AN EMPIRICAL ANALYSIS ON THE OPPORTUNITY AND CONSTRAINTS

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Abstract

This is due to the fact that the financial resources available at the state level are limited; as a result, it is imperative to guarantee that resources are used effectively. According to this point of view, it is of the highest significance to have an understanding of which factors provide the most significant barriers to the expansion of agricultural production. It has been demonstrated that the several types of vendors operating in the Ranchi market who are in the business of selling veggies are also accountable for a sizeable amount of the price variation in these goods. This inquiry also focuses on the technique of procurement, also known as the supply chain mechanism, of green vegetables by various merchants as well as the costs that are involved with such operations. Despite the fact that prices are fixed on both the farmer's side and the retailer's side, it was discovered that there is a price gap and variations between the two. As a result, in order to determine whether or not there are significant differences between the seasons in terms of the average productivity, cost of production, cost of transportation, and cost of packaging of different vegetables during the pre-monsoon, monsoon, and post-monsoon periods, an analysis of variance with a one-way analysis When manufacturers sell their items to end users or merchants directly rather than going via a middleman, they are able to bring in a higher total net price for their products. Tomatoes were shown to give the best absolute net returns to the farmers, followed by cauliflower, cabbage, brinjal, and local beans across all distribution channels. Cauliflower was found to provide the second highest absolute net returns.

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INTRODUCTION

Despite its location on the verdant Gangetic plains, the Indian state of Bihar is considered to be one of the most impoverished in the country, and its score on the Composite Development Index is among the lowest in the country. This is due to Bihar's lack of investment in infrastructure and agriculture. The average per capita income in the state of Bihar was twenty times less than that of the state of Haryana for the years of 2008 and 2016. However, ever since it was divided into the modern states of Bihar and Jharkhand in the year 2000, the economy of Bihar has started growing significantly, exhibiting a clear structural shift from the primary sector to the services sector. Jharkhand's economy, on the other hand, has remained relatively stagnant. On the other hand, Jharkhand's economy has not changed all that much during the past several years. Despite this change in the structural framework of the economy, agriculture continues to account for more than a quarter of the overall GDP of the state and provides jobs for around 70 percent of the rural labour force. Therefore, the strong growth of the agricultural sector inside the state is the primary factor that will determine the state's level of economic and social success In light of this fact, the government of Bihar has been putting in a lot of effort since 2008 under the pretext of "agricultural roadmaps" to get a variety of various development projects off the ground and operational. The holistic development of agriculture is the core goal of this project, with a concentration on raising productivity growth and improving farmers' incomes. The initiative's primary focus is on the development of agriculture as a whole. It would appear that these initiatives have made a contribution to the quickening of the rate of agricultural expansion in Bihar (Minato, 2014). In the period between the years 2000–2001 and 2007–2008, when it reached its zenith, the agricultural sector grew at a pace of 2% per year, as shown by our most accurate estimates, on average. In the second year, which ran from 2008-2009 to 2011-12, there was a large rise in agricultural growth to 3.1%, which resulted in a very high growth rate of 10.9% in the Gross State Domestic Product. [Citation needed] (GSDP). However, during the subsequent period of five years, that is to say from 2012-2013 to 2016-2017, agricultural growth slowed down to 1.3%, which also drove down the overall economic growth of the state to 6.6%. This occurred between 2012-2013 and 2016-2017. It is of the highest significance to make certain that resources are used properly in order to support the complete expansion of the agriculture business. This is because financial resources at the state level are limited, thus it is essential to ensure that resources are used efficiently. In this view, it is of the utmost importance to understand which variables provide

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the largest obstacles to the increase in agricultural productivity. In our opinion, the removal of these restrictions brought about by the adoption of new legislation would make the sector's untapped potential for growth available for use As a result, the objective of this study is to investigate the growth diagnostics of Bihar's agricultural sector with the objective of identifying the most significant limits on the factors that are responsible for accelerating the output growth. A particular emphasis will be placed on agricultural topics throughout the project. Our major focus is directed at the crop industry since this sub-sector is accountable for more than two-thirds of the total agricultural production, and its contribution to the growth of the industry as a whole is much bigger than that of any of the other sub-sectors. 4 This work makes two important contributions, which are as follows: It identifies the most binding constraints on agriculture in a particular region (Bihar) and suggests policy remedies to deal with these constraints. First, it develops a growth diagnostics framework for the agricultural sector. Second, it identifies the most binding constraints on agriculture in Bihar. Both of these are significant advancements that have been made in the sector of agriculture. The remaining sections of the article are organised as shown in the following paragraphs. In Section 2, you will find a presentation of the methodological framework, which is an altered version of the growth diagnostics framework that was established In the third part of this article, we conduct an analysis of the performance of Bihar's agricultural sector with the intention of identifying the limits that are the most relevant for the crop industry. The scope of these restrictions is the topic of discussion in the section that comes after this one (section 4). In the concluding section, several recommendations for future policy are presented.

The production of crops used in horticulture is a considerable proportion of the country's total agricultural output. These plants are cultivated over an area that is roughly comparable to 11.6 million hectares (ha), and the total production that they offer each year is greater than 91 million tonnes. Growing one's own fruits and vegetables is an important contributor to the development of employment prospects, the accumulation of financial resources, and the attainment of a level of nutritional safety for one's home. The current annual output of fruits and vegetables in India is over 227 million tonnes (MT), and it is anticipated that this figure will increase to over 377 million tonnes (MT) by the year 2021. In the United States, the current annual output of fruits and vegetables is over 227 million tonnes (MT). However, the expected output of fruits and vegetables would only be sufficient to meet the demand in the domestic market, which would prevent any increase in the market for exported goods. This is owing to the fact that there would not be enough processing facilities on the farm, which would result in a tremendous volume of

3/13 | **Harsh Bhai Desai*,** *University Department of Economics: B.R.A. Bihar University, Muzaffarpur. India.*

food being thrown away. At the same time, this waste would continue to rise. At the present time, India is responsible for producing more than 77 MT of fruits and more than 150 MT of vegetables, and the production of each is increasing at a compounded annual growth rate that varies between 5 and 6% respectively.

REVIEW OF LITERATURE

According to research conducted by Ganesh Iyer and J. Miguel Villas-Boas (2003), an increase in the relative power of the retailer in the channel reduces the risk of double marginalisation and encourages channel coordination, both of which lead to an increase in the retailers' ability to negotiate favourable terms. People have gained a greater understanding of market information systems as well as the operation of market-based mechanisms for managing agricultural risk, such as futures, options, and insurance, as a result of the conversation that took place between Balagtas and Holt. Despite the remarkable progress that has been made over the years, Gulati notes that the environment for those who are involved in the food supply chain is changing as a result of the requirement for greater vertical coordination within the food system. This is necessary in order to satisfy the increasingly varied preferences of consumers. It is expected that noncompetitive behaviour and its repercussions will continue to be a top study focus in light of the current trend towards industry consolidation in the marketing business.

According to research conducted by M S Jairath and Gaurav Jairath (2009), the ratio of money invested by the private sector to money invested by the public sector is around one rupee for every rupee invested by the public sector. The investigation came to the conclusion that public and private investments complement one another quite effectively. The findings of the study indicate that this is something that has to be done in order to sustain investment in agricultural marketing infrastructure.

Sheoran, Rasi M., and A. each contributed a (2015), An effective marketing strategy that influences the pay of the manufacturer and shapes the welfare of the client is crucial for the long-term growth of agribusiness. The cost and yields of homestead production, in addition to the mechanism by which an item is transported to a client from the ranch door, are two of the many aspects that influence market productivity. The cyclical nature of these components, as well as their quality, price, and location, all contribute to the efficacy of the market. As an

4/13 | **Harsh Bhai Desai*,** *University Department of Economics: B.R.A. Bihar University, Muzaffarpur. India.*

illustration, the assembly markets in Ranchi and the areas surrounding it are situated in close proximity to the field gates through which farmers bring their veggies.

Sheoran, Rasi M., and A. each contributed a (2015), In general, the price is paid by the various marketing agencies regarding the packing, transportation, storage, and processing; however, in a city like Ranchi, the intermediaries or mahajans cut down the price of these variables from the farmers' end and lower down their margin. Because of this, an effective marketing channel needs to be developed through which the farmers can sustain with any losses. An effective marketing system can cut down on post-harvest losses, raise farmers' incomes, lower consumer prices, encourage grading and food safety practises, stimulate demand-driven production, enable higher value addition, and make exporting easier. Additionally, it can promote grading and food safety practises.

Brithal et al. (2015) conducted research to determine how smallholder farmers in India might benefit from newly emerging opportunities made possible by demand-driven innovations in high-value agricultural production. They investigated the institutional strategies that were utilised by a variety of companies in order to incorporate artisanal producers of dairy, poultry, and vegetables into the supply chain. Additionally, they investigated the impact that these strategies had on the profitability and transaction costs of the farmers. They made the discovery that the unique institutional structures of contract farming greatly reduced the expenses of conducting transactions and boosted the market efficacy to the smallholders' benefit. They did not find any instances of discrimination against smallholders in the context of contract farming. In addition, the study comes to the conclusion that there is no evidence to suggest that the relevant corporations have taken advantage of their dominant position by providing reduced prices to farmers. On the other hand, it was found that contract farmers were getting higher prices and guaranteed sales of their goods. This was a significant advantage for them.

Kledal and Sulitand (2017) conducted research to investigate the engagement of Chinese small landowners in the supply chains for organic vegetable production as well as the advantages of their participation. They examined two regions as examples: the metropolitan area of Shanghai, where all organic vegetable production is intended solely for consumption within China, and the rural area surrounding Tai'an city in the Shandong province, where all organic vegetable production is intended solely for export. Both of these regions are located in Shandong Province. Small holders are not at all included in the production of organic vegetables in the city of Shanghai since agricultural employment is more lucrative for larger farms. Village

cooperatives in Shandong act as a link between a segment of the organic processing industry and the smallholders and households that produce their products. Smallholders and households receive compensation that is more than what an unskilled worker in the sector would receive.

RESEARCH METHODOLOGY

A problem can be solved systematically using research technique. Research methodology is the general term used to describe the processes that researchers use to describe, explain, and forecast events. It can also be described as the study of knowledge acquisition techniques. According to Goddard and Melville (2004), exploration is the process of finding solutions to unsolved problems or looking into things that do not yet exist. The definition of research as a careful analysis or request, notably through the search for new realities in any area of information, is provided by The Advanced Learner's Dictionary of Ebb and Flow English.

According to Redmen and Mory (2009), research is an organised endeavour to learn new things. The combination of many plans, tactics, and calculations used in research is known as a research strategy. Every tactic a researcher does in an analysis study is referred to as a research technique. They are generally well-organized, rational, and seen as impartial. They include fictitious plans, test hypotheses, mathematical schemes, factual techniques, and so on. Research methods enable us to compile data and test hypotheses before identifying a solution to the problem. Particularly, logical research methods demand that clarifications be based on obtained facts, assumptions, and perceptions rather than just thinking. They only accept explanations that can be verified by testing.

The selection and acceptance of an appropriate and systematic methodological technique is crucial for any logical investigation because it involves the clarity, expertise, exactitude, unwavering quality, validity, and extraction of the exploration discoveries. The approaches taken for the test should be precise, tried-and-true, and most appropriate. Every effort was made in the current inquiry to select such methodologies while keeping in mind the objectivity, nature, and scope of the investigation.

The current exam was conducted in the Jharkhand provinces of Ranchi. Because Ranchi region and its surrounding regions are enriched with moderately most noteworthy territories under particular vegetable, they make up the majority of the production of the vegetables chosen in this location and are the subject of extensive marketing campaigns involving these vegetables. Beans, Cauliflower, Tomato, Cabbage, Brinjal, Bottle Gourd, Tomato, and Cabbage were

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among the vegetables used in the current study. Both optional and necessary information is required for the study. The Birsa Agriculture University, Government of Jharkhand, collected the optional information on the region and vegetable production, among other things, from various dispersed and unpublished documents. Using a multistage stratified arbitrary inspection process, the farmers from Ranchi's region's Thakurgoan, Choria, Chatwal, Boreya, Murma, and Kanke were asked for the crucial information about the trimming framework and marketing of selected veggies.

DATA ANALYSIS & INTERPRETATION

This paper discusses the various analyses that can be used to demonstrate that there is a variation in the price of vegetables in different seasons from framers to consumers due to the existence of various intermediaries. These analyses are covered in this paper because they are relevant to the topic at hand. The headings that are included in this paper are as follows:

After all of the data had been collected from the source, they were then entered into a spreadsheet where they were ordered in a logical fashion and tabulated so that they could be analysed and interpreted. Since the price from the farmer and retailer was found to be a price gap and variations despite the fact that there are fixed prices on both sides, in order to test whether or not there are significant differences between the seasons in terms of the average productivity, cost of production, cost of transportation, and cost of packaging of various vegetables during the pre-monsoon, monsoon, and post-monsoon periods, an analysis of variance with a one-way analysis of variance (ANOVA) was performed. The results of

The research is carried out in the region that is immediately next to Ranchi city. In this part of the world, growing the specified vegetables is a large industry, and each vegetable producer generates around 10-15 tonnes of produce each season. The primary neighbourhoods or blocks that have been taken into account are Thakurgoan, Choria, Chatwal, Boreya, and Kanke. Also taken into account is Murma. Along with this, the major huge stores of Ranchi city, such as Big Bazaar and Reliance Fresh, are also taken into account in order to learn and discover the true variety of these veggies. The price of these vegetables is determined by a number of different factors, including production and marketing considerations, respectively. After doing an in-depth analysis of the field data I collected, I presented my findings on the costs of various vegetables during their respective growing seasons, including those associated with the seeds, labour, fertilisers, insecticides, and irrigation systems.

7/13 | **Harsh Bhai Desai*,** *University Department of Economics: B.R.A. Bihar University, Muzaffarpur. India.*

THE COST OF DIFFERENT AGRICULTURAL INPUTS FOR THE SELECTED VEGETABLES
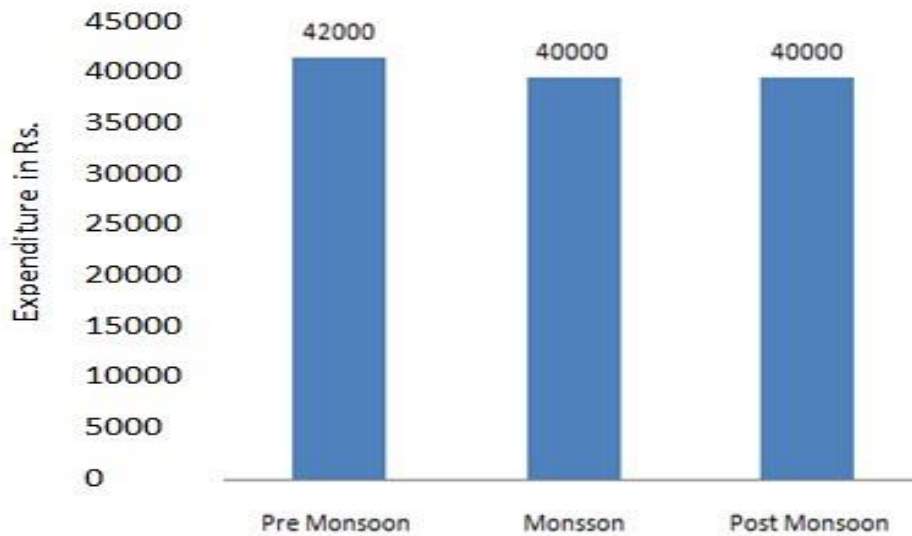
There are various agricultural inputs which directly affect the price of the vegetables.
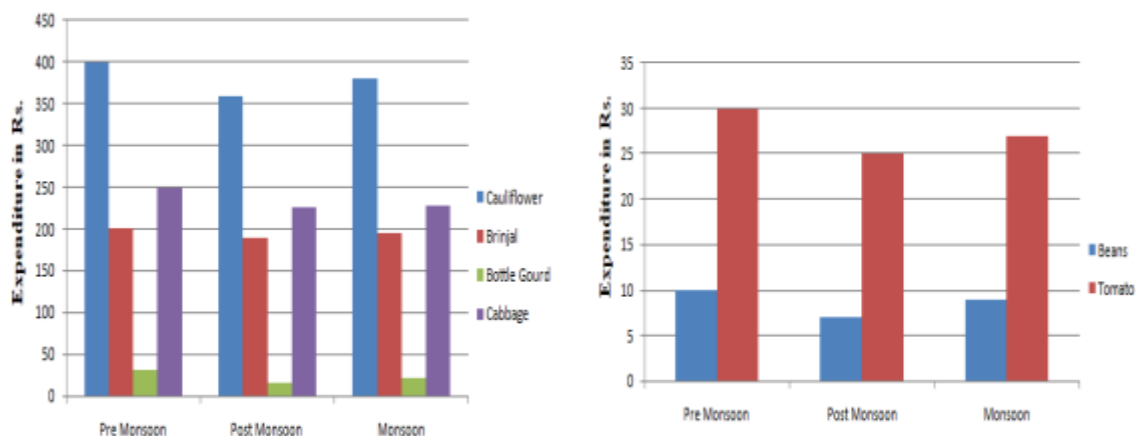


Figure 1 Vegetables seeds cost

According to one possible interpretation of the data shown in the figure 1 that was just presented, the average cost of seeds varies depending on the climate or agricultural season (i.e. Pre Monsoon, Monsoon and Post Monsoon). which was taken into account over the course of the survey (data collection). Cauliflower seeds, on average, cost Rs. 400 during the post-monsoon season, Rs. 360 during the pre-monsoon season, and Rs. 380 during the monsoon season. Similarly, After the monsoon, the price of brinjal seed is 195 rupees, whereas before the monsoon it is 190 rupees, and during the monsoon it is 200 rupees. The price of cabbage seed is as follows: Rs. 250 during the post-monsoon season, Rs. 225 during the pre-monsoon season, and Rs. 228 during the monsoon season. Bottle gourd seeds cost Rs. 30, Rs. 15, and Rs. 22 each in the post-monsoon, pre-monsoon, and monsoon seasons, respectively. Beans have a seed cost of Rs. 10, Rs. 7 and Rs. 9 in the post-monsoon, pre-monsoon, and monsoon seasons, respectively. Tomato seeds cost Rs. 30, Rs. 25, and Rs. 27 respectively in the post-monsoon, the pre-monsoon, and the monsoon seasons. The preceding graph can be interpreted to demonstrate that cauliflower has the highest average seed cost over all three seasons, i.e. post-monsoon, pre-monsoon, and monsoon, whereas beans and tomatoes have the lowest seed costs accordingly.

| **Harsh Bhai Desai*,** *University Department of Economics: B.R.A. Bihar University, Muzaffarpur. India.*

Figure 2 Cost of Labor

It is vitally crucial that there be labour present or available during all of the different seasons. This is a significant consideration in the agricultural industry. The cost of labour throughout different seasons, such as post-monsoon, pre-monsoon, and monsoon, is depicted in the graph 2 that can be found above. According to the graph, the cost of labour in the post-monsoon season is around Rs. 42000, whereas it is only Rs. 40,000 during the pre-monsoon and monsoon seasons. This demonstrates that there is a lower availability of labour during the post-monsoon season, which is a contributing factor to the increase in price; conversely, there is a greater availability of labour during the pre-monsoon and monsoon seasons, which is a contributing factor to the decrease in price or cost. The price of labour goes up, which has a direct impact on the price of vegetables, which ultimately leads to a rise in the price of vegetables from the farmer's perspective.
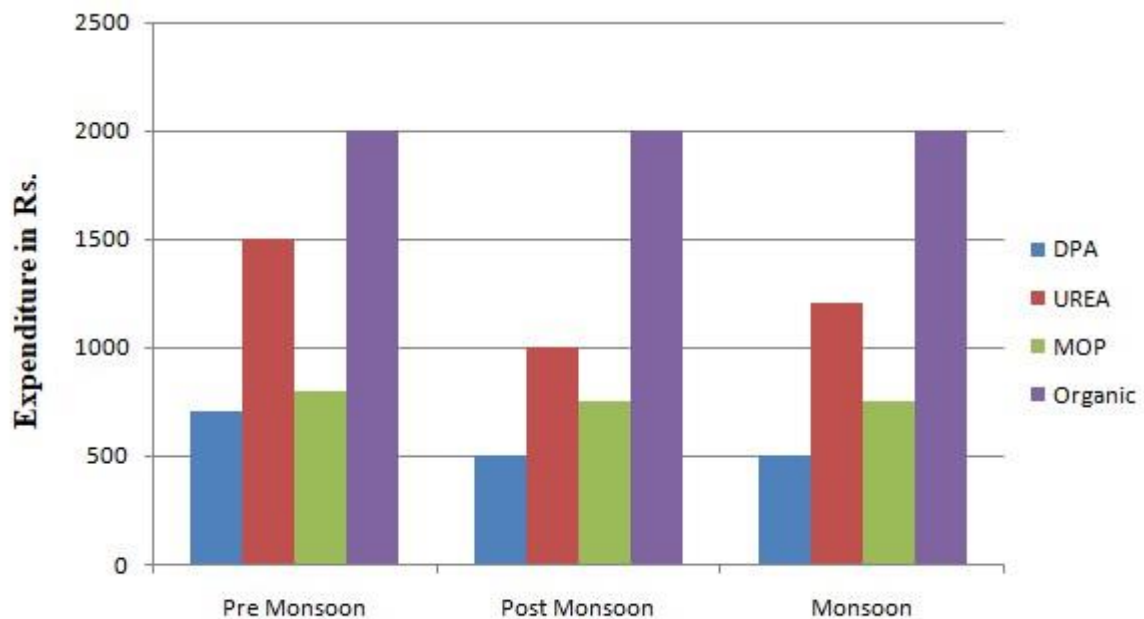
Figure 3 Cost of Fertilizer

Fertilizer, whether natural (organic) or artificial, as well as substances such as diammonium phosphate (DPA), urea, and muriate of potash (MOP), include a variety of ingredients that promote the development and increased production of particular plants. The fertilisers contribute to an increase in the soil's innate fertility. The price of fertiliser as it is applied to various types of vegetables is displayed in the preceding graph (3), which compares the effects of several climates. The number indicates that the cost of organic manure was two thousand rupees, which was the most expensive of any of the seasons. In the instance of DPA, it was greater in the Post Monsoon period compared to both the Pre Monsoon and the Monsoon periods. Urea, which is utilised in the cultivation of vegetables, costs Rs. 1000 during the post-monsoon season, Rs. 1500 during the pre-monsoon season, and Rs. 1200 during the monsoon season. When compared to the prices of other seasons, such as pre-monsoon and monsoon, the cost of muriate potash, also known as MOP, is more expensive after the monsoon.
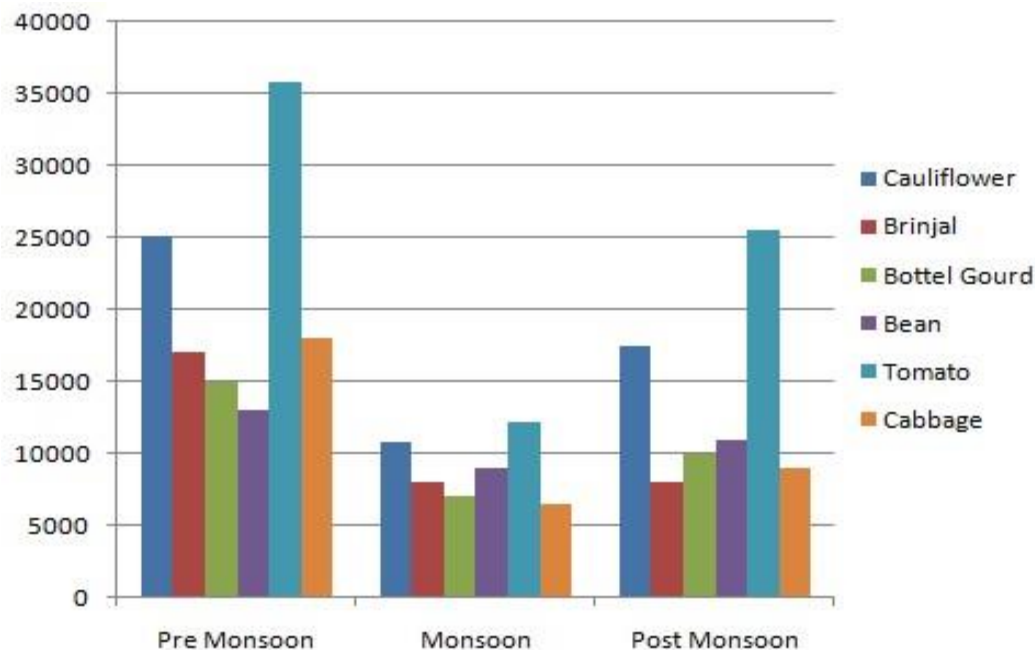
Harsh Bhai Desai*, *University Department of Economics: B.R.A. Bihar University, Muzaffarpur. India.*

Figure 4 Cost of Irrigation

Irrigation refers to the process of applying water in a controlled manner using various methods to land that has been prepared for agricultural use. The cultivation of vegetables will benefit from irrigation that is both effective and efficient. The cost of irrigating various types of vegetables throughout the year is depicted in figure 4, which can be seen above. According to the observation, this demonstrates that the highest level of irrigation demand was needed during the post-monsoon season for the production of tomatoes, whereas the lowest level of irrigation requirement was required during the pre-monsoon season for the production of cabbage.
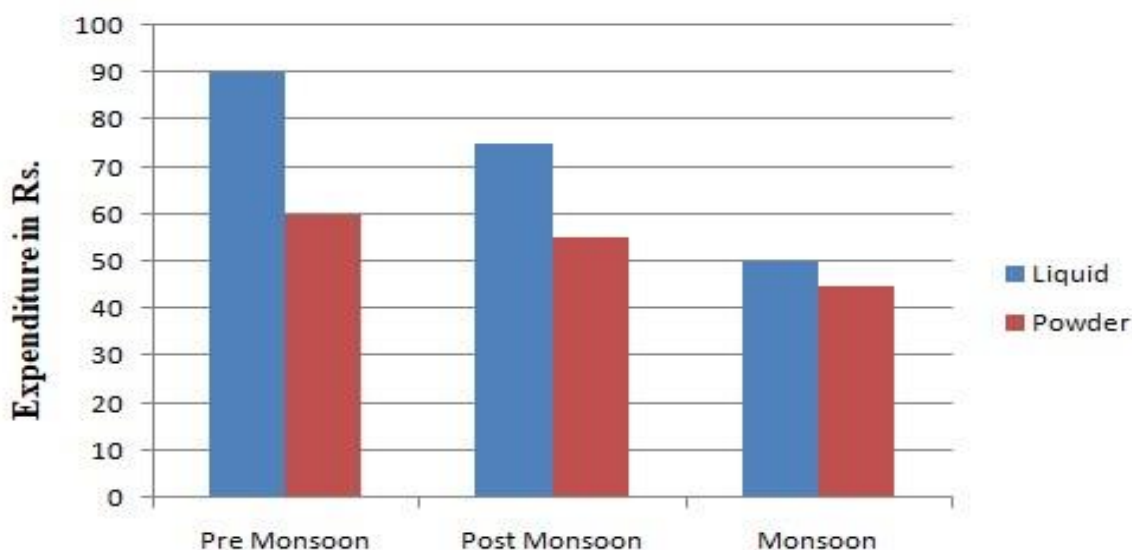
Figure 5 Cost of insecticide

Killing insects requires the use of a material called an insecticide. They consist of ovicides and larvicides, which are respectively employed to kill eggs and larvae. Insecticides find widespread application in agricultural practises, including farming and gardening. During the course of the investigation, it was discovered that two distinct types of insecticides, namely powder and liquid, are utilised throughout the growing process. The cost of pesticides that are utilised in different climatic conditions, such as pre-monsoon, monsoon, and post-monsoon, is represented by the figure 5. that is shown above. During the pre-monsoon and monsoon seasons, there is a significant increase in the demand for liquid insecticides. In a similar vein, the demand for electricity from pesticides is significantly higher in the post-monsoon period.

CONCLUSION

The marketing of vegetables is a complicated process because of the perishable nature of vegetables, as well as the fact that they are seasonal and bulky. It is made even worse by the fact that farmers only have tiny areas available for cultivation, which results in a limited amount of produce that can be sold. Due to the larger output and postharvest losses, vegetables require a more sophisticated marketing structure in order to be quickly disposed of. It has also been noted that the proportion of the price paid by the producer to the final customer falls as the number of intermediaries in the supply chain rises. The producers are able to bring in a greater overall net price when they offer their wares to the end users or merchants directly rather than going via a middleman. Tomatoes were shown to provide the highest absolute net returns to the farmers, followed by cauliflower, cabbage, brinjal, and local beans across all distribution channels. Cauliflower came in last. There is a significant disparity in price between a few of these different types of veggies. Tomatoes, brinjals, beans, and bottle gourd all have a significant price differential between them. The farmers do not receive an adequate value for their harvested veggies and other commodities. Because of the perishability of the vegetables and the lack of storage space available to them, they are unable to keep these vegetables in their possession for an extended period of time after cultivation. As a result, they are forced to sell the vegetables at the price set by the intermediary within a predetermined amount of time. As a consequence of this, the farmer does not receive the appropriate value, and instead, intermediaries such as mahajans gain more money. These middlemen also play an important part in determining the prices of the veggies that are sold on the market or to retailers, depending on which option is more convenient for them.

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13/13 | **Harsh Bhai Desai*,** *University Department of Economics: B.R.A. Bihar University, Muzaffarpur. India.*