



Cropping Pattern in Tribal Area of Dang District

J B Dobariya¹, N M Thesiya², V J Zinzala³ and S A Aklade⁴

Krishi Vigyan Kendra, Waghai, 394 730, Dang (Gujarat)

ABSTRACT

Study was conducted in the Dang district of Gujarat. For the purpose of this study, 20 villages of Waghai, Ahwa and Subir talukas were selected. 200 respondents were selected for the study with the help of proportionate multistage random sampling methods of analysis. 44.5 per cent of the respondents were in the middle age group, 62.5 per cent of the respondents were found to have below or primary level of education, 57.0 per cent of the respondents belonged to the marginal and small farmers, respectively. Majority (76 %) of the respondents were in the middle to low level of extension personnel contact, 78 per cent of the respondents were in the low to middle level of economic motivation, 77.5 per cent of the respondent had low to medium level of scientific orientation and 38.5 percent of farmers did not have any source of irrigation. Production of paddy (drilled), paddy (T.P), niger and gram had increased during the last five years, no major change was observed in cropping pattern in *kharif* crops, although, in *rabi*, change in cropping pattern was observed due to increase in irrigation facility and market availability. Area under paddy, black gram, soybean and niger had increased while area under ragi, sorghum, pigeon pea had decreased during last five years. Population growth and change in family structure, modernization and commercialization of agriculture, change in agricultural production, prices and food and fodder self-sufficiency were socio-economic factors responsible for to change in cropping pattern.

Key World: Cropping pattern, Tribal area, *Rabi* and *kharif* crops, Dang

INTRODUCTION

The cropping pattern in Dang district had been changing due to introduction of hybrids in various crops especially paddy and vegetables, due to which areas under the crops like paddy (local/scented varieties), finger millet (ragi), little millet (vari) & other minor millets is decreasing day by day which were the major crops as well as the potential source of nutrients earlier. Change in cropping pattern was mainly attributed to the shift in area from seasonal/annual crops to high-value-yielding perennial cash crops having a long gestation period. Therefore, during the past five years agricultural income had started rising. However, the question arises that whether this performance was sustainable and the emerging cropping pattern is in the best interest of the state, this requires serious considerations. So, keeping this in mind the present study entitled

“Change in cropping pattern in tribal area of the Dang district” was under taken with the objectives to know the change of cropping pattern and their factors responsible with respect to yield and to study the socio economic factors responsible in changing the cropping pattern in tribal area.

MATERIALS AND METHODS

The present study was conducted in the Dang district of Gujarat. For the purpose of this study, 20 villages of Waghai, Ahwa and Subir talukas were selected. Total samples of 200 respondents, 10 from each village were selected. The information of each respondents was collected with the help of pre tested, structured interview schedule by personal interview. There are more than 20 crops being grown in the district and out of these, only 10 major crops based on the properties of land to the

^{1, 2 and 4} Subject Matter Specialist, KVK, NAU, Waghai, Dang

³Programme Coordinator, KVK, NAU, Waghai, Dang

Corresponding Author's: Email:kvkwaghai@nau.in

total area under cultivation alone was considered for analysis.

RESULTS AND DISCUSSION

Socio-economic and personal characteristics of the respondents

The data in the Table 1 clearly showed that 44.5 per cent of the respondents were in the middle age group. The respondents in young and old age groups were 27.5 and 28.0 per cent, respectively. In case of level of education, 37.5 per cent of the

respondents were found to have primary level of education. The respondents from secondary and higher secondary level of education and illiterate education category were 35.0 and 25.0 per cent, respectively. Very few respondents (2.5 per cent) were found having college and above level of education. As, education plays an important role in bringing out desirable changes in human behavior in the form of knowledge, skill and attitude, it is valued as means of increasing level of knowledge and information.

Table 1: Per cent distribution of respondents

Sr. No.	Particular	Percentage
A.	Age groups	
1	Young age (<39 years)	27.5
2	Middle age (39 – 50 years)	44.5
3	Old age (>50 years)	28.0
B.	Level of education	
1	Illiterate	25.0
2	Primary level of education (1 st to 7 th standard)	37.5
3	Secondary and Higher secondary level of education (8 th to 12 th standard)	35.0
4	College and above level of education (above 12 th standard)	2.5
C.	Land holding	
1	Marginal farmer (up to 1.0 ha)	29.0
2	Small farmer (1.01 to 2.0 ha)	28.0
3	Medium farmer (2.01 ha to 4.0 ha)	22.5
4	Big farmer (above 4.0 ha)	20.5
D.	Extension personnel contact	
1	Low (up to 6 score)	31.5
2	Medium (07 to 16 score)	44.5
3	High (above 16 score)	24.0
E.	Level of economic motivation	
1	Low level of economic motivation (up to 13 score)	10.5
2	Medium level of economic motivation (14 to 17 score)	67.5
3	High level of economic motivation (above 17 score)	22.0
F.	Level of scientific orientation	
1	Low level of scientific orientation (up to 12 score)	20.0
2	Medium level of scientific orientation (13 to 16 score)	57.5
3	High level of scientific orientation (above 16 score)	22.5

www.IndianJournals.com
Members Copy, Not for Commercial Sale
Downloaded From IP - 124.253.136.240 on dated 3-Oct-2016

Cropping Pattern in Tribal Area

The data in Table 1 indicated that, 29.0 and 28.0 per cent of the respondents belonged to the marginal and small farmers, respectively while only 22.5 and 20.5 per cent respondents belonged to the category of medium and big farmers, respectively. In case of extension personal contact, responses of selected respondents were rated sixes point continuum, namely daily, weekly, fortnightly, monthly, six monthly and yearly with assigning score 6, 5, 4, 3, 2 and 1 respectively. Majority of the respondents were in the middle to low level of extension contact and only 24 per cent of respondent were having higher contact with extension personnel for acquiring information about cropping pattern.

Economic and scientific motivation scales assessed the individual's success in term of profit maximization and the relative importance placed on economics end. It was measured by using the scale which was developed by Supe (1969) with due modification. There are six statements, which were weighted on three point continuum i.e. 3, 2 and 1 for the positive statements and reverse scoring were applied for negative statements. It was clear from the data that 67.5 per cent of the respondents were in the middle level of economic motivation, followed by 22.0 per cent of them with higher and 10.5 per cent of them were with low level of economic motivation. It was evidence that majority (57.5 %) of the respondent had medium level of scientific orientation, followed by 22.5 per cent of them with high and 20.0 per cent of them were with low level of scientific orientation (Table 1).

Table 2. Distribution of respondents according to Irrigation Facilities

Sr. No.	Irrigation facilities	Percentage
1	Bore Well	2.5
2	Well	15.0
3	Pond	1.0
4	Check Dam	9.5
5	River	33.5
6	No Source	38.5

Irrigation facilities

The data presented in Table 2 indicated that, the majority (38.5 %) of the farmers did not have any source of irrigation, whereas, 33.5 and 15.0 per cent farmers had river and well facility for irrigation, respectively.

Change in cropping pattern and productivity of crops during last decade

Cropping pattern refer to the change in proportion of area under different crops at two different points of time. The data (Table 3) shows that the change in cropping pattern in the Dang district of Gujarat had reported a significant shift from area sown in *rabi* season only due to availability of irrigation, transformation of the technology supported by infrastructure like good roads, improved market accessibility and ensured power supply to farmers, higher productivity of commercial crops, better market price. No major changes were observed in cropping pattern in *kharif* crops and the farmers were utilizing traditional methods of cultivation. In *rabi* crops, change in cropping pattern had observed due to increase in irrigation facility and market availability. Area under paddy (TP), black gram, soybean and niger had increased while area under finger millet, sorghum, pigeon pea had decreased and no major change were observed in crops like maize, groundnut and gram.

The production of paddy (drilled), paddy (T.P), niger and gram had increased while the production of finger millet, sorghum, maize, pigeon pea, soybean and groundnut had decreased during last five year. So, it could be said that finger millet and little millet were replaced by paddy during the course of time. The data were supported by *Payal* and *Parmar* (2013).

Socio economic factors responsible for change of cropping pattern

1. Population growth and change in family structure
2. Deforestation
3. Strengthening of public distribution system

Table-3: Comparison of area and productivity from different two periods

Sr. No.	Crop	Average data of the period 2005 to 2010		Average data of the period 2011 to 2015		Per cent change in area and productivity	
		Area (ha)	Productivity (kg /ha)	Area (ha)	Productivity (kg /ha)	Area (ha)	Productivity (kg /ha)
1	Paddy (Driilled)	4017	1725	1147	1802	-49	+04
2	Paddy (T.P)	13857	2581	16771	3374	+21	+30
3	Finger/Littel millet	12400	1248	12128	895	-26	-28
4	Sorghum	3942	2088	1460	866	-63	-58
5	Maize	2771	2425	2555	976	-7	-60
6	Black Gram	3912	933	5081	861	+30	-08
7	Pigeon Pea	4110	1612	2797	1185	-32	-26
8	Soybean	2282	1850	2648	1096	+16	-40
9	Ground nut	4512	1585	2564	1182	-43	-25
10	Niger	3820	288	5206	346	+36	+20
11	Gram	14100	1180	16401	1250	+16	+06

4. Modernization and commercialization of agriculture
5. Change in agricultural production
6. Change in employment and income of rural labour
7. Changes in farm income
8. Women's participation
9. Food and fodder self-sufficiency requirement as well as investment capacity.
10. Price related factors covering output and input prices as well as trade policies

facility and market availability. In case of areas, finger millet was been replaced by paddy whereas, area of paddy, black gram, soybean and niger had increased while area of finger millet, sorghum, pigeon pea had decrease and no major change was observed in crops like maize, groundnut and gram. Decline in the number of persons engaged in farm-related activities, shift of economic opportunity away from women to men, increasing specialization in livelihoods, migration of rural labor in search of work, withering away of traditional and local institutions were all major features of this change in cropping pattern

CONCLUSION

It can be said that the causes and consequences of the changes in cropping pattern were so complex and inter-related that it was difficult to classify and isolate individual factors. Production of paddy (drilled), paddy (T.P), niger and gram had increased during last five years. No any measured changes were observed in cropping pattern in *kharif* season crops where farmers had utilized traditional methods of cultivation. In *rabi* crops, cropping pattern had changed due to increase in irrigation

REFERENCES

- Payal Z and Parmar A (2013). Change in cropping pattern utilizing Narmada main canal water: a case study of Barmer district. *International J Res Eng Tech* 2(10):99-105
- Supre S V (1969). "Value Scales" *Hand book of psychological and social instruments*. I.I.M., Ahmedabad, pp. 306-308.

Received on 16/07/2016 Accepted on 08/09/2016