



Conference Paper

Challenges and Sustainable Solutions for Agro-Based Industries in Western Rajasthan

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Abstract	Manuscript Information
<p>An agro-based industry is that industry that depends on agriculture. Agro-Based Industry deals with growing plants and food for consumer use and consumption. In these Industries post-harvesting activities are incorporated in preparation, preservation and transformation of the agriculture production for intermediary or final consumption. Western Rajasthan, characterized by its arid climate and inadequate water resources, faces distinctive challenges in the development and sustainability of agro-based industries. This research paper explores the many-sided issues confronting these industries, including production problems, marketing issues, lack of research & development, infrastructural problems, financial problems, water scarcity, managerial issues, soil degradation, unskilled labour, limited access to technology, climatic extremes and miscellaneous problems. In response to these challenges, the paper proposes a sort of sustainable solutions. To address these challenges, this abstract highlights several sustainable solutions and top quality practices. These include the adoption of integrated pest management techniques, which decrease the reliance on chemical pesticides. Policy recommendations are provided to encourage public-private partnerships, boost research and development. The adoption of water-efficient irrigation technologies such as drip and sprinkler systems, soil management practices to prevent degradation and the integration of climate-resilient crop varieties. This research paper tries to find out the main challenges which are faced by agro based industries in the Western Rajasthan and to find the appropriate & sustainable solutions for development of these Industries.</p>	<ul style="list-style-type: none"> ▪ ISSN No: 2583-7397 ▪ Received: 19-12-2024 ▪ Accepted: 27-02-2025 ▪ Published: 17-03-2025 ▪ IJCRM:4(SP1); 2025: 281-285 ▪ ©2025, All Rights Reserved ▪ Plagiarism Checked: Yes ▪ Peer Review Process: Yes <p>How to Cite this Article</p> <p>Dr. Taruna Sharma. Challenges and Sustainable Solutions for Agro-Based Industries in Western Rajasthan. Int J Contemp Res Multidiscip. 2025;4(6):281-285.</p> <p>Access this Article Online</p> <div style="text-align: center;">  </div> <p style="text-align: center;">www.multiarticlesjournal.com</p>

KEYWORDS: Industry, Consumption, Sustainability, Scarcity, Management, Development.

1. INTRODUCTION

Agro-based Industry may be considered to be the most vital sector of Indian economy considering its vast potential for expansion and the likely socio-economic consequences, particularly in the field of generating employment and income.

Some studies recommend that approximately 14% of the entire work force, directly or indirectly, is engaged in the agro-processing sector, in developed countries.

Agro-Based Industry has been accorded special importance in Rajasthan for various reasons - Social, Economic and Political.

The growth of these Industries has been fostered over the years through various incentives such as special treatment in respect of credit and marketing, offer machinery on hire, purchase and provision of technical assistance etc.

Western Rajasthan is primarily an agricultural Region and this may suggest the possibility of developing Agro-Based Industry. However, a casual glance of the region's cropping pattern would reveal the except for Ganganagar, Pali Districts, where some Industrial crops are raised, the crop forming in the rest of region is mainly subsistence oriented and can hardly support any Industry.

Agro-industry includes hi-tech and biotechnology-based agriculture. The development of the agro-based industry will improve both the social and physical infrastructure of Rajasthan. In a labour surplus economy like Rajasthan, State Government needs solutions that increase producer's incomes but also generate new employment opportunities. The present paper is intended to understand the major challenges faced by the agro-based industries in Rajasthan, particularly the Western parts of Rajasthan, and to examine how these problems affect their business performance. This paper also recommends sustainable solution for agro based industries.

2. OBJECTIVES OF THE STUDY

The main objectives are to assist the main challenges and sustainable solution for agro based industries in Western Rajasthan. The key objectives of the study are given below:

- To analyze the constraints that may help in the improvement of the production.
- To study the factors responsible for sustainable growth and development of Agro-based industrial units.
- To assess the problems and challenges encountered by the Agro-based industrial units to establish themselves as economically viable.
- To identify the policy needs and strategies for economically viable Agro-based industrial units.

Study Area

The area of the study broadly covers the western districts of Rajasthan. The western part of Rajasthan which is 2,11,867 square kilometers covers a large part of Rajasthan to the West and Northwest of the Aravali axis, this region comprises of 12 Districts, namely:-

Barmer, Churu, Ganganagar, Sikar, Bikaner, Nagaur, Hanumangarh, Jodhpur, Pali, Jaisalmer, Jalore, and Jhunjhunu. The present study is basically empirical in nature and hence, it attempts to evaluate the impact of the agro-based Industries and infrastructural facilities on the rural economy of Western Rajasthan.

3. METHODOLOGY

The present paper study is mainly based on secondary data obtained from Rajasthan statistical abstract and economic

review. Other relative data collected from various official sources, literature, research papers, journals, libraries and related government department. Review of secondary study also included government orders, legislations, polices, combined with online search through relevant website etc.

4. RESULT AND DISCUSSION

Agro-based industries in Western Rajasthan

Agriculture is an important occupation of the people in Western Rajasthan. The western part of Rajasthan state is under arid climate. The soil topography and climate in Western Rajasthan are not very much favorable for the some crops. Due to unstable weather conditions farmers have to depend on both rain-fed and groundwater agriculture.

Western Rajasthan, with its assorted agro-climatic conditions, is blessed with the cultivation of a wide range of crops. The western part of the state is the significant producer of guar, mustard, oilseeds, soybean, gram, moth bean and seed spices like coriander, fenugreek, cumin, fennel and so forth. Western Rajasthan has proximity to large consumer markets in the nearby region (close to the NCR region) which has a substantial share of Agro-industrial processing in the country. Infrastructural developments like the Agro Food Parks in Kota, Sriganganagar, Jodhpur and Alwar has been undertaken by RIICO. Western Rajasthan also offers tremendous opportunities in the area of organic farming, contract cultivating and in the creation of post-harvest infrastructure such as cold chains, special warehouses, testing and certification facilities.

In the Western Rajasthan agro-based industries face several problems and many times these problems result in the agro-industries being converted to sick industries. Some of the problems could be dealt with by the industries themselves and others require government intervention and even the cooperation of some supporting agencies. The study purports to analyze the problems encountered by the Agro-based industry in Western Rajasthan, so as to offer some feasible suggestions for toning up of their performance.

Challenges Faced by Agro-Based Industries in Western Rajasthan

Agro-based industries in Western Rajasthan face several challenges that impact their growth and sustainability. Here are some key issues:

- **Management challenges**

The managerial functions of planning, organizing, staffing, directing and controlling are common to both the agro-based industrial sector and the other large scale sectors. Small agro-based firms cannot afford to train and develop a specialized staff on their own. Therefore, these agro-based organizations have a necessarily need for some trained and professional managers for the growth and development of business. Agro-based business firms are generally managed by the owner who does not have any professional

qualification and adequate skills for efficient management of enterprises. There is a lack of proper division of work and specialization. They have not accepted modern and technological methods for proper management of the business organization.

- **Production challenges**

There is an acute shortage of basic raw materials required by agro units. These units are under a handicap in obtaining raw material of requisite quality of reasonable prices. Agro-industries are facing a shortage of power due to this problem, they are unable to make full utilization of plant capacity. Due to this nature, there is no continuous and stability in the supply of primary raw materials, which are necessary for the industrial production process. Majority of the agro-based units uses old techniques of production and outdated machinery or equipments.

- **Labour-related challenges**

The main resource of any organization is its manpower. If industries get sufficient and skilled manpower, profitability and productivity enhance manifold. In Western Rajasthan, the Agro based industries have to hire labour from other states. Sometimes, there is a need to train the labours which enhances the cost of the unit as well. It has been observed that the major labour-related problem was lack of skilled Labour. In the agro-based industry, there is a lack of such personnel in the organization who possess the motivation and competence to make a project viable and successful.

- **Marketing challenges**

An agro-based industrial unit has to face several difficulties in the marketing and distribution of agricultural and allied products because they do not have their own marketing network. Agro-based industrial units cannot afford to spend much on advertising, transportation and other promotional activities for good marketing of their products.

- **Research & development challenges**

Productive research in production, marketing, planning and distribution of agricultural products are still very far from the agribusiness sector. There is also a lack of research about consumer habits, demands and what they prefer in consumption which affects the sales of agricultural products. The number of laboratories in the Western Rajasthan is insufficient. In the western part of Rajasthan, there is no well-equipped laboratory available for testing the agro-based products. Units have to move for testing their products in different parts of the countries, as a result of which, the cost of production increases to a great extent.

- **Infrastructural challenges**

Infrastructure has a very crucial role in the development of the agro-based industry. Lack of transportation, communication, warehouses and other essentials facilities are common hurdles in the path of development of the agro-based business sector in Western Rajasthan. For creating an industrial culture in any region, infrastructural

facilities are required to be well developed & organized. Without these, no industrial enterprise can survive and sustain for long.

- **Financial challenges**

All business firms require sufficient funds to meet their fixed capital and working capital requirements. Agro-based units are often unable to purchase of machinery, equipment and raw materials for meeting day to day requirements due to inadequate financial resources. Financial problems relate to the shortage of capital to build up fixed assets, for modernization and technological up gradation and shortage of working capital.

- **Environmental challenges**

Soil Pollution: Intensive farming often lead to soil erosion, nutrient depletion and loss of organic substance. Over-reliance on chemical fertilizers can degrade soil health, reducing its productivity.

Water Pollution- The use of pesticides and fertilizers can results in contaminating nearby water bodies. This pollution not only affects aquatic ecosystems but also poses health risks to local communities.

Greenhouse Gas Emissions- Agro-based industries contribute to greenhouse gas emissions through deforestation, land-use changes, and fossil fuel consumption in agricultural practices and transportation.

- **Miscellaneous challenges**

Apart from the above-mentioned problems & challenges, the agro-based industrial units also face various other problems like Unfavorable Government Policy, Excessive Government Control, Natural calamity, etc. These issues also exert a negative impact on the performance of the agro-based industrial units, to some extent.

- **Sustainable Solutions for Development of Agro-Based Industries**

It's found from the depth study that, State of Rajasthan has faced some major and minor crisis in agriculture sector. Main agriculture crisis are:

Adverse climate, lack of irrigation facilities, inadequate financial assistance, droughts and famines, lack of knowledge of modern technology, poverty and lack of education among farmers.

Although the central and the state governments are paying due attention to the problems of agro-based industries, yet the following suggestions can be given from the point of view of future development.

- **To arrange the supply of raw materials**

Special efforts should be made to supply raw materials to agro-based industries. Although the government has made arrangements for the supply of raw materials for these industries, but this system has not been effective.

Therefore, this system should first be made effective. Also a buffer stock should be prepared, so that the raw material is available on time. Import facilities should also be increased.

- **Financial facilities**

Loans given by banks to agro-based industries are collateral and require guarantees. Consequently, very few industries are able to take advantage of these loans. Therefore, these banks should give loans according to the potential credit power of agro-based industries. Along with this, other institutions should also provide loans to these industries on more liberal terms.

- **Improvement in production technology**

In future, due attention should be paid to improve the production technology of these industries. Only then these industries will be able to provide good quality products to consumers. With this view, the government should arrange that each agro-based industry unit should transfer 10% of its annual income as a special fund and it should be used in the modernization program. Also, this fund should be tax free.

- **Establishment of Industrial Cooperative Societies**

It has been observed that agro-based industries work individually, due to which they have to face many challenges like marketing, finance, production, etc. Therefore, if industrial cooperative societies are set up in the country, many of these problems will be automatically ended.

- **Special attention to research programs**

Research programs should also be arranged in order to enhance the productivity of agro-based industries. It will contribute to the discovery of new information and technologies that can solve real-world problems and improve the variety of goods.

- **Agro-based industry exhibitions**

Agricultural-based industry exhibitions should be organized more and more. These exhibitions should not be confined to large cities only, but should be organized in different parts of the country so that consumers can get detailed information about the products of these industries.

- **Arrangement for industrial education and training**

To ensure growth and development of the agro-based industries, it is necessary that proper education and training should be arranged for the people related to these industries so that they can use modern scientific methods easily. For this, training centers should be set up in villages and towns.

- **Marketing related reforms**

An important problem faced by agro-based industries is marketing. In this direction, the adoption of cooperative marketing can be improved. Along with this, the government should also create a marketing organization that helps in the sale of goods of agro-based industries.

Sustainable practices for agro based industries-

- **Agro forestry:** Integrating trees with crops and livestock can enhance biodiversity and reduce soil erosion.
- **Sustainable Land Use:** Practices like crop rotation and conservation tillage can improve soil health and productivity.
- **Efficient Irrigation:** Implementing drip and sprinkler irrigation systems reduces water waste.
- **Wastewater Treatment:** Advanced treatment technologies can minimize the impact of industrial effluents.

5. CONCLUSION

Agriculture is the largest private sector in India and in Rajasthan also. A large portion of population of state is still dependant on agriculture for their livelihood. About 55% of total state's income generated from agriculture and their allied sector. Agriculture in Rajasthan is controlled by some environmental factors such as dry climate, Thar Desert, uncertainty of monsoon, lack of moisture soil, lack of irrigation facilities, etc. Agriculture sector is facing some manmade crisis such as lack of fertilizers and modern technology, inadequate financial assistance to farmers, poverty among farmers, etc. Physical environment of the state plays critical and significant role in almost every phase of agricultural activity. The performance of agriculture sector in the state is quite satisfactory but there are several challenges. Most of the challenges are adverse climatic conditions and implementation of agro-development plans. So, it is quite essential that Government and Farmers of Rajasthan both should be conscious about the overall development of agriculture sector and tackles the challenges in agriculture. There is a lot of potential for agro-based industries in the study area. In order to provide a strong and sustainable basis for the development of agro-based industries in the study area, it is very important to implement the planning format of the infrastructural elements.

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