

Short Communication

PADDY PRODUCTIVITY DETERMINENTS IN VAVUNIYA DISTRICT

A. SAKEELA BANU

Deputy Provincial Director Office, Vavuniya, Sri Lanka

INTRODUCTION

More than half of the world population consumes rice as their staple food and demand for rice increases with the population growth. Per capita rice consumption in Sri Lanka was 86.8 kg in 1973 and it was 116.0 kg in 2008. (www.statistics.gov.lk). It reveals that per capita rice consumption increased by 30 kg within 35 years in Sri Lanka. Vavuniya district situated in the Dry zone and accounts for 20,600 ac of paddy land of which 4,622 ac are irrigated by major schemes whereas 10,493 ac are irrigated by minor tank and the rest is being cultivated under rainfed condition (Anon, 2014). Though Sri Lanka produce rice presently at its self-sufficient level, a declining trend has been observed in extent and productivity in Vavuniya district from 2005 (Anon, 2014). This study was conducted to identify the major constraints associated with declining productivity of paddy in Vavuniya district. Both technical and socio economic constraints were considered in the evaluation.

MATERIALS AND METHODS

Eight agrarian service divisions of Vavuniya district with 24,460 farmers were selected as the study area. Sample size was determined according to Krejcie and Morgan (1970) which was 377. Farmers were randomly selected and a structured questionnaire was used to collect information by interviewing them. Number of farmers interviewed from each agrarian service division was similar. Multiple liner regression and step wise correlation were performed to analyze the influence of the crucial factors which affect productivity of paddy land. In this model the yield of paddy productivity was taken as the dependent variable and other parameters were taken as the independent variables. Minitab soft ware 15

version was used for data analysis.

RESULTS AND DISCUSSION

Results revealed that the majority of farmers in the study area belonged to the age category of 41-50 years. It may be due to the migration of younger generation either to urban area or abroad seeking other occupations as they are not willing to engage in agriculture. It was observed that young generation is of the opinion that the income from agriculture is not sufficient for a better life.

Direct contributory factors the Productivity of paddy land

Stepwise analysis was showed the association of each variable with the productivity of the crop. Extent of the non rice crop cultivated showed a positive 68% association ($r=0,683$, $P=0.000$) with paddy yield. As the non rice crop cultivated in paddy lands often represents a legume this shows the importance of having legume-rice rotation in improving the productivity of rice. Applied amount of organic fertilizers showed a 56% positive correlation ($r=0.567$, $P=0.000$) with paddy yield. This also agrees with the previous observation. The application of fertilizers urea, triple super phosphate (TSP) and muriate of potash (MOP) also showed 53%, 43% and 63% correlation with paddy yield which were significant.

Results showed that only about 32 percent of the farmers used organic manure with inorganic fertilizers. But all the farmers used inorganic fertilizers showing awareness on the use of fertilizer. However, it was also observed that no farmers were using $ZnSO_4$ despite the recent recommendation of the material. Farmers themselves feel it is sensible to use more fertilizer as it would increase yield. However, study showed that increased rates of application of urea has increased the incidences of stem borer which really accounts for yield loss instead of a yield gain.

When the negatively correlated parameters are considered, the age of farmers is one factor which shows 15% negative influence with ($P=0.002$, $r = -0.157$) the yield of paddy. It may be associated with their literacy level as only

7% percent of the farmers had tertiary education. The amount of seed paddy used is one factor ($P = 0.000$, $r = -0.607$) influencing paddy yield negatively by sixty percentage. 64% of farmers used 50-65 kg of seed paddy for an acre and 10% of them used more than 65 kg/ac and the remaining 26% of the farmers used recommended rate of 50 kg/ac. The higher amount of seed paddy usage increases the crop density and facilitates pest and disease attack and reduce the tillering rate.

Other contributory factors

It was observed that, nearly 30% of the farmers used their own seed paddy, but most of them did not have proper storage facilities. Others obtained seed paddy from their neighbours, friends and government institutions. The unavailability of proper storage facilities could also be a as that affect the quality of seeds. Most of the farmers reported that timely availability of seed material is a main problem for them to commence cultivation. Majority of the farmers depend on government farms to supply seeds as they are not confident about the quality of their own seeds.

Another factor influencing negatively is the field distance from the tank. With the distance availability of water is reduced and farmers at the channel end faced with problems of water shortage especially during *Yala* season. Field distance from the house also showed a marked negative influence on paddy yield. This may due to lack of monitoring of field frequently. Total labour used also showed 80% negative impact on paddy yield. This may due to wrong agricultural practices such as manual transplanting, unnecessary spraying and weeding.

Cost of production of paddy

Cost of production of paddy in the district shows that nearly 26% of the total cost goes for land preparation. Around 13% of the total cost is for agro chemicals and a greater portion goes for weed management. Pest and disease outbreaks are big problem in mono cropping systems. According to the survey, nearly 28% of the farmers' fields were affected by paddy blast and 14% farmers'

field had leaf blight. Stem borer in 74%, leaf folder or leaf roller in 35%, and thrips, mites and case worm were found in the paddy fields.

Credit facilities

The farming communities in the study area heavily depend on credit from institutional sources. In the study area the money lenders were owners of rice processing mills, who lent money to the farmers without interest but with an agreement to sell the harvest to them. Since the cost of cultivation is high, the farmers borrow money from private money lenders and often obliged to sell their products at lower than the market price. Although institutions such as banks provide loan facilities for cultivation, farmers were unable to utilize these services since those institutions enforce strict rules and regulations to protect them from default. And also due to the long procedures they were unable to obtain the loan on time.

Institutional Issues

Over three fourth of the farmers do not know their range Agricultural Instructors. It shows that extension service from Department of Agriculture was not sufficient. Lack of transport facilities and shortage of Agricultural Instructors and staff in Agricultural Service were the main problem encounter by the Department of Agriculture. One Agriculture Instructor was expected to cater around 3,000 farm families. It seems to be a big task to the Department to fulfil the farmers' need.

CONCLUSIONS

In this study an attempt was made to find out the reasons for declining of paddy productivity in Vavuniya district. It can be concluded that from the land preparation to post-harvest operations, each and every aspect influence the productivity of paddy. There are many socio economic factors affects the rice productivity in the district. Farmer age, their literacy rates are negatively affect the productivity while the use of fertilizers and manures positively affects the rice productivity in the district. Unavailability of flexible loan facilities for

farmers and the unavailability of proper marketing opportunities are also key issues to be addressed in this regard. Institutional problems associated with the state agencies also negatively affect the rice productivity in the district.

REFERENCES

- Anon, 2014. Statistical hand book, Vavuniya – 2014, District Secretariat, Vavuniya, Sri Lanka.
- Krejcie, R.V, and D.W. Morgan, 1970. Educational and Psychological measurement. Determining sample size for research activities. pp. 607-610.
- Peris, T.S.G, N.R. Abeynayake and M.S, Perera. 2012. Socio- economic factors affecting the technology adoption level of sugarcane in rain fed sector in Sevensgala; pp 22-27; Wayamba University of Sri Lanka.
- Sulo, T., P. Koech, C. Chumo and W. Chepng'eno, Socio economic factors affecting the adoption of improved Agricultural technologies among Women in Marakwet Country, Kenya. pp. 312 -317; Moi University, Kenya.