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APMC Market Automation

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Abstract: Agricultural Produce Market Committee: Marketing and trade, as an activity, are at the end of the value chain for any commodity, but they are the most essential determinant of all other activities. At this level, all labour, material, and capital input expenses are compensated, which must include some incentive above and beyond inputs. In a developing country, agricultural products are in constant demand throughout the year, despite the fact that most of them are produced only during certain times of the year, this causes price fluctuations, which can alter profit equations for farmers. All regional markets are being integrated into both parties benefit from a nationwide market. Farmers and customers Farmers will benefit. Rewarding prices even when there is little demand in their area, on the other side, if there isn't when a state produces less, the consumer will still be able to obtain things at reasonable pricing.

Index Terms **–Customers; Hopcoms; Crop Demand; Support; Confidence; APRIORI Algorithm.**

I. INTRODUCTION

Marketing and trade are the most essential factors for all other operations, despite being at the end of the value chain for every commodity. All labor, material, and capital input expenses, as well as a bonus above and beyond the inputs, are rewarded at this point. Agricultural items are in continual demand throughout the year in a developing country, despite the fact that most of them are only produced for a portion of the year. Price variations result, which might change the farmer's profit calculations. Farmer nd consumer interests should be served by merging all regional markets into one national market. Farmers will receive rewarding prices even if there is little demand in their location; on the other hand, if a state produces less, consumers will still be able to obtain products at reasonable rates.

Every state that operates APMC markets divides the state geographically. Markets (mandis) are set up in various locations throughout the state. Farmers must sell their produce at an auction at the mandi in their area. A license is required for traders to operate within a mandi. Food processing firms and wholesale and retail dealers (such as shopping mall owners) are unable to purchase produce directly from farmers.

II. LITERATURE REVIEW

In this paper, the necessary reforms, in combination with a good price discovery process through a regulated market system, will assist streamline and boost agricultural marketing. Small-scale farmers must be integrated and enlightened with market knowledge, such as fluctuations, demand, and supply principles, in order to prevent being cut off from the benefits of agricultural produce. Agriculture marketing may be made more effective if it is viewed through the lens of collaborative and integrative efforts from a variety of sources, including farmers, middlemen, researchers, and administrators[1].

This paper explain the Attempts to strengthen Indian agriculture must address not only farm production (farmers) but also

processing, marketing, trade, and distribution. We must link farmers to markets. In this endeavor, marketing and rural credit systems are extremely important. Indian agricultural marketing and rural credit systems have undergone several changes during the last decade[2].

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This paper is to analyze the functionality of China's agri-food e-markets from the functional evolution aspect, so as to shed light on the development of sound e-markets for agricultural products. Section two is the literature review, and section three depicts the functional evolution of e-markets, and develops a functional matrix. Section four describes the methodology and results. Discussion and implications are followed in Section five[4].

The author of this of this paper stated that The APMC Acts were no doubt beneficial legislation for the farmers, who had long suffered from exploitation in the pre-independence era. However, the Act was unable to provide fully for the farmer's welfare. Corruption pervaded the market authorities and market functionaries formed cartels. In addition, illiteracy levels were very high among farmers and availability of information was minimum. Thus the farmer was largely ignorant about the market prices of his produce[5].

III. PROPOSED SYSTEM

This system helps to keep an accurate track of the transactions made day to day. Since this is an automated system, errors are totally avoided. Farmers get the payment immediately to their wallet after the crop is sold in this system. Farmer can easily get a clear picture of the quantity of his agricultural produce sold, which crop is in demand, what is his total earnings in a day etc. Since this is automated system any information can be retrieved at any instance of time within few seconds which of course saves lot of time reducing manually errors and stress. Hopcoms can also place orders with the APMC, and their transactions are stored in the database. Customers can also register with the system and place orders with the hopcoms.

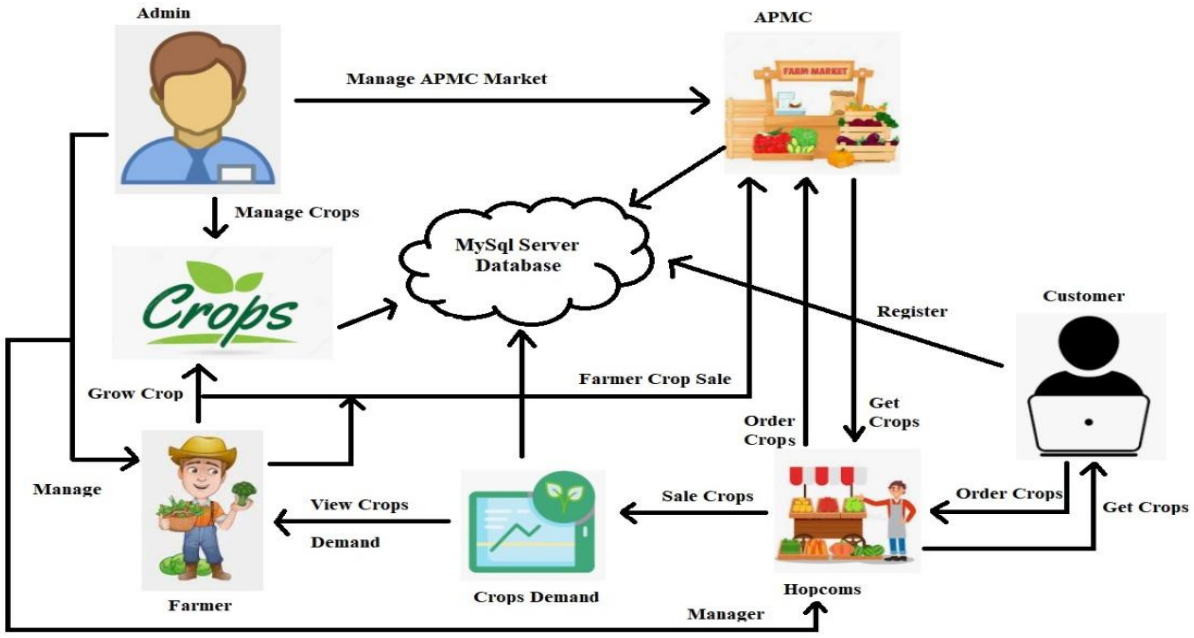

Figure 1: System Architecture

IV. WORKING OF APRIORI ALOGORITHM

The method (and data mining in general) are designed to extract meaningful information from vast amounts of data. For example, the following association rule can be used to determine whether a consumer who buys a tomato also buys chilli at the same time:

- Support: The percentage of task-relevant data transactions for which the pattern is true.

$$\text{Support (Keyboard -> Mouse)} = \frac{\text{No. of transactions containing both Keyboard and Mouse}}{\text{No. of total transactions}}$$

- Confidence: The measure of certainty or trustworthiness associated with each discovered pattern.

$$\text{Confidence (Keyboard -> Mouse)} = \frac{\text{No. of transactions containing both Keyboard and Mouse}}{\text{No. of transactions containing (Keyboard)}}$$

The goal of the method is to find rules that meet both a minimal support and a minimum confidence requirement (Strong Rules).

Working steps:

1. Find all frequent itemsets:
   - Get frequent items:
     - Items whose occurrence in database is greater than or equal to the minimum support threshold.
   - Get frequent itemsets:
     - Generate candidates from frequent items.
     - Reduce the results to find the frequent itemsets.
2. Generate strong associated rules from frequent itemsets
   - Rules which satisfy the minimum support and minimum confidence threshold.

V. CONCLUSION

Karnataka's state government has established APMCs in a number of cities to allow farmers to sell their produce at fair prices. Most APMCs have a market where traders and other marketing agents can buy agriculture produce from farmers from stalls and shops set up by the APMC. Under the auspices of the APMC, farmers can sell their produce to agents or traders. But There is no longer any transparency between farmers and traders (mandi owners), and no transparency between APMC and dealers. Every transaction is done by hand, which raises the risk of fraud, and famers do not obtain the exact price for the quantity of their harvest and do not receive prompt reimbursements. As a result of this suggested system architecture, every transaction is carried out digitally and kept in a database, giving the government a complete image of the transaction. This proposed system also provide crop demand for farmers using the Apriori algorithm. APMC's will also provide farmers with a comprehensive picture of agricultural prices. Hopcoms can also place orders with the APMC, and their transactions are stored in the database. Customers can also register with the system and place orders with the hopcoms.

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