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TECHNOLOGICAL GAP IN INTEGRATED SOIL CONSERVATION PRACTICES OF KERALA*

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In our country, mismanagement of soil and water has caused serious soil erosion and consequent loss of soil fertility. The serious depletion of soil fertility as a consequence of soil erosion in the State is being fought by the soil conservation unit of the Department of Agriculture by implementing integrated soil conservation practices. But the progress of coverage of land under effective soil conservation measures is poor. Even the land brought under contour bunding works has not been covered by other required soil conservation practices, as reported by the State Planning Board (1970). Hence a study has been conducted during 1982 and 1983 to determine the extent of technical gap on the various components of the integrated soil conservation practices in Kerala.

Materials and Methods

The cultivators who possessed lands in the completed soil conservation scheme areas of the selected districts of Kerala State were selected for the study through a multi-stage sampling procedure. Two scheme areas each from Kozhikode, Quilon and Trichur districts were selected at random, having 35 selected respondents per scheme area, thus the total sample size being 210. The three components of the integrated soil conservation practices viz., agronomic, agrostologic and engineering practices were taken into consideration for the study. The agronomic practices recommended are mixed cropping, strip cropping, cover cropping and contour cultivation. The farmers are expected to adopt any one or more of the agronomic practices suited to the cropping pattern. The agrostologic practice recommended is planting of grass species such as congosignal all along the top and sides of the contour bunds. The engineering practices recommended are stone pitched contour bunding or bench terracing. The extent of technological gap in each of the component was measured by using quotients developed for the purpose.

Technological gap in agronomic practices was measured by the quotient:

$$GPAG = \frac{RAG - AAG}{RAG} \times 100$$

Where GPAG = Technological gap in agronomic practices of soil conservation.

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RAG = Recommended agronomic practices of soil conservation for the area in hectare.

AAG = Adopted agronomic practices of soil conservation for the area in hectare.

Technological gap in agrostologic practices was measured by the quotient:

$$GPAS = \frac{RAS - AAS}{RAS} \times 100$$

Where GPAS = Technologic gap in agrostologic practices of soil conservation.

RAS = Recommended agrostologic practices of soil conservation for the area in hectare.

AAS = Adopted agrostologic practices of soil conservation for the area in hectare.

Technologic gap in engineering practices was measured by the quotient:

$$GPEN = \frac{REN - AEN}{REN} \times 100$$

Where GPEN = Technologic gap in engineering practices of soil conservation.

REN = Recommended engineering practices of soil conservation for the area in hectare.

AEN = Adopted engineering practices of soil conservation for the area in hectare.

The technological gap in the integrated soil conservation practices was measured by using the composite gap quotient (CGQISCP) developed for the purpose:

$$CGQISCP = \frac{GPAG + GPAS + GPEN}{3}$$

Results and Discussion

Table 1

Distribution of respondents along technological gap in agronomic practices of soil conservation

Technological gap score	Frequency	Percentage
0	108	51.43
50	4	1.90
75	1	0.48
100	97	46.19
Total	210	100.00

Table 1 revealed that 51.43 per cent had no technological gap in agronomic practices of soil conservation, whereas 46.19 per cent of the farmers were non-

adopters of any of the agronomic practices. Partial adopters were only negligible.

Table 2

Distribution of respondents along technological gap scores in agrostologic practices of soil conservation

Technological gap scores	Frequency	Percentage
0	25	11.90
25	1	0.48
50	26	12.38
75	5	2.38
100	153	72.86
Total	210	100.00

Table 2 revealed that only 11.90 per cent of the farmers had fully adopted the agrostologic practices, whereas 72.86 per cent were non-adopters indicating a Wide technological gap in this practice.

Table 3

Distribution of respondents along technological gap scores in engineering practices of soil conservafion

Technological gap score	Frequency	Percentage
0	161	76.67
25	3	1.43
50	21	10.00
75	3	1.43
100	22	10.47
Total	210	100·00

Table 3 revealed that 76.67 per cent of the adopters fully adopted the required engineering practices. Only 10.47 per cent of the farmers were in the non-adopter group. This indicated that majority of the farmers in the scheme areas adopted the recommended contour bunding works.

When the total sample of 210 farmer respondents were categorised on the basis of their composite technological gap in integrated soil conservation practices, 49.52 per cent were found in the low gap category, 33.33 per cent in the medium gap category, and 17.15 per cent in the high gap category.

It was revealed from the study that there existed 48.369 percent technological gap in integrated soil conservation practices in the soil conservation scheme areas of Kerala. This indicates the urgent need to fill up the gap by paying more attention to the agronomic and agrostologic aspects of the integrated soil conservation practices.

Summary

The study revealed that the technological gap was high in agrostologic practices followed by the gap in agronomic practices. The composite technological gap in integrated soil conservation practices in the scheme areas was found to be 48.369 per cent.

സംഗ്രഹം

സംയോജിത മണ്ണ് സംരക്ഷണ പരിപാടികളിലെ സാങ്കേതിക വിടവിനെപ്പറ്റിയുള്ള ഒരു പഠനം കേരളത്തിലെ മണ്ണുസംരക്ഷണ പദ്ധതി പ്രദേശങ്ങളിൽ നടക്കുകയുണ്ടായി. ffffff^j(roofOc£h"d±isTD പ്രവർത്തനത്തിന്റെ ഭാഗമായ പുല്ലു വച്ചുപിടിപ്പിക്കൽ പരിപാടിയിൽ വളരെയധികം സാങ്കേതിക വിടവ് കാണപ്പെട്ടു. മണ്ണുസംരക്ഷണക്കൃഷിരീതികളിലും സാങ്കേതിക വിടവുള്ളതായി കണ്ടു. മൊത്തത്തിൽ സംയോജിത മണ്ണുസംരക്ഷണ പരിപാടികളിലെ സാങ്കേതികവിടവ് 48.369 ശതമാനമാണെന്നു തെളിഞ്ഞു.

Reference

State Planning Board, Kerala, 1970. *Soil Conservation Programmes in Kerala. An Evaluation Study.* Evaluation Division, Trivandrum.