

CHAPTER - 7

STRATEGIES FOR AGRO-INDUSTRIAL DEVELOPMENT

(i) IMPROVEMENT OF SOCIO-ECONOMIC INFRASTRUCTURE

(Like Rural Road Net Work, Communication Facilities, Educational Facilities, Health Services and Sanction etc.)

To make the rural population prosperous it is essential to integrate agriculture, industry and commercial activities. Service centers have been selected in order to stimulate larger investment in agriculture to encourage higher agricultural productivity with agro-service units and better marketing facilities and to give more employment opportunities to the rural people. Such service centers have been selected for centre building purposes due to their increasing socio-economic reputation in the area. In the spatio temporal frame such service centres will play a very important role. They will contribute to the prosperity of the population they serve. Infrastructural and socio-economic institutions like electricity, roads, hospitals, post and telegraph, schools, colleges and various other facilities will grow by and by at these service centers. Obstacles lying in the way may be removed from time to time. Short term and long term plannings will be taken up for the self sustaining rural development in and around service centers. Rural electrification corporation may be started, which will ensure the power supply for domestic, agricultural and industrial needs of the rural areas. 1,

For proper development well linked transport system is the dire necessity of the rural areas. It is proposed to connect all the first order and second order service centres by metalled road. Initially all the third order service centres should be connected by unmetalled roads but later on they may be converted into metalled one.

It is also proposed to provide banking facilities at each of the service centres. Government resources must be decentralized. Facilities of cooperative societies, storage centres, were-houses, veterinary dispensaries are the essential needs of the farmers.

A model is required to be devised where different sub sectors of economy interact with each other at various levels of growth foci and their hinterlands. Such a model must adhere to ensure ecologically employment opportunities and to stimulate demand for additional production.

Experiences have shown that unless there is proper interaction among village markets, towns and cities it is not possible to achieve the goals of integrated development. The following measures are suggested for this purpose.

1. Development of transport network linkages between various service centres.
2. Inter linking of various linkages, administrative organizational, social, technological, physical and economic linkages are to be joined with each other.

3. Implementation of service centre strategy to cater to the needs of agro-politan centre, agro-foci and agro-point.
4. Service centres to develop as mediator between modernized urban centres and backward rural society.

Adequate development of transport system is but to be taken due care. In the absence of the proper transport system no development can be visualized. Before starting new plan it is but essential to convert the old kachcha roads into metalled. A plan for continuous is to be supervised. New metalled roads should connect growth centres with each other properly. Various far flung and isolated areas which are not perfectly linked so far are not to be ignored further. Private bodies may be invited to invest in road construction with the incentive to give them permit to run buses in due course. A careful study makes it clear that there is dire need to connect Nagram with Sadarpur Karora via Sheolar and Keoli, Saspan with Nabipanah, Karora with Deoti, Latifnagar with Rahimnagar, Hijnor with Kharika, Kumharawan with Paharpur, Piparsand with Khusahalganj via Behta and Maunda. (Fig. 7.1).

(ii) **Identification of Industrial Entrepreneurs**

The district of Lucknow is conspicuous by the absence of minerals hence agro-based industries predominate. There is a plenty of scope here for tertiary industries. More or less the rural people lack courage and entrepreneurship which are the basic requirements for setting up

industries. If the scale of production is taken into consideration, the industries of the district may be put under three heads.

1. Small Scale Industries.
2. Cottage or Village Industries.
3. Large and Medium Scale Industries.

Though there are 64 units of large and medium scale industries only 11 units have been located in rural areas. About 458 units of small scale industries have been set up in rural areas out of 2652 in the district as a whole. Moreover the industrial units are not evenly distributed in all the blocks. Most of the industrial units are located in Bakshi-Ka-Talab, Chinhat, Mohanlalganj and Sarojininagar. Mal has only a few industrial units.

Another important point to note is the concentration of agro-based industrial units. Flour-milling units predominate over manufacturing of edible oil and other industries. Most of the industrial units have no mechanical or electrical power. Only oil-crushing and flour mills are run with the help of electricity. In some units animals drive the machines.

(iii) Emphasis on Development of Agriculture (i.e. Adoption of New Agricultural Innovations and Technology use of bio-fertilizers and vermit technology in agriculture)

All possible efforts are to be made to increase the agricultural production and proper distribution of its benefits. To attain this objective suitable strategy is to be developed in a very planned manner.³

- a) Soils of various parts are to be tested and their characteristics defined. It must be made clear which soil is most suitable for which crop.
 - b) Crops of each area are to be selected on the basis of the soil testing report.
 - c) No part of the cultivable land is to be left uncultivated. Labour intensive crops are to be grown to the extent possible.
 - d) Fruits bearing trees and orchard are to be protected at all costs.
 - e) Labour saving devices and planning are to be discouraged as they lead to unemployment which is a contributory factor for reducing the purchasing capacity and standard of living.
- (iv) Promotion of Non-Conventional Sources of Rural Energy (viz. Bio-Gasenergy, Solar Energy and Wind Energy)**

BIO-GAS ENERGY

Water hyacinth can be used for production of 'biogas'. The process of methane yield from water hyacinth is the same as in the case of gobar gas. It may be termed as 'hyacinth gas'. The biogas produced from water hyacinth contains 60% to 80% methane. Besides that a very rich organic manure can be obtained in the form of residue. It has two times more nutritive value than other manures and four times more nutritive than compost manure. 'The Garbage James' a popular fertilizer of Sri Lanka has been prepared with mixture of water hyacinth ash and garbage. Researches carried in the field of biology and ecology revealed that 70,000 cubic meters of methane gas can be obtained from one hectare of water hyacinth which cost Rs.50,000.00. Thus one Kg. of dried water hyacinth can produce 374 litres of 'biogas' and one hectare of pond can produce 2,24,400 litres of hyacinth gas/hectare/day. The fuel value of this gas has been calculated to be 12000 BTU (British Thermal Unit) per cubic meter. The importance of hyacinth is very clear from the following Table 7.1.

TABLE 7.1
ENERGY POTENTIAL OF SOME BIOMASS RESOURCES

S.NO.	SPECIES	PRODUCTION IN TONNES/ HA/YEAR	ENERGY IN GJ/HA/ YEAR	REMARKS
1.	Water hyacinth	154	2680	best case
2.	Sorghun	20	235	
3.	Exotic Forage Sorghum	68.7	1250	
4.	Sugarcane	112	2000	best case
5.	Hybrid poplar star rotation 3 year	20	342	
6.	Coppice crop 2 Yr. old	8.3	144	
7.	Eucalyptus species	39.1	680	
8.	Algae (French Water pond culture)	88	1460	
9.	Casuarine (7-10) year rotation	200	4950	
10.	Leucerne	100 cu.m./ ha/year	4600	best case

The energy potential of some biomass resources particularly water hyacinth, sugarcane, sweet sorghum, algae, eucalyptus, casuarine, coppice crops hybrid poplar and exotic forage sorghum has been computed (Table 7.1). It indicates that water hyacinth along with sugarcane and casuarine is the best case of energy potential.

SOLAR ENERGY

In the Lucknow District where fossil minerals are not available and hydroelectricity is not possible solar energy may be generated. There is no dearth of solar heat especially in rural areas. Use of solar energy and conversion of solar heat into solar energy are still in the primary stage. Some researches and new technologies are required for this purpose.⁴

There are certain fields of solar energy applications such as heating, lighting, drying and processing of agro-products, pumping irrigation water and cooking in the northern parts of India. The sun shines approximately 300 days in a year. Many government and private agencies have developed solar cookers. It is very easy to operate and handle such cookers as they do not require constant attention. The government of India launched a programme in November 1981 more than 10,000 cookers were sold between 1981 and 1984 under subsidy scheme.

The government has approved a solar thermal energy programme with hundred per cent subsidy. This subsidy scheme covered the individual who wished to use solar energy for domestic, water lifting and heating purposes also.

In spite of the high efficiency of solar energy for cooking the rural people do not like to accept it. Cheap technology does not make any meaning to them as they cook in the night as well as early in the morning when solar energy is not available. It is difficult for the rural people to change their habits and cooking pattern. Moreover the present day bod type 'Janta' cookers take very long. Hours to cook even in bright sun light. In addition puries and chapattis can not be baked in such cookers. A district where chapattis are the integral part of diet cannot be able to make much use of such cookers.

WIND ENERGY

Wind energy is actually an off-shoot of the solar energy. It is indirect solar energy because the difference in heating the earth's surface by the sun causes convectional currents and winds on a global scale. The sun pours a very huge quantity of energy on the earth's surface. The observed power is of the order of 10^{18} KWH/year. of this roughly 2×10^{17} KWH/year is converted into wind power. But like the other 'low grade' energies such as solar, tidal and ocean thermal energies it is difficult to store wind energy or to convert it into an easily transmissible form. The uses of wind power as tried out are propulsion, lifting of water. A comparison of various sources of energy has been presented in Table No. 7.1.

RURAL MARKETING DEVELOPMENT

The markets of the study area have been classified on the basis of functions as well as of periodicity. There are 39 weekly, 65 bi-weekly, 4 tri-weekly and 4 daily markets. The district has got 112 periodic markets in all which are spread throughout. The distribution pattern of rural marketing centres has been analysed with the help of 'Nearest neighbour Analysis. (Fig – 7.2)

The influence zone of rural markets have been shown in Fig. 7.2. The markets close to the towns and Lucknow city.

Table No. 7.2

SPATIAL ORGANISATION OF PERIODIC MARKETS

Name of Blocks	Area in Sq. Kms.	No. of Periodic Markets	Spacing in Kilometers		
			Observed- Do	Expected Ye	Rn
Bakshi-Ka-Talab	378	16	2.42	2.357	1.02
Chinhat	219	12	3.05	2.357	1.48
Gosainganj	336	11	3.45	2.263	1.52
Kakori	237	12	2.96	2.134	1.38
Mohanlajganj	359	14	2.98	2.368	1.25
Malihabad	217	11	2.44	2.22	1.09
Mal	256	12	3.10	2.309	1.34
Sarojini Nagar	392	24	2.82	2.02	1.39

The analysis presented in table No. 7.2 shows the tendency of uniform pattern of periodic markets throughout the area under study. Malihabad and Bakshi-Ka-Tabab blocks show 1.09 and

1.02 Rn value respectively. This shows that the pattern is random. The rest of the blocks range from 1.25 to the maximum of 1.52.

Credit Facilities

The district is well served by credit and finance institutions. Since the state capital is located in the district, almost all the commercial banks have their Regional/Zonal offices located in Lucknow. The performance of commercial banks including RRBs reveal (Table 7.3) that in 2000-2001 the district had a total number of 297 bank offices with Rs. 1464 crore of deposit and 857 crore of advances*. As a percentage of state's total they accounted for 13.8, 28.0 and 30.4 per cent respectively in the said year. On account of this financial intermediation, not only the deposits mobilization by banks increased, but also, deployment improved significantly. This had helped a good number of small scale entrepreneurs including agro-industrial manufacturers to establish a number of units in the district. Apart from commercial banks, there are also a number of co-operative banks providing short and long-term loans functioning in the district for the benefit of rural people. Although cooperative short-term credit banks, more particularly the Primary Agricultural Cooperative Societies have dispensed credit more in favour of the farmers, yet, in course of time they too have shouldered the responsibility of providing credit to artisans and craftsmen operating at the grass root level. The district have two central cooperative banks like Lucknow Central Cooperative Bank and Central Cooperative Bank. They are the apex banks to which PACS are affiliated. Besides short-term credit corporatives, branches of CAD banks are also found to be operating in the district. They dispense long-term credit to prospective farmers

and others engaged in non-agricultural activities. The Lucknow - Urban cooperative bank is mostly working for non-agricultural borrowers, and, through its patronage, a number of small and village industries have come up in the district. Fig -7.3

Table 7.3

**NO. OF BRANCHES OF COMMERCIAL BANKS,
AGGREGATE DEPOSIT IN THE YEAR 2000-2001**

Items	Lucknow	Uttar Pradesh
No. of branches of Commercial banks	297 (13.8)	2149 (100.0)
Deposit (in Crores)	1463.96 (28.1)	5211.12 (100.0)
Credit (in Crores)	856.54 (30.4)	2820.66 (100.0)

Source: Govt. of Lucknow Statistical Abstract Lucknow 2001.

(Vii) Rural Employment and Man Power Utilization

Man Power planning amongst the optimum utilization of the existing Man Power and ensuring the availability of the skilled and unskilled manpower as and when required over a period of time. However the concern is much wider and more so in case of a perpetual growth in the size of unemployed and under employed labour force, as in Uttar Pradesh. The responsibility of the Government. Therefore lies not simply in improving upon the management of man power in production and services sectors but all the more towards employment generation for social welfare and redistributive growth. Although employment generation has been on the agenda of development since the beginning of the planning era. The size of unemployment and under

employment labour force has continued to grow much greater emphasis is therefore being laid on generation of employment in the subsequent plan formulating a suitable strategy for man power planning it would be necessary to have an idea of the existing situations of unemployment and under employment in the Lucknow district.

(viii) Areas of Functional Gaps and Optimum Location Sites of New Agro-Industries.

With the help of 'Location quotient derivation' the analysis of industrial locations may be presented very suitably. Here each and every block has been measured very carefully and conclusion has been drawn whether an area has got its genuine share in the particular industry. Location-quotient presents a comparative study of the various blocks so far as locations of industries are concerned. Also this location has been discussed in the background of the entire district. Quotient one means that development in a block commensurates with that of the district as a whole. A quotient less than one denotes the backwardness or less industrial development than the average of the district. Similarly a quotient more than one is suggestive of more industrial development than the average. The comparative study of the total population and the population in industries helps in deriving the location quotient.

$$\text{District Ratio of Population} = \frac{\text{Industrial Population(District)}}{\text{Total Population(District)} \times 100}$$

$$\text{Block Ratio of Population} = \frac{\text{Industrial Population(Block)}}{\text{Total Population(Block)} \times 100}$$

$$\text{Location Quotient} = \frac{\text{BlockRatio}}{\text{DistrictRatio}}$$

Table 7.4**LOCATION QUOTIENT OF BLOCKS**

NAME OF BLOCKS	INDUS- TRIAL EMPLOY- MENT	POPUL- ATION	DISTRICT RATIO IN % C/D X 100	BLOCK RATIO IN % A/BX 100	LOCATION QUOTIENT
Bakshi Ka Talab	3853	151528	7.12	2.54	.3567
Chinhat	4827	95171	7.12	5.07	.7120
Cosainganj	3178	109550	7.12	2.90	.4073
Kakori	2778	99583	7.12	2.78	.3904
Mal	122	93904	7.12	0.13	.0182
Malihabad	1897	100226	7.12	1.89	.2654
Mohanlalganj	3245	135837	7.12	2.38	.3342
Sarojininagar	11199	169036	7.12	6.62	.9297

District Ratio = C/D x 100 = 7.12

Total Population of Lucknow District = 2017117

* Industrial Employment includes all type of Employment in Industrial units of all categories.

The table No. 7.7 shows the location quotient of blocks with response to the industrial population. As per the table Sarojininagar has location quotient very near to 1. In other community development blocks it is not so. The location quotient of Mall is .0182 which is the

lowest in the district. It means that Mal Block is the most backward industrially. The condition of Malihabad block is slightly better than Mal Block.

CO-ORDINATION AMONG VARIOUS DEVELOPMENT AGENCIES

Presently the co-ordination between ministry of food processing industries, government of India, state agro-industries industries development corporation, and agro industries promotion and investment corporation ltd. Is lacking, many of the guidelines and instruction from the centre are found to be not adopted for implementation. It is , therefore necessary that the co-ordination between ministry of food processing, state agro-industries , development corporation development of agriculture and horticulture be strengthened through regular interactions in the form of holding official meetings, seminars, conferences and exhibitions etc. Besides the entrepreneurs need be provided with all types of extension facilities in order to establish several types of agro-industries units. The project findings received by the ministry of food processing industries, Government of India from various academic institutions by way of sponsorship of projects need be seriously implemented and these finding in most of the cases are found to have not been paid due to attention the gap that now exists between the research findings

generated out of the field level studies and the official line of thinking on issues relating to promotion and development of agro industries be bridged proper blending of academic output received through research findings approach towards the development of agro-industries be made regularly and systematically.

SUGGESTIONS FOR AGRO INDUSTRIES TO TRANSLATE THEIR BENEFIT FOR RURAL DEVELOPMENT

If we aspire for the over all development we have to consider the following heads.

(I)- HUMAN RESOURCE DEVELOPMENT

Population is the most important asset which is known as human resource. Every policy and planning which is population based comes nearer to the reality and can be executed with all possibilities.

The present population and the population which is going to be added by the end of the century are to be considered with care. The following points are suggested in this area.

(A) Some urban centres such as Sarojininagar, Kakori, Malihabad, Mohanlalganj, Bakshi- ka Talab may be allowed to expand to hold as much population as they can. Expansion of Lucknow city is to be restricted at all costs.

(B) Expansion and diversification must be planned properly and implemented carefully and judiciously to attain the above goal.

(C) By the end of this century one lakh persons may be allowed to be absorbed by the urban areas. The rural population may be increasingly allowed and planned to settle in rural growth points.

It has already been emphasized that rural development is the cornerstone of the economic development. In no case its importance can be denied or undermined. In the rural area's agro industrial progress can play a pivotal role. But at the same time we have not to work as day dreamers. Keeping in view the reality of the area we have to prepare a progressive and comprehensive plan at the grass root level. The users and consumers are to be involved fully and actively in the preparation and execution of every plan.

1. Agro-industries are to be given due weightage. In addition to this, industries pertaining to food products, animal-products, clay-products and other demand based products are to be given priority.

2. The decentralization of industries is to be considered very carefully and industries should be evenly distributed all over the district near the growth cells.

3. Industries are to be planned in such a way that entire labor force of the area should be fully utilized. In this planning labor-intensive activities are to be

given priority over others. The people inhabiting the rural areas will thus get impetus and incentive.

4. As far as possible processing industries pertaining to animal products should be located at or near animal husbandry centers.

5. The entire skill available in the district is to be provided opportunity and should not go waste.

6. Around cultivable lands brick manufacturing factories should not be discouraged and banned.

7. Low capital intensive industries should find a favour in rural areas.

8. Industries associated with the manufacturing of agricultural implements and their repairs should be started at growth point. All the ancillary industries should be started in the rural areas close to them. Such industries will have forward and backward linkages with urban areas.

9. Subsidies as far as practicable and possible are to be given liberally to the poor people to start such industries in far flung and isolated areas.

(II) – INFRASTRUCTURAL DEVELOPMENT

To make the rural population prosperous it is essential to integrate agriculture, Industry and commercial activities. Service centers have to be selected in order to stimulate larger investment in agriculture to encourage higher agricultural productivity with agro-service units and better marketing facilities and to give more employment opportunities to the rural people. Such

service center have been selected for centre building purposes due to their increasing socio-economic reputation in the area. In the spatio temporal frame such service centers will play a very important role. They will contribute to the prosperity of the population they serve. Infra-structural and socio-economic institution like electricity, roads, hospitals, post and telegraph, schools, colleges, and various, other facilities will grow by and by at these service centre. Obstacles lying in the way may be removed from time to time. Short term and long term planning will be taken up for the self sustaining rural development in and around service centre. Rural electrification corporation may be started, which will ensure the power supply for domestic, agricultural and industrial needs of the rural areas. Fig -7.4

For proper development well linked transport system is the dire necessity of the rural areas. It is proposed to connect all the first order and second order service centre by metalled road. Initially all the third order service centre should be connected by unmetalled roads but later on they may be converted into metalled one.

It is also proposed to provide banking facilities at each of the service centers. Government resources must be decentralized. Facilities of cooperative societies, storage centers, ware-house, veterinary dispensaries are the essential needs of the farmers.

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development to create additional employment opportunities and to stimulate demand for additional production.

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2. Inter linking of various linkages, technological, physical and economic linkages are to be joined with each other.
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(III) – PLANNING FOR LOCAL SKILLS AND ARTISANS TRAINING

It has already been discussed and stressed that industrial development is the backbone of the rural economy. Hence the industrial development plan is to be given top consideration. Cottage and village industries must stand at the apex of priority. It is an established fact that the rural population suffers from unemployment and under employment which are the most important reasons of the poverty prevailing over here. No doubt the village and cottage industries can play a vital role in alleviating the poverty of the people.

VILLAGE HANDICRAFTS AND COTTAGE INDUSTRIES

The tendency of migration to urban centres is on increase in the rural areas. It is due to the shortage of employment avenues. This migration to urban areas creates a lot of troubles and problems there. The rural people do not get regular employment throughout the year in agricultural activities. It is very clear that they are partly employed. During the rest of the year when agricultural activities are stopped, they should have some employment to augment their earnings. Here village handicrafts and cottage industries can come to their rescue. During the time they are free they can do something which will add to their income. All efforts are to be made for the development of handicraft and other village industries. Such industries do not require huge investment of capital and much technical skill. It has already been suggested that the government should try to start some training centre at growth centre, growth point and growth cells in a planned way which will provide technical

skill to the people of the area. The Government have earmarked to spare a very huge amount for rural development this year. Also marketing facilities are to be provided for the sale of products of such industries. Further it is equally important to make provision of raw materials to the village industries.

In the improvement of rural economy bee-keeping carpet-making , fruit-caning, carpentry, blacksmithy, rope-making, tailoring, doll-making, handloom, sericulture, contribute a lot. Fig – 7.5

Industries enumerated above do not require huge investment of capital, heavy and costly machineries, very skilled and much trained labour and big buildings. But still some infrastructure in the form of transport, communication, electricity, water supply and marketing are to be considered while planning. The use of modern techniques, improved machineries based on local resources should not be ignored. The people involved must be acquainted with the modern methods and equipments in place of obsolete and old ones. This will improve the quality of products and increase the quantity of production.

The question of technology is very pertinent and to be considered very carefully. The same technology which is used in urban areas can never be successful in rural areas. Even in rural areas different technologies are required at different places according to the nature of terrain, climatic condition and the stage of development. Keeping in view the socio-economic environment of a particular area appropriate technology is to be developed which will give better results.

SMALL SCALE INDUSTRIES

Small scale industries are very important for rural areas. The setting up of such industries must be encouraged at all costs. They will help in the development of the rural areas, provide employment to the people. Much capital and very costly equipments are not needed to set up such industries. Industries based on the local resources will play a very positive role in the improvement of the economy. Here again growth centres are to be given due considerations. Fig -7.6

1. Kakori, Nagaram, Mandiaon, itaunja, may be considered for manufacturing industries of khadi handloom and blankets.
2. Sarojininagar, Mau and Gosainganj may be considered for the industry of pesticides and insecticides.
3. Itaunja, Nagaram, Gosainganj, Rudhani may be considered for the manufacturing of oils and fats.
4. Mohanlalganj and Malihabad blocks where hyacinth grows in plenty may be considered for paper board based on the material.
5. Malihabad, Nagaram and Sissendi may be considered for the manufacturing of paper and paper board.
6. Mau, and Malihabad agro-industries may be considered for gobar gas plants to supply power for domestic use as well as for industrial purposes.
7. Banthara, Chinhat, Kakori, Gosainganj, Mal, and Mau may be considered for pulse making mills.

8. Gosainganj, Kakori, Amausi and Malihabad may be considered for the factories of condensed milk, milk food, Baby food, milk powder etc.
9. Mau may be considered for wood seasoning plant.
10. Itaunja, Kakori, Bakshi-Ka –Talab, Banthara, and Mau are good locations for mini flour mills.
11. For demand based industries Gosaiganj, Chinhat, and Kakori are ideal locations.
12. Mal, Mohana, Kharika, Indora, Jindaur, Rajapur. Jehta, Malihabad and Kakori, may be considered for fruit-canning and fruit preservation industries.
13. Chinhat, Mal, Rudhai and Itaunja are good locations for cold storages at least two at each centre
14. Kakori and Chinhat are good location for the manufacturing of electronic goods.

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