
**A QUANTITATIVE ANALYSIS OF AGRO-BASED INDUSTRY
IN MATIARI DISTRICT, SINDH, PAKISTAN:
A SOCIOLOGICAL PERSPECTIVE**

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ABSTRACT

Pakistan is the agrarian country and its last economic data shows the growth in the agriculture production. More than 60 percent population is living in rural areas of the country and is engaged with agriculture activities. While the agro based industry is linked with agriculture sector and use agriculture raw material for production of final goods. The agro based industry provides income and employment generation opportunities. Therefore, the agro based industry is beneficial for the economic development of the area. For this study the 384 sample has been selected from the district Matiari and statistical Chi square test result highlights that the agro-based industry is beneficial for the development of the rural area.

Keywords: Agro-based industry, Crop production, pre and post-harvest.

INTRODUCTION

Agriculture and industry are fundamental factors in accomplishing economic growth. Both sectors are reliant on one another. The agricultural sector provides raw material to the industrial sector including agro-based and mineral industries and the production of the industries are utilized for the development of the agriculture sector. The economic progress of an agricultural area depends on the progress of the agro-based industry and of the agriculture sector of the area. The agro-based industry is reliant on the agricultural sector production. The growths of the agro-based industry and of the agricultural sector have an organic link. One cannot grow without the growth of its counterpart (Venkaiah, 1985:14). The agro-based industries play a vital role in the generation of income and non-farm employment opportunities. Therefore, it is accounted as an important source for the socio-economic development of rural and semi-urban areas. The agro-processing industries support the producers in enhancing quality, and creating different varieties of agriculture and food products, which also create new farm and

non-farm employment such as, packaging, transportation, marketing, and handling. The trade and transport of food products, particularly in rural areas of developing countries engage 30 percent of the work force of non-farm employment (Henson & Crasfield, 2009:10).

The agro-based industry promotes agriculture markets and enhances the value of agricultural raw material, because the agro-based industry requires the agriculture raw material to be transformed into finished goods for consumption (NPSC, 2015).

The agro based industries are contributing significantly to the rural economy to eradicate poverty and to stop rural migration towards large cities of developing and developed countries. In the developed countries 14% of total force works in agro-based industries. Though India is the second largest producer of agricultural products such as rice and wheat, the agro-based industry absorbs 3 percent of the total agricultural force that highlights the underdeveloped status of agro-based industries (Dhima & Rani, 2011).

The contribution of the agro-processing accounts for 66 percent of the total manufacturing of the agricultural countries, while the share of agro-processing in the total manufacturing industry accounts for 38 and 37 percent respectively in transforming and urbanized countries (Wilkinson & Rocha, 2009). The figure-1 shows the composition of the agro-processing sector in terms of value adding in the low income, lower middle income and upper middle-income countries.

The agro-based industries are divided into two groups, the food processing and the non-food processing units. The food processing group process the agriculture products, preserve fruits, vegetables, meat, and process rice, wheat, pulses, barely, maize and utilize the by-products. The agro-based industries are further classified into the processing, manufacturing, inputs-manufacturing and agro-service units (Paramasivan & Pasupathi, 2016).

Classification of Agro-Based Industries

Agro-processing Units: The agro processing units process agricultural raw material, preserve the perishable agriculture products and make necessary arrangements to transport at a cheaper cost but without producing any finished goods such as Dal Mills, and Rice Mills.

Agro-Produce Manufacturing Units: These units process transform the agricultural raw material into finished and new products for final consumption, such as textile mills, sugar mills, bakery goods, food and beverage, and solvent extraction units.

Agro-Inputs Manufacturing Units: The manufacturing units are concerned with developing products to increase the productivity of the agriculture sector. Some of the Agro-inputs manufacturing units are agricultural tools, pesticides, fertilizer and seed industries.

Agro Service Centers: The agro-service centers are developed for repairing and the maintenance of tools used for the agriculture production, such as tractors, water pumps, tube wells, and diesel engines.

Pakistan is the sixth most populated country in the world. The total estimated population of the country is around 207.77 million 132.19 million of this population residing in rural, and 75.58 million in urban areas of the country. The 20.01 million households (i.e. 132.19 million people) which is more than 60% of the total population are living in rural areas of Pakistan and mostly earning their livelihood from agriculture and its allied fields (GoP, Federal Bureau of Statistics, 2017).

According to World Bank report 75% of 800 million poor people living in rural areas of the world depend upon the agriculture sector, which supplies an income of less than 1US\$ per day (World Bank, 2008).

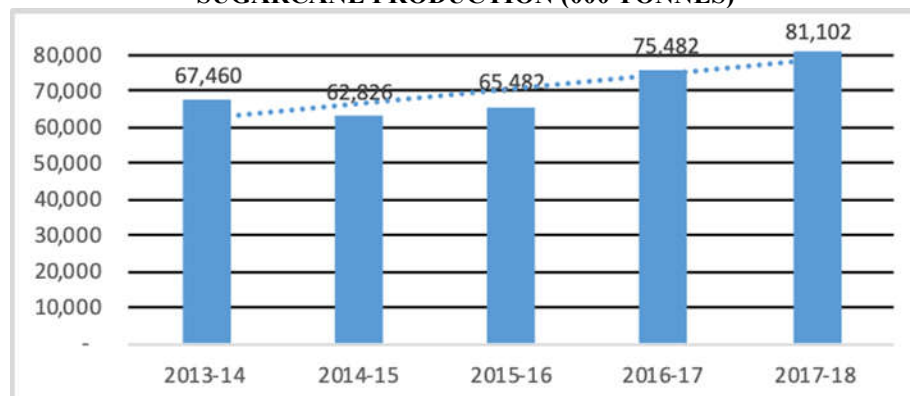
Agriculture is a major contributor to the gross domestic product of Pakistan since the independence of the country. The agriculture sector contributes 19 percent to the gross domestic product and absorbs 42.3 percent of the country's total workforce. The sector accounted for a 3.81 percent growth during fiscal year 2017-18. Furthermore, the major crop's production accounts for 3.83 percent growth during the fiscal year 2017-18 and provides the raw material for the agro and mineral industries (Economic Survey of Pakistan, 2017-18). The same can be envisaged from the Table-1 appended below.

TABLE-1
AGRICULTURAL GROWTH (%)

Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
Agriculture	3.62	2.68	2.50	2.13	0.15	2.07	3.81
Crops	3.22	1.53	2.64	0.16	-5.27	0.91	3.83
i) Important Crops	7.87	0.17	7.22	-1.62	-5.86	2.18	3.57
ii) Other Crops	-7.52	5.58	-5.71	2.51	0.40	-2.66	3.33
iii) Cotton Ginning	13.83	-2.90	-1.33	7.24	-22.12	5.58	8.72
Livestock	3.99	3.45	2.48	3.99	3.36	2.99	3.76
Forestry	1.79	6.58	1.88	-12.45	14.31	-2.37	7.17
Fishing	3.77	0.65	0.98	5.75	3.25	1.23	1.63
P: Provisional							

Source: Economic Survey of Pakistan, 2017-18.

FIGURE-1
SUGARCANE PRODUCTION (000 TONNES)



Source: Bureau of Statistics, 2017.

Indeed, a large population is living in the rural areas, and is dependent on the agriculture sector, while the agriculture sector is a major contributor to the gross domestic product and engages a significant portion of the labour. The Pakistani rural areas are depriving from the socio-economic facilities such as employment, health, education, equal economic rights. The rural population is moving towards urban areas for the prospects of a better future. Consequently, the population of the urban area is increasing. The urban population of the Sindh province has increased more in comparison to that of the other three provinces of Pakistan, which accounts for 52.02 percent of the total population of Sindh. The Table-2 highlights the urban population.

TABLE-2
POPULATION CENSUS OF URBAN AREAS, FROM 1981 TO 2017

Area	Population (million)			Urban share (%)		
	1981	1998	2017	1981	1998	2017
Pakistan	84.25	132.35	207.77	28.3	32.52	36.38
Khyber Pakhtunkhwa	11.06	17.74	30.52	15.06	16.87	18.77
FATA	2.20	3.18	5.00	-	2.69	2.84
Punjab	47.29	73.62	110.01	27.6	31.27	36.71
Sindh	19.03	30.44	47.89	43.32	48.75	52.02
Balochistan	4.33	6.57	12.34	15.62	23.89	27.55
Islamabad	0.34	0.81	2.00	60.06	65.72	50.58

Source: GoP, Bureau of Statistics, 2017.

Keeping in view the role of agro based industries in the economic progress of China, Japan, and Taiwan, the notable changes as estimated in the agriculture sector and industrial units of these developed countries are due to the development of agro-based industry. In order to address the socio-economic issues of gender disparity, income and employment generation in

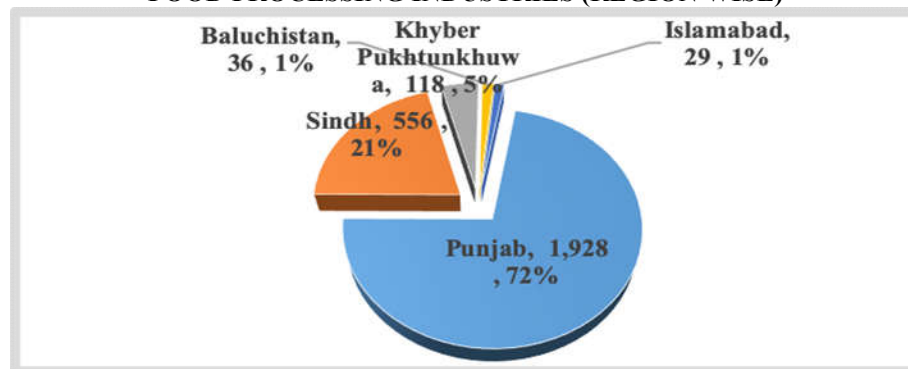
rural areas of Pakistan, it is necessary to develop non-farm activities to generate income and employment sources to improve the socio-economic conditions of the rural areas of Pakistan. This means establishing more units and strengthening existing units of the agro-based industry.

The increasing gap between the income of rural and urban populations and the failure of development policies and strategies to realise the potential of the agriculture sector creates political tension, because the large rural population is living and finding livelihood from the agriculture sector. In order to achieve the socio-economic progress, the development of the agro-based industries is essential to generate income and employment opportunities (Silva, *et.al.*, 2009).

Sindh is the second largest provinces of Pakistan and hub of the economic activities of Pakistan including commerce and trade, manufacturing industries, finance, and agriculture. The agriculture sector is the main component of the economy of Sindh and 47.98 percent of the rural population depends on it. The rice, sugar, wheat, fruits, vegetables, and different food items are produced in the separate districts of Sindh (Economic Survey of Pakistan, 2017-18:181).

In agro-based industries of Pakistan, food and beverages is the second largest industry after the textile industry of Pakistan and it provides employment 16 percent labour force of the manufacturing sector. According to the statistics, 72% of the food processing industries are in the province of Punjab and employ 183, 891, followed by Sindh province 21%, and 5%, KPK, 1% Baluchistan and 1% in the Federal Capital City Islamabad (Food Processing Report, 2106).

FIGURE-2
FOOD PROCESSING INDUSTRIES (REGION WISE)



Source: Food Processing Report, 2016.

During the fiscal year 2013-14, the food and beverages sector of Pakistan has earned US\$ 1.33 billion which accounts for 0.25% of the international share of food products. That highlights the underdeveloped

status of the agro-processing industry in Pakistan, for the purpose of socio-economic development (Sidat Hyder Morshed Associates, 2015).

PROFILE OF DISTRICT MATIARI

According to the census of 2017, the total population of the Matiari district was 769,349. The main source that drives the economy is the agriculture sector. The major agriculture products of district are, Wheat, Cotton, Rice, Wheat, Jowar, Sugarcane, Maize, Gram, Bajra, Rapeseed & Mustard and vegetables and fruits. The area and production of agriculture crops by Matiari District in Sindh province can be seen in the following Table-3.

TABLE-3
AREA AND PRODUCTION OF MAJOR CROPS IN DISTRICT MATIARI

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		Area (in Hectre)			Production (in M. Tons)		
Province/ District	Crop	2012-13	2013-14	2014- 2015	2012-13	2013-14	2014- 2015
Food Crops							
Sindh	Rice	511,091	745,539	781,679	1,843,881	2,617,338	2,652,583
Matiari		1,507	1,569	959	4,300	3,989	2,358
Sindh	Wheat	1,058,400	1,121,636	1,106,880	3,598,690	4,002,113	3,672,224
Matiari		37,390	37,330	38,649	141,556	150,755	150,170
Sindh	Jowar	12,445	12,822	12,228	12,014	12,015	11,586
Matiari		295	500	535	213	378	386
Sindh	Bajra	45,001	44,808	44,867	23,255	23,250	23,056
Matiari		343	492	472	200	294	368
Sindh	Maize	3,641	3,490	3,179	3,588	3,501	3,351
Matiari		216	435	420	258	516	540
Sindh	Gram	16,792	15,889	14,808	16,070	15,549	14,351
Matiari		466	507	527	460	496	516
Non-food Crops							
Sindh	Cotton	530,099	567,980	596,208	3,400,394	3,523,414	3,572,544
Matiari		36,835	40,387	41,916	274,137	283,126	265,346
Sindh	Sugarcane	253,694	297,558	316,749	15,966,224	18,362,515	16,613,835
Matiari		12,200	13,178	13,373	898,140	911,796	713,794
Sindh	Rapeseed & Mustard	46,518	48,330	49,100	49,521	51,358	51,363
Matiari		571	668	718	593	675	725

Source: Sindh Bureau of Statistics, 2016.

The agro-based industries of the Matiari District are Matiari Sugar Mill, Matiari Flour Mills, Cotton Ginning Factories, Oil Grain Milling, and Kashi and Jhandi work (i.e. wood and ceramic work) processing agriculture production. The same statistics can be witnessed from the Table-1. They contribute to the improvement of the rural economy, creating non-farm employment opportunities to improve the living standard of the rural people, to earn foreign exchange and to reduce the account deficit problem of balance of payment. On the other hand, the agro-based industries encourage

villagers to develop alliances, in order to work together for increased agriculture production. The status of 70 percent of agro-based units are working at a small scale and are an informal part of the economy, and face various problems such as lack of finance, lack of managerial and technical knowledge, lack of marketing, high cost of material, and bad infrastructural status, which need to be re-addressed for the future development of agro-based industries.

TABLE-4
AGRO-BASED INDUSTRIAL UNITS OF DISTRICT MATIARI

Formal Units		Informal Units	
Name of Industry	Numbers	Name of Industry	Numbers
Sugar Mill	01	Flour Mills (Atta Chakki)	125
Matol Mill	01	Oil Grain Milling	65
Cotton Ginning Factories	08	Wood Work (including Jandi)	75
Flour Mills	02		

Source: District Matiari Profile, 2015.

It may be a distinguishing feature that formal and informal small and medium enterprises are operating together in agro-based industrial sectors in developing countries. More often than not, the contribution and the activities offered by the informal agro-based industrial units are overlooked while recording national accounts (Henson & Cranfield, 2009).

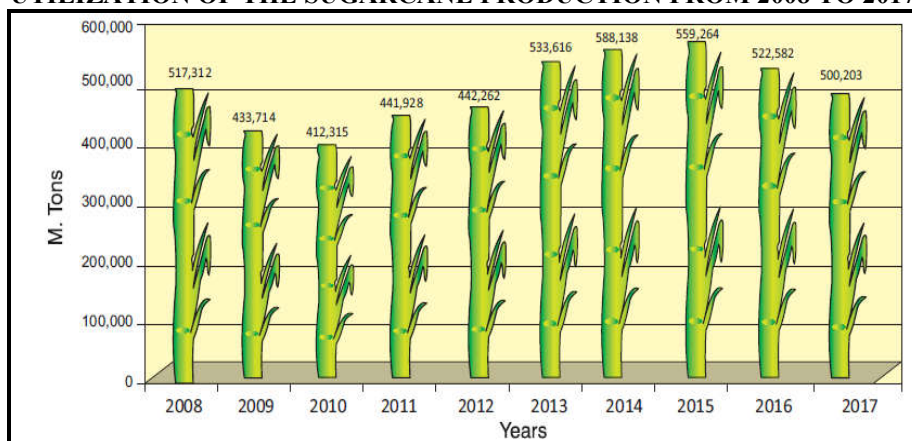
A brief discussion about the performance and the contribution of the Sugar Industry and other small and medium sized agro-processing units in the economic development of Matiari District is as follows:

MATIARI SUGAR MILLS LIMITED AND ITS ASSOCIATED COMPANIES

The Matiari Sugar Mills (Pvt.) Limited established in 1987 with motivate to promote economic growth and social development of the people of district Matiari. Furthermore, two companies Matol (Pvt.) Limited in 2003, and Matiari Flours Mill (Pvt.) Limited in 2013 were established with the same perspective, to use the agricultural raw material for the purpose of regional development. Review of the annual reports of Matiari Groups of Companies and discussion with the senior executive of the Matiari group, the following contribution for the economic progress and social development of the area has been observed, despite problems such as managerial, raw material, pricing policy of sugar and sugarcane, and the lack of skilled labour.

Contribution in Agriculture Production: The Matiari sugar mills have a very positive impact on the production of large quantities production of sugarcane in the area. Only 85% capacity of crushing of sugarcane is utilized by the company due to non-availability of the sugarcane. During the operational days of the mill 588,000 metric tons of sugarcane was crushed (Annual Report, 2017). The same can be envisaged from Figure-3.

FIGURE-3
UTILIZATION OF THE SUGARCANE PRODUCTION FROM 2008 TO 2017



Source: Annual Report, Matiari Sugar Mills (Pvt.) Limited, 2017.

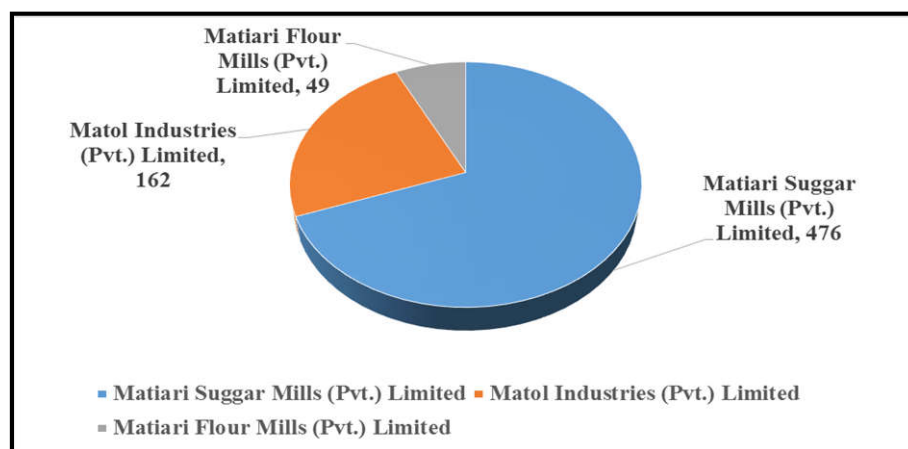
The mill management encourages farmers to increase the yield of sugarcane production. These initiatives are mutually beneficial for both (i.e. the mill owners and the farmers). In other words, mill management enhances the wealth of their shareholders and on the other hand the farmers of the area find a market for their agriculture product near the agriculture land and get a fair price of agricultural products. The following contributions of Matiari Sugar Mills (Pvt.) to improve the agriculture productivity are:

- The Matiari Sugar Mills (Pvt.) Limited and farmers devise a contract for the selling and purchasing of sugarcane. There is no involvement of the middle-man / agent, between mill management and farmers.
- Mill management makes timely payment to farmers for their raw material.
- Matiari Sugar Mills (Pvt.) Limited provide different varieties of the seeds, fertilizer, and technical support for the growers to enhance yield of sugarcane production.
- Matiari Sugar Mills (Pvt.) Limited issued a corporate guarantee to State Bank of Pakistan on behalf of the farmers to avail financial facility from commercial banks at a low mark-up rate.

- The cost of the transportation of sugarcane from the land to the mill has decreased because now the market (i.e. Matiari Sugar Mill) for their sugarcane is in vicinity of the land. Before that, they had to sell their product to the Mills locate in the Dadu, Tando Allahyar, Thatta, districts of Sindh. As a result of these efforts the crushing capacity of the sugar mill has increased from 2000 tons to 4200 tons per day (Annual Report, 2017).

Contribution Employment Generation: The Matiari Sugar Mills (Pvt.) Limited share their profitability with every worker from juniors to the senior management. According to the company policy, rules and regulations, the governing body accepts a monthly salary and perks. The figures appended below show, that the employment status in Matiari Sugar Mill and its associated companies Matol (Pvt.) Limited, Matiari Flour Mills (Pvt.) Ltd. More than 80 percent of local inhabitants are employed in various positions from junior to senior management.

FIGURE-4
EMPLOYMENT STATUS IN THE MATIARI SUGAR MILLS & ITS ASSOCIATED COMPANIES



Source: Annual Report, 2017

The bread and butter of more than 1000 people including workers who load and unload agriculture raw material, transporters, canteen operators, is depend on the operations of mills. The salaries of those permanent and contractual staff are fixed.

The new businesses such as of food, petrol pumps, CNG stations, automobile repairing shops, auto parts shops, have been established in the vicinity of the Matiari taluka, even the local transportation also reaps increasing income.

The Matiari Sugar Mills (Pvt.) Limited, facilitate the employees in following manner:

- The Matiari Sugar Mills provide the physical and working employment environment.
- The priority of employment opportunities in the Matiari Sugar Mills (Pvt.) Limited and its associated companies, is given to young and energetic fresh graduates of the district.
- For the development of skills and to enhance the technical knowledge of employees, the Matiari Sugar Mills (Pvt.) arrange in house training programmes and also send the employees to the quality training institutions of Pakistan.
- According to the annual report 2017, every employee has been awarded a bonus equal to five months basic salary.
Every year two employees from Matiari Sugar Mills Limited and its associated companies are selected through balloting to perform a pilgrimage (i.e. Hajj) along with their spouses and mothers.
- The Matiari Sugar Mills (Pvt.) Limited pay as per the terms of Companies Ordinance 1984, to the worker provident fund. The size of the provident fund Rs.86.219 million (Annual Accounts, 2017).

Contribution in Social Development Work: The initiatives of the Matiari Sugar Mills (Pvt.) Ltd. participate in social development works with the collaboration of NGOs, and charitable organizations of the area to improve the health, and education facilities for the inhabitants of the area. These contributions with respect to the social development has established following institutions;

- Dispensaries have been established by the Matiari Sugar Mills (Pvt.) Limited for the workers of factory and their families. In order to provide a health facility for workers and needy persons of the area, a corporate guarantee has been issued in favour of Matiari Health Services (Pvt.) Limited, to a commercial bank in order to earn better services.
- Arrangements have been made for the necessary vaccination programmes for the workers and their families.
- Financial support is reserved to arrange medical camps in the area.
- Support for the new educational institutions and existing schools.
- Fixed stipends for children of employees of Mills, who are needy and deserving students of the area.
- Reverse Osmosis (RO) water plant has been established.
- Publication of bi-monthly newsletter and arrange seminars.

The Matiari Sugar Mills (Pvt.) Limited is significantly contributing for the socio economic development of district Matiari.

THE SMALL AND MEDIUM SIZED FACTORIES IN MATIARI DISTRICT PROCESSING AGRICULTURAL RAW MATERIAL

Cotton Ginning Factories of District Matiari: The small and medium sized factories including Flour Mills (Atta Chakki), Oil Grain Milling and cotton ginning are operating in the District Matiari. These small and medium sized factories are processing the agricultural production wheat, cotton, and seeds. It is also mutually beneficial for farmers, local residents and others of the area who get work in these agro processing factories. Farmers, who produce a small quantity, find the market near to the agricultural land to sell the product and get a fair price. The local residents including transporters, traders and others of the area who get work as in these agro-processing factories (RSPN, 2016:3-4).

Wood Work (Kashi and Jandi): The Taluka Hala of Matiari District is famous for wood work, weaving cloths, cloth printing, and Fine Arts. The number of these entities shows a declining trend due to the unavailability of raw material, cost of production, market price of wood products, financial, technical and managerial. Though these small entities are operating as an informal economy and participating in the economic progress and the social development of the district Matiari, more than 500 people are engaged with these small entities and finding their livelihood.

In order to facilitate the industrialists and to encourage the investor for industrialization, the Small Industrial Estate (SME), was established by the Government of Sindh in 2008 under the Companies Ordinance 1984. The main function of the industrial estate is to develop infrastructure facilities such as the supply of electricity, gas, water, railway, road, drainage and sanitation, for the industrialization of the region, while the role of the industrial estate of the district has yet to become obvious.

LITERATURE REVIEW

The literature review of this study covers the sociological aspects of agro-based industry in Matiari District. In this part, pre and post-harvest sociological situation, relationship between of grower, and agro-Industry, effects of urbanization, economic expansion and need for policy reforms are emphasized.

Agro based industry is interlinked with regional development. In this regard, pre-processed raw material plays a vital role in the rural economy. Rangaswamy (1988) states that the agricultural raw material including plants, seeds, fertilizer, fishing, forestry, forestry, lives stocks, are pre-processed by the manufacturing industries into finished goods which are commonly known as agro-based industries. Similarly, James (1981) explains that the agro-based industry processes the raw material of the agricultural sector and transforms it into finished products. Hence, the agriculture sector and agro based industry are interrelated. The outcome of their parallel development

brings dynamic changes to socio-economic conditions in the region and addresses the issues of the population of rural areas in particular. This clearly shows that agro based economy inputs are associated with the rural economy.

Apart from agro based economy, it is important to identify the relationship between agro-based industry and the grower. In this regard, Babu, (2000) argues that the agro-based industry builds backward and forward links with the persons who are involved in activities of crop productions and allied fields of the agricultural sector. The Agro Based Industry gives loans, provides various types of seeds, fertilizers, and technical assistance to farmers for better crop production and enhancement of the yield (i.e. backward linkages between the farmer and industry). The ABI industry processes the agriculture raw material, so farmers find a market for their products nearer to the agriculture land, which saves their time, and transport costs (i.e. forward linkages between the farmer and the industry). As a result of demands of the ABI for the best and greater agriculture production opportunities, are provided for the farmers to generate income and more employment. Furthermore, improved agriculture productivity motivates others to build agro-based industries in the region and to earn foreign exchange and generate non-farm employment and also address the issue of food security.

To move further, it is important to understand the causes of poverty and urbanization. In this regard, Fateh (2007) argues that the economic progress of an agrarian country is centred on its agriculture production. However, to increase the contribution of the agriculture sector in gross domestic products, and to attain economic growth is associated with the development of the agro-based industry. The agro-based industry provides the income and employment opportunities which assist the state to address issues such as to eradicating poverty from rural areas, ensure food security, urbanization and economic progress.

Furthermore, in sociological perspective, factors affecting rural economy are important to consider. In other words, economic expansion plays a vital role in the rural economy. Roberts (2014) explained that the local plan for the regional development contains a positive motivational influence for the expansion of trade activities and development of the agro-processing industry such as textile, leather, foods, pulses, sugar, and wood work. Thus, the agro-based industry utilizes the crop production of the area and the products of allied fields and transforms them for final consumption. Additionally, the industry provides income and employment opportunities and the benefits motivate the interest of the local investor in further development. For example in case of Bangladesh, the Agro-based industry contributes a substantial part of the revenue generation and of employment for Bangladesh (Quddus, 2009). The food processing, tanning and leather are

major contributors in total the contribution of the agro-based industry because of their inter-industry linkages, produce a multiplier effect. In other words, in order to achieve economic development by the expansion. The agro-based industries cannot be attained without different sectors having healthier linkages, and multiplier effects as well.

There is an immense need of policy formulation in rural settings for two reasons. Firstly, Silva, *et.al.*, (2009) emphasis that a local economic development plans / policy are to be formulated for the secondary cities rather than to develop a policy for all regions of the country. The secondary cities serve as a bridge in the growth of rural, national and even the global economy. The center of attention of a local policy is to encourage investors by providing some incentives to develop new and reinforce small and medium sized manufacturing units based on the availability of raw material of area. Secondly, they serve as a protection to the local manufacturing industry by imposing tariffs, duties and taxes on imports.

In continuation of the above, (Kalwar, *et.al.*, 2018), suggest that in order to generate income and employment opportunities the Government of Pakistan has focused and initiated policies to develop textile and sugar agro-based industries mostly in the big cities of Pakistan which require heavy investment. Probably sugar and textile industries absorb a large number of the labour force of urban areas and supply their products to local and foreign markets. While development of small and medium size agro processing industries such as food, beverages, pulses, flour mills, date and wood works require a small investment, there remains an obvious lack of attention by policy makers and the managers of the economy of Pakistan to the medium and long term development of plans, although, the demand of food products is globally high. These small and medium size agro-processing plants will be helpful at improving agriculture production and assist in developing regional economic progress of country, because the small agro processing units process the agricultural raw material of the area which provides more income and employment opportunities for local population of area.

The literature review presented in this section explained all the factors affecting the sociological aspects of agro- based industry and emphasized on the necessary policy reforms.

OBJECTIVES OF THE STUDY

- To evaluate the importance of the agro-based industry to the socio-economic development of regional areas.

HYPOTHESES OF THE STUDY

- H1 Whether growth of agro-based industry is beneficial to the socio-economic development of Sindh?

H0 Growth of agro-based industry not beneficial to the socio-economic development of Sindh.

RESEARCH METHODOLOGY

This study uses a combination of quantitative and qualitative methods to ascertain the role and the performance of the agro-based industry for the socio-economic development in rural areas of Sindh. The qualitative methodology is used to ascertain the current status and the agro-based industry and its role in the generation of income and employment in the rural areas of Matiari district whereas the Quantitative methodology is used to collect and analyze the data by Chi Square statistics. The data are presented in tables, charts and graphs.

The research comprises primary and secondary data. Primary data is collected through questionnaires-based survey, and discussions with the different groups of population of District Matiari including farmers, landlords, mill management and traders. Secondary data is collected from the Economic Survey of Pakistan, books, research studies, archives and official websites.

The questionnaire is designed according to the scientific approach (i.e. what, why and who) in order to gather data from the study area: to learn about the ABI operating in the study area. The nature, scope and importance of ABI for the economic progress of the area, the financial problems faced by ABI and the development process. The questionnaire comprises socio-economic elements such as education, health employment, income, and financial problems.

Study Area and Sample: The District Matiari is 25 kilometres away from the metropolitan city of Hyderabad comprising the three talukas namely Hala, Saeedabad, and Matiari. The agriculture sector is the main source of the economic progress. About 84,000 hectares are cultivated which is 59 percent of the total area of the district. Sugar and wheat are cultivated on a large scale. The district is famous for its agriculture products especially fruits, bananas and mangoes, cottage industries such as potteries, Ajrak, Khadar cloth, Jhandi and Kashi (i.e. woodwork).

Sampling: The sample size is selected from the total population of the District Matiari with the help of the formula for sample size (Yamane 1967). In other words, 384 sample size is selected from the 769,349 population of study area. The formula is mentioned below:

Assumptions

95% confidence level, and
±5% confidence interval

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = the sample size

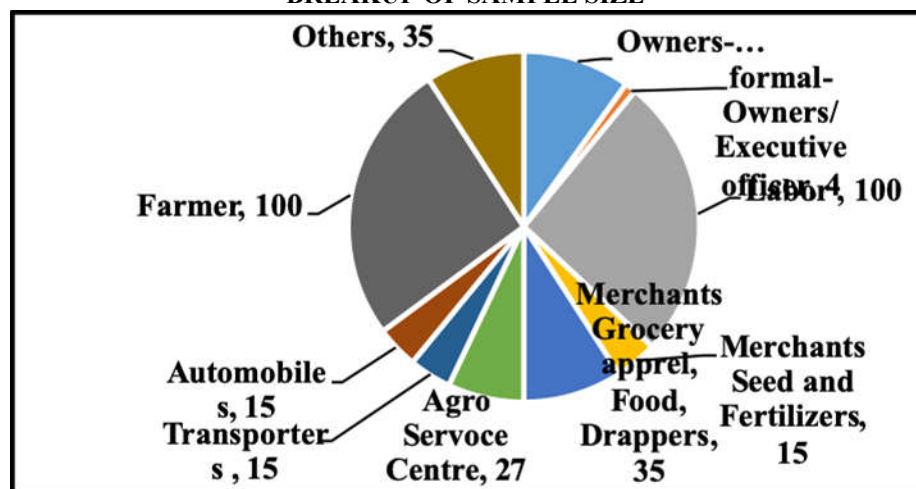
N = the population size

e = the level of precision (Sampling error)

$$n = \frac{N}{1 + N(e)^2} = \frac{769,349}{769,349 (0.05)^2} = 384$$

A simple random sampling method has been used to collect the primary data from 384 respondents, including the inhabitants directly engaged agriculture processing units, farmers, landlords, transporters, traders and common residents from three talukas i.e. Hala, Saeedabad, and Matiari of District Matiari. The employees and officials of informal and formal units of agro-processing or using agriculture raw material for their productions are selected out of the total selected number. The graph no. 04 depicts the breakup of the sample size.

FIGURE-5
BREAKUP OF SAMPLE SIZE

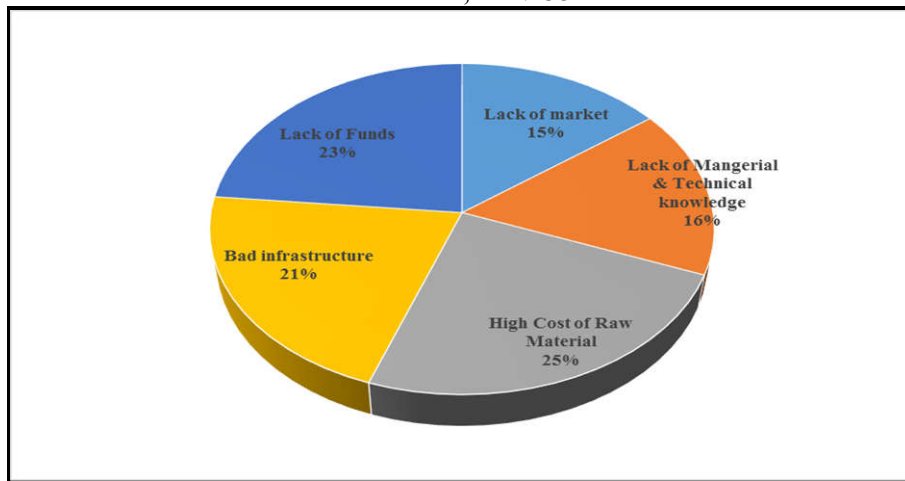


DATA ANALYSIS

The Chi square method is used to analyze. The data presented by using charts, tables, figures, Microsoft Excel and SPSS software, etc.

Problems Faced by Agro Based Industry:

FIGURE-6
PROBLEMS FACED BY THE AGRO BASED INDUSTRY OF DISTRICT
MATIARI, N=384



Source: Field survey 2018.

The survey data highlights the problems such as lack of fund, lack of market, lack of managerial and technical knowledge and bad infrastructure are faced to maintain business operation and for startup new agro based business.

RESULTS AND DISCUSSIONS

A large portion of estimated population of Pakistan lives in rural areas and depends upon the agriculture sector. Their socio-economic status is quite poor despite having adequate natural and mineral resources. The development policies have been documented but not properly managed or implemented to redress the problems of rural inhabitants. Therefore, development policies and plans are designed locally in such a manner that agricultural raw-material and mineral resources of the area can be utilized for industrial production, that will be beneficial for agricultural and mineral producers of the area to find a market for the products near to their production site. On the other hand an initiative or development plan will encourage local investors in the industrial development of the area. The research study attempted to ascertain the current status of agro-based industry operating in District Matiari and the problems associated with it, such as lack of managerial and technical knowledge, lack of finance, lack of marketing, high cost of material, and poor infrastructural status. The development of agro-based industry will promote agricultural production and sources of income and of employment generation. The contribution of the agro-based industry in the economy of District Matiari, Sindh can be calculated from tables mentioned below:

TABLE-5
ANALYSIS OF SURVEY DATA

S #	Questionnaire	p value	Chi Value	Degree of freedom
1	What are the problems faced by the agro based industry of district Matiari?	0.00226	9.324	1
2	Either monthly income of the respondents, (who are engaged with the agro based industry) increased?	0.02616	4.945	1
3	Do Agro based industries provide health and education facility to their staff?	0.00242	9.197	1
4	Does Government provide vocational and skill development facilities to the existing agro based units in district Matiari?	0.03770	4.319	1
5	Have the business / income opportunities increased in district Matiari due to the existing setup of the agro based industry?	0.00778	7.083	1
6	Do farmers get price of agriculture products?	0.00048	12.188	1
7	Do agro based industries provide financial facility to the farmers to purchase seed and fertilizer?	0.02129	5.303	1
8	Does the Agro based industry Sugar Mills provide technical facility to increase yield of sugarcane in the district?	0.01480	5.940	1
9	Has agriculture productivity increased especially after the embellishment of the agro based industries in the last ten years?	0.01301	6.168	1
10	Have you applied for a loan from a financial institution to maintain and for set up new business?	0.01531	5.880	1
11	What were the reasons you have not applied for a loan with a financial institution?	0.01230	6.268	1
12	Was your business profitable during the whole year?	0.40247	0.701	1
13	Do you think in current situation you are able to satisfy basic needs your family members?	0.01600	5.803	1
14	Do agro based industries hire additional employees in the season?	0.01661	5.737	1
	Total sample size 384			

*Significant level 0.05%

The Table-5 highlights the importance of the agro-based industry in the development process of rural areas. The Chi square test shows that p-value is less than 0.05 therefore, we accept the hypothesis and reject the null hypothesis.

CONCLUSION

Pakistan is fundamentally an agriculture country and a large portion of the population is living in rural areas and depends upon the agriculture sector and its allied fields. However, the people living in the rural and semi-urban areas are distant from socio-economic progress despite the abundance of natural and mineral resources. For the economic progress of the rural areas, the development policies and plan have been documented by economic managers and policy makers of the country without concern about local productivity. The agro-based industry plays a significant role in eradicating the poverty and it ensures food security. The agro-based industry provides a market for agriculture producers, income and farm and non-farm employment opportunities such as transport, packaging and loading. Similarly, the embellishment of agro-based industry also boosts agriculture production because the industry uses agricultural raw materials for processing and production of the finished goods.

The agro-based industry is facing financial, technical, managerial, high costs of the raw material and infrastructure problems. The lack of finance is the main problem for the agro-based industry to maintain and run their business operations. The major hindrances to get a loan from the financial institutions are high interest rates, mismatch maturity of loan, disbursement for working capital, the credit history of the applicant, and security requirements (i.e. collateral).

RECOMMENDATIONS

- The state should take some initiatives and measures to facilitate agro-based industrialists by introducing loan facilities at low mark-up rates and for long term maturity especially the asset of a financing facility.
- For technical and skill development vocational training institutes are developing with the help of non-government organizations in rural areas, rather than in the cities or public and private partnerships.
- Along with the state non-government organizations, the civil society can play their role in the development of agro-based industry by providing the technical, managerial, and vocational training to the small and medium sized agro-based industry, involving training and development teams comprised of experts in marketing, management, and technical specialists.

- Therefore, it is required that the economic managers and policy makers should formulate the development policies of growth determinants of the area which will motivate local investor and others to establish agro based industry and revive the existing plans of agro-based industry in rural areas.

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