

# **A Market Imperfections and Farm Profitability in Gujarat**

S. S. Kalamkar and K. Kapadia

*All India Study Coordinated by*  
Institute of Economic Growth, University of Delhi, Delhi



*Report submitted to the*  
**Directorate of Economics & Statistics**  
**Department of Agriculture, Cooperation & Farmers Welfare**  
**Ministry of Agriculture & Farmers Welfare,**  
**Government of India, New Delhi**



**Agro-Economic Research Centre**  
*(Ministry of Agriculture & Farmers Welfare, Govt. of India)*  
**Sardar Patel University**  
**Vallabh Vidyanagar 388120, Anand, Gujarat**

November 2020

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**Sardar Patel University**  
**Vallabh Vidyanagar 388120, Anand, Gujarat**

November 2020

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## Foreword

Profitability is an important economic motivation to the farmers to take up sustainable agricultural practices. As farming in India is characterized by small and fragmented holdings and high dependence on monsoon rains, operating small holdings is often unviable and farming is not a profitable business or enterprise. The economic viability of the small and marginal farm depends on input costs, institutional framework and different government policies (like price policy, minimum support prices, etc.). In fact, agriculture sector is marked by large-scale disguised unemployment and unending uncertainties at every stage of farm operations resulting in lower income and agrarian distress in many parts of the country. Agrarian distress is not limited to rainfed areas and has also spread to progressive states like Punjab and Kerala where the new generation of farm households is no longer interested in farming. Therefore, agriculture needs to be made more profitable, attractive and enterprising so that the rural to urban migration is reduced and farmers take pride in their profession, which can only happen if bottlenecks are removed. The understanding of agricultural input and output markets is essential for improving agricultural productivity and growth. Development of input and output markets is important because farmers are not motivated to increase yields if they are unable to sell their produce. If this occurs, it defeats the objective of intensifying agricultural production as the majority of the population derives its livelihood from the agriculture.

Recent efforts to improve farmers' income have been focused on raising Minimum Support Prices (MSPs). Historical evidence shows that MSP does not directly translate into higher income for farmers due to a deficient and ineffective implementation framework. Additionally, high MSPs result in market distortions and render Indian exports uncompetitive in world markets. Realising the need to pay special attention to the plight of the farmers, Union Government changed the name of Ministry of Agriculture to Ministry of Agriculture and Farmers' Welfare in 2015. Further, goal was set to double farmers' income by 2022-23 to promote farmers' welfare, reduce agrarian distress and bring parity between income of farmers and those working in non-agricultural professions. One of the important ways to achieve the GOI's goal of doubling the farmers' income by the year 2022 is through better price realization for their harvest. This can be achieved through upgrading traditional agricultural produce market to electronic markets. The current policy focus on doubling farmers' income can also achieve its desired objectives only by improving and vastly redesigning the existing marketing system in the country. Many studies have highlighted the grim situation of income from agriculture and that to unstable due to various reasons, while no study is found focusing on the market imperfection and farm profitability in India. In view of same, the Ministry of Agriculture and Farmers Welfare, Government of India entrusted this study to our Centre. The study is based on both primary and secondary level data. The study was undertaken to fill up this gap in literature and also to use in proper policy formulation towards doubling of farmers' income. The study came out with important and relevant policy implications which would help the policymakers to suggest appropriate strategies to increase income of the farmers.

I am thankful to members of research team for putting in a lot of efforts to complete this excellent piece of work. I also thank the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India for the unstinted cooperation and support. I hope this report will be useful for policy makers and researchers.

November 25, 2020

**Agro-Economic Research Centre**  
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November 25, 2020

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## **List of Abbreviations**

\$	- Dollar
ACZ	- Agriculture Climatic zones
APMC	- Agricultural Produce Market Committee
Av.	- Average
CCS	- Cost of Cultivation Scheme
COC/CoC	- Cost of Cultivation
DFI	- Doubling Farmers' Income
FICCI	- Federation of Indian Chambers of Commerce & Industry
GCA	- Gross Cropped Area
GDP	- Gross Domestic Product
GOI	- Government of India
hh/HH	- Household
MSP	- Minimum Support Price
NABARD	- National Bank for Agriculture and Rural Development
NCF	- National Commission on Farmers
NSA	- Net Sown Area
NSSO	- National Sample Survey Organization
PPS	- Probability Proportional to Size
SAS	- Situation Assessment Survey

## **Market Imperfections and Farm Profitability in Gujarat**

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---

### **1. Introduction**

Profitability is an important economic motivation to the farmers to take up sustainable agricultural practices. As farming in India is characterized by small and fragmented land holdings and high dependence on monsoon rains, operating small land holding is often unviable and thus, farming is not a profitable business or enterprise in India. The economic viability of small and marginal farm depends on input costs, institutional framework and different government policies (like price policy, minimum support prices, etc.). In fact, agriculture sector is marked by large-scale disguised unemployment and unending uncertainties at every stage of farm operations resulting in lower income and agrarian distress in many parts of the country. Agrarian distress is not limited to rainfed areas and has also spread to progressive states like Punjab and Kerala where the new generation of farm households is no longer interested in farming. Therefore, agriculture needs to be made more profitable, attractive and enterprising so that the rural to urban migration is reduced and farmers take pride in their profession, which can only happen if bottlenecks are removed. Therefore, understanding of agricultural input and output market is essential for improving agricultural productivity and growth. Development of input and output market is important because farmers are not motivated to increase yield if they are unable to sell their produce. If this occurs, it defeats the objective of intensifying agricultural production as the majority of the population derives its livelihood from agriculture.

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## 2. Data and Methodology

The study is based on both secondary and primary level statistics. The secondary data were compiled from different publications and related websites of Government of India and Government of Gujarat. The primary data were collected from 800 sample households from total sixteen villages from eight agro-climatic zones of Gujarat. The selection procedure suggested by the Ministry of Agriculture and Farmers Welfare, Government of India in Cost of Cultivation Scheme is adopted. The State is divided into 8 homogeneous agro-climatic zones based on crop-pattern, soil type rainfall pattern, etc. From each ACZ, two villages were selected with sufficient geographic spread. From each village, a total sample of 50 farmers were selected randomly. The households from the land size categories i.e. marginal (<1 hectare), small (1-2 hectares), medium (2.1-4 hectares), large (4.1-10 hectares) and very large (>10 hectares) were selected using stratified random sampling with PPS method (probability proportional to size). Due care was taken in selection to have farmer household with irrigation, livestock and other related factors (farmer response, etc.). Due care was also taken in selection of villages (not be contiguous in location). The agro-climatic zone wise selected villages and households are presented in Table 1.

Table 1: Agro-Climatic Zone-wise Selected Villages in Gujarat

Sl	Agro-Climatic Zones		District	Taluka	Village	Sample number
1	I	South Gujarat (Heavy Rain Area)	Navsari & Tapi	Khergam & Songadh	Vad & Kikakui	100
2	II	South Gujarat	Surat & Bharuch	Olpad & Jagadia	Khumbhari & Umalla	100
3	III	Middle Gujarat	Mahisagar	Khanpur & Balasinor	Limbadiya & Janod	100
4	IV	North Gujarat	Kheda	Mahudha & Kapadvanj	Heranj & Savali	100
5	V	North West Gujarat	Banaskantha	Tharad & Lakhani	Vasana-Vatam & Moti Pavad	100
6	VI	North Saurashtra	Bhavnagar & Botad	Mahuva & Botad	Otha & Shirvaniya	100
7	VII	South Saurashtra	Jamnagar	Dhrol & Jamnagar	Haripar & Theba	100
8	VIII	Bhal & Coastal Area	Ahmedabad	Dholka & Daskroi	Sahij & Vanch	100

## 3. Overview of the Study Region and Selected Villages

Gujarat state accounts for 6.19 per cent of total geographical area of the country. It has 33 districts and 248 talukas. The state is divided into five administrative regions. It falls in 13<sup>th</sup> Agro climatic zone of India which is further divided into eight sub-zones. Gujarat has been consistently clocking impressive agricultural growth rates. This has been possible because the government has focused on improving not only irrigation, quality of seeds and power but also subsidiary sectors like animal husbandry. The growth of the animal husbandry sector has resulted not only in increased milk production but has also provided a boost to the overall agro-economy of the state. The cooperative sector has been the key driver of the tremendous increase in Gujarat's milk production. The largest dairy co-operative in India, Amul, is based in Anand, Gujarat. 'Amul' pattern is well known and accepted by all states in India besides some of the countries in the world.

#### **4. Findings from Field Survey data**

- *Almost 70 per cent of selected households are from marginal and small landholding size group. The average size of landholdings of selected households is estimated to be 2.10 ha. The major crops grown were paddy, cotton, wheat, groundnut and fodder crops. More than 94 per cent of households has agriculture as a principal occupation.*
- *More than two fifth of total households owned milch buffaloes, three fifth of the households have milch cows, about 15 per cent households have bullock. One fourth of total households owned tractor.*
- *The average land holding is relatively higher in case of tobacco growing farmers followed by sugarcane, groundnut and cotton growers. Across the groups, marginal farmers covered maximum area under groundnut followed by tobacco. Failure of crop was reported by some of the farmers.*
- *Out of the total quantity produced, around 15 per cent was reported unsold or kept at home and 85 per cent produced was sold. Across land holding groups, it is observed that lower the land holding size more the share of total produce retained at home, may be due to less marketable surplus with marginal and small land holder farmers.*
- *The majority of the portion of the quantity produced was sold during the first attempt only (96.5 per cent) that to majority of sale was made to local private trader followed by sale in the nearby mandi. While across groups, highest share of marginal and small group farmers sold their produce to local private trader and the lowest in local mandi, indicate distress sale of produce by this vulnerable section of farming community.*
- *More than 98 per cent of the selected households have reported unsatisfied (sale of crops) due to receipt of lower rate than market, delayed payments, deductions for loans borrowed and faulty weighing and grading system.*
- *As crop cultivation is transferring from subsistence to commercialised farming, use of off-farm inputs have been increased to a large extent. In most of the cases, off farm inputs are used on large scale which are purchased from the market or in few cases are borrowed from others. While less than 10 percent of households have used farm saved seed. The input dealer and the local private trader were two important sources for purchase of seed. The labours were mostly family members.*
- *The total expenditure incurred on purchase of inputs reported by the selected households is estimated to be higher in case of marginal farmer group and the lowest was in case of very large farm holdings group, which indicate that higher the land size lower the expenses on inputs.*
- *More than 85 percent of the selected households reported that price paid for the seed input was high and thus was not reasonable. The prices paid for off-farm inputs such as fertilisers, plant protection, diesel are reported to be high and very high while in case of manure, it is reported reasonable. The labour rate are reported at very high level. Thus, at overall level, all the inputs are categorised under high to very high category and thus are not reasonable.*
- *In case of animal produce, more than 86 per cent of total milk produced was sold in village, of which more than half of total produce was sold to local traders followed by more than one third of total produce was directly sold to households in village in the first disposal itself. The remaining produce was sold during*

*second disposal to same agencies. The highest share of households of marginal group reported sale of milk to cooperative and government agency during first disposal. The majority of produce disposal was mainly during first attempt only.*

- Major reasons for the dissatisfactions over sale of animal produce reported by sample households were realisation of lower price than market and deductions towards loan borrowed. Very few buyers and collusion of private buyers are the major reasons for the unreasonable prices received from the buyers.*
- The private input dealer followed by cooperative and government agency were major input procurement stations for cattle and buffalo farmers while for small ruminants, inputs were taken from own farm.*
- The expenses incurred for the purchase of inputs related to animal husbandry showed that expenditure per households for rearing the livestock was reported the lowest by the medium land holders followed by small and large landholding groups. As such one cannot compare it as per landholding group as possession of livestock is different across the groups.*
- In case of labour use, on an average, five family members along with two farm servants were employed for farming and livestock operations. The average number of hours worked by each of the worker either from any category was around 6-7 hours per day. The average wage rate paid to farm servant were worked out to be Rs 220/- per day for male and Rs. 180 per day for female, while in case of casual labour, wage rate was same in both cases (Rs. 196 per day).*
- Almost two third of selected households opined that wage rate paid was high while one third of total households reported same as very high. Thus, altogether more than 88 per cent of households have reported high wages rates for labour. Limited labour supply in study area was main reason for same. The availability of work under MGNREGA as well as control of labour contractor on labour supply has created wage rate hike in the study area.*
- Most of the engagement of wage labour was up to nine months in a year and the wage rate prevailing for farm and MGNREGA work was reported to be Rs. 266 per day and Rs. 185 per day respectively.*
- More than half of the total households has taken some kind of loan. It is very surprising to note that all the farmers from very large farm holding group have borrowed money and the lowest ratio was reported in case of marginal landholder group. Thus, incidence of loan increases with the land holding size.*
- The major sources of the money borrowing by the sample households are formal agencies such as government bank and cooperative society. On an average, Rs. 191885 amount was borrowed to meet capital expenditure in farm business and to meet day to day working expenditure in farm business.*
- The average rate of interest charged by the formal lending agencies such as banks, cooperative society and SHGs ranges between 6.2 to 7.1 per cent per year. It was very strange to note that input dealers and commission agents are also lending loan at lower rate of interest of 7.1 per cent as compared to very high rate of 24 percent charged by the private money lenders. About two third of total households has repaid the loans. The reasons cited for non-repayments are payment would be after harvesting, due to medical expenses, income is less than the expectation and expecting the loan waiver.*

- Out of total sample households, 28.4 per cent households have reported purchase of productive assets during the year. Across the groups, lowest share of households who purchased productive assets were reported in case of marginal farmers and the highest in case of very large farmer group. Thus, purchase of assets has positive relationship with size of land holdings.
- The newspaper/radio/tv followed by nearby progressive farmer and gram sevek as well as extension officer of the respective area are the sources of information for selected households. Higher the land size, more the access to sources of technical advice. The need based contact is the major reason in most of the cases.
- The advice given by the Krishi Vigyan Kendra and private commercial agents is adopted cent percent basis, while adoption of advice given by veterinary department was at lower side than other sources. The major reasons for non-adoption of technical advice received were mostly lack of technical advice follow up and lack of financial resources.
- Majority of households have reported that advice was useful. The intensity of usefulness was the highest in case of advice received from agricultural university or college while same was the lowest in case of progressive farmers. The impact of adoption of advice was reported beneficial (put together moderately beneficial and beneficial) in all cases. None of the advice was reported harmful.
- It was observed that hardly 38 percent of selected farmer households were aware about the MSP. Those who were aware, majority of them were not aware about the procurement agencies for the crop. Across the land groups, hardly one fourth of the marginal farmers were aware about the MSP while more than one half of the large farmers were aware about the same.
- Very few households have reported the sale of produce to agencies nominated by the Government. In fact, sale of produce was the highest in case of the very large farmers group may be due to their approach and more marketable surplus. The crops sold at MSP to stipulated agency were groundnut, rapeseed and mustard, and cotton and the rate received by them was equal or higher than MSP.
- None of the farmer has reported receipt of deficiency payment under BBY or PM AASHA which indicate the poor reach and coverage under these schemes. Under the PM KISAN assistance scheme of the Government of India, around 78 per cent of selected farmers have received assistance which took almost 5-6 months to realise same in their account.
- More than half of the selected households have reported crop loss that to cent percent in case of large farmer group which was very strange to note. The major cause of crop loss was inadequate rainfall/drought like situation during the agriculture year under study.
- Those who have reported crop loss and has taken insurance have reported that about 86 percent of households have not received claim amount, while 9.2 per cent received after some time (delayed) and remaining received amount in time. Thus, hardly 14 per cent of claims were settled by insurance company. The claim amount received vary from crop to crop and group to group. On an average, total claim amount received was estimated to be Rs. 28457/- per household.
- There are various types of problems enter-counter by the farmer households while performing the various operations on field as well as in marketing of produce. The cumulative impact of same has been seen in terms of income generated from crop cultivation keeping in view cost on crop cultivation. About

*99 per cent of households have reported that income generated from farming is not adequate. All the households from marginal group have reported the same.*

- The major five reasons for inadequate income from agriculture reported are problem of pest /diseases; nuisance of animals; insufficient irrigation; non remunerative prices and labour shortage. The small size of holding is one of the major problems for marginal farmers which makes farming uneconomical.*
- The economic risks faced reported by the sample households are lack of finance/capital, lack of access to inputs, sharp fluctuations in input prices, sharp fluctuations in output prices, lack of demand/inability to sell agricultural products, lack of demand /inability to sell non-agri products and seasonal unemployment.*
- Sample households have adopted the coping strategies such as borrowed money from friends/relatives, worked as wage labour in the village, borrowed money from bank, borrowed money from moneylenders, reduced household consumption expenditure, deferred social & family functions and started petty business/shops. Specifically, majority of marginal and small farmer households have to work as wage labour in the village as well as they have borrowed loan from friend/relatives to cope up with economic risk faced.*

## **5. Conclusions and Policy Implications**

- The villages in North and Saurashtra regions are scattered and far from the town and APMC market as compared to villages in South and the Central region of Gujarat. Physical market infrastructure is critical in enhancing production and marketed surplus and ensuring higher returns to farmers. The development of quality physical infrastructure helps to reduce transactional costs and improve market efficiency. Improved roads and creation of market hubs that are closer to producers can reduce transportation costs and post-harvest losses, which in turn can lead to higher prices received for outputs, resulting in farmers receiving higher returns from agricultural production.*
- On an average marketed surplus was 85 per cent of crop produced. The majority of the portion of the quantity produced was sold during the first attempt (96.5%) that to majority of sale was made to local private trader mostly at lower rate than market price. It indicates that farmer prefer to sale the produce to local trader to meet the need of requirement of next crop cultivation and home expenditures. Among different farm size groups, the marketed surplus ratios found lower in case of small and marginal farmers compared with large farms. It is also found that marketed surplus increased with an increase in farm size and output. Further, marketed surplus was higher than marketable surplus for small and marginal farmers, indicating distress sale.*
- Farmers have sold almost entire produce immediately after the harvest as they need credit for the next crop cultivation that leads to serious constraints in handling and storage of produce for procurement agencies, particularly in rice and wheat. Therefore, access to institutional credit and proper storage at village level will play an important role in increasing marketable surplus and reduce distress sale.*
- In most of the cases, off farm inputs are used on large scale which are purchased from the market or in few cases are borrowed from others. Input dealer and the local private trader are two important sources for purchase of seed and other inputs. Prices paid for these inputs were reported to be high and very high level.*

*Therefore, there is a need to ensure timely availability of adequate quantity of quality seed and fertiliser and other inputs at reasonable price, particularly by State Seed Certification Agency and State Department of Agriculture.*

- *More than half of the total households has taken some kind of loan. It is very surprising to note that all the farmers from very large farm holdings group have borrowed money and the lowest ratio is reported in case of marginal landholder. Thus, incidence of loan increases with the land holding size. The major sources of the money borrowing by the land holders are formal agencies such as government bank and cooperative society. The reasons to borrow loan are to meet capital expenditure and day to day working expenditure in farm business. It is therefore need to narrow the gap in financial inclusion for farmers.*
- *Market information and extension services play a significant role in increasing productivity and market participation of small farmers. The major sources of information for selected households are newspaper/radio/tv followed by nearby progressive farmer and gram sevak as well as extension officer of the respective area. Availability of timely and reliable market information has been seen as a major constraint by farmers in marketing of their produce, leading to low price realization. Hence, there is a need to strengthen dissemination of market intelligence/information so that farmers can make appropriate decision.*
- *Hardly 38 percent of selected farmer households are aware about the MSP. Those who are aware, majority of them are not aware about the procurement agencies for the crops. Thus, there is a need to create awareness about the same.*
- *None of the farmers have reported receipt of deficiency payment under BBY or PM AASHA which indicate the poor reach and coverage under these schemes.*
- *More than two third of the selected households put together are either not aware or not interested about the crop insurance which once again highlighted the poor reach of crop insurance scheme.*
- *About 99 per cent of households have reported that income generated from farming is not adequate which is in tune with other research findings.*
- *The major five reasons for inadequate income from agriculture are problem of pest /diseases; nuisance of animals; insufficient irrigation; non remunerative prices and labour shortage. The high severity is reported in case of inadequate availability of irrigation, lower prices for produce, nuisance of animals; insect pest problems and small size of land holdings were major ones.*
- *Since farmers can receive higher prices under competitive markets, there is a need to create more competitive market structure by liberalizing agricultural markets so that farmers could choose the agency to whom they wished to sell their produce. Small and marginal farmers are forced to sell their produce just after harvest at lower prices. Sometimes farmers may want to sell it later when prices are higher but feel constrained by, among other things, lack of storage facilities and access to credit. Therefore, a competitive market combined with storage facilities can ensure better prices to small farmers by allowing them to have greater flexibility in the timing and location of their sales.*
- *At overall level, more than 98 per cent of the selected households have reported unsatisfied with sale of crops due to lower rate than market, followed by delayed payments, deductions for loans borrowed and faulty weighing and grading. Thus, there is a need for efficient marketing system and diffusion of information and innovations on production technologies.*