input uses, agricultural prices, marketing

policies, and governmental policies etc. which are not under direct control of the cultivators.

Keeping these points in view the study was undertaken in Marathwada region with a specific objective *i.e.* resource productivity and resource use efficiency in pulse crops.

MATERIALS AND METHODS

Marathwada region of Maharashtra was purposively selected in order to study the farm business analysis. Multiple stage sampling design was used for selection of zone, tehsils, villages and farms. Twenty eight tehsils under the assured rainfall zone were selected from the eight districts of region because of their involvement in cost of cultivation scheme. From each cluster villages, two farmers of medium categories were selected. Thus, total 100 sample farms were selected. Data pertain to the year 2006-07. Technique like tabular analysis, budgeting technique, non-linear and multiple regression analysis, frequency and percentage method were used to analyze the data.

Strong inter-correlations among independent variables were identified for solving problem of collinearity in estimating production function. The variables which had non-significant correlation significant with respect to pigeon pea and green gram production were also dropped in estimating production function. Thus for pigeonpea and green gram seven independent variables were included in both linear and Cobb-Douglas production functions. On the basis of goodness of fit (R^2), Cobb-Douglas production function was found to be the best fit to the data to estimate the resource productivity, resource use efficiency and