



 Aerobic rice; Positive externality; Methane inventory; Partial budgeting





Eastern Dry Zone of Karnataka was selected purposively because; the aerobic rice varieties were released and distributed exclusively for Eastern Dry Zone. Snow ball sampling technique was adopted for selection of sample respondents, since; it was difficult to locate ARC farmers. The snowball sampling is a non-random sampling technique wherein the initial informants are approached who through their social network nominate or refer the participants that meet the eligibility criteria of the research under study. Consequently, this strategy is likewise called as the reference testing technique or chain examining technique. Snow ball sampling technique was employed since identifying or finding potential respondents was difficult because the respondents were deviant or geographically isolated.

The sample farmers numbering, 50 were selected each practicing ARC and CRC. The sample farmers were interviewed using the pre tested and well-structured schedule to collect the required information to achieve the proposed objectives of the study. The data relating inputs use, labour use, costs incurred and returns obtained

On an average, the seed rate used was 69.31 Kg per ha in CRC, whereas, it was only 23.27 Kg per ha in ARC which is statistically significant. The CRC farms used higher FYM with 4.73 tractor load in comparison with 3.05 tractor load per ha in ARC. The expenditure on per ha use of FYM was 9,147.20 and 14,182.69 in ARC and CRC, respectively. In ARC, it was found that the expenditure on fertilizer was 4,147.20 which was lower compared to 6,056.09 incurred in CRC. Inputs like FYM and fertilizers were more intensively used in CRC whereas, ARC was highly input responsive [11].

The study revealed that, CRC was resource intensive resulting in higher

sented. The results revealed that, ARC has positive externality over CRC. It was evident from the positive net gain obtained in ARC. A positive value indicates the net gain from ARC over CRC which is considered as externality cost in Natural Resource Economics (NRE).

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The additional costs incurred in ARC include human labour for weeding (₹ 4,780/ha), manure and fertilizer application (₹ 1,255/ha) and PP chemicals (₹ 55/ha). Since, weed infestation was the problem in ARC, manual weeding was regularly carried out for better growth of crop. Absence of standing water makes it difficult to control weeds which emerge simultaneously along with crop. The manual incorporation of fertilizers along the crop stand directly into the soil incurs additional labour. The line by line chemicals application in aerobic paddy cultivation also incurs extra labour.

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