

CHAPTER II

CONCEPTUAL FRAMEWORK

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CHAPTER II

CONCEPTUAL FRAMEWORK

2.1 Terms in Usage:

Increasing interdependence between agriculture and industry has raised the significance of the agro-industries in general. As agriculture gets more and more modernised and commercialised, business and industry enter into the spheres of agricultural inputs and outputs. The industries which process the farm produce have emerged out as a separate category of industries. A number of terms such as agro-industries, rural industries, agricultural or agro-processing industries are interchangeably used to refer to industries which are related to agriculture. Such terms were rarely used before some three decades even to industries closely related to agriculture; but, now these terms are used to refer to industries not only closely related to agriculture but also to other industries which are remotely related to agriculture.

The term 'agro-industry' is commonly related to all those industries which are directly related to agriculture. The Planning Commission has used the term agro-industry to refer to industries of both the categories. It has set forth the following criteria to distinguish the agro-industries.

- 1) Industries which produce inputs for agriculture;
- ii) Industries which lead to better processing and conversion of agricultural commodities; and,
- iii) Industries which help to increase agricultural production.

Thus, the Planning Commission has clearly defined the agro-industries as not only those industries which are concerned with the processing of agricultural products including animal husbandry, horticulture and poultry, but also those concerned with the manufacture of inputs required for agricultural production like agricultural implements.¹ Many authors have used the term agro-industries to mean industries of both the categories.²

Sheorey also uses the term agro-industries with reference to industries of both the categories, viz.,

¹Fourth Five Year Plan: A Draft Outline (1966), Planning Commission, Govt. of India, New Delhi, p. 241.

²1) S.R. Sen, "The Strategy of Agricultural Development," Asia Publishing House, Bombay, 1962, p. 18

ii) A.P. Gupta, "Agricultural Processing and Supply Industries in U.P.," Khadi Gramodyog, Vol. XIII, No. 5, February 1967, p. 336.

iii) Y.P. Pant, "Agro-Industrial Development in Nepal," Khadi Gramodyog, Vol. XIV, No. 2, November 1967, pp. 224-226.

those taking raw materials from agriculture as their inputs and those supplying inputs to agriculture.³ He relates the agro-industries with:

- i) products of plant and vegetable origin;
- ii) products of animal and marine origin;
- iii) products from natural mineral wealth; and
- iv) inputs required for agro and agricultural industries.

These criteria identify one category of agro-industries viz., those which process the agricultural products. The last criterion refers to those industries which supply inputs to agro and agricultural industries, but this is vague. However, in another context he includes the industries which supply inputs to agriculture under the broad category of agro-industries.

Iqbal, on the other hand, uses the term agro-based industries with reference to not only industries processing agricultural products but also the industries which supply inputs to agriculture. He also uses the term agro-industries to refer to both the categories of

³ M.N. Sheorey, "Credit Needs of Agro-Industries," Khadi Gramodyog, Vol. XXI, No. 1, October 1974, pp. 55-65.

industries.⁴ This reveals vagueness in the usage of the terms.

The Reserve Bank of India has given an exhaustive definition, describing the agro-based industries and agro-industries. It states thus:⁵

The agencies supporting agriculture by way of designing and manufacturing of inputs generally terms agro-industrials are by nature different from those supported by agricultural products which are known as 'agro-based' industries. Generally, most of the industries, in one way or the other, use agricultural output as basic raw materials. But, the concept of agro-industries is confined only to those industries that are engaged in processing of agricultural produce either for consumption (food crops), sugarcane, oil seeds, fruits and vegetables, etc.) or for the use of industry (cotton and other similar products) and also to those industries producing inputs for agriculture, such as fertilizer, Industries manufacturing equipment for agriculture also come under this category.

This exhaustive definition does not impart much clarity and precision despite its length, to the concepts used in the statement.

⁴Badar Alam Iqbal, "Planning for Rural Areas," Khadi Gramodyog, Vol. XXI, No. 3, December 1974, p. 18.

⁵Report of the Fifth Finance Commission, RBI Bulletin, Vol. XXIII, No. 9, September 1969, p. 1435.

The State Planning Commission of Tamil Nadu also uses the term agro-industries interchangeably with processing industries such as carming, tannery, etc.⁶ Thus, the term agro-industries has been used interchangeably both at the official level and non-official level.

The Maharashtra Economic Development Council which has surveyed the various industries related to agriculture, puts them all under the caption 'agro-industries,' and they are classified into four categories,⁷ such as those which,

- i) encourage inputs in agriculture;
- ii) lead to better processing and conversion of agricultural and allied commodities;
- iii) ensure fair returns on processed goods; and/or,
- iv) increase agricultural production.

There is another example to show that the term agro-industries is commonly used to mean all the industries which are closely related to agriculture with backward or

⁶The Perspective Plan of Tamil Nadu - 1974-84, State Planning Commission, Tamil Nadu Government, Madras, 1978, pp. 8-10.

⁷Agro-industries in Maharashtra, Maharashtra Economic Development Council, Bombay, 1970, Review by Indian Journal of Agricultural Economics, Vol. XXIV, No. 1, pp. 86-89.

forward linkages. Seven groups of industries which are related to agriculture are identified by Maharashtra Development Council as agro-industries.⁸ They are,

- a) Agricultural equipment industries;
- b) Fertilizer and pesticides industries;
- c) Industries based on--
 - i) cotton, ii) oil seeds, iii) tobacco, iv) sugarcane and v) food crops, fruits, vegetables, animal products etc.

Thakur has used the term agro-industries with reference to industries utilising agricultural raw materials and industries supplying inputs to agriculture. He is of the opinion that the two types of industries should be developed for transforming a stagnant rural economy. He has classified the agro-industries into two categories as given below:⁹

- i) Industries processing agricultural products using large quantities of agricultural raw materials, and having backward linkage with agriculture.

⁸Ibid.

⁹Shrinivas Y. Thakur, op. cit., p. 98.

ii) Industries producing agricultural requisites and vital inputs required for modern and dynamic agriculture, and having forward linkages with agriculture.

This categorisation is right but Thakur includes in the first category, textiles, furniture making, etc. This does not seem to be correct. Dependence of the textile industry on agriculture is only indirect through the spinning mill and ginning factories. It is the ginning factory which directly depends on agriculture. Barring this defect, Tagore's classification serves a practical purpose.

Therefore, the term agro-industries cannot be used to mean any specific type of industries organised in any manner, but the entire range of industries which are directly related to agriculture. Sadasiva Rao considers, "Agro-industrial development implies the growth of industries in rural areas through interdependence with agriculture under a system of mutual and complementary input-output relations. It is a process of symbiosis of joint growth of industry and agriculture in which the outputs of agriculture serve as the inputs to industries and vice versa."¹⁰

¹⁰Sadasiva Rao, "Rural Industrialization Through Co-operative Agro-Industrial Development," Khadi Gramodog. Vol. 13, No. 1, October 1966, p. 68.

On the basis of these evidences, it is considered that the term agro-industries cannot be used interchangeably with agro-based industries but only as a common term to all those industries which are immediately related to agricultural sector, either for supply of raw materials or for marketing their own products. Therefore, it can be said that the concept of agro-industries is a larger one encompassing agro-based industries, which are a category by themselves.

Bepin Behari, who is of the opinion that agro-based industries are well established in India, freely uses the term interchangeably with agro-industries.¹¹ He states: "Generally, agro-based industries which obtain their major inputs from, or which primarily meet the requirements of agricultural sector." This does not seem to be a correct approach because, agro-based industries only obtain their inputs from agriculture but they do not meet the input requirements of agriculture. The industries which satisfy the second criterion are a category by themselves. Industries producing chemical fertilizers, pesticides, agricultural machinery and their spares and industries producing other farm equipments will come under the second category.

¹¹Bepin Behari, op. cit., p. 258.

The term agro-based industry is relevant and appropriate only to those industries which directly depend on the agricultural sector for the supply of their basic raw materials. Therefore, the term agro-industry as used by many authors, embraces all those industrial activities which depend on the agricultural sector either for supply of raw materials or for marketing their products. Aggarwal, for example, has given such a definition. He says, "Agro-based industries can be defined as those industries that are dependent upon agriculture for their raw materials and other basic inputs."¹²

The term 'processing' has been used by many writers in the context of agro-based industries to impart a more specific meaning. The term agricultural processing is commonly used to refer to agro-based industries. N.A. Majumdar, Madappa, M.T.R. Sarma, A.S. Kahlon etc. have used this term in their papers submitted to the All-India Conference on Location and Role of Agricultural Processing Industries in 1966.¹³ While distinguishing the processing industries from other agro-industries,

¹²Y.P. Aggarwal, op. cit.

¹³All-India Conference on "Location and Role of Agricultural Processing Industries" held by the Indian Society of Agricultural Economics, Ludhiana, 1966.

Majumdar uses the term 'supply industries' to refer to the industries which supply inputs to agriculture. Referring to agro-based industries as processing industries, he defines processing as "the process of changing raw materials into finished products."¹⁴ He further qualifies his statement saying that it involves the conversion of farm products into more usable forms.

Sudhakar Gautam further qualifies the term processing and says that processing is not only essential to convert the farm produce into more usable form but it is also essential to preserve the perishable as well as non-perishable products.¹⁵ Gautam's definition does not bring out the full implication of the term processing. Mathew also almost puts forth the same view.¹⁶ He means by processing the work which changes the raw materials into finished products. When applied to agriculture, it means processing of agricultural produce or raw materials.

¹⁴N.A. Majumdar, op. cit., p. 89.

¹⁵Sudhakar Gautam, op. cit., p. 96.

¹⁶E.T. Mathew, "Role of Processing of Agricultural Produce in Indian Rural Economy," Indian Journal of Agricultural Economics, Vol. XV, No. 1, January-March 1960, pp. 55-61.

Among others who have used the term processing, mention may be made of Charanjit Chanana.¹⁷

Thus, many authors have used the terms agro-based and processing industries interchangeably. However, a few have attempted to distinguish between those industries which simply process the agricultural produce and feed them to industries at higher levels of production (cotton ginning for example) and those industries which convert the farm produce into finished products as in the case of sugar. But, it is not possible to make a clear distinction between these two types of industries. In the case of sugar factories and factories which undertake fruit processing, coffee curing, tea processing, rice milling etc. the processing involves conversion of agricultural produce into finished products. On the other hand, ginning of cotton, tanning of leather, sawing and slicing of wood etc. are only processing activities and the products thus processed and turned out of these factories are utilised for further processing or manufacturing. Thus, the ginned cotton goes for spinning, tanned leather goes for polishing and manufacturing and woods sliced into planks go for different uses such as construction materials, furniture making etc.

¹⁷Charanjit Chanana, op. cit., pp. 3-4.

This view is supported by Gupta. In his opinion, "Processing is an act or series of acts which make a commodity suitable either for final consumption or for further use as raw materials in the factory. In other words, it adds form utility to a commodity."¹⁸

The one characteristic feature of industries of both these categories is that, both of them depend on the agricultural sector for the supply of the basic raw materials. Hence, they can rightly be called agro-based industries. Another important characteristic common to both the types of agro-based industries is that these activities are very much rural based, and are located in rural and semi-urban areas. Exceptions are there as in the case of rice mills, saw mills and fruit processing units. A third characteristic feature of these industries is that a major part of the working capital is utilised for the procurement of raw materials.

Majumdar considers, "If agricultural raw material accounts for a substantial portion of the cost of production of the end product, perhaps the industry could be categorised as agricultural processing industry. The

¹⁸A.P. Gupta, "Agricultural Processing and Supply Industries in U.P.," Khadi Granodhag, Vol. 13, No. 5, February 1967, p. 363.

dividing line between agricultural processing industry 'agro-based industries' could sometimes be blurred and hence this criterion is not always dependable."¹⁹

Balasubramanian also expresses a similar opinion and says that it is not possible to make a clear distinction between processing and manufacturing agro-based industries. However, he is of the opinion that processing has become a separate industry by itself.²⁰ Srinivasan uses the terms "first stage processing or single-stage processing" to refer to processing and manufacturing agro-based industries respectively.²¹

A fourth characteristic of these industries is that they mostly employ unskilled labourers. With a little training they are employed to handle simple machinery.

Preliminary Processing:

Preliminary processing refers to certain processing works undertaken at the farmers' level, before the produce

¹⁹N.A. Majumdar, op. cit., p. 65.

²⁰M. Balasubramanian, "Role of Processing of Agricultural Produce in the Rural Economy," Indian Journal of Agricultural Economics, Vol. XV, No. 1, January-March 1960, pp. 70-76.

²¹M. Srinivasan, "Role of Processing of Agricultural Produce in the Rural Economy," Indian Journal of Agricultural Economics, Vol. XV, No. 1, January-March 1960, pp. 62-70.

is sold off. This includes cleaning, gradation, packing, etc. Some agricultural produce like tamarind is processed even at the farmers' level in a crude and traditional manner. However, such processing activities undertaken at the farmers' level do not constitute complete processing done in an organised manner. Moreover, such preliminary processing activities are carried on with human labour only. Such farm level processing activities are not to be considered as part of the complete agricultural processing done in factories on a relatively larger scale and on commercial basis.

Kamala and Khot have defined agro-processing industries as, "these industries concerned with the conversion of agricultural raw materials into finished products."²² But, this definition seems to be one sided as it does not include the industries which are simply processing industries.

2.2 Western Approach:

Western authors also have used the term agro-based industry, agro-processing industry and agro-industry interchangeably. Among those who have used the term agro-industry to mean all those groups of industries related

²²G.V. Kamala and C.P. Khot, "Policy Vacuum in Agro-Processing Industries," Indian Journal of Agricultural Economics, Vol. XXVII, No. 2, April-June 1972, p. 98.

to agriculture directly, mention may be made of G. Doulevska, and V. Bogdonov.²³ Richard E. Rhode, on the other hand, uses the term 'agri-processing' which is only a slight variation of the term 'agro-processing' that is widely in usage in India.²⁴ Rhode considers that agri-processing regional centres are capable of affecting rural-urban migration.

David and Goldsberg of the Harvard Business School undertook a study of the nature and functioning of the agro-industries, which they referred to as 'agro-business.' While describing in quantitative terms the character and extent of the existing interaction between agriculture and industry, they refer to the industries

²³1) G. Doulevska, "Some Problems of Agro-Industrial Integration," World Agricultural Economics and Rural Sociology Abstracts, Commonwealth Agricultural Bureau, Vol. 22, No. 12, December 1980. (In this the author discusses the process of integration between agricultural production and processing units).

ii) V. Bogdonov, "The Organisation of Agro-Industrial Integration and Production," World Agricultural Economics and Rural Sociology Abstracts, Commonwealth Agricultural Bureau, Vol. 22, No. 12, December 1980. (In this the author discusses the mutual dependence between agro-industrial complexes, agro-industrial systems and sub systems in Bulgaria).

²⁴Richard E. Rhode, "Development Activities and Rural Urban Migration," Development Digest, Vol. VIII, No. 4, October 1980, National Planning Association, U.S. Dept. of State, U.S.A., p. 19.

which supply inputs to agriculture and the industries which process and distribute the agricultural produce as 'agri-business.' In their opinion agri-business refers to "... all operations involved in the manufacture and distribution of farm supplies, production activities on the farm, storage, processing and distribution of farm commodities."²⁵

Drilon has further expanded the scope of 'agri-business' by including the co-ordinators of agri-business structure such as government agencies and directors of research and educational institutions.²⁶ John W. Love holds a similar view and says, "... agri-business ventures are considered to be large and generally corporate enterprises which manage the production and/or processing of agricultural goods for domestic consumption or for exports." This statement obviously refers to agro-based industries which process agricultural produce or convert them into finished products.²⁷ He includes flour milling,

²⁵John H. Davis and Ray A. Goldsberg, "A Concept of Agri-business," cited by D.K. Desai, in his article entitled, "Evolution of a Concept of Agri-business and its Application," Indian Journal of Agricultural Economics, Vol. XXIV, No. 4, 1974, pp. 35-43.

²⁶J.D. Drilon, "Introduction to Agri-business Management," Indian Journal of Agricultural Economics, Vol. XXVII, No. 2.

²⁷John W. Love, "The IFC and the Agri-business Sector," Finance and Development, March 1977, pp. 25-28.

pasta manufacturing, sugar production, grain storage, tomato and pepper canning, cattle fattening, sugar estate and mill, animal feed and mixing, storage and distribution, vegetables and tea processing, processing of meat and meat products, etc. under the scope of agri-business.

Thomas and Wharton use the term 'agricultural-related industries' to mean all those industries related to agriculture either through their inputs or through their outputs. The term is given a wider scope, as the distributive services are also included.²⁸ In a similar manner, Moore and Walsh use the term 'agricultural industries' in the same sense. In this term, besides the industries supplying farm inputs and those drawing their inputs from agriculture, industries supplying petroleum to agricultural vehicles and machinery, agricultural credit, electric power, food retailing, etc. are included.²⁹ These approaches indicate the need for a term which can include all these industries and activities which are related to agriculture.

²⁸1) Edgar Thomas, "The Industries Associated with Agriculture - Their Growth and Development," Paper and Proceedings, Regional Seminar on Agriculture, Hongkong, ADB, 1969.

ii) Clifton R. Wharton Jr., "Infrastructure and Input Requirements for Asian Agriculture," Paper and Proceedings, Regional Seminar of Agriculture, Hongkong, ADB, 1969.

²⁹John R. Moore and Richard G. Walsh, "Market Structure of the Agricultural Industries," Iowa: Iowa State University Press, U.S.A., 1966, pp. xii-xiii.

Halm Halperin uses the concept of 'agrindus' with a still wider scope and he means by that a process of industrialisation of villages through schemes of integrated rural development include appropriate agro-industrial schemes for different rural areas.³⁰

A.T. Mosher, with a similar idea, used the term, 'agri-support activities' to mean all kinds of industrial activities.³¹ Again, while writing on agricultural marketing, he mentions processing as an essential requisite for agricultural marketing.³² Ruttan has made a different approach to the problem. He considers five models in the context of agricultural development strategies. One of the five models, is, according to him, 'The Urban Industrial Impact Model.' The central idea of this model is that, industrial development stimulates agricultural development by expanding the demand for farm products and by supplying the industrial inputs needed to improve agricultural productivity and by drawing away surplus farm

³⁰Halm Halperin, "Agrindus - Integration of agriculture and Industries," Fredrick A. Praeger, New York, 1953, p. 49.

³¹A.T. Mosher, "Getting a Progressive Rural Structure," Agricultural Development Council, Inc. USA, 1969, p. 80.

³²_____, "Getting Agriculture Moving," The Agricultural Development Council, Inc. New York, 1966, pp. 66-67.

labour. These are attributes of agro-industries which have already been dealt with.³³ The World Bank refers to agro-industrial activities as non-farm activities. These include inputs and services to agriculture, such as tools, and equipments, repair services, transport, processing and supporting infra structure and works related to agricultural sector.³⁴

Thus, different terms and phrases have been used in the western literature on the concept of agro and agro-based industries. In India, however, the terms agro industry, agro-based industry and agro-processing industry are in common usage.

2.3 Classification of the Terms:

Firstly, a broad classification of the various terms in usage is necessary so that the term agro-based industry can be defined for the purpose of this study. The term agro industry is taken to mean the following three broad categories of industries.

³³Vernon W. Rutten, "Induced Innovation and Agricultural Development," Food Policy, Vol. 2, No. 3, August 1977, Agricultural Development Council, USA, p. 200.

³⁴Rural Enterprise and Non-farm Employment, A World Bank Paper, Washington D.C., January 1978, p. 30.

i) Agro-oriented Industries:

This concept is used for the first time in this thesis to refer to the industries which supply inputs to agriculture, such as fertilizers, pesticides, agricultural machinery, and implements, cattle food, and also slaughter house equipments.

ii) Agro-based Industries:

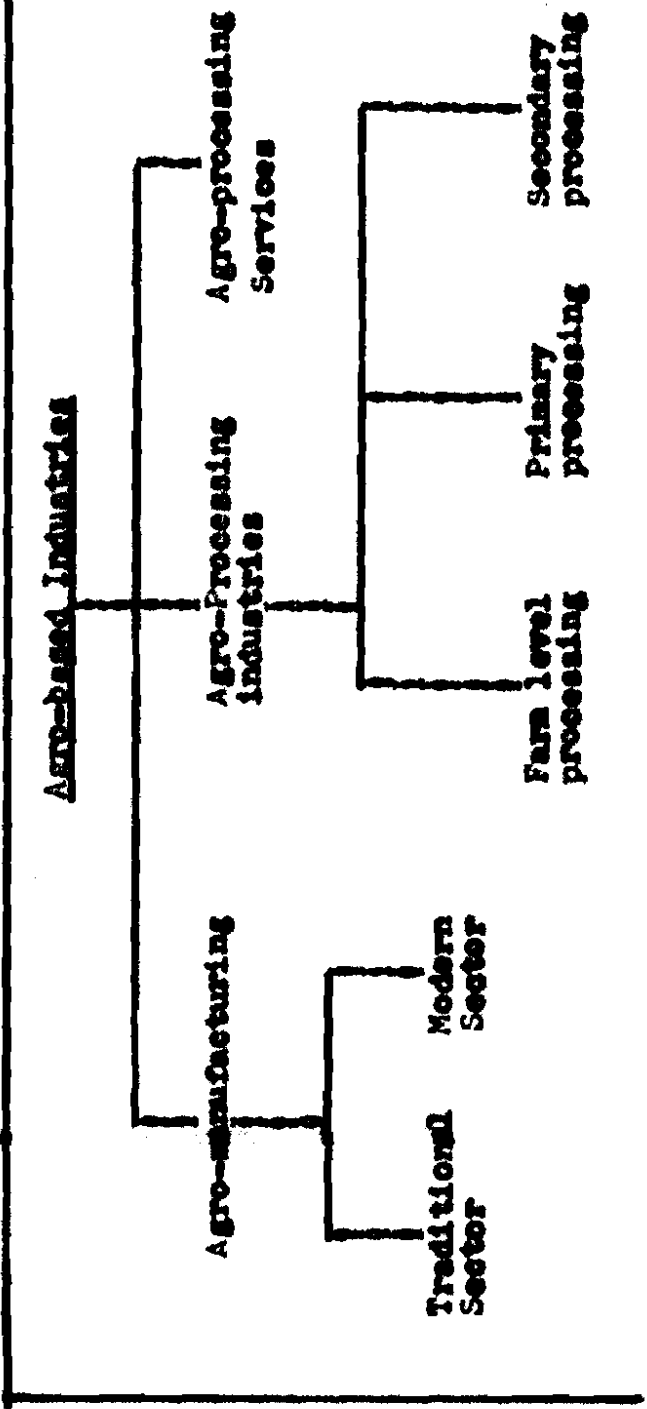
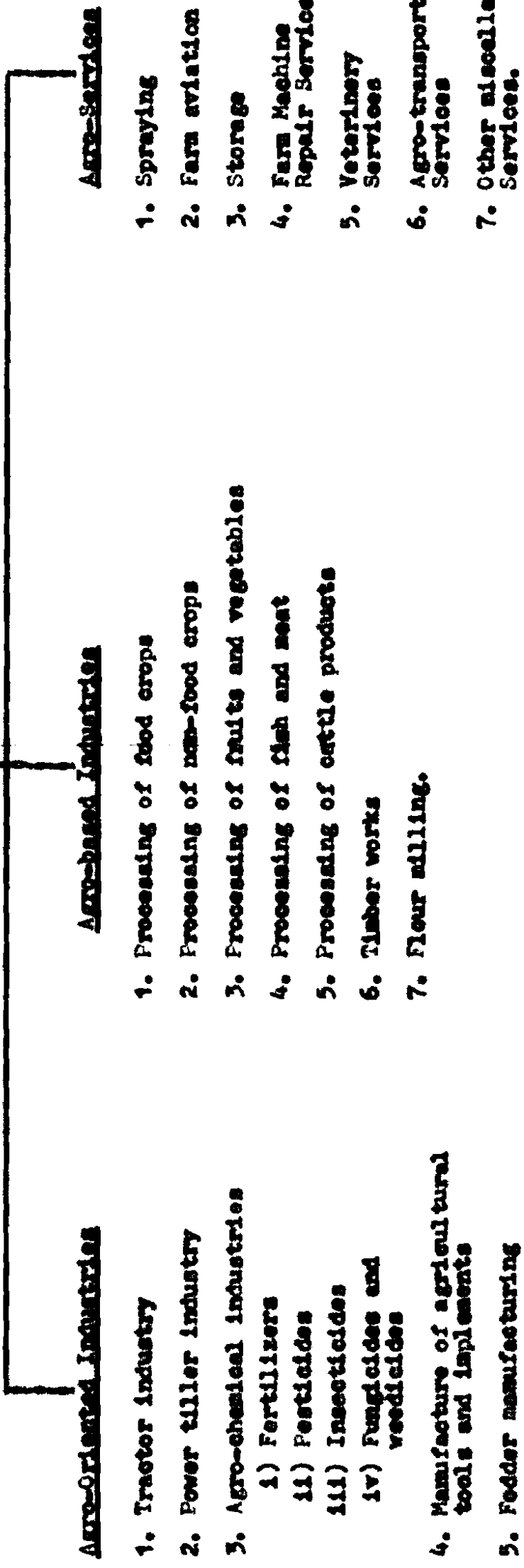
This term is in usage already but, it is often used interchangeably with other categories of agro-industries. Therefore, in this thesis it is used specifically to mean only those industries which draw their basic raw materials from the agricultural sector. Sugar industries, ginning factories, fruit processing units, coffee curing works, tobacco processing works are examples for this. The term agro-based industries is also taken to mean the industries which process the by-products of other agro-based industries.

iii) Agro-services:

This concept is used to mean all those commercial services (except those concerned with finance and credit) related to the agricultural sector. Examples are spraying service, farm machine service centres, agro-transport services, farm aviation, etc. (Please refer Chart).

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AGRICULTURAL INDUSTRIES



2.4 Agro-based Industries Defined and Classified:

For the purpose of this study, agro-based industries are defined as those industries which directly depend on the agricultural sector for the supply of basic raw materials which are either processed for further use in other industries or transformed into finished products. This definition encompasses industries like cotton ginning, sugar industry, coffee curing, fruit processing, rice milling, flour mills, leather tanning, dairy products, etc. Some of the agro-based industries are of manufacturing type and some are simply processing industries. Therefore, the agro-based industries may further be classified as agro-based manufacturing industries and agro-based processing industries. The former will include sugar industries, fruits and vegetables processing, milk processing and dairy products, processing of by-products, etc. while the latter will include all those industries which do only processing and feed other industries, as for example the cotton ginning industries.

2.5 Scope of the Term Agro-based Industries:

The scope of the term agro-based industries depends on the scope of the term 'agriculture.' The definitions given by the text books on Agricultural Economics include not only the soil based cultivation

carried on by combining labour, capital and chemical inputs, but also the forest and hill resources and also the resources obtained from the ocean. If this broad definition is to be the basis for the scope of the term agro-based industry, then forest-based industries and marine-based industries must also be included under the scope of agro-based industry. Besides these, the industries based on dairy products also come under the scope of the agro-based industry. Finally, processing of by-products are included.

Thus, the term agro-based industry is taken to mean the following industries. (i) processing of food grains, (ii) processing of non-food crops or cash crops, (iii) processing of dairy products, (iv) processing of marine products; (v) processing of forest and hill products; (vi) processing of the by-products of the agro-based industries.

Sugar industry belongs to the category of agro-based manufacturing industry and the cotton ginning industry comes under the category of agro-based processing industry. Crystal sugar being the product of the sugar industry, is ready for final consumption while the product of the cotton ginning industry is sent to the spinning mills.

G.V. Kamala and a few others have introduced a classification as primary processing and secondary processing, on the basis of the nature of processing. By primary processing she means the first stage processing such as sugarcane into sugar, gur and khansari; oil seeds into oil by village ghani or mills; curing of coffee, tea and tobacco by curing houses, ginning and pressing of cotton and baling of jute, milling of paddy, wheat and dhal, processing and canning of fruits and vegetables, etc.

And, by secondary processing she means further processing or more sophisticated treatment of the product or utilisation of by-product as for example, bakery and confectionary, vanaspathi, cigarette manufacturing, cotton and jute weaving and spinning etc.³⁵ G.V. Kamala has further classified the primary processing industries as traditional and modern processing on the basis of (i) the type of technology used; (ii) the coverage of markets served and (iii) linkages with the rest of the

³⁵1) G.V. Kamala, op. cit.

ii) V.G. Purnaik, "Operational and Managerial Problems of Processing Co-operatives," Indian Co-operative Review, Special Number on Co-operative Processing in Agricultural Sector, Vol. III, No. 1, October 1965, p. 676.

iii) International Co-operative Alliance - Report of the Regional Seminar on "How to establish a Co-operative Processing Plant," 1962, p. 2.

economy, both backward and forward. She considers that traditional processing is primarily concerned with the processing of local raw materials for serving local markets with simple techniques. With the result, its scope for the development of links with the rest of the economy is wholly absent or is very much restricted. "In other words, the traditional processing functions on a subsistence as well as in an isolated manner.

Modernisation in processing is carried on by mill sector, using a technology which serves a larger market and develops a vital link with the rest of the economy. Lundy Thompson also holds a similar view, and classifies the processing industries into primary and secondary processing industries.

From the review of definitions presented so far, the following inferences are derived regarding the definition of the terms and their classification.

The term agro-industry is taken to mean three groups of industries related to agriculture. They are:

- 1) Agro-oriented industries which supply various inputs to agriculture and thereby depend on agriculture for their market;

2) Agro-based industries which obtain their basic raw materials from agricultural sector for processing them either for final consumption or for further processing in higher industrial formation; and,

3) Agro-services, that is all these services which are commercially undertaken relating to agricultural sector. (This does not include the after sales services offered by some of the agro-oriented industries).