

Project Dissertation

Agricultural Marketing Information System Network: A Gap Analysis for Soyabean

Submitted by

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2K14/MBA/33

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CERTIFICATE

This is to certify that the dissertation report titled “**Agricultural Marketing Information System Network : A Gap Analysis for Soyabean**” is a bonafide work carried out by **Mr. Kapil Sharma** of **MBA 2014-16** and submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 in partial fulfillment of the requirement for the award of the Degree of Masters of Business Administration.

Signature of Guide

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Place:

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DECLARATION

I, **Kapil Sharma**, student of **MBA 2014-16** of Delhi School of Management, Delhi Technological University, Bawana Road, Delhi – 42, hereby declare that the dissertation report “**Agricultural Marketing Information System Network : A Gap Analysis for Soyabean**” submitted in partial fulfillment of Degree of Masters of Business Administration is the original work conducted by me.

The information and data given in the report is authentic to the best of my knowledge.

This report is not being submitted to any other University, for award of any other Degree, Diploma or Fellowship.

Kapil Sharma

Place:

Date:

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ABSTRACT

The AGMARKNET portal is an initiative taken by the Directorate of Marketing and Inspection, Ministry of Agriculture and Farmer Welfare, Government of India, with the aim of collecting and disseminating marketing related information of agricultural commodities throughout the country. This information is highly crucial in nature as it can be used by various stakeholders, such as farmers, traders and policy makers among others, to make important decisions at individual as well as national level. It also aims to strengthen the economic position of farmers as well as consumers by providing them with marketing related information of agricultural commodities spanning over all the markets in the country. Such information will enable the farmers to obtain fair returns on their produce. For consumers, it means that they will be able to obtain agricultural produce at fair and affordable prices.

To achieve these objectives, it is necessary that the information being recorded and disseminated by the AGMARKNET portal be of accurate and reliable nature. The fact that this information is also intended to be used for national level agricultural policy decisions, makes it even more crucial for the information to be highly accurate and complete in all aspects.

This study aims to analyze the daily market data reported by the markets on the AGMARKNET portal, regarding the non-perishable agricultural commodity Soyabean, over a period of time and test the data in terms of quality, correctness, accuracy and reliability. Various techniques have been used to analyze the data and establish the various types of anomalies that may or may not exist in the data. The study also aims to establish whether the original intention of the AGMARKNET initiative of uploading accurate market related data timely and regularly, is being fulfilled, and establish the defaulters in the process, if any.

The activity involved daily collection of data of prices and arrivals of all the markets in the country from the AGMARKNET portal regarding the non – perishable commodity Soyabean. The data collection was repeated after a pre-defined period of time to identify deficiencies and verify the various evaluation parameters. Microsoft Excel has been used as an analysis tools in this study.

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ABBREVIATIONS

| | |
|-----------|---|
| AGMARKNET | Agricultural Marketing Information Network |
| AMA | Agricultural Marketing Adviser (to the Govt. of India) |
| APMCS | APMCS (Agricultural Produce Market Committees) |
| DMI | Directorate of Marketing and Inspection |
| EDP | electronic data processing (EDP) |
| FAO | Food and Agriculture Organization |
| GNU | GNU (operating system) is Not Unix (recursive abbreviation) |
| GPL | (GNU) General Public License |
| IADP | Intensive Agricultural Development Programme |
| ICT | Information and Communication Technology |
| IFFCO | Indian Farmers Fertilizer Cooperative Limited |
| MCX | Multi Commodity Exchange of India |
| NCDEX | National Commodity & Derivatives Exchange |
| NGO | Non-governmental Organization |
| NIC | National Informatics Centre |
| NMCE | National Multi Commodity Exchange of India Ltd. |
| OS | Operating System |
| SMS | Short Message Service |
| SQL | Sequential Query Language |
| WHO | World Health Organization (WHO) |

Chapter 1

Introduction

1.1 Introduction to the project

1.1.1 Background

Agricultural marketing in India has come a long way since independence, but still many challenges are present. Market information could be considered as a crucial factors for farmers in order to plan production and marketing of the produce. Other market participants also require market information in order to make decisions related to trading. Thus it was highly essential that the marketing information is accurate and complete in all aspects, and is efficiently disseminated to the stakeholders. With the advent of Information and Communication Technology (ICT), it became easier to communicate large volumes of data to far and remote locations. Thus in order to strengthen the farming communities and to provide them with opportunities of trade, there was a need to implement a solution providing “Agricultural Marketing Information Network” in the country.

As a result, the Central Sector Scheme project of Agricultural Marketing Information Network (AGMARKNET) was launched by the Ministry of Agriculture, Government of India in the month of March, 2000. It aimed to connect together all the agricultural produce wholesale markets throughout the country and the State Agricultural Marketing Boards and Directorates. The project received technical support from National Informatics Centre (NIC).

Till date, a total of 3245 nodes have been affiliated with the scheme. These nodes comprise of agricultural produce markets, field offices of Directorate of Marketing and Inspection and State Agricultural Marketing Boards/ Directorates and their attached offices, etc. These nodes have been provided with necessary computer hardware components along with internet connectivity. ‘AGMARK,’ a

user friendly software package has been developed to facilitate compilation and transmission of data at market level. The reporting system is now web enabled. The Agmarknet portal (<http://agmarknet.dac.gov.in/>) strengthens interface with farmers and other beneficiaries The AGMARKNET portal also provides access to various websites of organizations involved with agricultural marketing. It provides weekly trend analysis, futures prices and international price trends for important commodities.

1.1.2 Directorate of Marketing and Inspection

The Directorate of Marketing and Inspection (DMI) is under the Governance of the Ministry of Agriculture. The Government of India had setup the DMI in the year 1935 to facilitate the implementation of agricultural marketing policies and programmes. Since then the Directorate has been working tirelessly to bring about advancement of agricultural marketing as well as safeguarding the interests of produces, suppliers as well as consumers. It also facilitates interaction between the Central and State Governments regarding agricultural marketing policies. The Directorate is headed by the Agricultural Marketing Adviser to the Govt. of India (AMA).

1.1.3 National Informatics Centre (NIC)

The National Informatics Centre (NIC) was established in 1976 to provide ICT Solutions for effective e-Governance initiatives. National Informatics Centre has spearheaded the "Informatics-led-development" programme of the Government of India and has generated competitive advantage by implementing ICT applications in social & public administration. The following major activities are being undertaken:

- Setting up of ICT Infrastructure
- Implementation of National and State Level e-Governance Projects
- Products and Services
- Consultancy to the government departments
- Research and Development

- Capacity Building

Since its inception, NIC has undertaken many software application implementations based on state-of-the-art technology. NIC is also responsible for managing the information systems and websites of Central Ministries/Departments, Disaster Recovery Centres, Network Operations facility to manage heterogeneous networks spread across Bhawans, States and Districts, Certifying Authority, Video-Conferencing and capacity building across the country. NIC also has under its belt various initiatives such as Government eProcurement System (GePNIC), Office Management Software (eOffice), Hospital Management System (eHospital), Government Financial Accounting Information System (eLekha), etc.

For the Agricultural Marketing Network Scheme, NIC had provided computer hardware, developed the software, provided training to market personnel towards the operation of the hardware and software systems and provided internet connectivity. It has also developed the integration between the software packages developed by the various states with AGMARKNET to bring about seamless uniformity in the database.

1.1.4 State Agricultural Marketing Boards

Ever since the country attained independence, the Planning Commission of India has been striving hard to maximize agricultural production. In pursuit of this goal, the Zamindari system had to be abolished and surplus land had to be distributed among farmers and laborers. The programmes like Intensive Agricultural Development Programme (IADP) were launched. And rural development became of prime importance. So, on one hand, on the national level, efforts were being made to maximize production, while on the state level, the focus was laid on sale, storage and processing of agricultural produce. There was also the issue of distribution of the produce so that the produce was sold off at prices which were to be fair to both farmers, traders and consumers. It was with this objective in view that many states chose to establish State

Agricultural Marketing Boards in order to facilitate marketing activities regarding agricultural produce.

For AGMARKNET, the State Government/ Marketing Boards provided the list of markets to be covered under the Agricultural Marketing Scheme. The selected markets were to provide site for installation comprising facilities for computer installation, telephone connectivity and computer operator.

Market Committees/ Controlling authorities of AGMARKNET node at market level were assigned to collect relevant data and information, feed it and transmit it to the State level and AGMARKNET portal. NIC had also trained suitable persons from each node in operating computer and handling software package.

At each market node, there is a person assigned to collect data and transmit it. An incentive scheme has been introduced to reward data entry operators for maintaining performance standards regularly.

1.2 Significance of study

As a step towards globalization of agriculture, the Directorate of Marketing & Inspection (OMI) has embarked upon an ICT project: "NICNET based Agricultural Marketing Information System Network (AGMARKNET)" in the country, during the Ninth Plan, for linking all-important APMCS (Agricultural Produce Market Committees), State Agricultural marketing Boards / Directorates and OMI regional offices located throughout the country, for effective information exchange on market prices NIC implements this project on a turn-key basis.

The purpose of study is to understand and investigate into the data quality. There are many approaches in the literature that can be applied to studying data quality. A data life cycle which focuses on the sequence of activities from creation to disposition of data has been proposed. Another concept that might be applicable is the value chain, where defining, gathering and compiling data are categorized by the value they add at each stage in information system.

Other approaches to the data quality problem include an electronic data processing (EDP) audit and database integrity. Although all of these approaches have merits, we choose to draw upon an analogy that exists between quality issues in an information systems environment.

1.3 Objectives of the Study

The AGMARKNET Portal, though fully functional for the last decade and a half, still suffers from certain shortcomings that raise questions upon the quality and integrity of the data being provided by the portal. The data containing marketing information about the various agricultural produce is being uploaded on the portal at the end of each day. This makes the data prone to human errors which may be either deliberate or unintentional in nature. This study aims to find out whether such errors exist and to evaluate the quality of the data being provided by the AGMARKNET portal. Since it would be impractical to evaluate the data of all the commodities being listed on the portal, we shall only evaluate the data for one of the non-perishable commodities i.e. Soyabean. The objectives of this study are as follows:

1. To uncover any faults / errors / shortcomings in the data being uploaded on the AGMARKNET portal.
2. To evaluate the data being uploaded on the AGMARKNET portal in terms of accuracy, integrity and reliability.

Chapter-2

LITERATURE REVIEW

A lot of literature is available on agricultural marketing and its' management. It is neither desirable nor possible to survey the whole literature. Therefore, only those relevant works have been reviewed, which reveal some general idea and provide a rationale for the present study. Such review of literatures always helps the researcher in getting an overview of the problem under study. It, moreover, helps to identify areas where in-depth research has not been carried out. Such as identification of fresh areas facilitate the taking up of new and meaningful research work.

2.1 WHAT IS AGRICULTURAL MARKETING?

Agricultural marketing can best be defined as series of services involved in moving a product from the point of production to the point of consumption. Thus agricultural marketing is a series of interconnected activities involving: planning production, growing and harvesting,, grading, packing, transport, storage, agro- and food processing, distribution, and sale (Tracey, 2003). Such activities cannot take place without the exchange of information and are often heavily dependent on the availability of suitable finance. Marketing systems are dynamic. They are competitive and involve continuous 21 change and improvement. Those who have high costs, do not adapt to changes in market demand and provide poor quality are often forced out of business. Marketing has to be customer-oriented and has to provide the farmer, transporter, trader, processor, etc. with a profit. This requires those involved in marketing chains to

understand buyer requirements, both in terms of product and business conditions.

2.2 MARKET INFORMATION

Efficient market information can be shown to have positive benefits for farmers and traders. Up-to-date information on prices and other market factors enables farmers to negotiate with traders and also facilitates spatial distribution of products from rural areas to towns and between markets. Most governments in developing countries have tried to provide market information services to farmers, but these have tended to experience problems of sustainability. Moreover, even when they function, the service provided is often insufficient to allow commercial decisions to be made because of time lags between data collection and dissemination (Barrett., 1997). Modern communications technologies open up the possibilities for market information services to improve information delivery through SMS on cell phones and the rapid growth of FM radio stations in many developing countries offers the possibilities of more localised information services. In the longer run, the internet may become an effective way of delivering information to farmers in developing countries like India. However, problems associated with the cost and accuracy of data collection still remain to be addressed. Even when they have access to market information, farmers often require assistance in interpreting that information. For example, the market price quoted on the radio may refer to a wholesale selling price and farmers may have difficulty in translating this into a realistic price at their local assembly market (Barrett, and Carter, 1999). Various attempts have been made in developing countries to introduce commercial market information services but these have largely been targeted at traders, commercial farmers or exporters. It is not easy to see how small, poor farmers can generate sufficient income for a commercial service to be profitable, although, in India a new

service introduced by Thompson Reuters was reportedly used by over 100,000 farmers in its first year of operation (Fafchamps, and Minten , 2001).

2.3 MARKETING TRAINING

Farmers frequently consider marketing as being their major problem. However, while they are able to identify such problems as poor prices, lack of transport and high post-harvest losses, they are often poorly equipped to identify potential solutions. Successful marketing requires learning new skills, new techniques and new ways of obtaining information. Extension officers working with ministries of agriculture or NGOs are often well-trained in horticultural production techniques but usually lack knowledge of marketing or post-harvest handling (Fickler, Goodwin, 2001). Ways of helping them develop their knowledge of these areas, in order to be better advise the farmers about market-oriented horticulture, need to be explored. While there is a range of generic guides and other training materials available from FAO and others, these should ideally be tailored to national circumstances to have maximum effect.

2.4 ROLE OF AGRICULTURAL MARKETING SYSTEM IN ECONOMIC DEVELOPMENT

Rao (2000) in his study, "Experience in Agricultural Marketing in India" states that it is only now that the developing countries have increasingly recognized that the agricultural marketing system plays a crucial role in economic development, not only by physically distributing increased production through incentives but also distributing the benefits of growth. As a result, many governments have now tried many approaches to develop the marketing system, with varying degrees of success. Jaganathan (1997) in his paper

"Utilisation of Regulated Markets by Farmers in Periyar District, Tamil Nadu", outlines that the establishment of regulated markets to solve marketing problems could be reflected in their proper utilization by farmers for deriving economic benefits. A high degree of utilization of regulated markets by farmers would lead the farming community to higher standard of living.

2.5 IMPORTANCE OF FAIR PRICE TO BOTH FARMERS AND CONSUMERS

Organized market can alone ensure fair price to producers as well as consumers. Farmers' markets operate in the same line. If marketing of agricultural produce is properly organized, it can fetch a good price to the farmer and he will be inspired to produce more. The interest of the consumer will also be taken care of side by side. An efficient and properly organized marketing should get along with price strategies. Therefore, insure fair price to the producer as well as to the consumer.

2.6 GREEN REVOLUTION

M.S. Swaminathan, the eminent agricultural scientist, analyzing the success of green revolution in Punjab state "The green revolution in Punjab is not a miracle". It happened only because the following prerequisites for its success existed in mid-sixties.

1. Land consolidation and levelling.
2. Owner cultivation resulting in a long term stake in land.
3. Rural communication.
4. Rural electrification and
5. A dynamic agricultural university.

According to Acharya (2004) India's age old farming practice has taken a turn in the recent years. There had been a technological breakthrough after the advent

of Green Revolution, the evolution of high-yielding variety seeds, increased use of fertilizers, insecticides and pesticides, installation of pump sets and tractorisation and mechanization. This technological breakthrough has led to a substantial increase in production on the farms and to a large marketable and marketed surplus.

2.7 AGMARKNET – GLOBALISATION OF INDIAN AGRICULTURE & GREEN REVOLUTION

A step towards globalisation of Indian agriculture, and a step in bringing another green revolution the e-governance portal AGMARKNET facilitates generation and transmission of prices, commodity arrival information from agricultural produce markets, and Web-based dissemination to producers, consumers, traders, and policy makers transparently and quickly.

It aims at improving the decision-making capability of the farmers and strengthening their bargaining power.

2.7.1 Situation

Agricultural marketing is an initiative to bring the second generation of green revolution problems. Indian marketing is undergoing a significant metamorphosis because of economic liberalization and globalization.

Market information is an important aspect of agricultural marketing. The importance of sound agricultural marketing policies for ensuring fair returns to the farmers cannot be overemphasized.

Therefore, it has become necessary on the part of the regulatory agencies to ensure remunerative prices to farmers for the sale of their produce, to boost up their efforts for increasing and sustaining the agricultural production. Almost all states and union territories are providing market information in one form or the other for the benefits of market users like producers, traders, and consumers. However, the information is collected and disseminated by use of conventional

methods causing inordinate delay in communicating to different groups and this, in turn, adversely affects their economic interest.

Therefore, the availability and dissemination of complete and accurate marketing information is the key to achieve both operational and pricing efficiency in the marketing system.

To strengthen interface with farmers and other beneficiaries, AGMARKNET portal has been evolved. Over 600 markets regularly report price-related data being disseminated through the portal. The portal also serves as a single window for accessing Web sites of various organizations.

It also provides weekly trend analysis, linkage to online commodity exchange of India, Food and Agriculture Organization (FAO), Indian Farmers Fertilizer Cooperative Limited (IFFCO) Web site, and so forth.

The development of the AGMARKNET portal and the state-level portal, and undertaking market-led extension activities are important components of this scheme. AGMARKNET ensures dissemination of data through the network to any distance for the benefit of citizens, farmers, traders, and consumers.

The improved communication system has enabled producers to learn about probable markets in which their produce can be disposed more profitably. Also the modernization of the market information system has led to efficiency in markets and increased participation of the farmers.

2.7.2 Knowledge Portal

The AGMARKNET portal is constantly enriched with agricultural marketing-related information. Efforts are on to reach out to the farmers in their regional languages. As of now, the portal is disseminating daily prices and arrivals information in eleven regional languages. The portal also caters to the diversified needs of these stakeholders by providing the following agricultural marketing-related information as a single window Web service over the Internet.

2.7.3 Price and Arrivals

The portal provides access to commodity-wise, variety-wise daily prices and arrivals information of various wholesale markets. Future prices from the three national multi-commodity exchanges are reflected on the portal.

2.7.4 Commodities and Varieties

A commodity base, comprising of more than 300 commodities and about 2,000 varieties has been evolved. The commodities are being categorized into various groups: cereals, pulses, oil seeds, fruits, vegetables, spices, fiber crops, beverages, forest products, drugs and narcotics, dry fruits, flowers, forest products, livestock/poultry, and so forth to facilitate easy retrieval of market information.

2.7.5 Grading and Standardization

To promote the importance of quality among the farming community, the portal emphasizes on standardization and grading aspects of the agricultural products. The information is provided in the form of documents/specifications prescribed by the act/rules of DMI and other agencies. It also links to the Codex International food standards, guidelines, and related texts such as the codes of practice under the joint FAO/World Health Organization (WHO) Food Standards Programme.

2.7.6 Benefits

The AGMARKNET project has strengthened the interfaces among government organizations, farmers, industry, policy makers, and other beneficiaries.

The project also aims at empowering the farming community with market information. For maximizing the benefits it needs to be integrated with other ICT initiatives targeting the upliftment of rural India. The project is part of National eGovernance action plan of Government of India.

2.7.7 Efficient and timely utilization of market data

AGMARKNET has helped establish a nationwide information network for speedy collection and dissemination of market data for efficient and timely utilization.

2.7.8 Farmer empowerment

The AGMARKNET has already emerged as the sun-shine website to bargain better prices for their produce, and marching ahead towards becoming an e-Commerce and e-Business Portal in India.

2.7.9 Improvement in agricultural marketing

Progressive sensitization and orientation of farmers helps them respond to new challenges in agricultural marketing by using Information, Communication and Technology (ICT) as a vehicle of extension.

2.8 Conclusion of the Review

The review concludes that multiple arguments do exist in international and national literature on the ways and need of marketing of Agriculture in overall as well as specifically in our country India and methods in which systems can be developed to centralize the overall produce , consumption , prices and distribution of Agricultural Produce in the country. One such step in that direction has been AGMARKNET. All schools of thought acknowledge the powerful effects of the regulated markets namely farmer motivation, team work of officials, organizational commitment, farmer orientation, and increasing the arrivals.

Chapter-3

METHODOLOGY

3.1 Process of analysis

Phase I – Preliminary activities

Step 1: Write a mission statement, decides the purpose of project and what are we looking for.

Step 2: Identify the market data for a particular commodity, which includes arrival, minimum price, maximum price, modal price.

Phase II – Compile and analyze the data

Step 1: The data is to be collected daily for the commodity and then recorded again after a specific period of time to look for any anomalies.

Step 2: Compile the data of same date observed on different dates

Step 3: Test data

Step 4: In depth analysis of internal data like arrival and modal price

Step 5: Findings

Step 6: Recommendations, keeping resource constraints and feasibility in mind.

3.1.1 Phase I

The two steps in phase I build the foundation for the organizations to successfully address data quality and information. Step 1 asks the organization to write a mission statement, if one does not exist. This important, yet often overlooked, step ensures that the organization has agreement on its purpose for existence. Step 2 identifies the data of different commodity on daily basis. Although this seems obvious, in many organizations, there are multiple checks. The exercise of focusing on the modal price is useful. This is accomplished by the first defining the term “modal price” as “price at which maximum quantity has been sold of a particular commodity”. Phase II moves the team into compilation and analyzing for the quality of data.

3.1.2 Phase II

Phase II identifies, defines, compile and analyze the data. Perspective 1 obtains input from the mandi; it seems obvious that the input would be solicited. Surrogate middleman, or staff personnel who interact closely with the farmer, provider perspective 2 for quality check of data. They are experts with respect to the process and the farmer interactions with the process. Not only do they have Knowledge of underlying issues, but they have the benefit of multiple interactions with multiple farmers.

Steps 1, 2 and 3 in Phase II obtain input from the three perspectives mentioned above, while Step 4 combines the three sources of input. Step5 and 6 define the dimensions and test the definitions. Step 7, 8 and 9 prioritize the resulting process and service quality.

Step 1:

- Record data of each commodity on daily basis for a limited time period mentioned in our report. We have to keep arrival and price in our data, So choose both option in filter and than download the data.
- As we are doing research on data quality, we choose a particular commodity for this purpose. We need to record for whole markets covered under AGMARKNET project.

Step 2:

- In this step compilation need to be done. We gathered data of commodity on daily basis and gathered data of same date in next 2 or 3 consecutive days.
- The aim here is to verify whether the data of commodities is being updated daily or not.

Step 3:

- The aim here is to verify whether the data of commodities is being updated daily or not. If not, then it identifies that the purpose of the AGMARKNET portal is not being fulfilled. The AGMARKNET portal is supposed to have daily updates of data from the various markets across the country.
- Second purpose is to check the price (modal price) of each market. We need to check whether the modal price is wrongly reported as the average of min. and max. Price. As per definition, modal price is the price at which maximum quantity of commodity is sold.

Step 4:

- This iterative process is performed by the team of experts. Emphasis is placed on data received directly from the portal. There is need to check

the trend of prices and find out the markets who are doing this exercise repeatedly.

- The sole purpose of this portal is to serve the information on daily basis. If farmers do not get the information on time then it is of little use. The dimensions now must be defined and prioritized.

Step 5:

- This step is an attempt to find flaws in data quality and how to improve it. Data quality is not related to complete data only. It is also related to correct data or information on time.
- Mandis or markets need to be identified who have not reported correct and complete data on time.

Step 6:

- In this step we provide recommendations and solutions to improve the data quality available on portal.
- Certain background checks and new approaches will be discussed to record data.

Chapter-4

Data Analysis

4.1 Introduction

Two different types of analyses were performed on the data retrieved from the AGMARKNET portal. Firstly, the data was analyzed as a whole. This helped in identifying major trends in the data. Secondly, data collected on individual days were analyzed and compared together. This helped to obtain in-depth insight into the data. Observations regarding the following aspects of data were made:

1. Are all nodes updating the data to the portal regularly as expected?
2. Is the data represented on the portal complete?
3. If the data is not being updated timely, then, are there some nodes who are defaulting from the protocol on a regular basis?
4. Is the modal price being correctly recorded? Or is there evidence that mean of minimum and maximum price is being wrongly recorded as modal price? Are there any nodes who are defaulting from the protocol in this manner on a regular basis?

4.2 Analysis Tools

Microsoft Excel 2013

Microsoft Excel is a spreadsheet developed by Microsoft for Windows, Mac OS X, Android and iOS. It features calculation, graphing tools, pivot tables, and a macro programming language called Visual Basic for Applications. It has been a very widely applied spreadsheet for these platforms, especially since version 5 in 1993. It forms part of Microsoft Office Software Suite.

Microsoft Excel has been used in this project for analyzing and comparing data collected on individual days.

4.3 Data Analysis

Observation 4.3.1 Late updation of data

When data of commodity Soyabean was re-recorded after a certain period of time, it showed entirely new nodes which had not uploaded their data previously. For example, when data of March 11th, 2016 was recorded at the end of the day, the state of Gujarat had data about 2 varieties of Soyabean uploaded by 3 market centers in 3 districts. However when the data of March 11th, 2016 was retrieved again on March 30th, 2016, the state of Gujarat had data for 3 varieties of Soyabean, recorded by 4 market centers in 4 districts.

Table 4.1: New markets and varieties added when data of the same day was re-recorded at a subsequent date

Agmarknet_11 March.xls - Microsoft Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ADD-INS POWERPIVOT

Clipboard Font Alignment Number Styles Cells

A22

| | A | B | C | D | E | F | G | H | I | J | K | L |
|----|------------|---------------|--------------------|---------|-------------------|---------|------|------|-------|--------------|---------------|---|
| | state_name | district_name | market_center_name | Variety | group_name | Arrival | MIN | MAX | MODAL | date_arrival | date_observed | |
| 1 | Gujarat | Dahod | Dahod | Soyabee | Oil Seeds | 24.6 | 3600 | 3675 | 3650 | 11-Mar-16 | 11-Mar-16 | |
| 2 | Gujarat | Rajkot | Gondal | Yellow | Oil Seeds | 3.5 | 3305 | 3405 | 3405 | 11-Mar-16 | 11-Mar-16 | |
| 3 | Gujarat | Junagarh | Junagadh | Soyabee | Oil Seeds | 1.6 | 3310 | 3420 | 3320 | 11-Mar-16 | 11-Mar-16 | |
| 4 | | | | | Gujarat Sub Total | 29.7 | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | Gujarat | Dahod | Dahod | Soyabee | Oil Seeds | 24.6 | 3600 | 3675 | 3650 | 11-Mar-16 | 30-Mar-16 | |
| 8 | Gujarat | Jamnagar | Jam Jodhpur | Other | Oil Seeds | 0.9 | 3000 | 3300 | 3150 | 11-Mar-16 | 30-Mar-16 | |
| 9 | Gujarat | Junagarh | Junagadh | Soyabee | Oil Seeds | 1.6 | 3310 | 3420 | 3320 | 11-Mar-16 | 30-Mar-16 | |
| 10 | Gujarat | Rajkot | Gondal | Yellow | Oil Seeds | 3.5 | 3305 | 3405 | 3405 | 11-Mar-16 | 30-Mar-16 | |
| 11 | | | | | Gujarat Sub Total | 30.6 | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |

When data of commodity Soyabean was re-recorded after a certain period of time, it showed entirely new nodes which had not uploaded their data previously. For example, when data of March 11th, 2016 was recorded at the end of the day, the state of Madhya Pradesh had data about 3 varieties of Soyabean uploaded by 24 market centers in 24 districts. However when the data of March 11th, 2016 was recorded again on March 30th, 2016, the state of Madhya Pradesh had data about 3 varieties of Soyabean, recorded by 81 market centers in 34 districts. Here is the list of markets who have uploaded data late. Numerous such cases were observed throughout the period of the study.

Table 4.2: Late updation of data of Soyabean for 11-March- 2016

| 1 | state_name | district_name | market_center_name | Variety | group_name | Arrival | MIN | MAX | MODAL | date arrival | date observed |
|----|------------|---------------|--------------------|---------|------------|---------|------|------|-------|--------------|---------------|
| 2 | Madhya | Ashoknagar | Shadora | Other | Oil Seeds | 0.4 | 2810 | 3125 | 2810 | 11-Mar-16 | 30-Mar-16 |
| 3 | Madhya | Betul | Bhensdehi | Yellow | Oil Seeds | 4.5 | 3100 | 3200 | 3200 | 11-Mar-16 | 30-Mar-16 |
| 4 | Madhya | Bhopal | Berasia | Soyabee | Oil Seeds | 37.7 | 3050 | 3626 | 3350 | 11-Mar-16 | 30-Mar-16 |
| 5 | Madhya | Bhopal | Berasia | Yellow | Oil Seeds | 37.7 | 3050 | 3626 | 3350 | 11-Mar-16 | 30-Mar-16 |
| 6 | Madhya | Burhanpur | Burhanpur | Yellow | Oil Seeds | 6.6 | 2960 | 3302 | 3281 | 11-Mar-16 | 30-Mar-16 |
| 7 | Madhya | Chhatarpur | Chhatarpur | Other | Oil Seeds | 0.8 | 3095 | 3095 | 3095 | 11-Mar-16 | 30-Mar-16 |
| 8 | Madhya | Datia | Datia | Other | Oil Seeds | 4.5 | 3325 | 3325 | 3325 | 11-Mar-16 | 30-Mar-16 |
| 9 | Madhya | Dewas | Dewas | Other | Oil Seeds | 215.2 | 2831 | 3700 | 3400 | 11-Mar-16 | 30-Mar-16 |
| 10 | Madhya | Dewas | Haatpipliya | Yellow | Oil Seeds | 7.11 | 3282 | 3456 | 3369 | 11-Mar-16 | 30-Mar-16 |
| 11 | Madhya | Dewas | Sonkatch | Yellow | Oil Seeds | 35.5 | 3120 | 3601 | 3500 | 11-Mar-16 | 30-Mar-16 |
| 12 | Madhya | Dhar | Dhamnod | Other | Oil Seeds | 7 | 3200 | 3200 | 3200 | 11-Mar-16 | 30-Mar-16 |
| 13 | Madhya | Dhar | Dhar | Yellow | Oil Seeds | 86.8 | 2640 | 3750 | 3550 | 11-Mar-16 | 30-Mar-16 |
| 14 | Madhya | Dhar | Rajgarh | Yellow | Oil Seeds | 23.3 | 3351 | 3581 | 3510 | 11-Mar-16 | 30-Mar-16 |
| 15 | Madhya | Guna | Aron | Other | Oil Seeds | 25 | 2900 | 3400 | 3250 | 11-Mar-16 | 30-Mar-16 |
| 16 | Madhya | Guna | Guna | Other | Oil Seeds | 51.9 | 2715 | 3520 | 3325 | 11-Mar-16 | 30-Mar-16 |
| 17 | Madhya | Guna | Maksudangarh | Other | Oil Seeds | 1.1 | 3000 | 3200 | 3100 | 11-Mar-16 | 30-Mar-16 |
| 18 | Madhya | Harda | Harda | Yellow | Oil Seeds | 122.5 | 3000 | 3518 | 3400 | 11-Mar-16 | 30-Mar-16 |
| 19 | Madhya | Harda | Khirakiya | Yellow | Oil Seeds | 20.6 | 3300 | 3500 | 3420 | 11-Mar-16 | 30-Mar-16 |
| 20 | Madhya | Hoshangabad | Banapura | Yellow | Oil Seeds | 88.3 | 2601 | 3465 | 3245 | 11-Mar-16 | 30-Mar-16 |
| 21 | Madhya | Hoshangabad | Itarsi | Yellow | Oil Seeds | 142.7 | 2700 | 3520 | 3275 | 11-Mar-16 | 30-Mar-16 |
| 22 | Madhya | Hoshangabad | Pipariya | Other | Oil Seeds | 9.4 | 2611 | 3440 | 3425 | 11-Mar-16 | 30-Mar-16 |

| | | | | | | | | | | | |
|----|--------|-------------|--------------|---------|-----------|-------|------|------|------|-----------|-----------|
| 23 | Madhya | Indore | Indore | Yellow | Oil Seeds | 187 | 2500 | 3720 | 3600 | 11-Mar-16 | 30-Mar-16 |
| 24 | Madhya | Indore | Mhow | Other | Oil Seeds | 101.3 | 2600 | 3620 | 3110 | 11-Mar-16 | 30-Mar-16 |
| 25 | Madhya | Khandwa | Khandwa | Other | Oil Seeds | 40.4 | 3001 | 3557 | 3300 | 11-Mar-16 | 30-Mar-16 |
| 26 | Madhya | Morena | Morena | Soyabee | Oil Seeds | 0.4 | 2900 | 2900 | 2900 | 11-Mar-16 | 30-Mar-16 |
| 27 | Madhya | Narsinghpur | Gadarwada | Yellow | Oil Seeds | 0.3 | 3001 | 3001 | 3001 | 11-Mar-16 | 30-Mar-16 |
| 28 | Madhya | Narsinghpur | Kareli | Yellow | Oil Seeds | 14.4 | 3030 | 3307 | 3152 | 11-Mar-16 | 30-Mar-16 |
| 29 | Madhya | Narsinghpur | Narsinghpur | Other | Oil Seeds | 4.8 | 2800 | 3290 | 3250 | 11-Mar-16 | 30-Mar-16 |
| 30 | Madhya | Neemuch | Manasa | Other | Oil Seeds | 462 | 2601 | 3665 | 3133 | 11-Mar-16 | 30-Mar-16 |
| 31 | Madhya | Raisen | Obedullaganj | Yellow | Oil Seeds | 2.2 | 2752 | 3162 | 2904 | 11-Mar-16 | 30-Mar-16 |
| 32 | Madhya | Raisen | Udaipura | Other | Oil Seeds | 0.1 | 2800 | 2800 | 2800 | 11-Mar-16 | 30-Mar-16 |
| 33 | Madhya | Rajgarh | Khujner | Yellow | Oil Seeds | 8.2 | 3160 | 3445 | 3360 | 11-Mar-16 | 30-Mar-16 |
| 34 | Madhya | Ratlam | A lot | Yellow | Oil Seeds | 0.35 | 3200 | 3550 | 3500 | 11-Mar-16 | 30-Mar-16 |
| 35 | Madhya | Ratlam | Jaora | Other | Oil Seeds | 77.9 | 3550 | 3700 | 3600 | 11-Mar-16 | 30-Mar-16 |
| 36 | Madhya | Rewa | Rewa | Other | Oil Seeds | 4.3 | 2999 | 3276 | 3175 | 11-Mar-16 | 30-Mar-16 |
| 37 | Madhya | Sagar | Bamora | Yellow | Oil Seeds | 1.9 | 3250 | 3250 | 3250 | 11-Mar-16 | 30-Mar-16 |
| 38 | Madhya | Sagar | Bina | Yellow | Oil Seeds | 9.7 | 3000 | 3350 | 3150 | 11-Mar-16 | 30-Mar-16 |
| 39 | Madhya | Sagar | Rehli | Yellow | Oil Seeds | 379 | 2900 | 3000 | 2950 | 11-Mar-16 | 30-Mar-16 |
| 40 | Madhya | Satna | Satna | Other | Oil Seeds | 173.3 | 2000 | 3500 | 3200 | 11-Mar-16 | 30-Mar-16 |
| 41 | Madhya | Sehore | Nasrullaganj | Yellow | Oil Seeds | 1 | 3000 | 3000 | 3000 | 11-Mar-16 | 30-Mar-16 |
| 42 | Madhya | Shajapur | Agar | Other | Oil Seeds | 20 | 2800 | 3558 | 3400 | 11-Mar-16 | 30-Mar-16 |
| 43 | Madhya | Shajapur | Akodia | Other | Oil Seeds | 100 | 3200 | 3540 | 3500 | 11-Mar-16 | 30-Mar-16 |
| 44 | Madhya | Shajapur | Badod | Yellow | Oil Seeds | 1.1 | 3500 | 3530 | 3515 | 11-Mar-16 | 30-Mar-16 |

| | | | | | | | | | | | |
|----|--------|-----------|-----------|---------|-----------|-------|------|------|------|-----------|-----------|
| 45 | Madhya | Shajapur | Berachha | Yellow | Oil Seeds | 1.9 | 3255 | 3435 | 3345 | 11-Mar-16 | 30-Mar-16 |
| 46 | Madhya | Shajapur | Nalkehda | Other | Oil Seeds | 2.8 | 3345 | 3510 | 3422 | 11-Mar-16 | 30-Mar-16 |
| 47 | Madhya | Shajapur | Shujalpur | Other | Oil Seeds | 96.97 | 3000 | 3701 | 3650 | 11-Mar-16 | 30-Mar-16 |
| 48 | Madhya | Shajapur | Susner | Other | Oil Seeds | 1.8 | 3300 | 3491 | 3450 | 11-Mar-16 | 30-Mar-16 |
| 49 | Madhya | Shivpuri | Badarwas | Soyabee | Oil Seeds | 10.1 | 3060 | 4340 | 4180 | 11-Mar-16 | 30-Mar-16 |
| 50 | Madhya | Tikamgarh | Tikamgarh | Yellow | Oil Seeds | 44.6 | 3350 | 3475 | 3420 | 11-Mar-16 | 30-Mar-16 |
| 51 | Madhya | Ujjain | Badnagar | Yellow | Oil Seeds | 582 | 3150 | 3803 | 3620 | 11-Mar-16 | 30-Mar-16 |
| 52 | Madhya | Ujjain | Khachrod | Yellow | Oil Seeds | 13.3 | 3448 | 4246 | 3514 | 11-Mar-16 | 30-Mar-16 |
| 53 | Madhya | Ujjain | Mahidpur | Other | Oil Seeds | 1.99 | 3271 | 3581 | 3454 | 11-Mar-16 | 30-Mar-16 |
| 54 | Madhya | Ujjain | Tarana | Yellow | Oil Seeds | 9 | 2600 | 3781 | 3450 | 11-Mar-16 | 30-Mar-16 |
| 55 | Madhya | Ujjain | Ujjain | Yellow | Oil Seeds | 115.8 | 2600 | 3711 | 3619 | 11-Mar-16 | 30-Mar-16 |
| 56 | Madhya | Vidisha | Kurwai | Yellow | Oil Seeds | 1.5 | 3235 | 3235 | 3235 | 11-Mar-16 | 30-Mar-16 |
| 57 | Madhya | Vidisha | Sironj | Other | Oil Seeds | 9.5 | 2795 | 3670 | 3232 | 11-Mar-16 | 30-Mar-16 |
| 58 | Madhya | Vidisha | Vidisha | Yellow | Oil Seeds | 79 | 2500 | 3600 | 3320 | 11-Mar-16 | 30-Mar-16 |

Observation 4.3.2 Mean of Minimum and Maximum Prices for the day, being recorded in place of Modal Price

Numerous instances were found where the Mean of Minimum and Maximum prices for the day was being recorded in place of Modal Price. The Modal Price for the day for a commodity is supposed to represent the price at which maximum trading of that commodity occurred. However, replacing this data with a simple arithmetic mean of minimum and maximum price of the day, simply defeats the purpose of recording this data altogether.

Table 4.3: Mean of minimum and maximum prices for 11th March recorded in place of modal price

| 1 | state_name | district_name | market_center_name | Variety | group_name | Arrival | MIN | MAX | MODAL | date_arrival |
|----|----------------|---------------|--------------------|----------|------------|---------|------|------|-------|--------------|
| 2 | Karnataka | Dharwad | Dharwar | Soyabeen | Oil Seeds | 37 | 3480 | 3680 | 3580 | 11-Mar-16 |
| 3 | Karnataka | Haveri | Haveri | Soyabeen | Oil Seeds | 4 | 3400 | 3400 | 3400 | 11-Mar-16 |
| 4 | Karnataka | Dharwad | Kalagategi | Soyabeen | Oil Seeds | 49 | 3500 | 3500 | 3500 | 11-Mar-16 |
| 5 | Karnataka | Belgaum | Nippani | Soyabeen | Oil Seeds | 10 | 3000 | 3000 | 3000 | 11-Mar-16 |
| 6 | Madhya Pradesh | Chhindwara | Chaurai | Other | Oil Seeds | 9 | 2851 | 3181 | 3016 | 11-Mar-16 |
| 7 | Madhya Pradesh | Dindori | Gorakhpur | Local | Oil Seeds | 25.2 | 3200 | 3400 | 3300 | 11-Mar-16 |
| 8 | Madhya Pradesh | Ashoknagar | Mungawali | Yellow | Oil Seeds | 0.2 | 2840 | 2842 | 2841 | 11-Mar-16 |
| 9 | Madhya Pradesh | Mandsaur | Suvasra | Other | Oil Seeds | 0.7 | 2617 | 2617 | 2617 | 11-Mar-16 |
| 10 | Maharashtra | Buldhana | Chikali | Yellow | Oil Seeds | 56 | 3400 | 3680 | 3540 | 11-Mar-16 |
| 11 | Maharashtra | Jalana | Jalana | Yellow | Oil Seeds | 5 | 3200 | 3600 | 3400 | 11-Mar-16 |
| 12 | Maharashtra | Sangli | Sangli | Other | Oil Seeds | 3 | 3300 | 3700 | 3500 | 11-Mar-16 |
| 13 | Manipur | Thoubal | Thoubal | Other | Oil Seeds | 0.2 | 5450 | 5550 | 5500 | 11-Mar-16 |
| 14 | Rajasthan | Jhalawar | Aklera | Other | Oil Seeds | 9 | 3200 | 3400 | 3300 | 11-Mar-16 |
| 15 | Uttrakhand | Nanital | Haldwani | Other | Oil Seeds | 43.7 | 3600 | 3654 | 3627 | 11-Mar-16 |
| 16 | | | | | | | | | | |
| -- | | | | | | | | | | |

Table 4.4: Mean of minimum and maximum prices for 12th March recorded in place of modal price

| 1 | state_name | district_name | market_center_name | Variety | group_name | Arrival | MIN | MAX | Average | MODAL | date_arrival |
|----|----------------|---------------|--------------------|----------|------------|---------|------|------|---------|-------|--------------|
| 2 | Chattisgarh | Durg | Bemetara | Yellow | Oil Seeds | 1.6 | 3250 | 3250 | 3250 | 3250 | 12-Mar-16 |
| 3 | Gujarat | Dahod | Dahod | Soyabean | Oil Seeds | 10.5 | 3600 | 3700 | 3650 | 3650 | 12-Mar-16 |
| 4 | Karnataka | Dharwad | Dharwar | Soyabean | Oil Seeds | 10 | 3450 | 3450 | 3450 | 3450 | 12-Mar-16 |
| 5 | Madhya Pradesh | Rajgarh | Chhapiheda | Other | Oil Seeds | 5 | 3321 | 3475 | 3398 | 3398 | 12-Mar-16 |
| 6 | Madhya Pradesh | Ashoknagar | Mungawali | Yellow | Oil Seeds | 0.5 | 3411 | 3413 | 3412 | 3412 | 12-Mar-16 |
| 7 | Madhya Pradesh | Rajgarh | Sarangpur | Yellow | Oil Seeds | 8.7 | 3200 | 3500 | 3350 | 3350 | 12-Mar-16 |
| 8 | Madhya Pradesh | Shajapur | Shajapur | Other | Oil Seeds | 0.1 | 3690 | 3690 | 3690 | 3690 | 12-Mar-16 |
| 9 | Madhya Pradesh | Vidisha | Shamshabad | Yellow | Oil Seeds | 0.5 | 3130 | 3130 | 3130 | 3130 | 12-Mar-16 |
| 10 | Madhya Pradesh | Shivpuri | Shivpuri | Other | Oil Seeds | 0.8 | 310 | 310 | 309.5 | 309.5 | 12-Mar-16 |
| 11 | Madhya Pradesh | Shajapur | Susner | Other | Oil Seeds | 0.9 | 3450 | 3450 | 3450 | 3450 | 12-Mar-16 |
| 12 | Maharashtra | Amarawati | Amarawati | Other | Oil Seeds | 122 | 3200 | 3550 | 3375 | 3375 | 12-Mar-16 |
| 13 | Maharashtra | Nanded | Bhokar | Other | Oil Seeds | 2 | 3400 | 3600 | 3500 | 3500 | 12-Mar-16 |
| 14 | Maharashtra | Buldhana | Chikali | Yellow | Oil Seeds | 59 | 3420 | 3700 | 3560 | 3560 | 12-Mar-16 |
| 15 | Maharashtra | Beed | Gevrai | Yellow | Oil Seeds | 1 | 3575 | 3575 | 3575 | 3575 | 12-Mar-16 |
| 16 | Maharashtra | Akola | Telhara | Yellow | Oil Seeds | 10 | 3250 | 3500 | 3375 | 3375 | 12-Mar-16 |
| 17 | Rajasthan | Bundi | DEI(Bundi) | Other | Oil Seeds | 2 | 3461 | 3541 | 3501 | 3501 | 12-Mar-16 |
| 18 | Rajasthan | Chittorgarh | Fatehnagar | Other | Oil Seeds | 1.7 | 3450 | 3450 | 3450 | 3450 | 12-Mar-16 |
| 19 | Telangana | Nizamabad | Nizamabad | Yellow | Oil Seeds | 0.3 | 2732 | 2732 | 2732 | 2732 | 12-Mar-16 |
| 20 | | | | | | | | | | | |

Observation 4.3.3 Markets which have repeatedly recorded the mean of minimum and maximum prices as the modal price

Several markets (Refer Annexure-I) were found to have recorded mean of maximum and minimum prices of the day in place of the modal price. But no such evidence could be collected for any market which showed this pattern repeatedly.

Observation 4.3.4 Change in recorded values of arrival, minimum price, maximum price and modal price

Many instances were found (Refer Annexure-II) where the recorded values of arrival, Minimum Price, Maximum Price and/or Modal Price were changed when the data was re-recorded after a period of time.

Table 4.5: Change in recorded values of arrival for 11th March

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
|----|----------------|---------------|--------------------|---------|------------|---------|--------------------------------|------|------|-------|--------------|---|---|---|---|---|---|
| 1 | state_name | district_name | market_center_name | Variety | group_name | Arrival | Arrival observed on 30th March | MIN | MAX | MODAL | date_arrival | | | | | | |
| 2 | Madhya Pradesh | Vidisha | Ganbasoda | Yellow | Oil Seeds | 25.1 | 11.7 | 2900 | 3570 | 3280 | 11-Mar-16 | | | | | | |
| 3 | Madhya Pradesh | Shajapur | Kalapipal | Other | Oil Seeds | 6.03 | 22.06 | 3100 | 3560 | 3300 | 11-Mar-16 | | | | | | |
| 4 | Madhya Pradesh | Shajapur | Shajapur | Other | Oil Seeds | 21.4 | 23.3 | 3375 | 3570 | 3512 | 11-Mar-16 | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | |

Table 4.6: Change in recorded values of arrival for 12th March

| state_name | district_name | market_center_name | Variety | group_name | Arrival | Arrival Observed on 30th March | MIN | MAX | MODAL | date_arrival |
|----------------|---------------|--------------------|---------|------------|---------|--------------------------------|------|------|-------|--------------|
| Madhya Pradesh | Khargone | Khargone | Other | Oil Seeds | 0.2 | 8.5 | 3281 | 3300 | 3300 | 12-Mar-16 |

4.4 Findings

- (i) It is observed that there is constant delay in updating the data of commodities on the AGMARKNET portal. Many markets do not upload the data on the same day. The data is uploaded on the next day or during the course of the next few days. Additionally, instances have also been discovered where markets have uploaded data as late as at least ten days after the data was first uploaded on the portal. These delays are preventing from being realized the essential function of making accurate agricultural marketing related information readily available to all the stakeholders.
- (ii) Several instances are recorded where various markets have uploaded the arithmetic mean of the minimum and maximum prices for the day, in place of modal price of the day. Additionally, there are markets which have made this error many times consecutively for several days straight.

The modal price of a commodity is the price at which maximum trading of that commodity occurred. Putting in arithmetic mean of minimum and maximum prices of the commodity for the day, severely affects the overall quality of the data, as the stakeholder are now devoid of the valuable information about the modal price. Also, the information on the AGMARKNET portal is intended to be used for policy making purposes. Feeding of such incorrect information will severely affect the policy making process in an adverse manner.

(iii) There are also few instances recorded where the values of arrival, minimum price for the day, maximum price for the day and modal price for the day are found to be changed. However, the number of such instances is so few that they can be attributed to error correction activities being carried out by the respective markets.

4.5 Recommendations

(i) Automation of data upload process: In the current situation, all the data of the day's trade in the various markets, is uploaded to the AGMARKNET portal at the end of the day. Each market compiles the data of all the transactions held throughout the day, identifies the minimum, maximum and modal prices of the commodities, calculates the total arrival of the various commodities, and, only then, can the data be uploaded to the portal.

However, such a method of manual compilation of data leaves room for human errors and also makes the entire process very challenging for the markets, as the amount of data generated in a single day for all the commodities is huge.

It is therefore recommended to make use of Information Technology Solutions to the problem such that each and every transaction that occurs in any given market, should occur through electronic channels only and also with due record keeping. This will ensure that the market personnel do not

have to spend considerable time in compiling the data at the end of each working day. This will also ensure that chances of human error are minimized.

In the long run, it will ensure that all data is uploaded to the AGMARKNET portal in due time and can even reach lengths as far as real time updation of data on the portal. Additionally, since all transactions will be processed electronically, it will be possible to record even more aspects of the transactions that occur in the agricultural markets. This will lead to better analyses of the collected data, which is likely to give the policy makers deeper insight into the functioning of agricultural markets.

- (ii) For the short term solutions, the data being uploaded onto the AGMARKNET portal from the different markets across the country, needs to constantly monitored for discrepancies. Periodic checks need to be placed in action by taking a sample of data and checking for irregularities such as late updation of data, uploading arithmetic mean of minimum and maximum prices in place of modal price, markets which upload erroneous data repeatedly, etc. In addition, the existing system needs to be modified such that proper alerts are generated and sent to the concerned authorities whenever such irregularities in the data are brought to the surface.
- (iii) Alternatively, there is need for cleaning and translation of commodity names and synonyms. Due to the diversity of languages and other cultural differences across the country, same crop or commodity may be known by different names in different parts of the country. Due to this, trading of commodities is not picking up the pace that it should have as the general farmers is not aware that the same commodity might be in demand in different parts of the country, but under different names.

However, if a translation of all the different names by which a particular variety of any given commodity is known in different parts of the country, is available, it is expected to greatly boost commodity trading along the length and breadth of the country.

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Annexure-I: Markets who have uploaded mean of minimum and maximum prices for the day in place of modal price of Soyabean

| state_name | district_name | market_center_name | Arrival | MIN | MAX | Average | MODAL | date_arrival |
|----------------|---------------|--------------------|---------|------|------|---------|-------|--------------|
| Karnataka | Dharwad | Dharwar | 37 | 3480 | 3680 | 3580 | 3580 | 11-Mar-16 |
| Karnataka | Haveri | Haveri | 4 | 3400 | 3400 | 3400 | 3400 | 11-Mar-16 |
| Karnataka | Dharwad | Kalagategi | 49 | 3500 | 3500 | 3500 | 3500 | 11-Mar-16 |
| Karnataka | Belgaum | Nippani | 10 | 3000 | 3000 | 3000 | 3000 | 11-Mar-16 |
| Madhya Pradesh | Chhindwara | Chaurai | 9 | 2851 | 3181 | 3016 | 3016 | 11-Mar-16 |
| Madhya Pradesh | Dindori | Gorakhpur | 25.2 | 3200 | 3400 | 3300 | 3300 | 11-Mar-16 |
| Madhya Pradesh | Ashoknagar | Mungawali | 0.2 | 2840 | 2842 | 2841 | 2841 | 11-Mar-16 |
| Madhya Pradesh | Mandsaur | Suvasra | 0.7 | 2617 | 2617 | 2617 | 2617 | 11-Mar-16 |
| Maharashtra | Buldhana | Chikali | 56 | 3400 | 3680 | 3540 | 3540 | 11-Mar-16 |
| Maharashtra | Jalana | Jalana | 5 | 3200 | 3600 | 3400 | 3400 | 11-Mar-16 |
| Maharashtra | Sangli | Sangli | 3 | 3300 | 3700 | 3500 | 3500 | 11-Mar-16 |
| Manipur | Thoubal | Thoubal | 0.2 | 5450 | 5550 | 5500 | 5500 | 11-Mar-16 |
| Rajasthan | Jhalawar | Aklera | 9 | 3200 | 3400 | 3300 | 3300 | 11-Mar-16 |
| Uttarakhand | Nanital | Haldwani | 43.7 | 3600 | 3654 | 3627 | 3627 | 11-Mar-16 |

| | | | | | | | | |
|----------------|------------|------------|------|------|------|-------|-------|-----------|
| Chattisgarh | Durg | Bemetara | 1.6 | 3250 | 3250 | 3250 | 3250 | 12-Mar-16 |
| Gujarat | Dahod | Dahod | 10.5 | 3600 | 3700 | 3650 | 3650 | 12-Mar-16 |
| Karnataka | Dharwad | Dharwar | 10 | 3450 | 3450 | 3450 | 3450 | 12-Mar-16 |
| Madhya Pradesh | Rajgarh | Chhapiheda | 5 | 3321 | 3475 | 3398 | 3398 | 12-Mar-16 |
| Madhya Pradesh | Ashoknagar | Mungawali | 0.5 | 3411 | 3413 | 3412 | 3412 | 12-Mar-16 |
| Madhya Pradesh | Rajgarh | Sarangpur | 8.7 | 3200 | 3500 | 3350 | 3350 | 12-Mar-16 |
| Madhya Pradesh | Shajapur | Shajapur | 0.1 | 3690 | 3690 | 3690 | 3690 | 12-Mar-16 |
| Madhya Pradesh | Vidisha | Shamshabad | 0.5 | 3130 | 3130 | 3130 | 3130 | 12-Mar-16 |
| Madhya Pradesh | Shivpuri | Shivpuri | 0.8 | 310 | 310 | 309.5 | 309.5 | 12-Mar-16 |
| Madhya Pradesh | Shajapur | Susner | 0.9 | 3450 | 3450 | 3450 | 3450 | 12-Mar-16 |
| Maharashtra | Amarawati | Amarawati | 122 | 3200 | 3550 | 3375 | 3375 | 12-Mar-16 |
| Maharashtra | Nanded | Bhokar | 2 | 3400 | 3600 | 3500 | 3500 | 12-Mar-16 |
| Maharashtra | Buldhana | Chikali | 59 | 3420 | 3700 | 3560 | 3560 | 12-Mar-16 |
| Maharashtra | Beed | Gevrai | 1 | 3575 | 3575 | 3575 | 3575 | 12-Mar-16 |
| Maharashtra | Akola | Telhara | 10 | 3250 | 3500 | 3375 | 3375 | 12-Mar-16 |

| | | | | | | | | |
|----------------|-------------|-----------------|------|------|------|------|------|-----------|
| Rajasthan | Bundi | DEI(Bundi) | 2 | 3461 | 3541 | 3501 | 3501 | 12-Mar-16 |
| Rajasthan | Chittorgarh | Fatehnagar | 1.7 | 3450 | 3450 | 3450 | 3450 | 12-Mar-16 |
| Telangana | Nizamabad | Nizamabad | 0.3 | 2732 | 2732 | 2732 | 2732 | 12-Mar-16 |
| Madhya Pradesh | Damoh | Javera | 21.5 | 3000 | 3100 | 3050 | 3050 | 13-Mar-16 |
| Madhya Pradesh | Rajgarh | Khilchipur | 0.4 | 3300 | 3300 | 3300 | 3300 | 13-Mar-16 |
| Madhya Pradesh | Satna | Nagod | 7.9 | 3000 | 3400 | 3200 | 3200 | 13-Mar-16 |
| Madhya Pradesh | Shajapur | Shajapur | 0.2 | 3540 | 3540 | 3540 | 3540 | 13-Mar-16 |
| Maharashtra | Jalana | Bhokardan | 2 | 3550 | 3650 | 3600 | 3600 | 13-Mar-16 |
| Maharashtra | Aurangabad | Sillod | 2 | 3400 | 3600 | 3500 | 3500 | 13-Mar-16 |
| Maharashtra | Yavatmal | Umarkhed(Danki) | 7 | 3300 | 3500 | 3400 | 3400 | 13-Mar-16 |
| Telangana | Nizamabad | Gandhari | 30 | 3000 | 3000 | 3000 | 3000 | 13-Mar-16 |
| Uttarakhand | Nanital | Haldwani | 51.8 | 3600 | 3650 | 3625 | 3625 | 13-Mar-16 |
| Chhattisgarh | Kawardha | Kawardha | 0.4 | 3400 | 3400 | 3400 | 3400 | 15-Mar-16 |
| Gujarat | Dahod | Dahod | 6.6 | 3600 | 3700 | 3650 | 3650 | 15-Mar-16 |
| Gujarat | Junagarh | Bhesan | 0.18 | 2750 | 3050 | 2900 | 2900 | 15-Mar-16 |
| Gujarat | Rajkot | Gondal | 4.1 | 3105 | 3305 | 3205 | 3205 | 15-Mar-16 |
| Karnataka | Haveri | Haveri | 50 | 3450 | 3600 | 3525 | 3525 | 15-Mar-16 |
| Madhya Pradesh | Ashoknagar | Isagarh | 0.2 | 3025 | 3025 | 3025 | 3025 | 15-Mar-16 |

| | | | | | | | | |
|----------------|------------|--------------|-------|------|------|------|------|-----------|
| Madhya Pradesh | Badwani | Sendhwa | 1.4 | 3500 | 3628 | 3564 | 3564 | 15-Mar-16 |
| Madhya Pradesh | Chhatarpur | Chhatarpur | 0.8 | 3165 | 3165 | 3165 | 3165 | 15-Mar-16 |
| Madhya Pradesh | Dhar | Dhamnod | 0.5 | 3505 | 3505 | 3505 | 3505 | 15-Mar-16 |
| Madhya Pradesh | Dindori | Gorakhpur | 20.04 | 3100 | 3300 | 3200 | 3200 | 15-Mar-16 |
| Madhya Pradesh | Jabalpur | Jabalpur | 2 | 3126 | 3126 | 3126 | 3126 | 15-Mar-16 |
| Madhya Pradesh | Khandwa | Khandwa | 45 | 3000 | 3600 | 3300 | 3300 | 15-Mar-16 |
| Madhya Pradesh | Mandsaur | Shamgarh | 37.52 | 3100 | 3300 | 3200 | 3200 | 15-Mar-16 |
| Madhya Pradesh | Raisen | Obedullaganj | 0.5 | 2793 | 2793 | 2793 | 2793 | 15-Mar-16 |
| Madhya Pradesh | Rajgarh | Chhapiheda | 0.5 | 2400 | 3450 | 2925 | 2925 | 15-Mar-16 |
| Madhya Pradesh | Sagar | Deori | 29 | 3100 | 3300 | 3200 | 3200 | 15-Mar-16 |
| Madhya Pradesh | Sagar | Rehli | 455 | 2900 | 3000 | 2950 | 2950 | 15-Mar-16 |
| Madhya Pradesh | Sehore | Nasrullaganj | 0.5 | 3000 | 3000 | 3000 | 3000 | 15-Mar-16 |

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|----------------|------------|--------------------------|------|------|------|------|------|-----------|
| h | | | | | | | | |
| Madhya Pradesh | Shajapur | Susner | 0.8 | 3435 | 3435 | 3435 | 3435 | 15-Mar-16 |
| Madhya Pradesh | Tikamgarh | Tikamgarh | 18.2 | 3300 | 3300 | 3300 | 3300 | 15-Mar-16 |
| Madhya Pradesh | Vidisha | Kurwai | 1 | 3300 | 3300 | 3300 | 3300 | 15-Mar-16 |
| Madhya Pradesh | Vidisha | Shamshabad | 0.2 | 3351 | 3351 | 3351 | 3351 | 15-Mar-16 |
| Madhya Pradesh | Vidisha | Sironj | 7.2 | 3060 | 3250 | 3155 | 3155 | 15-Mar-16 |
| Maharashtra | Ahmednagar | Jamkhed | 1 | 3200 | 3450 | 3325 | 3325 | 15-Mar-16 |
| Maharashtra | Akola | Telhara | 5 | 3300 | 3400 | 3350 | 3350 | 15-Mar-16 |
| Maharashtra | Amarawati | Amarawati | 84 | 3525 | 3675 | 3600 | 3600 | 15-Mar-16 |
| Maharashtra | Buldhana | Chikali | 61 | 3400 | 3670 | 3535 | 3535 | 15-Mar-16 |
| Maharashtra | Buldhana | Deoulgaon Raja | 3 | 3600 | 3600 | 3600 | 3600 | 15-Mar-16 |
| Maharashtra | Buldhana | Jalgaon Jamod(Aasalgaon) | 26 | 3200 | 3500 | 3350 | 3350 | 15-Mar-16 |
| Maharashtra | Buldhana | Shegaon | 4 | 3200 | 3700 | 3450 | 3450 | 15-Mar-16 |
| Maharashtra | Hingoli | Sengoan | 9 | 3492 | 3692 | 3592 | 3592 | 15-Mar-16 |

| | | | | | | | | |
|-------------|-----------|-----------------------------|------|------|------|------|------|-----------|
| Maharashtra | Jalana | Bhokardan(Pimpalgao n Renu) | 3 | 3500 | 3600 | 3550 | 3550 | 15-Mar-16 |
| Maharashtra | Nanded | Nanded | 11 | 3660 | 3660 | 3660 | 3660 | 15-Mar-16 |
| Maharashtra | Osmanabad | Umarga | 1 | 3695 | 3695 | 3695 | 3695 | 15-Mar-16 |
| Maharashtra | Parbhani | Parbhani | 2 | 3500 | 3600 | 3550 | 3550 | 15-Mar-16 |
| Maharashtra | Vashim | Manora | 37 | 3550 | 3750 | 3650 | 3650 | 15-Mar-16 |
| Maharashtra | Yavatmal | Babhulgao n | 60 | 3301 | 3701 | 3501 | 3501 | 15-Mar-16 |
| Maharashtra | Yavatmal | Ner Parasopant | 32 | 3450 | 3650 | 3550 | 3550 | 15-Mar-16 |
| Maharashtra | Yavatmal | Pandhakaw ada | 2 | 3500 | 3500 | 3500 | 3500 | 15-Mar-16 |
| Maharashtra | Yavatmal | Umarkhed | 20 | 3100 | 3300 | 3200 | 3200 | 15-Mar-16 |
| Manipur | Thoubal | Thoubal | 0.4 | 5450 | 5550 | 5500 | 5500 | 15-Mar-16 |
| Rajasthan | Baran | Atru(Kawai Salpura) | 1.8 | 3500 | 3500 | 3500 | 3500 | 15-Mar-16 |
| Rajasthan | Baran | Chhabra | 91.8 | 3112 | 3630 | 3371 | 3371 | 15-Mar-16 |
| Rajasthan | Bundi | DEI(Bundi) | 2.1 | 3500 | 3536 | 3518 | 3518 | 15-Mar-16 |
| Rajasthan | Jhalawar | Bhawani Mandi(Chomehla) | 80 | 3500 | 3600 | 3550 | 3550 | 15-Mar-16 |
| Rajasthan | Kota | Itawa | 15.5 | 3300 | 3540 | 3420 | 3420 | 15-Mar-16 |
| Rajasthan | Kota | Ramgang Mandi(Bapawarkala) | 0.1 | 3480 | 3480 | 3480 | 3480 | 15-Mar-16 |

| | | | | | | | | |
|----------------|------------|------------|-------|------|------|------|------|-----------|
| Telangana | Nizamabad | Gandhari | 17 | 3000 | 3000 | 3000 | 3000 | 15-Mar-16 |
| Gujarat | Junagarh | Bhesan | 0.08 | 2500 | 3000 | 2750 | 2750 | 16-Mar-16 |
| Karnataka | Haveri | Haveri | 20 | 3600 | 3600 | 3600 | 3600 | 16-Mar-16 |
| Madhya Pradesh | Ashoknagar | Shadora | 0.2 | 2807 | 2807 | 2807 | 2807 | 16-Mar-16 |
| Madhya Pradesh | Chhatarpur | Chhatarpur | 2.1 | 3230 | 3230 | 3230 | 3230 | 16-Mar-16 |
| Madhya Pradesh | Damoh | Hata | 6 | 3000 | 3200 | 3100 | 3100 | 16-Mar-16 |
| Madhya Pradesh | Dhar | Manawar | 6 | 3400 | 3400 | 3400 | 3400 | 16-Mar-16 |
| Madhya Pradesh | Dindori | Gorakhpur | 20.98 | 3100 | 3300 | 3200 | 3200 | 16-Mar-16 |
| Madhya Pradesh | Indore | Gautampura | 10 | 3300 | 3300 | 3300 | 3300 | 16-Mar-16 |
| Madhya Pradesh | Indore | Mhow | 86.6 | 2700 | 3640 | 3170 | 3170 | 16-Mar-16 |
| Madhya Pradesh | Mandsaur | Shamgarh | 14.67 | 3100 | 3300 | 3200 | 3200 | 16-Mar-16 |
| Madhya Pradesh | Panna | Ajaygarh | 120 | 3490 | 3510 | 3500 | 3500 | 16-Mar-16 |
| Madhya Pradesh | Rajgarh | Chhapiheda | 1 | 3445 | 3445 | 3445 | 3445 | 16-Mar-16 |

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|----------------|------------|----------------|------|------|------|------|------|-----------|
| Madhya Pradesh | Rajgarh | Narsinghgarh | 17 | 3000 | 3400 | 3200 | 3200 | 16-Mar-16 |
| Madhya Pradesh | Ratlam | A lot | 0.15 | 3675 | 3675 | 3675 | 3675 | 16-Mar-16 |
| Madhya Pradesh | Rewa | Baikunthpur | 0.1 | 3351 | 3351 | 3351 | 3351 | 16-Mar-16 |
| Madhya Pradesh | Sagar | Banda | 3 | 2800 | 3500 | 3150 | 3150 | 16-Mar-16 |
| Madhya Pradesh | Sagar | Rehli | 270 | 2900 | 3000 | 2950 | 2950 | 16-Mar-16 |
| Madhya Pradesh | Satna | Nagod | 10.5 | 3200 | 3400 | 3300 | 3300 | 16-Mar-16 |
| Madhya Pradesh | Shajapur | Susner | 0.7 | 3340 | 3340 | 3340 | 3340 | 16-Mar-16 |
| Madhya Pradesh | Vidisha | Shamshabad | 1.3 | 2301 | 2785 | 2543 | 2543 | 16-Mar-16 |
| Maharashtra | Amarawati | Anajngaon | 7 | 3000 | 3450 | 3225 | 3225 | 16-Mar-16 |
| Maharashtra | Aurangabad | Vajipur | 1 | 3626 | 3626 | 3626 | 3626 | 16-Mar-16 |
| Maharashtra | Buldhana | Buldhana(Dhad) | 12 | 3500 | 3700 | 3600 | 3600 | 16-Mar-16 |
| Maharashtra | Buldhana | Chikali | 49 | 3400 | 3680 | 3540 | 3540 | 16-Mar-16 |
| Maharashtra | Buldhana | Lonar | 30 | 3550 | 3700 | 3625 | 3625 | 16-Mar-16 |
| Maharashtra | Buldhana | Shegaon | 4 | 3100 | 3500 | 3300 | 3300 | 16-Mar-16 |

| | | | | | | | | |
|-------------|------------|----------------|------|------|------|------|------|-----------|
| Maharashtra | Chandrapur | Gondpimpri | 54 | 3250 | 3350 | 3300 | 3300 | 16-Mar-16 |
| Maharashtra | Chandrapur | Varora | 17 | 3100 | 3600 | 3350 | 3350 | 16-Mar-16 |
| Maharashtra | Hingoli | Sengoan | 4 | 3475 | 3675 | 3575 | 3575 | 16-Mar-16 |
| Maharashtra | Nagpur | Kalmeshwar | 2 | 3495 | 3495 | 3495 | 3495 | 16-Mar-16 |
| Maharashtra | Nanded | Hadgaon | 2 | 3300 | 3500 | 3400 | 3400 | 16-Mar-16 |
| Maharashtra | Nanded | Umari | 2 | 3600 | 3700 | 3650 | 3650 | 16-Mar-16 |
| Maharashtra | Nandurbar | Nandurbar | 1 | 3565 | 3565 | 3565 | 3565 | 16-Mar-16 |
| Maharashtra | Osmanabad | Murim | 1 | 3700 | 3724 | 3712 | 3712 | 16-Mar-16 |
| Maharashtra | Vashim | Manora | 41 | 3550 | 3750 | 3650 | 3650 | 16-Mar-16 |
| Maharashtra | Vashim | Risod | 129 | 3400 | 3700 | 3550 | 3550 | 16-Mar-16 |
| Maharashtra | Yavatmal | Ghatanji | 7 | 4120 | 4300 | 4210 | 4210 | 16-Mar-16 |
| Maharashtra | Yavatmal | Ner Parasopant | 42 | 3500 | 3700 | 3600 | 3600 | 16-Mar-16 |
| Maharashtra | Yavatmal | Umarkhed | 10 | 3100 | 3300 | 3200 | 3200 | 16-Mar-16 |
| Maharashtra | Yavatmal | ZariZamini | 1 | 3200 | 3200 | 3200 | 3200 | 16-Mar-16 |
| Manipur | Thoubal | Thoubal | 0.4 | 5450 | 5550 | 5500 | 5500 | 16-Mar-16 |
| Rajasthan | Baran | Atru | 4.5 | 3300 | 3560 | 3430 | 3430 | 16-Mar-16 |
| Rajasthan | Baran | Chhabra | 94.5 | 3380 | 3570 | 3475 | 3475 | 16-Mar-16 |
| Rajasthan | Bundi | DEI(Bundi) | 5.1 | 3485 | 3535 | 3510 | 3510 | 16-Mar-16 |
| Rajasthan | Bundi | Keshoraipatan | 2.7 | 3300 | 3500 | 3400 | 3400 | 16-Mar-16 |
| Rajasthan | Bundi | Sumerganj | 0.4 | 3300 | 3500 | 3400 | 3400 | 16-Mar-16 |

| | | | | | | | | |
|----------------|------------|--------------------------|-------|------|------|------|------|-----------|
| Rajasthan | Jhalawar | Bhawani Mandi(Choumehla) | 100 | 3400 | 3600 | 3500 | 3500 | 16-Mar-16 |
| Rajasthan | Jhalawar | Jhalarapatan | 17 | 3550 | 3620 | 3585 | 3585 | 16-Mar-16 |
| Telangana | Nizamabad | Nizamabad | 0.1 | 3220 | 3220 | 3220 | 3220 | 16-Mar-16 |
| Chhattisgarh | Bilaspur | Munguli | 5.1 | 3100 | 3300 | 3200 | 3200 | 17-Mar-16 |
| Chhattisgarh | Durg | Bemetara | 0.9 | 3280 | 3280 | 3280 | 3280 | 17-Mar-16 |
| Madhya Pradesh | Ashoknagar | Shadora | 0.1 | 3110 | 3110 | 3110 | 3110 | 17-Mar-16 |
| Madhya Pradesh | Badwani | Sendhwa | 2 | 3450 | 3628 | 3539 | 3539 | 17-Mar-16 |
| Madhya Pradesh | Chhatarpur | Badamalhera | 60.3 | 3100 | 3300 | 3200 | 3200 | 17-Mar-16 |
| Madhya Pradesh | Chhindwara | Chaurai | 4.7 | 3151 | 3361 | 3256 | 3256 | 17-Mar-16 |
| Madhya Pradesh | Chhindwara | Chhindwara | 21.8 | 2960 | 3426 | 3193 | 3193 | 17-Mar-16 |
| Madhya Pradesh | Dewas | Haatpipliya | 22.55 | 3280 | 3460 | 3370 | 3370 | 17-Mar-16 |
| Madhya Pradesh | Dindori | Dindori | 25.2 | 3500 | 3500 | 3500 | 3500 | 17-Mar-16 |
| Madhya Pradesh | Dindori | Gorakhpur | 47.22 | 3200 | 3400 | 3300 | 3300 | 17-Mar-16 |

| | | | | | | | | |
|----------------|-----------|--------------|------|------|------|------|------|-----------|
| Madhya Pradesh | Indore | Gautampura | 9 | 3300 | 3300 | 3300 | 3300 | 17-Mar-16 |
| Madhya Pradesh | Raisen | Gairatganj | 0.4 | 3000 | 3000 | 3000 | 3000 | 17-Mar-16 |
| Madhya Pradesh | Rajgarh | Chhapihedra | 0.5 | 3485 | 3485 | 3485 | 3485 | 17-Mar-16 |
| Madhya Pradesh | Rajgarh | Narsinghgarh | 10 | 2850 | 3450 | 3150 | 3150 | 17-Mar-16 |
| Madhya Pradesh | Sheopur | Sheopurbadod | 0.3 | 2501 | 2501 | 2501 | 2501 | 17-Mar-16 |
| Madhya Pradesh | Shivpuri | Khaniadhana | 13.2 | 3200 | 3300 | 3250 | 3250 | 17-Mar-16 |
| Madhya Pradesh | Tikamgarh | Jatara | 5 | 3200 | 3600 | 3400 | 3400 | 17-Mar-16 |
| Madhya Pradesh | Tikamgarh | Niwadi | 8.6 | 3400 | 3460 | 3430 | 3430 | 17-Mar-16 |
| Madhya Pradesh | Tikamgarh | Tikamgarh | 27.9 | 3300 | 3300 | 3300 | 3300 | 17-Mar-16 |
| Madhya Pradesh | Vidisha | Sironj | 3.9 | 2700 | 3250 | 2975 | 2975 | 17-Mar-16 |
| Maharashtra | Akola | Telhara | 5 | 3300 | 3400 | 3350 | 3350 | 17-Mar-16 |
| Maharashtra | Amarawati | Amarawati | 170 | 2850 | 3450 | 3150 | 3150 | 17-Mar-16 |
| Maharashtra | Buldhana | Chikali | 12 | 3400 | 3700 | 3550 | 3550 | 17-Mar-16 |

| | | | | | | | | |
|-------------|------------|----------------------|------|------|------|------|------|-----------|
| Maharashtra | Buldhana | Lonar | 20 | 3570 | 3700 | 3635 | 3635 | 17-Mar-16 |
| Maharashtra | Buldhana | Shegaon | 1 | 3000 | 3600 | 3300 | 3300 | 17-Mar-16 |
| Maharashtra | Chandrapur | Chandrapur | 17 | 3330 | 3570 | 3450 | 3450 | 17-Mar-16 |
| Maharashtra | Chandrapur | Varora | 80 | 3000 | 3500 | 3250 | 3250 | 17-Mar-16 |
| Maharashtra | Hingoli | Akhdabalapur | 5 | 3500 | 3600 | 3550 | 3550 | 17-Mar-16 |
| Maharashtra | Hingoli | Sengoan | 6 | 3400 | 3700 | 3550 | 3550 | 17-Mar-16 |
| Maharashtra | Nagpur | Kalmeshwar | 2 | 3490 | 3490 | 3490 | 3490 | 17-Mar-16 |
| Maharashtra | Nagpur | Mandhal | 1 | 3320 | 3320 | 3320 | 3320 | 17-Mar-16 |
| Maharashtra | Nagpur | Savner | 2 | 3000 | 3400 | 3200 | 3200 | 17-Mar-16 |
| Maharashtra | Nanded | Hadgaon | 3 | 3300 | 3500 | 3400 | 3400 | 17-Mar-16 |
| Maharashtra | Nanded | Umari | 1 | 3600 | 3700 | 3650 | 3650 | 17-Mar-16 |
| Maharashtra | Vashim | Manora | 48 | 3550 | 3750 | 3650 | 3650 | 17-Mar-16 |
| Maharashtra | Yavatmal | Ghatanji | 2 | 3510 | 3660 | 3585 | 3585 | 17-Mar-16 |
| Maharashtra | Yavatmal | Ner Parasopant | 50 | 3475 | 3675 | 3575 | 3575 | 17-Mar-16 |
| Manipur | Thoubal | Thoubal | 0.4 | 5450 | 5550 | 5500 | 5500 | 17-Mar-16 |
| Rajasthan | Bundi | Keshoraipatan | 5.3 | 3300 | 3500 | 3400 | 3400 | 17-Mar-16 |
| Rajasthan | Kota | Itawa | 12 | 3351 | 3391 | 3371 | 3371 | 17-Mar-16 |
| Rajasthan | Kota | Ramgang Mandi(Samod) | 0.1 | 3300 | 3300 | 3300 | 3300 | 17-Mar-16 |
| Telangana | Nizamabad | Bodhan | 36.6 | 3500 | 3500 | 3500 | 3500 | 17-Mar-16 |

| | | | | | | | | |
|-------------|-----------|----------|------|------|------|------|------|-----------|
| Telangana | Nizamabad | Gandhari | 9 | 3000 | 3000 | 3000 | 3000 | 17-Mar-16 |
| Uttarakhand | Nanital | Haldwani | 47.9 | 3600 | 3650 | 3625 | 3625 | 17-Mar-16 |

Annexure-II: Recorded values of arrival, minimum, maximum and modal prices of Soyabean are changed

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Clipboard Font Alignment Number Styles Cells

A1 : state_name

| | A | B | C | D | E | F | G | H | I | J | K | L |
|----|----------------|---------------|--------------------|---------|------------|---------|--------------------------------|------|------|-------|--------------|---|
| 1 | state_name | district_name | market_center_name | Variety | group_name | Arrival | Arrival Observed on 30th March | MIN | MAX | MODAL | date_arrival | |
| 2 | Madhya Pradesh | Khargone | Khargone | Other | Oil Seeds | 0.2 | 8.5 | 3281 | 3300 | 3300 | 12-Mar-16 | |
| 3 | Madhya Pradesh | Vidisha | Ganjbasoda | Yellow | Oil Seeds | 25.1 | 11.7 | 2900 | 3570 | 3280 | 11-Mar-16 | |
| 4 | Madhya Pradesh | Shajapur | Kalapipal | Other | Oil Seeds | 6.03 | 22.06 | 3100 | 3560 | 3300 | 11-Mar-16 | |
| 5 | Madhya Pradesh | Shajapur | Shajapur | Other | Oil Seeds | 21.4 | 23.3 | 3375 | 3570 | 3512 | 11-Mar-16 | |
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