ABSTRACT

ECONOMICS OF AGRICULTURE AND FARMERS’ SUICIDES – A CASE STUDY OF WARANGAL DISTRICT IN ANDHRA PRADESH

by

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Farmers’ Suicides in India

Several studies conducted in India have linked the phenomenon of farmer suicides generally to agrarian crisis, particularly to crop failure, raising input prices, inferior quality of seeds and pesticides, private money lending, inter-linkages of product and credit markets and non-remunerative prices. There is a feeling of insecurity due to crop failure, land alienation and indebtedness. This has resulted in a spate of farmers’ suicides in different parts of the country.

In view of the seriousness of the issue, the selection of the present study is need-based and fully justified.

Objectives of the Study

The specific objectives of the study are as follows:

1. To study the socio-economic conditions of the selected farmers.
2. To analyze the cropping pattern, yield levels, economies of agriculture of selected farmers.
3. To identify the contributory factors for farmers’ suicides and
4. To critically review the relief and rehabilitation measures for the families of the deceased farmers.
2. Hypotheses

1. Social factors have influenced farmers’ suicides.

2. A strong correlation exists between farmers’ indebtedness and suicides.

3. Agriculture is a losing proposition in Warangal district.

4. Relief and rehabilitation measures have helped the family members of the victims or deceased farmers.

Methodology

Warangal district in Andhra Pradesh is selected for the study purposively as it recorded a high rate of farmer suicides.

The study is based on both primary and secondary sources of information and data. Secondary data includes season and crop reports, statistical abstracts of Andhra Pradesh, National Crime Records Bureau (NCRB), published and unpublished works of scholars, reports and monographs published by the State Government and Central Government.

Primary data and information are collected from the respondents who happen to be close members of the deceased farmers. The data are collected by adopting personal interview method through a pre-tested schedule, specially designed for the purpose. Focused Group Discussions (FGD) are also held with the members of the victims’ families and the villagers as well to solicit general
information and their impressions, views and suggestions pertaining to the issues.

**Sample Design**

As stated already, Warangal district is selected purposively for the study. Three Revenue divisions, namely Warangal, Jangaon and Mulugu -are selected. Two Mandals from each revenue division are selected, as these areas have more number of farmers’ suicides. Further, from each Mandal, all villages which witnessed farm suicides were chosen purposively. A sample of 163 farmers constitutes the respondents. They are post - classified into three categories; the first group consists of farmers with less than one acre, while the second and third groups with 1 - 2.5 acres and 2.5 acres and above respectively.

The study pertains to the period from 2011 to 2013. Data was collected in 2013.

The collected information and data are scrutinised for accuracy and uniformity, and then tabulated. Some statistical tools such as, percentages, averages, range, chi square tests and regression analysis are used in analysing and interpreting the data.
Techniques of Analysis:

The present study made use of various tools of statistics including sample percentages, frequency distribution, coefficient of correlation, Chi-Square statistics and simple regression to measure and test the significance of relations specified in the study.

\[ R = 1 - \frac{6 \sum d^2}{N(n^2 - 1)} \]

Where \( r \) = Pearson’s rank correlation coefficient

\( d \) = deviation

\( n \) = number of items

\[ X^2 = \sum \frac{(O_i - E_i)^2}{E_i} \]

When \( X^2 \) = Chi-Square statistics

\( 0i \) = Observed frequencies of the \( i^{th} \) class

\( Ei \) = Expected frequencies of the \( i^{th} \) class
Findings:

Particulars of Mandal – wise selected respondents

The total number of respondents selected from 6 mandals is 163. Majority of them are from Atmakuru (47) and Regonda (30) mandals. Farmers numbering 26, 22, 22 and 16 are from Geesugonda, Bachannapeta, Dharmasagar and Narmetta mandals respectively. Each of the respondents is from a deceased family.

The selected respondents from the victims’ families are categorised into three groups according to size of holdings. The first group consists of farmers with less than one acre, while the second and third groups with 1 to 2.5 acres and 2.5 acres and above respectively. Overall, the highest number of farmers are in group two followed by 63 farmers in group three. It is observed that the largest number of farmers is found in group two in all the mandals except in Bachannapeta Mandal. No selected farmer is found in Bachannapeta mandal in the first group (that is less than 1 acre group). In the first group only one farmer in Narmetta mandal and three farmers in Dharmasagar mandal are found. In the second group, the highest number of farmers is found in Atmakuru and Dharmasagar mandals. Overall, the maximum number of farmers committed suicides are found to be in the second group (that is between 1 and 2.5 acres). The chi-square results for mandal and land holdings are found to be significant.
(\chi^2 = 33.934; \text{ df} = 10; p < .001) prompting us to reject the null hypothesis that there is no relationship between Mandals and land holding size. The land holdings do seem to significantly differ between Mandals.

**Major causes of farmers’ suicide**

The causes of or contributory factors for farmers’ suicides are presented in the Table. The victims’ family members mentioned more than one cause for farmers’ suicides.

**Table - 1: Major causes of farmers’ suicides**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Problems</th>
<th>Percentage of farmers reporting the cause %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Indebtedness</td>
<td>94</td>
</tr>
<tr>
<td>2</td>
<td>Crop loss, crop failure and risk factor</td>
<td>70</td>
</tr>
<tr>
<td>3</td>
<td>Input related problems</td>
<td>60</td>
</tr>
<tr>
<td>4</td>
<td>Failure of agriculture extension</td>
<td>70</td>
</tr>
<tr>
<td>5</td>
<td>Lack of storage and marketing facilities</td>
<td>55</td>
</tr>
<tr>
<td>6</td>
<td>Lack of remunerative price</td>
<td>50</td>
</tr>
<tr>
<td>7</td>
<td>Absence of agricultural Insurance</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Psychological factors</td>
<td>30</td>
</tr>
</tbody>
</table>

*Source: Primary Data*

1. **Farmers’ Indebtedness**

Debts are not something new to Indian farmers. In the past also, farmers used to borrow money from debtors. Further, those loans were not considered a
serious issue. But during the last 15-20 years almost all the farmers were reportedly trapped into debts and the farmers have no way to come out of this trap. The situation has become very serious over a period of time.

Table – 2: Incidence of Farmers’ Indebtedness

<table>
<thead>
<tr>
<th>S. No.</th>
<th>State</th>
<th>Farmers’ Indebted (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andhra Pradesh</td>
<td>82.00</td>
</tr>
<tr>
<td>2</td>
<td>Assam</td>
<td>18.10</td>
</tr>
<tr>
<td>3</td>
<td>Bihar</td>
<td>33.00</td>
</tr>
<tr>
<td>4</td>
<td>Chhattisgarh</td>
<td>40.02</td>
</tr>
<tr>
<td>5</td>
<td>Gujarat</td>
<td>51.90</td>
</tr>
<tr>
<td>6</td>
<td>Haryana</td>
<td>53.10</td>
</tr>
<tr>
<td>7</td>
<td>Himachal Pradesh</td>
<td>33.40</td>
</tr>
<tr>
<td>8</td>
<td>Jammu &amp; Kashmir</td>
<td>31.80</td>
</tr>
<tr>
<td>9</td>
<td>Jharkhand</td>
<td>20.90</td>
</tr>
<tr>
<td>10</td>
<td>Karnataka</td>
<td>61.60</td>
</tr>
<tr>
<td>11</td>
<td>Kerala</td>
<td>64.40</td>
</tr>
<tr>
<td>12</td>
<td>Madhya Pradesh</td>
<td>50.80</td>
</tr>
<tr>
<td>13</td>
<td>Maharashtra</td>
<td>54.80</td>
</tr>
<tr>
<td>14</td>
<td>Orissa</td>
<td>47.80</td>
</tr>
<tr>
<td>15</td>
<td>Punjab</td>
<td>65.40</td>
</tr>
<tr>
<td>16</td>
<td>Rajasthan</td>
<td>52.40</td>
</tr>
<tr>
<td>17</td>
<td>*Tamil Nadu</td>
<td>74.50</td>
</tr>
<tr>
<td>18</td>
<td>Uttar Pradesh</td>
<td>40.30</td>
</tr>
<tr>
<td>19</td>
<td>West Bengal</td>
<td>50.10</td>
</tr>
<tr>
<td></td>
<td>All India</td>
<td>48.60</td>
</tr>
</tbody>
</table>

Farmers across the country, which means in different States and regions, have been facing the problem of debt burden. Andhra Pradesh, Punjab and Tamil Nadu topped the list of farmers with highest indebtedness. These States are considered to be agriculturally advanced States. Farmer debts in Bihar, Assam and Odisha are at a lower level and it may be noted that all these States are treated as agriculturally backward. Incidence of farmers’ indebtedness at all – India level is about 49 per cent. In other words, about 49 per cent of farmers are trapped in debts. In Andhra Pradesh, about 82 per cent of farmers are trapped in debts.

**Outstanding loans of deceased farmers**

It is reported the farmers obtained loans from several sources, namely banks, crop societies, friends and relatives, money lenders, input dealers and traders. It is observed from this table that private sources have been dominating in the rural credit market. The private sources have provided loans on higher scale not only in terms of number of farmers but also in the amount provided. Farmers in the first and second categories had less access to institutional finance compared to that of farmers of third category. At the overall level, the loan amount outstanding was Rs 41,932 while the same was Rs 36,786 and Rs 38,291 and Rs 50,718 for the farmers of first, second and third categories.
Crop loss and failure and Risk factors

Crop loss emerged as the second major factor forcing farmers to end their lives. A large number of respondents from the victim’s families that is 70 per cent of them reported this reason for farmer’s suicides. About 70 per cent of the suicides happened due to this factor among the selected deceased farmers. Crop loss was mainly due to failure of crops partially or totally. The details of normal yields of crops and the yields obtained in the case of crop failures partially or totally are presented in the table.

The most important causes for crop failure identified are as follows:

a). Adverse seasonal conditions.

b) Lack of irrigation.

c) Pest and disease attack.

d) Seed.

Empirical analysis of causes for crop loss

The details of crop loss are, the main reason expressed by about 21 per cent of the farmers is lack of irrigation for crop failure. Even the farmers depending on lift irrigation from wells and bore wells pointed out that power failure or inadequate power supply is responsible for crop loss. Droughts
occurred sequentially or consequently or successively in some of the areas in the district. The crop failure is due to late seasonal rains, dry spells and early cessation of rains before the end of the season. Heavy rains and untimely rains also are said to be responsible by a small number of farmers for the crop failure. Adverse seasonal weather conditions often contributed to crop failure. About 20 per cent of the farmers felt the crops of field due to outbreak of pests and disease. Seed also affected badly the crop production and this is responsible for crop failure according to about 17 per cent of the farmers.

**Input related problems**

a) . Seed  
b) . Inferior quality and high cost of seed  
c). Fertiliser

**Use pattern of fertilisers and chemical**

It is observed from about 85 per cent of the farmers are using excessive doses of fertilisers. It is the same story with regard to pesticides. The excessive usage of fertilisers by the farmers is due to the expectation that it would boost crop productivity. Further it is noticed that the farmers are using pesticides indiscriminately and excessively. Whether there is pest or no pest on the crop, spraying of pesticides is going on. The farmers believe that the plant protection
prevents the pests and disease attack on the crop and thus helps to increase the farm productivity. The farmer continues to use fertilizer and pesticide excessively and indiscriminately despite the fact that the cost of these inputs is abnormally high. This shows that the awareness of the farmers regarding the scientific use of fertilizers is very low. Agricultural extension programme has completely failed to deliver the goods.

C). Pesticides

Plant protection has become essential as there is proliferation of pests and diseases on the crops. The only way to control crop pest and diseases is through chemical pesticides. The awareness on natural remedies to the problems of pests and diseases is completely absent. Though some farmers in the district use such methods, majority of the farmers believe in applying chemicals to address the problems. According to the table almost all the farmers of the three categories purchased pesticides. Only a few farmers reported that pesticides are not available in the village itself. They have to purchase the same in the neighbouring markets.

E. Irrigation

Most of the selected farmers for the study fall under dry land farmers’ category. They reported that the ground water level is very low in this area.
However, some of the farmers do depend on wells and borewells and all of them stated that the quality of power supply is very bad. There is no uninterrupted supply of power. They get a supply of less than 4 or 5 hours per day. Chowdry et al reported that accumulated debt for digging and deepening of the wells is the main cause for suicides. Failure of borewells added fuel to the fire.

F. Agricultural Credit

About 77 per cent of the selected farmers are reportedly not getting institutional finance. About 43 per cent of the farmers stated that the institutional finance they get is adequate for their cultivation purposes. About 90 per cent of the farmers reported that they do not get credit in time, which is so essential for taking up timely farming operations.

4). Failure of Agricultural Extension

This cause for farmers’ suicides is highlighted by 70 per cent of the respondents. Technical knowledge of the farmers is found to be very low regarding most of the agricultural production, particularly soils, nutrient status, suitability of soils and weather conditions to different crops, agronomic practices, fertiliser types and doses for different crops, crop pests and deceases and control measures, suitability of crop varieties, etc. It is reported that 16 per
cent of technical knowledge is being transferred to the farmers. Several agencies are the sources of technical knowledge to farmers. As per the input dealers provide technical information, while the government extension system has totally collapsed and the farmers suffer from want of unbiased scientific advice. The uniformed input dealers give advice to promote their business.

5). Lack of Storage and Marketing facilities

It is noted from that none of the selected farmer has storage facility to store the agriculture produce. They also have no withholding capacity either in physical terms or economic terms. About 77 per cent of the selected farmers sold their agriculture produce in the market yard. However, about 23 per cent of farmers, mostly farmers of the category -1, resorted to selling their produce to the middlemen within the village itself.

6. Lack of remunerative prices

An overwhelming number of farmers (about 85 per cent of the farmers on the whole) reported that they do not get fair prices for their produce. Further their loans are linked to sale of produce to the traders at prefixed prices. Farmers have been incurring losses due to this sort of hedging. Minimum Support Price (MSP) fixed by the GoI for various crops are found to be far lower when compared with the cost of production. Minimum Support Price is
not implemented in several cases and that is why farmers do not even get MSP to their products. This is the one of the main causes for farmers’ distress and suicides.

7. Absence of Agricultural Insurance

In the personal interviews with the respondent farmers and also focused group discussions held in the villages, it is revealed that 80 per cent of the farmers were not aware of the existence of an insurance scheme and none of them got indemnity or compensation for crop loss. Even in the case of insured farmers.

B). MACRO-LEVEL PERSPECTIVES OF AGRARIAN CRISIS AND FAREMRS’ SUICIDES

Agrarian crisis and farmers’ suicides is analysed from two important policy perspectives at the macro level. These are:

a). New Economic Policy (NEP) and
b). Globalisation of Agriculture Trade

Relief and rehabilitation packages promise and performance

After the death of the farmer, who is generally the head of the family, the remaining members of the family have a greater sense of insecurity. Social
stigma is also attached to them. They lack a reliable source of income and are ensulted by fear of survival. The lenders start harassing them for repayment immediately after the death of the farmer. Lack of capital and credit also threaten their lives and they could not continue their cultivation. If a male farmer commits suicide, the female members of the deceased family face a lot of difficulty in continuing the agriculture. They face the problems of lack of income to conduct their daughters’ or sons’ marriages. The education of the children also suffers for lack of income. Even medical treatment has become next to impossible for lack of money.

Mass organisations. The Government formulated the following three important relief and rehabilitation packages, following widespread agitations.

1. The G.O. 421

2. Prime Minister’s Relief package


The foregone discussion clearly establishes that there is a big gap between the Governments promises and implementation. Not only are the packages designed properly but are also not implemented sincerely and faithfully. The
failure of the Government in this regard is all pervasive. The nature of the Government is not to help or serve the poor but to promote the interest of the private corporate companies, both domestic as well as multinational.

During the pre-Green Revolution period of agriculture development after the Independence, food was the main problem. Bringing new lands under the plough and provision of irrigation were the two measures taken by the Government. During the Green Revolution period, modern agricultural technology, nationalisation of banks and establishment of Agricultural Prices Commission did help the farmers to improve their agricultural production and also get better prices for their agricultural commodities. In the Post Green Revolution period, rich farmers got the benefit while small and marginal farmers are bypassed. During the Reforms period, the New Economic Policy and WTO policies have contributed to the agrarian crisis. Further, the agrarian crisis deepened in the subsequent years. The crisis is manifested in declining output growth rate, farmers’ indebtedness, low level of farmers’ income, poverty, food problem, low productivity of crops, out migration of poor farmers and labours, loss making agriculture etc.
According to NCRB, (the Government of India) Maharashtra, Andhra Pradesh, Karnataka, Kerala and Chattisgarh are the five States where farmers’ suicides were occurred most.

BCs, SCs and STs form the major part of the farmers committing suicides in the selected Warangal district. The percentage of female population in the selected households is more than male population. The major activity of the respondents is agriculture. The literacy level among the respondents is very low. About 50 per cent of them are illiterates. Only 30 out of 163 respondents are members of the cooperative societies.

**Economic aspects**

It is noted that common property resources have declined drastically in the selected villages which caused great trouble to the farmers. All the selected farm households were small and marginal farmers. About 83 per cent of the farmers depend on rainfed agriculture. Among the selected farmers, as many as 129 are dry land farmers and 39 were irrigated farmers who also possessed dry lands. The live stock position in the selected households was very poor. Majority of the farmers did not possess implements and machinery and consumer goods.
The total outstanding loan per farmer in less than 1 acre group was Rs 36,786. The same in the 1-2.5 acres group is Rs 38,291 and in the third group it is Rs 41,932. It is noted that less than half of the farmers received loans from the banks. Private sources are still dominating rural credit market. Cotton, paddy, maize, chillies, pulses and vegetables are the main crops grown by the selected farmers. Majority of the small and marginal farmers hired out their labour.

POLICY IMPLICATIONS

1. It is recommended that the solutions to the problems of farmers’ suicides as suggested by various commissions and committees appointed on farmers’ conditions and related aspects should be implemented by the government immediately and fully to solve the problem of agrarian distress and farmers’ suicides.

2. Since the members of the kind of the deceased did not derive much benefit from government in their distressed conditions. Efforts must be made to ensure quicker disbursal of the relief to the kin. As the relief and rehabilitation packages are not properly designed, these should be redesigned or reformulated to meet the requirements of the families. The implementation should be free from obstacles like corruption and delays.
3. Indebtedness is the most important contributory factor for suicides. All the farmers, not only those who have taken loans from public financial institutions but also those who have taken loans from private sources, should be relieved from their debt burdens. In addition to the debt waiver scheme from public institutions, debt relief scheme even from private sources should be implemented. The farmers’ dependency on the private exploitative credit market should be reduced. All the farmers, especially small, marginal and tenant farmers should be provided with institutional credit at a zero rate of interest. Loan should be provided for all crops according to the scale of finance. No security should be demanded from farmers borrowing less than Rs one lakh as per the guidelines of RBI and NABARD.

4. Crop loss has emerged as the second major cause for farmers’ suicides and hence both preventive as well as relief measures should be extended to the farmers. Preventive measures include development of irrigation through minor and macro irrigation facilities. Better and effective plant protection measures should be taken to prevent crop loss due to pest and decease attack. Drought resistant crop varieties need to be developed for dry land farmers. The farmers should be paid input subsidy and indemnity or compensation amount without delays.
5. The government should supply at least 50 per cent of agricultural inputs such as seeds, fertilisers, pesticides etc. at 50 per cent subsidy from the public institutions or agro-service centers.

6. Infrastructure including electricity, road connectivity, storage and warehousing and cold storage facilities, agro-processing, improving services at the market yard etc. should be created for strengthening the base of the farmers.

7. Remunerative prices should be provided to farmers based on the recommendations of the Prof. M.S. Swaminathan’s Commission.

8. **RESEARCH AND EXTENSION**

   Public funded research in agriculture shall benefit farmers, particularly small and marginal. The research efforts at agricultural research station, Warangal have to be diversified and intensified so as to evolve straight varieties in crops. The seeds of straight varieties are invariably cheap. The foundation seed may be given by the agricultural research station directly to the farmers for multiplication and use. The cost reducing and yield increasing technologies have to be evolved so that the cost of production of crops in reduced and farmers are benefited.

   Government must strengthen agricultural extension services by equipping with men and material adequately and suitably to transfer the
technology from Lab to Land. Investment on agricultural extension should be enhanced.

9. Sustainable Agriculture/Organic farming / Ecological agriculture

Chemical agriculture, which is being adopted by farmers in Warangal district, is not only highly expensive but also environmentally damaging and health hazardous. Sustainable agriculture with farm produced seeds, organic manures, non-pesticide management etc is proved to be cost-effective. Hence, Government should extend incentives, subsidies, credit and other support to sustainable agriculture to reduce farmer’s expenditure on cultivation and to make agriculture profitable and sustainable.

10. Irrigation

Tank Irrigation system in Warangal district has to be strengthened, as tanks have to play a big role in the provision of irrigation to farmers. A separate board may be established with necessary funds to take up the development of tank irrigation system.

Indiscriminate tapping of ground-water should be stopped by adopting various measures for recharging ground water and controlling
digging of new borewells recklessly and irresponsibly by strictly implementing Water, Land and Three Act (WALTA)

11. Cooperative Service Societies / Producers’ Associations

These institutions provide quality inputs at fair prices obtained from manufacturing or Distribution Companies through enhanced bargaining power and also market farmer-members’ produce at competitive prices. Farmers are thus helped by saving them from exploitation of middlemen and corporate forces. It is, therefore suggested that farmers may be motivated to become members of the cooperative service corporative and produces’ Associations. Government has to take steps to establish these institutions.

12. Agricultural Insurance should be extended to each and every farmer, as he is constantly facing crop loss and risk factor. Insurance should be delinked from loans. Small and marginal farmers may be provided insurance with 50% subsidy in premium. All the crops may be covered with insurance facility. The compensation should be provided to the framers within a month after the harvest. This will infuse confidence in farmers and may act as a deterrent in taking a drastic step of forced death.
13. Counseling and Help-lines

Camps are suggested in the villages to extend counseling to farmers in general by the competent psychologists. Government may take steps in this direction. Help-lines, which were started earlier by Government may be made functional to help the farmers who vulnerable.

14. Protection to farmers from global market forces

Government may formulate a long term import-export policy in the interest of domestic farmers. Restriction or regulation on import of agricultural products is necessary so that demand for domestic products is not slashed and prices declined.

15. Since agriculture sector is in deep crisis, top most priority needs to be given to agriculture and allied sectors by enhancing budgetary provision at least to 10% of the total budget of the State and the Central Governments.