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Short Research Article

Farmers' Distress in Uttar Pradesh, India – Lesson from a Research Study

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Abstract

Indian Economy is primarily based on Agriculture, where more than 85% farmers belong to small and marginal categories that face agrarian distress due to several causes. With this background, a research study was conducted in Bundelkhand region of Uttar Pradesh, India to assess the factors responsible for distress among farmers as well as to find out the agrarian distress vulnerability and to suggest extension strategy to prevent agrarian distress proneness levels. The study revealed that 65.72% farmers of this region were moderately to highly vulnerable to stress. Non profitable price of farm produces, poor return from farming, and *monsoon*/ weather related uncertainties, high cost of cultivation, and lack of irrigation facilities, etc. are mainly responsible for farmers' distress. Only 5.14% farmers were found resistant to stress. Stress vulnerability related perception showed that distress regarding poor return from farming due to poor productivity was seen in nearly 59.71% farmers, while 58% farmers were in distress due to low market price of agricultural produces. Study revealed that 54.58 % farmers were vulnerable due to uncertainty of *monsoon*. Therefore, increasing the productivity level of farming through various strategies is urgently needed to assure profitable price of farm produce, develop weather forecasting system, crop insurance, etc. and launch a social awareness programme for stress management.

1. Introduction

Agriculture is the largest important sector of Indian economy in terms of population dependent on it out of which more than 85% belong to small and marginal categories. Due to several reasons, farming has become less remunerative during last decade which has led to declining income in turn increasing indebt and overall distress among farmers. Over 0.25 million farmers have committed suicide between 1995 and 2011 across India, including in state like Andhra Pradesh, Maharashtra, Karnataka, U.P., Punjab, Haryana and Kerala. Most of the victims belong to small and marginal farmers' category, and many (of them) belong to backward classes and schedule castes (Murthy, 2013). Sainath, P. while assessing the data available from National Bureau of Crime Record, claims that the numbers of farmers' suicide have been in increase year after year. In this line the farmers of Vidarbha, Telangana and Bundelkhand region have committed more suicide. Ramanjaneyulu, G.V. stated that on an average nearly 5 farmers committed suicide every week in Vidarbha region. Sharma in his editorial article to Dainik Jagran revealed that 105 farmers committed suicide during January, February and March, 2014 in Bundelkhand region. A critical analysis of factors responsible for these suicides reveals similarity across the country. However, major factors as found by Rao (2008) are economic, social, psychological, technological and institutional with market imperfections.

Farmers of Bundelkhand region are also under distress condition due to agrarian and social reasons. Here, the economy of farmers totally depends upon agriculture and goodness of agriculture depends upon *monsoon*. Due to uncertainty of *monsoon* and abrupt weather conditions, during last ten to fifteen years, the agriculture was not remunerative as expected and, therefore, the farmers were heavily indebted which generated stress in the mind of rural community. A report published in leading daily Dainik Jagran, reported 1122 suicide deaths during 2007 to 2012 in Bundelkhand region of U.P. due to starvation and farmers indebt.

Bundelkhand region of Uttar Pradesh is characterized as dry land having difficult terrain, undulated topography, scarce natural resources, unemployment, rural migration, etc. This

region suffers from extreme poverty and environmental degradation (Singh et al., 2010). Due to soil conditions and lack of adequate irrigation facilities generally mono-cropping is prevalent. The unique agro-ecological situation, however, is best suited for rain fed agriculture. Due to uncertainty of *monsoon* and abrupt weather conditions, the farmers could not get the expected results of their agriculture. Thus, the present study was conducted to study the factors responsible for agrarian distress and to suggest extension strategy for prevention.

2. Materials and Methods

Present research investigation was purposively carried out in 7 districts of Bundelkhand region of Uttar Pradesh. These districts were Banda, Chitrakoot, Hamirpur, Mahoba, Jaloun, Jhansi and Lalitpur. From each district, one block and from each block, 5 villages were selected randomly. From each village 10 respondents were randomly interviewed with the help of structured schedule. Thus, this investigation was confined to a sample of 350 farmers. Statistical tools like frequency, %age, mean severity scale, rank and stress vulnerability scale were applied to draw meaningful conclusions.

2.1. Mean Severity Score (MSS)

For the calculation of mean a self developed mean severity scale was used to quantify the mean severity score. The response of farmers were taken on four point continuum according to adverse affect of each selected distress factors as severe, some what, can't say and not at all by assigning the score of 4, 3,2 and 1 respectively. Sum of the raw score of each selected factor was the distress proneness score of an individual farmer which was converted into mean severity score (MSS) with the help of following formula. On the basis of MSS, each identified factor has been ranked.

$$\text{MSS}=\frac{\text{Mean of the raw score of each selected factor}}{\text{Total number of respondents}}$$

2.2. Stress Vulnerability Scale (SVS)

This scale was used for measuring farmers stress. For assessment of vulnerability to psychological stress SVS developed by Miller and Smith (1985) was used with required modification. This test measures the individual's vulnerability against stress. It contains 10 statements developed by researchers regarding distress and arranged in 5 point scale. It entails degrees from 1 (always), 2 (frequently), 3 (occasionally), 4 (some times) and 5 (never) and the subject had to rate each item accordingly to have much of time the statement was true to him. Thus, individual score ranges from 10-50 strength. To get the final score, the obtained score of each individual farmer were added up and 10 was subtracted (total of statement) from the actual score. A score value below 10 (minimum score) indicates highly vulnerability to stress, score value in range10-20 indicates moderately vulnerability, score value in range of 20-30 indicates slightly vulnerability, score value ranging 30-40 means tolerant to stress and score value in range of 40-50 indicates resistant to stress.

3. Results and Discussion

3.1. Socio-economic profile of farmers

Table 1 shows the data with respect to various characteristics of the respondents. It was observed that about 82% farming family size were small (47.71%) to medium (34.57%). It was also proved that 56.29% respondents were under middle age group (36-60 years) followed by young (up to 35 years) with 33.14% and old age group(above 60 years) with 10.57%. The data related to educational level indicated that about 12% respondents were educated up to graduate and Post Graduate. Occupational details indicated that 42% respondents were practicing farming and allied enterprises including dairy, followed by 22.86% farming with labour, 20% farming alone, 8% farming with business and 6% farming with service.

Out of total respondents, 46% came under small holding category, about 32% marginal holding category and rest 22.29% respondents were medium and large. In Bundelkhand, land holdings are bigger in size than other part of the state where density of population is higher. It is basically a rain fed region, therefore, 42% respondents were having no source of irrigation, while 37% respondents were availing the irrigation facilities by Canal /River/Pond and 20% irrigated their field through well/ tube well. In this region cropping pattern indicated that mono cropping is prevalent as about 65% respondents were practicing mono cropping and rest of them practiced dual cropping. The scenario of crop insurance represented very grim picture as only 16.86% respondents received crop insurance facility as they were credit/loan defaulters, while 59% respondents availed crop loan up to 0.1 million.

Analysis of respondents views about access to information sources indicated that 48.20% consulted their friends, 30% relied on local input dealers. Only 0.86% consulted *Kisan Call Center* (KCC) for accessing information. It was also observed that 16% respondents had tractor while 26% had other farm machinery (except tractor). About 28% respondents used rented and 45% used rented and own farm machinery. The data also indicated that annual income of 53.42% respondents was up to rupees 0.1 million (INR), 29.71% respondents earned between rupees one to 0.2 millions annually while 83% respondents annually earned income up to rupee 0.2 millions (INR).

3.2. Factors responsible for agrarian distress

Table 1: Distribution of selected respondents according to personal profile

Sl. no.	Personal profile	Category	Respondents N=350	
			Frequency	%
1.	Age	Young (up to 35 years)	116	33.14
		Middle (36-60 years)	197	56.29
		Old (above 60 years)	37	10.57
2.	Educational level	Illiterate	39	11.17
		Up to middle	78	22.28
		Up to Xth	105	30.00
		Up to XIIth	86	24.57
		Up to graduation	36	10.28
		>graduation	06	01.70
3.	Occupation	Only farming	71	20.28
		Farming+Labour	80	22.86
		Farming+allied occupation (including dairy)	147	42.00
		Farming+business	29	08.28
		Farming+service	23	06.58
4.	Land -holding	Marginal (up to 1 ha)	111	31.71
		Small (1.01-2.00 ha)	161	46.00
		Medium and Large (>2 ha)	78	22.29
5.	Irrigation sources	No sources	147	42.00
		Well/Tube Well	72	20.57
		Canal/River/Ponds/ others	131	37.43
6.	Cropping pattern	Mono cropping	227	64.86
		Double cropping	123	35.14
		Multiple cropping	-	-
7.	Crop insurance facility availed during 2012-13	Yes	59	16.86
		No	291	83.14
8.	Family size	Small (up to 5)	167	47.71
		Medium (6-10)	121	34.57
		Large (>10)	62	17.72
9.	Credit/ Loan defaulter position	Yes	56	16.00
		No	294	84.00
10.	Amount of crop loan availed during 2012-13	Not availed	52	14.86
		Up to 25,000	20	5.71
		25,001-50,000	88	25.14
		50,000-1,00,000	98	28.00
		1,00,001-2,00,000	59	16.86
		Above 2,00,000	33	09.43
11.	Information Sources	Neighbours/ friends	169	48.28
		Local dealers	105	30.00
		Officials	11	3.14
		Kisan Call Center	03	0.86
		Radio	12	3.44
		Television	16	4.57
		News paper	27	7.71
		Others	07	2.00
12.	Own Tractor	No	293	83.71
		Yes	57	16.29
13.	Farm machinery (except tractor)	Own	93	26.57
		Rented	99	28.28
		Own+Rented	158	45.15
14.	Annual Income ₹ (millions)	Up to 0.1	187	53.42
		0.1 - 0.2	104	29.71
		0.2-0.3	39	11.14
		0.3-0.4	11	3.14
		>0.4	09	2.57

A close look of (Table 2). epicts that 25 factors were responsible for agrarian distress among respondents. Among them, "Poor income from farming due to poor productivity" was ranked I followed by "Lack of profitable price to farm produce" assuming rank II. "Monsoon and Weather related uncertainties" ranked III. Lack of irrigation facilities, high cost of cultivation, intra family struggle and conflict due to poor income and accessibility, unavailability and high wage of labours, poor availability of agricultural technology, tension of daughter(s) marriage, children education and other social needs, Spurious quality of seeds, *Annapratha,* utilization of loan for unproductive purpose, illness from diseases and other health problems and non-availability of chemical fertilizers were

Table 2: Factors responsible for agrarian distress

Sl. no.	Factors responsible for distress	MSS	Rank
1.	Monsoon and weather related uncertainties	3.73	III
2.	Poor return from farming due to poor productivity	3.99	I
3.	Lack of profitable price to farm produce	3.84	II
4.	High cost of cultivation	3.66	IV
5.	Lack of irrigation facilities	3.66	
6.	Crop damage by Annapratha	3.37	IX
7.	Unavailability and high wages of labour	3.53	VI
8.	Problem related to electricity	2.86	XIII
9.	Lack of technical knowledge	2.84	XIV
10.	Non-availability of chemical fertilizers in market during crop season	2.87	XII
11.	Restricted credit and non availability at proper time.	2.82	XV
12.	Spurious quality seeds	3.44	VIII
13.	Utilization of loan for unproductive purposes.	3.16	X
14.	Illness from diseases and other health problems	3.14	XI
15.	Family struggle and conflict due to poor income and accessibility of basic needs.	3.55	V
16.	Tension of daughter(s) marriage, children education and other social needs	3.46	VII
17.	Fear of loan recovery (RC/Bank notice)	2.66	XVI
18.	Faulty loaning cause partial/ non-repayment.	2.66	
19.	Debt from private money lender	2.57	XVII
20.	Litigation	2.23	XVIII
21.	Bad habits like Alcoholism, gambling Nakarapan, etc.	2.20	IXX
22.	Low level of personnel tolerance	2.02	XX
23.	Poor availability of agricultural technology.	3.53	VI
24.	Due to social system	1.98	XXI
25.	Any other uncertainty	1.97	XXII

MSS: Mean severity score

other factors which ranked in decreasing order. The findings are in line with Kale (2008) who observed that poor returns to cultivation and absence of non-farm opportunities is indicative of the larger socio-economic malaise in rural India.

3.3. Vulnerability of agrarian distress

(Table 3). indicates the distribution of respondents' views for measuring stress vulnerability. It was seen that 59.71% of respondents viewed poor return from farming due to poor productivity as "Always causing stress" while 58% viewed receiving low market price of agricultural produce during peak sale period as "Always causing stress" condition. About 54 % respondents preferred "Always causing stress" option for afraid of monsoon, incidence of other abiotic and biotic stresses and limit of ₹ 34 day^{-1} $member^{-1}$ expenditure of all family members. About 46% respondents preferred "Always causing stress" option to family struggle and conflict due to poor accessibility of daily need things. Repaying loan, fulfilling family needs and marriage of family members were also causing stress among 42% respondents. The rest of the factors causing stress were ranged on five point continuum from "Always" to "Never" causing stress conditions.

Table 4 shows distribution of respondents according to vulnerability measurement. It stated that nearly 37% respondents were highly vulnerable to stress followed by 28.86% respondents in moderately vulnerable to stress category while 18.11 and 5% of respondents were in slightly vulnerable to stress, tolerable to stress and resistant to stress categories respectively.

Hence, this research study clearly shows 66% respondents were highly to moderately vulnerable to stress and it is, therefore, necessary that government should focus on factors causing distress among the agrarians. It is also supported by Census 2011 which indicated that in India nearly 2400 farmers left agriculture per day and migrated to cities for search of jobs. Above factors are also responsible for migration of farmers to non-farm sectors.

3.4. Extension Strategy to prevent agrarian distress proneness levels

The study gave a grim scenario about distress in farmers, so suitable extension strategies for making farmers friendly policies are need. (Table 5). gives 20 strategic points for making effective farmer friendly policies. Some of the major strategies for reducing farmers distress listed as a result of this study are; to develop advance weather forecasting network / system, to increase the coverage area of crop insurance, timely and accurately crop losses assessment and their compensation to farmers, dedicated Kisan channel, profitable price to farm

Table 3: Distribution of respondents according to distress statement for measuring stress vulnerability

Sl. no.	Statements regarding distress	Measuring scale									
		Always		Frequently		Occasionally		Some times		Never	
		F	%	F	%	F	%	F	%	F	%
1.	You have stress regarding poor return from farming due to poor productivity	209	59.71	87	24.86	18	5.14	14	4.0	22	6.29
2.	You receive low market price of agricultural produce	203	58.0	91	26.0	16	4.57	13	3.71	27	7.72
3.	You always afraid regarding uncertainty of monsoon and incidence of other abiotic and biotic stresses.	191	54.58	102	29.14	37	10.55	13	3.72	07	2.0
4.	You think about high cost of inputs and burrow loan for their arrangement.	178	50.85	97	27.72	39	11.14	02	0.57	34	9.71
5.	You limit yourself and your family members about to expend average Rs. 34/day/person*	190	54.28	99	28.28	21	6.0	16	4.58	24	6.86
6.	Family struggle and conflict is daily routine due to poor accessibility.	161	46.0	107	30.58	44	12.57	09	2.57	29	8.28
7.	You and your family members daily did hard work even in lean period for repaying loan and full filling family needs and for marriage of family members.	147	42.0	109	31.14	56	16.0	20	5.71	18	5.14
8.	You have poor health but you can't expend money for their treatment.	97	27.72	137	39.15	92	26.28	18	5.14	06	1.71
9.	You purchase at least two set of clothes per year for yourself and your family members	106	30.28	109	31.14	87	24.87	48	13.71	-	-
10.	You and your family member take at least one balance meal in daily life.	101	28.87	103	29.43	67	19.14	40	11.42	39	11.14

*survey report of NSSO, 68th round (2011-12) reported about 50% rural population expend ₹ 34.33 day^{-1}

Table 4: Distribution of respondents according to Vulnerability Measurement

Sl. no.	Distress category	R	Respondents N=350	
			F	%
1.	Highly vulnerable to stress	0-10	129	36.86
2.	Moderately vulnerable to stress	10-20	101	28.86
3.	Slightly vulnerable to stress	20-30	63	18.00
4.	Tolerable to stress	30-40	39	11.14
5.	Resistant to stress	40-50	18	05.14
	Total		350	100

R: Range of stress vulnerability; F: Frequency

Table 5: Extension Strategy to prevent Agrarian Distress proneness levels.

Sl. No.	Extension Strategies
1.	To develop advance weather forecasting network/system
2.	Increases the coverage area of crop insurance.
3.	Timely and accurately crop losses assessment and payment of crop insurance to fragile farmers.
4.	Increase the productivity level of farming through efficient network of technology transfer including 'kishan channel'.
5.	Profitable price to farm produce.
6.	Popularize Good Agricultural Practices (GAP) including water saving devices to reduce cost of cultivation.
7.	Manage/control 'annapratha'

continue...

Sl. No.	Extension Strategies
8.	Motivate to farmers for double cropping instead of mono cropping
9.	Increase mechanization due to shortage of labors.
10.	Manage inputs prices, quality and availability.
11.	Increases the flow of basic human facilities.
12.	Aware to people against bad habits, non-repayment of loan, faulty loan, litigation.
13.	Increases the credit flow among farmers.
14.	Need livelihood security policy for rain fed regions like Bundelkhand.
15.	Increases connectivity of roads and transport.
16.	To train/aware farmers regarding tolerance level against distress.
17.	To increase the accessibility of basic services.
18.	Increase the flow of electric supply for farmers specially required time.
19.	To develop farming based small scale business for additional income.
20.	To make them skillful for future agro-based job opportunity.

produce, increase the flow of credit and basic human facilities, to develop livelihood security policy for this region, etc. However, some dedicated steps such as social awareness programme to manage farmers' distress or a skill oriented training programme etc. may prove useful for stream lining the safe life of the agrarians.

4. Conclusion

Poor return from farming due to poor productivity, lack of profitable price to farm produce, monsoon and weather related uncertainties, lack of irrigation facilities and high cost of cultivation were found main factors responsible for agrarian distress. About two third of farming population were highly to moderately vulnerable to stress. The study also suggested some Extension strategies like development of advance weather forecasting network, increasing the coverage area of crop insurance, timely and accurate crop losses assessment and providing compensation to farmers, dedicated *Kisan* channel, making profitable price to farm produce, increasing farm productivity, etc.

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