

# *Agriculture Marketing Using Web and Mobile Based Technologies*

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**Abstract**— The Vision of this project is to ensure fair price to the farming community by devising new techniques and by making use of online market. An application, that serves as a platform for movement of agricultural products from the farms directly to the consumers or retailers. This mobile and web application provides privilege for both farmers and consumers or retailers to buy and sell the required farm products without the involvement of a middleman at its right profitable price. The agriculture experts shall analyze the product that comes into this platform, approve it and provide ratings based on quality. This makes all the available farm products easily accessible. Hence it provides freedom of pricing and freedom of access. Through this we can ensure farmers to make selling decisions most advantageously.

**Keywords**— *Web application, Mobile application, Ratings, Agriculture marketing, Producer, Consumer*

## I. INTRODUCTION

Gone are the times when the world used to depend a lot on agriculture and now, agriculture is dependent on the world. Agriculture is something that people have started to become lethargic on, forgetting that it is what is keeping us alive. But there are still some hardworking, passionate farmers whose life runs on just farming. But there's also the corruption that's increasing a lot nowadays. The Vision of the Department of Agricultural Marketing & Agricultural Business is to ensure fair price to the farming community who are left behind in the competitive marketing scenario and the mission of achieving this is by enforcing the existing act and rules most effectively and also by devising, implementing new technologies aimed at reducing pre and post-harvest losses through appropriate methods and encourage value addition. The main purpose of forming regulated market is to eliminate the unhealthy trade practice, to reduce marketing expenses and to provide fair prices to the farmers. Several initiatives have been taken to promote agricultural marketing in pivotal role in fostering and sustaining the tempo of rural economic development.

To benefit the farming community from the new global market access opportunities, the internal agricultural marketing system in the country also needs to be integrated and strengthened. In particular, the market system has to be revitalized to:

- a) provide incentives to farmer to produce more;
- b) convey the changing needs of the consumers to the producers to enable production planning;
- c) foster true competition among the market players and
- d) to enhance the share of farmers in the ultimate price of his agricultural produce.

Farmers, right from sowing the seeds to dispatching the grown crops spend a lot of blood and sweat. They will obviously expect the right amount of money for their efforts. But not every consumer gets the farm products at the "FACTORY PRICE". They go through three to four middlemen and reach the customer with almost double the actual price. The same goes with the farmers. If they have to buy manure or some pesticides, they don't get it at the right price at the right quality. This is not a recent occurrence. This corruption even on the farm products has been happening over a long period of time.

In order to avoid this, there has to be direct relationship and communication between the farmers and customers. With the world being more modern and technical oriented, smart phones has come into the hands of people even in the rural areas. Farmers have started to realize the importance of smart phones and technology. A Web cum mobile application will ease this problem. The requirements needed for the functionality are: Details of products from farmers and consumers, Expert analysis, Cost estimation, Quality check.

## II. RELATED WORKS

We all might remember the 12<sup>th</sup> five-year plan, in which the 12th plan was designated to the field of agriculture for the development of our country depends on the [3] Planning Commission and the Ministry of Agriculture to focus particularly on this aspect in the 12<sup>th</sup> plan. Modernization of (agricultural) marketing implies greater interaction and involvement of the private sector". In [1], "It's obvious there is major block hole in the growth of the agricultural sector of India mainly because the farmers are held as hostages by the middlemen". Farmers don't get enough outcomes for the efforts that they put in. Therefore, almost two-thirds of the farmers in Madhya Pradesh and Bangalore commit suicide, a

report says. To get out of this trap cuff, providing a direct link between the farmers and consumers will solve problems for both, thus yielding high profits. A web cum mobile technology will solve this problem. This will serve as a platform where they can communicate directly to buy/sell farm products at the right price. The study in [7] examines the cellular technology to enhance the services on Agricultural services and delivery system in India. The result of the research shows the amount and the quality of service with the speed in delivery is projected. Further the evaluation suggests that the farmer's benefits are more rather than the intervention from the better off. E- Agriculture [8] is the rising field which focuses on the rural and agricultural development through the information and communication process. The E- Agriculture is the platform which supports the marketing of agriculture products.

### III. CHALLENGES AND AWARENESS

There are several challenges [2] involved in marketing of agricultural produce. There is limited access to the market information, literacy level among the farmers is low, multiple channels of distribution that eats away the pockets of both farmers and consumers. The government [4] funding of farmers is still at nascent stage and most of the small farmers still depend on the local moneylenders who are leeches and charge high rate of interest. There are too many vultures that eat away the benefits that the farmers are supposed to get. Although we say that technology have improved but it has not gone to the rural levels as it is confined to urban areas alone. There are several loopholes in the present legislation and there is no organized and regulated marketing system for marketing the agricultural produce. The farmers have to face so many hardships and have to overcome several hurdles to get fair and just price for their sweat.

The awareness on market information [6] in general was found to be relatively poor in case of farmers as compared to the traders since the accessibility of market information in terms of communication systems is very poor in case of farmers. The status of assets on audio visual and communication systems of farmers clearly indicated that radio followed by television were the only assets owned by small farmers. The advanced communication systems like mobile phones were owned by medium and large farmers. A few large farmers [5] also subscribed to agriculture magazines like Annadata, Krishimunnade and Krishipete. However, traders with all the modern and advanced communication gadgets were able to source the market information easily and regularly. The awareness on market information pertains to only arrivals and prices in local markets in all the categories of farmers. The other important production and marketing parameters like post-harvest handlings, grading and standardization, etc. were not known to the small and medium farmers but a few large farmers were aware of them.

### IV. PROPOSED MODEL AND EXPERIMENTAL ANALYSIS

The development of this application will be a very productive source for a common man. The ultimate aim of

making this as a liable model is to put an end to the trauma and difficulty faced by the farmers because of the middlemen. Basically this model will work as following:

1. Getting the details of the products from farmers/consumers.
2. Analyzing the products obtained, considering the various criteria of examination required for it, with the help of agricultural experts to meet the quality expectation of customer.
3. Get the right value of the verified product and uploading it in the application.

The details of the products as given by the farmers/consumers should be proper. The product has to be given to the place by the seller for it to be checked and verified. This can be done man-to-man or the products can be sent via courier. Next, the products are sent to the agricultural experts. The experts are completely neutral with no partialities who will analyze the quality of the product received. Based on certain criterion, the products are estimated based on its quality, quantity and price. Depending on the quality the products are given ratings. some of the basic agricultural products that are extensively cultivated are cereals and pulses, seeds, spices, vegetables and fruits, fertilizers and fodder.

TABLE I. DIFFERENCE IN PRICES WHEN PRODUCTS ARE SOLD NORMALLY AND THROUGH OUR APPLICATION

Sr. No.	Products	Price (Using Middlemen) 1 kg each	Price (Using this app) 1 kg each
	<b>Cereals and Pulses</b>		
a)	Barley	Rs.57.00	Rs.51.30
b)	Wheat	Rs.55.00	Rs. 49.50
	<b>Seeds</b>		
a)	Basil seed	Rs.150.00	Rs.135.00
b)	Cumin seed	Rs.195.00	Rs.175.50
	<b>Spices</b>		
a)	Chilly powder	Rs.320.00	Rs.288.00
b)	Black pepper	Rs.390.00	Rs.351.00
	<b>Vegetables</b>		
a)	Carrot	Rs.70.00	Rs.63.00
b)	French Bean	Rs.65.00	Rs.58.50
	<b>Fruits</b>		
a)	Banana	Rs.75.00	Rs.67.50
b)	Guava	Rs.88.00	Rs.79.20
	<b>Fertilizers</b>		
a)	Bio fertilizer	Rs.325.00	Rs.292.50
b)	Urea fertilizer	Rs.450.00	Rs.405.00
	<b>Fodder</b>		
a)	Alfalfa	Rs.400.00	Rs.360.00
b)	Birdsfoot trefoil	Rs.520.00	Rs.468.00

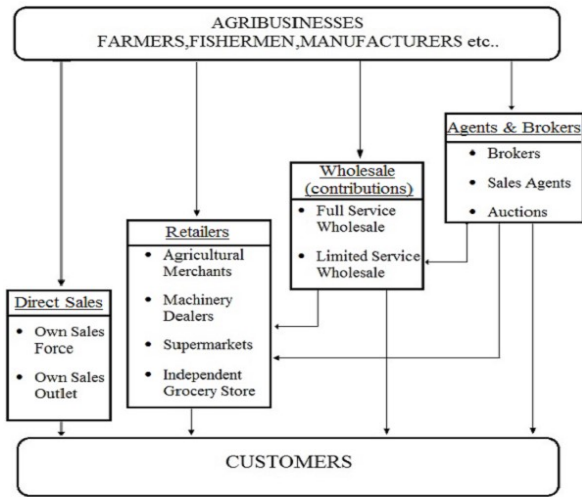


Fig. 1: Flow of farm products from farmers to consumers (Actual)

The table provides a clear analysis that when a middleman is not involved in the transaction of one agricultural product, the buyer can exercise a minimum of 10% profit solidly. The same can be implemented in case a farmer wants to buy something from the customers. Next, since the right value is predicted based on its quality as determined by the agricultural experts, the products are now ready to be uploaded for transaction. The product will be uploaded with a photo along with the full details including its own brand name but with the price as estimated by our experts thus making it easier for the buyer to buy the product.

Overall, this application when implemented will satisfy the needs of the buyers and sellers making them both happy. This application concept was already thought of by the Government

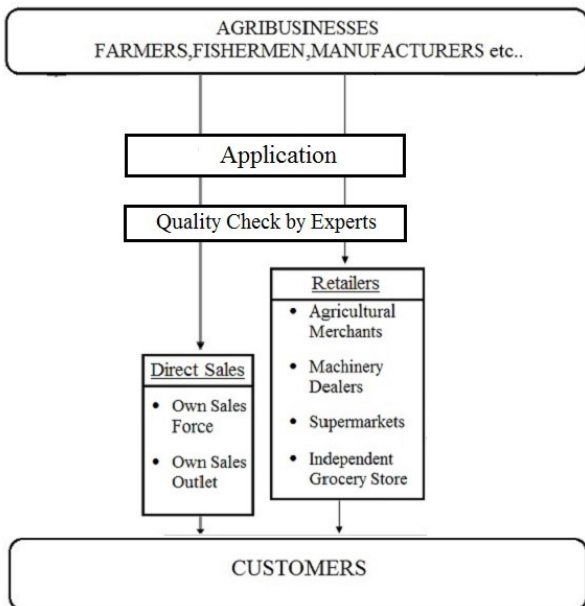


Fig. 2: Flow of farm products when our application is used

of India known as DIGITAL INDIA, but still it didn't come into existence. But this application will stand out differently as it will be customized into our regional language if needed. Further, more updates can be implemented into this play as a part of up gradation process later. Let us have an insight on how products actually reach the customers, going through the hands of various middlemen and then to the customer or retailer.

The Figure 1 represents the flow of farm products that reach into the hands of the customer through various sources in between. First basically, the products are prepared through immense efforts of the Farmers. Next those products are levered into the hands of Agents/Brokers, where the farmers lose nearly 30% of their actual profit. Those agents make sure that they get the right amount of profit even by degrading the price of the products. Next comes the Wholesale marketing, where the products have to brought in bulk otherwise the farmers will face the loss still. There is no guarantee that every farmer succeeds or sees profit in this. From there, it goes out to the Retailers, where already the profit is determined by the wholesale market, this still remains the same. After all the cut down of the actual profit that a farmer should get, it goes down quite considerably leaving very little profit to the farmers. After all the ball game, it reaches to the customers. Now, let us see what the scenario is when this application comes into use.

Now as you can see, there is a huge gap that has been filled and the communication between the farmers and the consumers have been made simple. There is no involvement of middleman whatsoever. The products are produced by the Farmers and then it is given directly to the hands of the customers with the help of our application. There is a huge difference in the profit margin when this application is used and when not. Through this application we achieve our main objective, which is to increase the profit margin of the farmers and make sure they get the right price for their efforts.

## CONCLUSION

There is no doubt that in any marketing there is a motive towards profit involved and at the same time the marketing is to be based on certain values, principles and philosophies such as offering just and fair prices to the farmers who toil hard to till. Bringing necessary reforms coupled with proper price discovery mechanism through regulated market system will help streamline and strengthen agricultural marketing. Through this mobile and web application, we can make sure it is profitable for both the farmers and consumers. Since agriculture is still called the back bone of our nation, it is our responsibility to keep it as the same for a lot more generations to come and not let the chain break off. It is very much necessary that we must ease some of the pressure from our farmers so that they will not stop doing this divine job, because of whom our stomach gets filled. Marketing of agriculture can be made effective if it is looked from the collective and integrative efforts from various quarters by addressing to farmers, middlemen, researchers and administrators. It is high time we brought out significant

strategies in agricultural marketing with innovative and creative approaches. This application will be one such strategy that will encourage the farmers to continue farming and make sure they get the right fruit for the labor.

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