



PROGRESS OF AGRO-BASED INDUSTRIES IN INDIA

Commerce

P. Hussain Basha Research Scholar, Rayalaseema University, Kurnool, Andhra Pradesh.

Dr B. Ramachandra Reddy Professor, Department of Commerce, Sri Venkateswara University, Tirupati – 517 502(AP).

ABSTRACT

The agro-based industries assume great significance in the context of a developing country like India where agriculture accounts for over 35 per cent of the national income and about two-thirds of the working population. Over three-fourths of Indian population lives in rural areas. Agro-based industries have great priority in the rural areas since they could be instrumental in fostering strong linkages between the agricultural and industrial sectors and in enhancing the employment potential. Agro-based industries set up in rural areas have to be designed in such a way that they operate more as catalytic agents for developing infrastructure that would bridge the gap between rural and urban economies. According to Badar, small agro-based industries can be classified as Khandasari and Gur, Grain Mills, Edible Oil, Tea Factories, Cold Storage, Bakery, Products Tobacco Manufactures, Canning and Preservation of Fruits and Vegetables, Jute Manufactures, Cotton Ginning and Pressing, Leather Products. According to the criteria set forth by the Planning Commission the agro-based industries include industries i) which encourage greater input into agriculture? ii) which lead to better processing and conversion of agricultural Commodities? iii) which ensure high returns on processed goods; and iv) which increase agricultural production? In this paper an attempt has been made to study the progress of agro-based industries in India covering the category-wise number of units, fixed and working capital, value of output and profitability.

KEYWORDS:

Khandasari, commodities, fixed capital, working capital etc.

1. INTRODUCTION

The economic prosperity of a developing country like India depends on the forward and backward linkages of the development process. Agro-based industries lead to the creation of both forward and backward linkages on a large scale by maximizing mutual complementarities of agriculture and industry. Improvement in agricultural productivity depends on a variety of inputs of industrial origin, including fertilizers, power, tools and techniques, while agriculture, in turn, supplies to the industries not only wage goods but also raw materials. The agro-based industries assume great significance in the context of a developing country like India where agriculture accounts for over 35 per cent of the national income and about two-thirds of the working population. Over three-fourths of Indian population lives in rural areas. Agro-based industries have great priority in the rural areas since they could be instrumental in fostering strong linkages between the agricultural and industrial sectors and in enhancing the employment potential.

2. CLASSIFICATION OF AGRO-BASED INDUSTRIES

Conceptually, agro-based industries are the industries dependent not only on the output of agriculture and allied activities but also on the inputs in agriculture like agricultural machinery and implements, fertilizers, pesticides, etc. However, according to the criteria set forth by the Planning Commission the agro-based industries include industries:

- (i) Which encourage greater input into agriculture?
- (ii) Which lead to better processing and conversion of agricultural Commodities?
- (iii) Which ensure high returns on processed goods; and
- (iv) Which increase agricultural production?

Agro-based industries set up in rural areas have to be designed in such a way that they operate more as catalytic agents for developing infrastructure that would bridge the gap between rural and urban economies. According to Badar, small agro-based industries can be classified as Khandasari and Gur, Grain Mills, Edible Oil, Tea Factories, Cold Storage, Bakery, Products Tobacco Manufactures, Canning and Preservation of Fruits and Vegetables, Jute Manufactures, Cotton Ginning and Pressing, Leather Products.

3. PROGRESS OF AGRO-BASED INDUSTRIES

3.1 Category-wise Agro-Based Industries in India

The total number of agro-based industries has increased from 56,567 in 2011-12 to 77,584 in 2015-16 with only 0.37 per cent growth rate. The manufacture of food products and beverages accounts for more than half of the total output of agro-based industries in India. Under this category, the manufacture of grain mill products, starches and starch products and prepared animal feeds is playing a prominent role with a share of 46.19 per cent.

The number of textile manufacturing units has the highest percentage next to food products and beverages, but their number has decreased slightly from 2011-12 to 2015-16. In the case of Textile products there is a declining trend from 26.58 per cent during the same period. The Tobacco products also show the same trend during the period under study. The CGR is computed for the different categories of agro-based industries, which is significant at 5 per cent level (See Table 1).

3.2 Category wise Fixed Capital of Agro-Based Industries

Fixed capital refers to any kind of real or physical capital (fixed asset) that is not used up in the production of a product. Fixed capital is that portion of the total capital which is invested in fixed assets (such as land, buildings, vehicles and equipment) which stay in the business almost permanently.

The fixed capital of total agro-based industries has increased by 23.36 per cent from Rs.1, 93, 59,713 lakhs in 2010-11 to Rs.3, 75, 64,482 lakhs in 2015-16. The fixed capital was the highest in the case of manufacture of textile industry during the period 2010-11 compared to other categories of agro-based industries, but its share has been decreasing from 42.25 per cent to 28.91 per cent during 2015-16. The manufacture of food products and beverages is occupying second place in fixed capital investment during the period 2010-11 with a share of 29.68 per cent. Now it trends to occupy the first place with a share of 32.15 per cent. The share of fixed capital in the case of tobacco products is decreasing every year. The Compound Growth Rate (CGR) is calculated for all the categories of agro-based industries based on the data available in Table 2. The CGR is the highest in agriculture and related activities and the lowest in the tobacco related products, but compound growth rate of all the categories of agro-based industries is significant at 1 per cent level (See Table 2).

3.3 Category-wise Working Capital of Agro-Based Industries

Working Capital measures both a company's efficiency and its short-term financial health. The working capital ratio is calculated as:

Net Working Capital = Current Assets – Current Liabilities

Positive working capital means that the company is able to pay off its short-term liabilities. Negative working capital means that a company currently is unable to meet its short-term liabilities with its current assets (cash, accounts receivable and inventory). This is also known as "net working capital".

Over a period of five years, from 2010-11 to 2015-16, the working capital of total agro-based industries has increased from Rs. 2,56,85,752 lakhs to Rs.4,88,64,551 lakhs with the growth of 21.93 per cent. Like fixed capital, the working capital investment is the highest in the case of manufacture of food products and beverages in all the five years. The manufacture of textiles is occupying second place in working capital position and its share has been 40.45 per cent in 2010-11 to 27.50 per cent in 2015-16. The working capital position of tobacco products has gradually decreased from 1.78 per cent to 1.38 per cent and its share is the least in total agro-based industries. As per the Compound Growth Rate and t-statistic, all the categories of agro-based industries are significant at 5 per cent level except manufacture of tobacco products (See Table 3).

3.4 Category-wise Employment in Agro-Based Industries

Agro-based industries were providing employment to 46, 28,023 persons in 2010-11 and it increased to 49, 44,504 persons in 2015-16. It is observed from the Table 4 that among the different categories of agro-based industries, the manufacture of food products and beverages is providing the highest share of employment i.e. 34.03 per cent. The manufacture of textiles stood second by providing employment to the different persons (29.59 per cent). Compound

Growth Rates are calculated for all the agro-based industries, which are significant at one per cent level.

3.5 The Category-wise Value of Output in Agro-Based Industries

It is evident from Table 5 that the value of output of agro-based industries increased from Rs.6,68,94,813 lakhs in 2010-11 to Rs.13,31,78,487 lakhs in 2015-16 with a growth of 28.43 per cent. Among the different categories, the value of output is the highest in the case of manufacture of food products and beverages i.e. 43.73 per cent, and the lowest in tobacco related products i.e., 1.98 per cent, during the year 2015-16. The Compound Growth Rates were significant at one per cent level for all the categories of agro-based industries over a period of five years from 2010-11 to 2015-16.

3.6 Category-wise Net Income of Agro-Based Industries

The net income has increased from Rs.78, 91,782 lakhs to Rs. 1,27,38,365 lakhs over a period of five years. During the year 2015-16, the manufacture of food products and beverages and manufacture of motor vehicles trailers & semitrailers generated more income i.e., 32.80 and 26.69 per cent respectively in the total income generated by agro-based industries in India. The other five categories put together generated a net income of 40.51 per cent which is less than the net income of food products and textiles that is 59.49. The computed Compound Growth Rates reveal the significant position of all the categories of Agro-Based Industries (See Table 6).

4. CONCLUSION

The role of agro-based industries is most significant both in respect of employment and value added by manufacture, not only in the developing economies but also in the highly developed economies of the world. Today the agro-based industries constitute the backbone of a developing economy. These industries have become an indisputable weapon in bringing into existence a harmoniously balanced, integrated, socio-economic order in the world economy.

TABLE: 1 CATEGORY-WISE AGRO-BASED INDUSTRIES IN INDIA (In Number)

Sl. No.	Category	2011-12	2012-13	2013-14	2014-15	2015-16	CGR	t-Stat
1	Agriculture and Related Activities	3,018 (5.33)	2,988 (5.40)	2,902 (5.04)	2,771 (4.75)	4,338 (5.59)	0.09	11.16*
2	Food Products and Beverages	25,759 (45.54)	26,220 (47.39)	27,216 (47.24)	27,480 (47.12)	35,838 (46.19)	0.08	15.32*
3.	Textile Products	15,035 (26.58)	12,860 (23.25)	13,360 (23.19)	13,345 (22.88)	18,584 (23.95)	0.05	13.89*
4.	Tobacco & Related Products	3,226 (5.71)	3,161 (5.72)	3,281 (5.69)	3,120 (5.36)	3,493 (4.51)	0.02	49.88*
5.	Leather & Related Products	2,400 (4.24)	2,688 (4.86)	2,559 (4.44)	2,822 (4.86)	4,072 (5.25)	0.14	9.72*
6.	Paper and Paper Products	3,868 (6.84)	4,096 (7.40)	4,637 (8.05)	4,599 (7.89)	6,120 (7.89)	0.12	11.88*
7.	Motor Vehicles, Trailers and Semi Trailers	3,261 (5.76)	3,310 (5.98)	3,662 (6.35)	4,186 (7.12)	5,139 (6.62)	0.12	11.22*
	Total	56,567 (100)	55,323 (100)	57,617 (100)	58,323 (100)	77,584 (100)	0.08	14.69

(Table value = 2.306) * Significant at 5 per cent level

Note : Percentages in parentheses

Source: Annual Survey of Industries, Central Statistical Organisation, New Delhi (Different issues).

TABLE: 2 CATEGORY-WISE FIXED CAPITAL OF AGRO-BASED INDUSTRIES IN INDIA (Rs. in Lakhs)

Sl.	Category	2011-12	2012-13	2013-14	2014-15	2015-16	CGR	t-Stat
1	Agriculture and Related Activities	98,272 (0.51)	92,234 (0.41)	2,14,375 (0.79)	2,50,094 (0.77)	4,17,647 (1.11)	0.43	3.60*
2	Food Products and Beverages	57,45,985 (29.68)	68,33,484 (30.63)	81,15,641 (29.87)	99,48,246 (30.84)	1,20,75,977 (32.15)	0.20	7.58*
3.	Textile Products	81,78,657 (42.25)	79,84,055 (35.79)	86,09,501 (31.67)	97,46,225 (30.21)	1,08,56,909 (28.91)	0.07	16.80*
4.	Tobacco & Related Products	2,20,374 (1.14)	2,31,713 (1.04)	2,51,115 (0.740)	3,19,410 (0.99)	2,60,925 (0.69)	0.04	14.91*
5.	Leather & Related Products	3,16,495 (1.63)	4,02,164 (1.80)	5,32,583 (1.96)	6,45,396 (2.00)	6,28,586 (1.67)	0.18	7.89*
6.	Paper and Paper Products	17,47,180 (9.02)	21,89,323 (9.81)	26,50,958 (9.76)	32,74,402 (10.15)	35,35,209 (9.41)	0.19	8.08*
7.	Motor Vehicles, Trailers and Semi Trailers	30,52,750 (15.77)	45,74,226 (20.52)	67,96,621 (25.21)	80,74,427 (25.03)	97,89,229 (26.06)	0.33	5.36*
	Total	1,93,59,713 (100)	2,23,07,199 (100)	2,71,70,794 (100)	3,22,58,200 (100)	3,75,64,482 (100)	0.68	2.21

(Table value = 2.306) * Significant at 5 per cent level

Note : Percentages in parentheses

Source: Annual Survey of Industries, Central Statistical Organisation, New Delhi (Different issues).

TABLE: 3 CATEGORY -WISE WORKING CAPITAL OF AGRO-BASED INDUSTRIES IN INDIA (Rs. in Lakhs)

Sl. No.	Category	2011-12	2012-13	2013-14	2014-15	2015-16	CGR	t-Stat
1	Agriculture and Related Activities	2,05,061 (0.81)	2,40,227 (0.85)	3,84,008 (1.14)	5,52,141 (1.36)	10,14,595 (2.08)	0.49	3.25*
2	Food Products and Beverages	79,51,559 (30.96)	97,16,375 (34.46)	1,08,03,475 (32.07)	1,39,97,487 (34.39)	1,94,70,067 (39.84)	0.25	6.11*

3.	Textile Products	1,03,89,582 (40.45)	98,77,748 (35.03)	1,05,82,044 (31.41)	1,24,90,464 (30.69)	1,34,37,886 (27.50)	0.06	16.61*
4.	Tobacco & Related Products	4,57,789 (1.78)	3,95,037 (1.40)	5,32,167 (1.61)	6,45,229 (1.58)	6,74,306 (1.38)	0.10	1.13@
5.	Leather & Related Products	5,52,624 (2.15)	6,26,343 (2.22)	7,95,577 (2.36)	9,23,467 (2.27)	9,72,999 (1.99)	0.15	9.48*
6.	Paper and Paper Products	20,84,540 (8.16)	25,17,710 (8.93)	30,91,095 (9.16)	39,08,793 (9.60)	45,03,840 (9.22)	0.21	7.27*
7.	Motor Vehicles, Trailers and Semi Trailers	40,44,597 (15.75)	48,22,406 (17.11)	74,99,162 (22.26)	81,86,807 (20.11)	87,90,858 (17.99)	0.21	7.07*
	Total	2,56,85,752 (100)	2,81,95,846 (100)	3,36,87,528 (100)	4,07,04,388 (100)	4,88,64,551 (100)	0.17	8.36

(Table value = 2.306) * Significant at 5 per cent level

@ Not significant at 5 per cent level

Note : Percentages in parentheses**Source**: Annual Survey of Industries, Central Statistical Organisation, New Delhi (Different issues).**TABLE: 4 CATEGORY-WISE EMPLOYMENT IN AGRO-BASED INDUSTRIES IN INDIA (Rs. in Lakhs)**

Sl. No.	Category	2011-12	2012-13	2013-14	2014-15	2015-16	CGR	t-Stat
1	Agriculture and Related Activities	1,20,825 (2.61)	1,15,350 (2.6)	1,06,798 (2.36)	92,437 (2.01)	1,19,635 (2.43)	-0.00	21.12*
2	Food Products and Beverages	14,76,352 (31.90)	15,05,246 (33.93)	15,63,516 (34.63)	16,05,954 (34.86)	16,75,332 (34.03)	0.03	44.02*
3.	Textile Products	18,14,063 (39.12)	14,60,126 (32.92)	14,00,207 (31.01)	13,84,888 (30.06)	14,56,371 (29.59)	-0.05	18.99*
4.	Tobacco & Related Products	4,44,108 (9.61)	4,15,509 (9.37)	4,52,026 (10.01)	4,19,736 (9.11)	4,12,422 (8.38)	-0.01	53.16*
5.	Leather & Related Products	1,74,121 (3.76)	2,21,706 (4.99)	2,50,984 (5.56)	2,55,096 (5.54)	2,92,657 (5.95)	0.13	12.10*
6.	Paper and Paper Products	1,90,110 (4.11)	2,51,382 (5.67)	2,31,415 (5.14)	2,28,513 (4.96)	2,49,019 (5.06)	0.06	20.94*
7.	Motor Vehicles, Trailers and Semi Trailers	4,08,444 (8.83)	4,66,667 (10.52)	5,09,741 (11.29)	6,19,588 (13.46)	7,17,068 (14.56)	0.15	9.84*
	Total	46,28,023 (100)	44,35,986 (100)	45,14,687 (100)	46,06,212 (100)	49,22,504 (100)	0.01	55.89

(Table value = 2.306) * Significant at 5 per cent level

Note: Percentages in parentheses**Source**: Annual Survey of Industries, Central Statistical Organisation, New Delhi (Different issues).**TABLE: 5 CATEGORY-WISE VALUE OF OUTPUT OF AGRO-BASED INDUSTRIES IN INDIA (Rs. in Lakhs)**

Sl. No.	Category	2011-12	2012-13	2013-14	2014-15	2015-16	CGR	t-Stat
1	Agriculture and Related Activities	15,98,564 (2.39)	19,86,710 (2.61)	15,20,688 (1.78)	27,49,577 (2.74)	59,46,915 (4.47)	0.38	3.34*
2	Food Products and Beverages	2,84,31,320 (42.50)	3,37,39,019 (44.34)	4,05,36,725 (47.52)	4,46,69,138 (44.48)	5,82,34,160 (43.73)	0.19	8.05*
3.	Textile Products	1,68,00,921 (25.12)	1,66,21,606 (21.85)	1,71,70,010 (20.13)	1,97,70,887 (19.68)	2,71,96,562 (20.42)	0.12	9.73*
4.	Tobacco & Related Products	14,92,795 (2.23)	14,43,074 (1.89)	20,19,260 (2.37)	22,16,506 (2.21)	26,59,033 (1.98)	0.15	8.60*
5.	Leather & Related Products	17,20,475 (2.57)	23,80,126 (3.13)	24,58,139 (28.89)	30,55,433 (3.04)	31,26,391 (2.35)	0.16	9.94*
6.	Paper and Paper Products	27,66,359 (4.14)	35,86,386 (4.72)	41,07,717 (4.82)	44,30,336 (4.41)	59,60,453 (4.48)	0.21	7.88*
7.	Motor Vehicles, Trailers and Semi Trailers	1,40,84,379 (21.05)	1,63,29,633 (21.46)	1,74,95,763 (20.51)	2,35,22,439 (23.42)	3,00,54,973 (22.57)	0.20	7.00*
	Total	6,68,94,813 (100)	7,60,86,554 (100)	8,53,08,302 (100)	1,004,14,316 (100)	13,31,78,487 (100)	0.18	7.95

(Table value = 2.306) * Significant at 5 per cent level

Note: Percentages in parentheses**Source**: Annual Survey of Industries, Central Statistical Organisation, New Delhi (Different issues).**TABLE: 6 CATEGORY WISE NET INCOME OF AGRO-BASED INDUSTRIES IN INDIA (Rs. in Lakhs)**

Sl. No.	Category	2011-12	2012-13	2013-14	2014-15	2015-16	CGR	t-Stat
1	Agriculture and Related Activities	48,856 (0.62)	1,20,982 (1.52)	47,802 (0.62)	2,27,175 (2.32)	3,05,860 (2.40)	0.58	2.95*
2	Food Products and Beverages	28,55,502 (36.18)	26,79,406 (33.57)	30,29,905 (39.14)	33,21,027 (33.72)	41,78,663 (32.80)	0.09	12.18*
3.	Textile Products	16,53,271 (20.95)	16,47,173 (20.64)	12,19,104 (15.75)	18,61,197 (18.89)	29,53,854 (23.19)	0.15	6.41*
4.	Tobacco & Related Products	5,93,885 (7.53)	5,93,009 (7.43)	8,78,019 (11.34)	6,84,554 (6.96)	8,67,685 (6.81)	0.09	11.43*

5.	Leather & Related Products	1,94,227 (2.46)	2,19,505 (2.75)	2,70,234 (3.49)	3,83,316 (3.88)	3,79,615 (2.98)	0.18	7.33*
6.	Paper and Paper Products	3,91,496 (4.96)	4,51,727 (5.66)	5,08,791 (6.57)	3,64,002 (3.69)	6,53,247 (5.13)	0.13	9.22*
7.	Motor Vehicles, Trailers and Semi Trailers	21,54,545 (27.30)	22,70,213 (28.43)	17,87,747 (23.09)	30,07,391 (30.54)	33,99,441 (26.69)	0.12	8.54*
	Total	78,91,782 (100)	79,82,015 (100)	77,41,602 (100)	98,47,662 (100)	1,27,38,365 (100)	0.08	2.83

(Table value = 2.306) * Significant at 5 per cent level

Note: Percentages in parentheses

Source: Annual Survey of Industries, Central Statistical Organisation, New Delhi (Different issues).

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