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Original Research Article

Farmers’ perception on constraints in adoption of double cropping in Upper Brahmaputra Valley Zone of Assam

ABSTRACT

Introduction: Out of the total net cropped area of 28.10 lakh hectares in Assam, only 1.96 lakh hectares is under double cropping despite the implementation of “Mission Double Cropping” with a target fixed of covering 2.09 lakh hectares in the state. Double cropping is not a new concept in Assam, because the cropping intensity has increased to 155.81 per cent in 2013-14 from 152.29 per cent in 2012-13 (Economic survey of Assam 2014-15). However, there is still some inhibitions on the part of the farmers in going for double cropping though it gives the farmers an increasing cash flow.

Aims: The present study was conducted to identify the major socio-economic constraints in adoption of double cropping

Study design: Original Research

Place and Duration of Study: The study was conducted in Jorhat and Golaghat districts of Upper Brahmaputra Valley Zone (UBVZ) of Assam during 2016 where government programmes of double cropping are in operation.

Methodology: The study based on primary data collected through personal interview from a sample of 120 farmers. The sample was drawn through multistage stratified random sampling technique. Constraint facing index was used.

Results: The study revealed the non-availability of water supply in the crop field as the major constraint faced by the highest number of farmers during Rabi season followed by shortage of labour and stray cattle problem. Some other problems like non-availability of credit, shortage of water supply to the crop field, high fuel cost, shortage of credit, high wage rate, transportation cost etc were also reported by the study as constraints in adopting double cropping in the zone.

Conclusion: There is need to enhance awareness among the farmers to overcome their problems in adopting double cropping.

Keywords: Double cropping, socio-economic constraints, UBVZ, Assam

1. INTRODUCTION

Double cropping is the practice of growing a second crop immediately following the harvest of the first *kharif* crop, thus harvesting two or more crops from the same field in one year. Both economic and

39 environmental concerns motivate the interest in double cropping (Searchinger *et al.*, 2013; Siebert *et*
40 *al.*, 2010). The economy of Assam is largely rural and agrarian. Agriculture is still the principal
41 occupation of majority of the rural population in the state in terms of employment and livelihood. In
42 Assam, there is ample scope for increasing agricultural production by raising the cropping intensity
43 which is very low compared to some other states and India. Assam has abundant rainfall per year, yet
44 there are very large fallow lands in post monsoon period. The total net sown area of Assam is 28.10
45 lakh hectares of which farmers are using 16.22 lakh hectares for single crop. The area under mono
46 cropping in Upper Brahmaputra Valley Zone is 4.23 lakh hectares which is 26 per cent of total mono
47 cropped area of the state and it is very high as compared to double cropped area (1.96 lakh hectares)
48 according to Economic survey of Assam, 2014-15. In order to popularize growing a second crop, to
49 improve the economic status of the farming community in general and the poverty stricken marginal
50 farmers, the Government of Assam has launched a mega project entitled "Mission Double Cropping"
51 with a target fixed of covering 2.09 lakh hectares of land to be covered under mustard, pea, potato,
52 summer paddy, coriander and hybrid brinjal. The cropping intensity of the state has increased to
53 155.81 per cent in 2013-14 from 152.29 per cent in 2012-13 (Economic survey of Assam 2014-15).
54 But however, in spite of having lots of benefits from double cropping, the most of the farmers of
55 Assam are reluctant to go for double cropping. Therefore, the present study made an attempt to
56 identify the socio-economic constraints in adoption of double cropping in Upper Brahmaputra Valley
57 Zone of Assam.

58 1. METHODOLOGY

59 The study was carried out in the Jorhat and Golaghat districts of Upper Brahmaputra
60 Valley Zone of Assam during the year of 2016. The study area was selected based on criteria viz.,
61 areas where double/ multi crops are grown, areas where government programmes of double cropping
62 are in operation, convenience of the researchers. Multistage stratified random sampling technique
63 was used to draw a sample of 120 farmers for the purpose of the study. A pretested schedule was
64 used to collect the necessary data from the sample farmers through personal interview method. **Each**
65 **of the farmers was asked to indicate the extent of difficulty caused by each of the constraint**
66 **by checking any of the four responses such as, 'strongly agree', 'moderately agree', 'less**
67 **agree' and 'disagree' and weight was assigned to these responses as 3, 2, 1 and 0,**
68 **respectively. Constraints were arranged in a rank order by developing Constraint Facing Index**
69 **(CFI) by using the formulae:**

$$70 \text{ CFI} = P_n \times 0 + P_l \times 1 + P_h \times 2 + P_{vh} \times 3$$

71 **Where, CFI = Constraint Facing Index**

72 **P_n = Percentage of farmers disagree**

73 **P_l = Percentage of farmers less agree**

74 **P_h = Percentage of farmers moderately agree**

75 **P_{vh} = Percentage of farmers strongly agree**

76

77 CFI for any aspect of constraint could range from 0 to 300, 0 indicating no constraint and 300
78 highest constraint. (Pandit and Basak, 2013)

79 2. RESULTS AND DISCUSSION

80 The present study has identified total 11 numbers of social economic constraints
81 faced by the sample farmers and listed in table 1.

82

83 **Table 1. Socio Economic Constraints faced by the respondents in adoption of double cropping**
84 **(In percentage)**

85

N=120

SI. No.	Constraints	Strongly agree	Moderately agree	Less agree	Disagree
1.	Non availability of water supply	13.33	70.00	11.67	5.00
2.	Shortage of labour	12.50	69.17	12.50	5.83
3.	Stray cattle	12.50	69.17	12.50	5.83
4.	Non availability of credit	10.00	62.50	13.33	14.17
5.	Shortage of water supply	10.83	59.17	14.17	15.83
6.	High fuel cost	12.50	55.00	10.83	21.67
7.	Shortage of credit	12.50	55.00	10.83	21.67
8.	Non availability of labour	11.67	51.67	13.33	23.33
9.	Non adequate demand in the nearby area	14.17	45.83	10.00	30.00
10.	High wage rates	10.00	49.17	12.50	28.33
11.	High transportation cost	10.00	49.17	12.50	28.33

86

87 It was observed that 13.33 per cent farmers were strongly agreed and 70 percent farmers were
88 moderately agreed that non-availability of water supply in the crop field was a major constraint in
89 adopting double crops during *Rabi* season. Likewise a large per cent of farmers considered shortage

90 of labour, stray cattle, non availability of credit etc also as major constraint. Based on those responses
91 Constraint facing Indices (CFI) were estimated and constraints were ranked (table 2).

92

93 **Table 2: Ranking of Socio Economic Constraints according to the CFI score**

SI. No.	Constraints	CFI	Rank order
1.	Non availability of water supply	191.67	I
2.	Shortage of labour	188.33	II
3.	Stray cattle	188.33	II
4.	Non availability of credit	168.33	III
5.	Shortage of water supply	165.00	IV
6.	High fuel cost	158.33	V
7.	Shortage of credit	158.33	V
8.	Non availability of labour	151.67	VI
9.	Non adequate demand in the nearby area	144.17	VII
10.	High wage rates	140.83	VIII
11.	High transportation cost	140.83	VIII

94

95 Non availability of water supply was found to be the major problem faced by the
96 farmers. It was due to lack of proper irrigation facilities and no measures were taken up by the
97 farmers for rain water harvesting. Then, shortage of labour and stray cattle problem constituting
98 188.33 of CFI score each were reported as second major constraint. Shortage of labour is a major
99 growing concern for the state agriculture due to labour migration, implementation of MGNREGA
100 scheme etc and making it challenging to perform crop cultivation throughout the year. Stray cattle are
101 also highly encountered problem in Assam. Due to the scarcity of fodder crops and grazing land,
102 peoples' negligence etc stray cattle problem is arising and harm the crop field.

103 Non-availability of credit for growing more than one crop was also reported as a
104 constraint of double cropping. Shortage of water supply to the crop field, high fuel cost used in
105 irrigation and shortage of credit were some of the other major problems which were faced in adopting
106 double cropping. Beside these, non-availability of labour when needed, non adequate demand in the
107 nearby area, high wage rates of labour and high transportation cost were also indicated as some
108 constraint by many of sample farmers.

109 Similar studies have been done and observed the major problems faced by the
110 farmers in the production front were shortage of labour during peak season [Naik (1998); Basavaraj
111 and Kunnal(2002); Hiralal and Verma (2004)]. Gavisiddappa *et al.* (2001) identified the problems in
112 Gherkin production and trade in Haveri district of Karnataka and observed that, lack of irrigation
113 facilities and lack of cheap labours were the major problems. **Borah *et al.* (2013) revealed that the
114 major problems faced by the members of the farmers' groups organized under Agricultural
115 Technology Management Agency (ATMA) in Jorhat district of Assam included non-availability
116 of various irrigation facilities, lack of special market for organic produce, lack of need based
117 training, lack of electricity, non-availability of seed in the village at proper time, non-availability
118 of own vehicle, unavailability of raw materials needed for storage construction, high cost of
119 infrastructure, unavailability of organic manures and high cost of pump sets and other
120 equipments required for irrigation. Again according to Sharma (2014) high cost of chemicals,
121 non-availability of disease free seeds, non-availability of chemicals, lack of labour, lack of
122 time, lack of technical knowledge, financial problem, poor shelf life, inadequate supply of
123 storage material, lack of marketing facilities, less support price and price fluctuation were the
124 main constraints encountered by the vegetable growers in the adoption of recommended farm
125 practices of major vegetable crops in Punjab.**

126

127 **3. CONCLUSION**

128 The present study revealed that, the farmers of Upper Brahmaputra Valley zone of Assam were not
129 willing to adopt double cropping fully on their land holding because of some major problems like non
130 availability or shortage of required water supply, non availability or shortage of labour, higher wage
131 rate of labour, stray cattle, non availability of credit, high transportation cost etc. **Therefore, to
132 promote double cropping in Assam, only distribution of seeds and fertilizer, boosting
133 productivity of crops etc are not sufficient. There is need to enhance awareness among the
134 farmers to overcome their problems in adopting double cropping. The present study suggests
135 some measures to overcome these reported problems like ensuring adequate irrigation
136 facilities, proper awareness among the famers regarding water harvesting, acquiring credit
137 facilities offered by different financial institutes specially for farmers, proper fencing around
138 the field to avoid stray cattle, facilitate construction of sufficient godowns and cold
139 storages by Agriculture Department of the state to promote marketing as well as to reduce
140 transportation cost etc.**

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