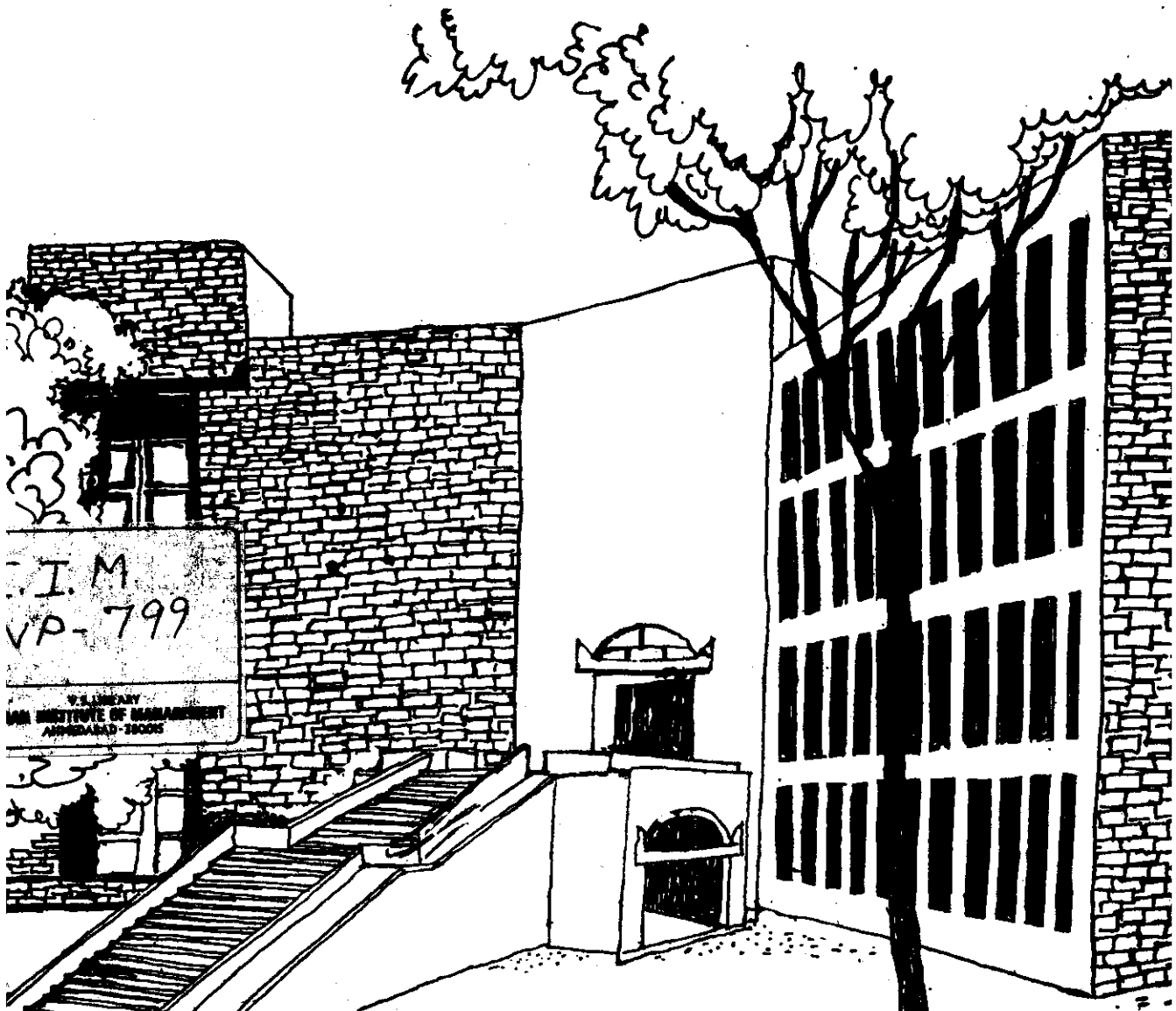




Working Paper



With best Compliments
and regards to

Shri. Jambhakar,

S. Srinivasan
24-5

BIBLIOGRAPHICAL STUDY OF MANAGEMENT
RESEARCH STUDIES ON GUJARAT ECONOMY
(BY INDIAN INSTITUTE OF MANAGEMENT,
AHMEDABAD)

By

S. Srinivasan

WP799



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The main objective of the working paper series of the IIMA is to help faculty members to test out their research findings at the pre-publication stage.

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S. SRINIVASAN

BIBLIOGRAPHICAL STUDY OF MANAGEMENT RESEARCH STUDIES ON GUJARAT
ECONOMY (BY INDIAN INSTITUTE OF MANAGEMENT, AHMEDABAD)

Gujarat, being one of the fast developing states in the Indian economy today, industrially in the forefront, agriculturally strong (eliminating the recent drought affected years), flourishing business in trading and allied activities, has been providing innumerable opportunities for conducting various researches by the academicians in the past and present decades. More specifically the variety of research opportunities provided by the state has helped to quench the "research-thirst" of the academicians to a certain extent. In fact during the last twenty five years about two-hundred odd research works of IIMA was conducted on Gujarat economy alone. These research works have mostly appeared in the form of working papers/monograph series (published at IIMA), Research projects, papers published at various journals/magazines/newspapers at India and abroad, and papers presented at some of the popular Indian/International Conferences. In addition to this, some articles have come out in the form of a book published by reputed publishers of the country and abroad. The following table would provide a rough idea about the research works on Gujarat Economy carried out by IIMA researchers, (This rough statistics is based upto the year 1986-87):

Research Project	59
Monograph	40
Working Papers	33
Articles/Book Chapters	61
Seminars/Conferences	50
Books	15

The Centre for Management in Agriculture (popularly known as CMA) has contributed the maximum number of research work on Gujarat Economy, it is closely followed by other allied and functional areas of management such as Economics, Public Systems Group, Business Policy, Finance, Marketing, Production and Quantitative Methods, Personnel and Industrial Relations, Organisational Behaviour and Management Information System.

This study, which will provide a short summary of "findings" of management research studies on Gujarat economy, is expected to be a "source of help" and as a "guide" to those who are planning to or presently pursuing research on Gujarat Economy. It is strongly believed that this study will serve as a stepping stone for further research studies on Gujarat Economy.

The summary of various research works are classified and arranged in the following title heads, for easy and quicker references.

1. Agriculture: Growth and Development
 - a. Technology and Agricultural Development
 - b. Impact of Irrigation on Agriculture
(inclusive of Water Management Studies)
 - c. Agricultural Crop Study
 - d. Agriculture : Allied Industries
2. Rural Economy
 - a. Rural Development : Issues and Cases
 - b. Rural Credit Institutions
 - c. Organisational Structure and Processes
3. Drought Identification Studies

4. Miscellaneous Studies
(pertains to agriculture and allied sector)
5. Industry : Growth & Development
6. Investment and Banking
7. Pricing Policies and Issues
8. Fiscal aspects
9. Human Resources Development
10. Urban Development
11. Transportation
12. Housing
13. Demography (also includes 'Health' studies)
14. Social Welfare
15. General Management Studies.

Agriculture: Growth and Development: Technology and Agricultural Development:

Desai D.K.; Gopinath C, Basu S.K., Nambudiri N.V., Patel I.T., Patel N.S., Patel N.T., Ramachandran V, and Ravaljhi H.R. (1975) Impact of Tractorization on Productivity and and Employment in Gujarat State. Ahmedabad: I.I.M. (Research Project)

This study is primarily meant to investigate whether the introduction of tractor would either do or do not displace labour, the paper also brings out the profitability of tractor usage.

The study is experimented on the basis of 182 irrigated farms and 50 non-irrigated ones during the period 1972-73 and 1973-74 respectively.

The main findings of the study are:

- a. Investments in tractor used farm build-up is very high.
- b. The cost-benefit analysis shows that, investments in tractor based farms is profitable with the prevailing custom-hiring of tractors.
- c. Custom hiring of tractors seems to be very much predominant in all the talukas of Anand.

Patel N.T. and Patel M.S. (1976) Impact of Farm energy on the cropping intensity, levels of use of inputs and profitability of farming in the Anand Taluka of Gujarat, Indian Journal of Agricultural Economics, Vol.31, No.3 (July-September) p.232.

This paper bring to light the impact of ownership and utilization of farm energy on cropping pattern and intensity it also studies the utilization of inputs and profitability of farming.

The methods of the study involve the classification of farmers into four categories viz., farmers with tractors and pumpsets (F1), tractor only (F2), pumpset only (F3), neither tractor nor pumpset (F4).

From each of the above category, about 25 farmers are chosen randomly. The study is based on the agricultural year 1972-73.

The main findings of the study are:

- a. The average size of holding of F1 is higher than that in F2, F3 and F4.
- b. The cropping pattern, cropping intensity, and the inputs per-acre of net cultivated area of F1 is higher than that of F2, F3 and F4.
- c. The study reveals that the utilisation of labour in terms of labour days per acre is the highest in F1.

Patel N.T. (1980) Farm Tractorisation: Its impact on agricultural input and output", Economic Times, Vol.7, No.207 (October 20), p.547.

This study brings forth the impact of tractorisation on cropping intensity, input utilisation and profitability of cultivation. The study makes comparison between the tractor used farms and non-tractorised farms to present additional authentic information. The study is based on Sidhpur Taluka of Gujarat.

The results of the study are based on the experience of about one hundred farmers chosen randomly the study is based on the agricultural year 1976-77.

The findings of the study are:

- a. Investment on farm resources by tractors are much higher than that of bullocks.
- b. Empirical tests confirm that cropping intensity in tractor farms is higher than that of bullock farms by about 17%.
- c. Tractor farms are used very extensively in cultivation of paddy, wheat and mustard, while it is used moderately in the cultivation of bajra and cotton.
- d. Estimation of net benefit ratio favours Tractor used farms to bullock used farms.
- e. Calculation of per hectare of gross cropped area shows that human labour used under tractorised farms are remarkably more than that under bullock farms, which implicitly means that the introduction of tractors does not displace the labour out of agriculture.

Sharan, Girija (1982) "Agricultural Mechanization in Gujarat", Working Paper No.421.

This study examines the following objectives:

- (1) To determine the level of a farm energy (bullocks, manual and mechanical) used in raising major crops such as cotton, banana, sugar-cane, bajra, paddy, wheat and jowar.
- (2) To bring out the effect of mechanization on the economics of cultivation, cropping intensity, farm returns, labour use and yield.
- (3) To workout the optimal mechanical farm power required on farms of various sizes and also the approximate farm size which could justify the purchase of custom hiring of tractors on a large scale.

To study and examine the above objectives, the author have surveyed about 161 farms drawn from three major crop zones of Gujarat. The major crops of the three zones are: Zone-1: Cotton, banana and paddy, Zone-2: jowar, bajra and wheat and Zone-3: paddy and wheat. Zone 1, 2 and 3 are located in the districts of Surat, Kaira and Ahmedabad respectively. On each zone, the sample farms are selected from the existing typical sizes. The number of units of each size surveyed varies from 7 to 10. The sample farms are categorized into three types viz., bullock, custom and tractor-farms. The farm returns, cropping intensity, yield, and labour use are compared amongst the three types of farms. The total number of man-hours, bullock-hours, and tractor-hours used for each operation of the selected crop are rotated.

The study summarises the following findings:

- a. At the time of the study, the then prevailing phase of mechanization encompassed the operating tillage, threshing and transport activities.
- b. Majority of small and medium sized farms used tractors on custom basis (custom hiring was one of the most important feature of the purpose of mechanization in Gujarat).
- c. The optimum level of mechanical power required on farms of different sizes in three zones are determined through a linear programming model. The study notes that the then prevailing phase of mechanization, the optimal number of tractor hours required varied from 8 to 11 in the three crop zones. This optimal number was compared with the minimum number of tractor hours required for breaking even in order to determine the farm size required to purchase and/or custom hiring of tractors. The study estimate farm of about 30 acres is required to generate enough work for a tractor to break-even.

Impact of Irrigation on Agriculture (Inclusive of Water Management Studies)

A Case Study of Hybrid Bajra Seed in Gujarat State (Research Project)

The basic objective of this paper is:

- (1) To study the management problems of production and marketing of hybrid seed in Gujarat state and to suggest alternatives,
- (2) To conduct a methodological study for demand estimation of hybrid bajra seed and to identify the demand determinants with a view to helping the decision makers in developing efficient production and marketing strategies.

This study is based on Amreli district of Gujarat, Amreli was chosen for the study as it had shown a good response to hybrid bajra programme. This study is based on personal interviews and survey. The latter method, came in handy for demand estimation and analysis of hybrid bajra programme.

Some of the very important findings as revealed by this study are:

- (1) Higher yield per acre resulted primarily due to locational factors.
- (2) Higher production of seed can be achieved by concentrating the seed production in few high productivity districts, talukas and villages.
- (3) A large quantity of seed remained unsold at the end of each session this is primarily due to the lack of knowledge of the demand for hybrid bajra seed from different districts of the state.
- (4) Adequate irrigation facilities was considered a 'must' for adoption of extension facilities in hybrid bajra cultivation.

Desai, D.K.; and Patel, D.A. (1969) "Demand Analysis of Hybrid bajra seed in Gujarat," Seed Specialists Seminar, Delhi, April 8-11.

The main objective of this study is to understand the entire process of and the problems related to planning and implementation of the HYV programme at various administrative levels with a view to find out whether management principles and techniques could be used in the process.

Gujarat being one of the foremost producer of hybrid bajra was selected for the study. The sample study was conducted at Kalol and Visnagar taluka of Mehsana district. The method of investigation was a combination of case method and survey method. The reference period for the study was the entire Kharif season in 1966.

This study concludes with the following main suggestions:

- (1) Seed distribution system should be effected through the agency which has close connection with the credit programme.
- (2) The programme should be stressed more on planning the supplies of seed, fertilizers, irrigation etc., to meet the likely demand from farmers, who is expected to adopt HYV programme.

Singh, Gurdev; and Prakash, Hari (1972) "Changing Production Pattern in Gujarat," Indian Journal of Agricultural Economics, Vol 27, No.4, (October-December)

The objective of the present study is (1) to examine the trends in production of important crops of Gujarat State, and (2) to study the relative importance of area, of productivity in the changed product-mix. To study the growth behaviours of

production, line are growth rates of seven important crops for the early and late sixties were worked out separately. The trunt analysis showed that the growth was positive for all the seven selected crops. The inter crop comparison of growth rates showed that bajra had achieved highest growth in both the periods followed by groundnut and jowar in early sixties' and rice, cotton and wheat in the late sixties.

The relative importance of area and productivity in the growth phenomenon was studied through disaggregation of total growth. The analysis indicate that except for groundnut and bajra the contribution of area to the growth in the early' sixties was positive for all crops. It was highest for Jowar and lowest for rice. The contribution of productivity was relatively high and positive except for Jowar where it was negative. In the late sixties except in maize and cotton, the contribution of area and productivity was positive indicating an increase in the area under the remaining five crops. Relatively the contribution of productivity remained high. The above findings clearly points out the policy regarding crop planning should guarantee assured harvest price, cheap and easy supply of audit and other conventional inputs, and effective extension agency to minimize the risk and uncertainty for achieving the desired product mix.

George, P.S., and Chokshi, S.N. (1973) The Sabarmati River-Bed Potato System. Ahmedabad: I.I.M. CMA Monograph No.37.

The major objectives of this study are to understand the economics of potato cultivation in the Sabarmati river-bed with a view to understand the total system. In particular, the study had the following objectives.

- (1) To understand the production practices adopted for potatoes in the river-bed.
- (2) To analyse the pattern of storage, transportation and disposal of potatoes.
- (3) To understand some of the structural aspect of some of the Ahmedabad potato market.

The study was based on a sample of 49 farmers growing potatoes on the Sabarmati river-bed. Three farmers belonged to four villages. The sample farmers were selected through the use of a multi-stage stratified random sampling procedure. Secondary data were obtained from a number of sources.

Some of the main findings of this study are:

- (1) Farmers in the smaller size groups used higher seed rates and farm power, while farmers in the large size groups placed more emphasis on the use of chemical fertilizers.
- (2) The level of potato field is influenced significantly by three factors viz., seeds, FYM and hired labour.
- (3) The farmers realized better prices from wholesalers than from the potato grower's cooperative Federation.

Patel, N.T. (1975) "Sugarcane Cultivation in Gujarat", Economic Times, Vol 15 No. 153 (August 8) pp 5.

The article brings forth the economicity of sugarcane cultivation in Kodinar taluka. This study also throws light on two important aspects viz., irrigation facilities and timely

supply of inputs which plays crucial for the betterment of sugarcane cultivation.

George P.S.; and Govindan A (1975) "Potato Cycles in Ahmedabad Market: A Harmonic analysis", Agricultural Situation in India Vol. 30, No. 8 (November) p.569-573.

The supply and price of agricultural commodities follow somewhat regular cycles, generally these cycles are of two types: seasonal cycle which where a period of 12 months and secondly cycles which are of a longer duration say more than a year.

Here, the author analyses the nature of cycles influencing the behaviour of potato which accounts for a major share of total arrivals of vegetables in the Ahmedabad market. The authors have used Harmonic analysis to carry out this study.

The study is restricted to the period between 1966-67 and 1973-74 and the data on market arrivals and prices of potatoes were collected from records of the market committee.

The major findings of this study were:

- 1) Existence of seasonal cycles both in the prices and market arrival of potatoes in the Ahmedabad market.
- 2) There exists a definite lag of about two months in the adjustment of quantity supplied in response to price change, since 90% of the potatoes in Ahmedabad come from distant areas.

- 3) The behaviour of a wholesale prices indicates the existence of a three year cycle, but the market arrival pattern does not indicate the presence of a similar long term cycle.
- 4) The price elasticities associated with shortterm, seasonal and long term cycles were - 0.518, -0.720 and -0.246 respectively.

Desai G.M; Singh, Gurdev; and Bandopadhyay S.C. (1978)
Cultivators experience of HYV of Cotton (A Micro Study in Gujarat)

The central focus of this project is to examine the economic viability of replacing the existing varieties of cotton by new HYV's of superior long staple cotton from the cultivators view point.

Also this study examines various issues relating to HYV adoption pattern, factors behind adoption pattern and their changes overtime, economics of cultivation practices, etc., This study is based on a sample of 100 cultivators in sabarkantha district of Gujarat.

Patel, N.T. (1979) Impacts of inputs and outputs price changes on the profitability of cultivation of paddy and wheat in Dascroi taluka of Gujarat, Vishleshan Vol.5, No. 2-3 (June-September)

This paper aims to bring out the impact of input and output price changes on (a) levels of input usage (b) profitability of use of inputs, and (c) profitability of entrepreneurship between the period 1972-73 to 1975-76.

The study involves two dominant crops of Dascroi taluka of Gujarat involving about 50 cultivators, who grows only paddy and wheat. The data pertains to the agricultural year 1972-73.

This study is analysed using various techniques of production function. Production function is basically used to estimate marginal value productivity and the least cost combination of inputs to get the same level of output.

Some of the important findings of the study are:

- 1) The aggregate impact of the rise in the price of input and the fall in the price of output deteriorates entrepreneurship skills.
- 2) At 1972-73 prices, the level of use of NPK fertilizer was profitable and below the optimum level, as its NMVP was above Zero, but at 1975-76 prices, it was not profitable, as its NMVP becomes negative for both the crops.
- 3) To maintain the same level of output and to minimize the impact of price change on the profitability of entrepreneurship, the best methodology is to adopt the least cost combination of inputs.

Agricultural Crop Study

Patel S. M., Desai, B.M., and Madappa P.R (1969) Management of Lift Irrigation (Report on a pilot Research Project in Gujarat) Ahmedabad, I.I.M., CMA Monograph No. 15.

This pilot study is basically intended (a) to identify the factors that promotes the use of pump irrigation, (b) to identify the factors causing under utilisation of the power-operated pumps.

This study has been restricted to two districts of Gujarat viz. Amreli and Mehsana district. About, 80 farmers owning/sharing pump sets and about 40 farmers not - owning pumpsets were randomly selected for the study. The reference year for the study was the agricultural year 1967-68.

The major findings of this study are:

- 1) Majority of the farmers preferred to have pumpsets based on their neighbour's experience. This indirectly means that the extension activities employed by the state departments, banks or pumpsets, did not motivated the farmer to use pumpsets.
- 2) As regards under-utilisation of pumpsets, two different reasons seem to prevail chiefly in the two districts chosen for the study. For instance, in Amreli, it was found that the scarcity of water was the chief cause for under utilisation, while in Mehsana it was due to lack of owned land.
- 3) This study also reveals, that heavy concentration of pumpset and unsuitability of land for irrigation as the main reason for under utilisation.
- 4) Other two criticalities responsible for underutilisation were lack of capital availability for repairing and boring and lack of underground pipe lines.

On the basis of the above findings, the authors' recommends the following:

- 1) Pumpset dealer should employ promotional efforts, to step-up the usage of pumpsets.
- 2) Provision of sufficient and timely credit was considered very important to enhance the rate of installation of pumpsets.
- 3) The government departments and other concerned agencies should ensure proper guidance and timely advice so that the farmers are able to select the right pumpsets.
- 4) Government should ensure the farmers that the pumps, oil engines, and electric motors are tested completely for their efficiency.
- 5) Banks should encourage small farmers in terms of provision of equipments on a hire purchase basis.

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Madappa, P.P. Patel K.V. and Patel N.T. (1970) "Investment decisions on pump sets - A case study of a Saurashtra Village" Economic and Political Weekly Vol 5, No. 1 (January 3) pp.21-25.

This article brings out a case study which compares the performance of investment decisions based on cooperative and non-cooperative operation. The study while accepting that scarcity of 'capital' and 'water' for cultivation are major problems in agricultural development suggests Judicious utilisation of both i.e. capital and water as of utmost importance for the development of agriculture.

The case of the study was developed based on the experience of chittal village in Amreli Taluka of Saurashtra district. The study was a cross-sectional one with the reference year being 1967-68. The objectives of the study were to get detailed information for analysing:

- i) The pattern of ownership and utilisation of the wells.
- ii) The pattern of mechanisation and investment on the wells.
- iii) To bring out reasons for different intensities of the mechanisation of wells.
- iv) Economic justification for installing more than one pump set in a well and
- v) Comparing the performance of wells of different intensities of mechanisation.

Asopa V.N. (1975) Irrigation Agriculture in Gujarat : Problems and Prospects Ahmedabad : IIM, CMA Monograph No. 53.

The objective of this study is to understand the problems and policies of the development and utilization of water resources for agriculture in Gujarat.

The study revealed that irrigation potential has been underutilized due to institutional and organizational factors. Rules of distributing water were not effectively enforced. Also, the cost of water formed only a small portion of the overall cost of cultivation and farmers were found to waste lot of water.

The study had made the following important suggestions: (1) To formulate a sound "water Management Policy" (2) Setting up of an organisation to handle technical matters (3) To ensure adequate and timely distribution of all agricultural inputs.

Asopa, V.N; and Tripathi, B.L.; (1975) "Development and Utilisation of Water Resources : Agriculture in Gujarat", Economic Times Vol 14, No. 340 (February 22) pp. 5-6.

This article is mainly concerned with the irrigation problem, development and utilisation of water resources in Gujarat. It also brings to light various states plan to develop new water resource and fuller utilisation of the existing potential to increase agricultural productivity to the maximum extent possible.

Patel N.T; and Patel, M.S. ; (1976) "Production functions for dry and irrigated wheat in Gujarat" Financing Agriculture Vol. 8 No.2 (July - September).

This article attempts to study the following objectives:

- 1) To determine production functions for dry and irrigated wheat,
- 2) to compute marginal physical productivities and marginal net returns per additional unit of inputs used in the production functions.

This study is based on Dholka (dry region) and Anand (irrigated region) taluka of Gujarat. Requisite data for this study is based on the agricultural year 1972-73. This study uses various techniques of production function, to determine the factors affecting the production of crops in dry and irrigated regions.

The various conclusions derived from this study are as follows:

- a) Irrigation, was found to be the chief input for more intensive cultivation of land, thereby increasing agricultural production,
- (b) Production of inputs was found to be chiefly dependent on irrigation.
- (3) Governments should provide adequate irrigational facilities by executing small and medium irrigation projects on priority basis.

Patel N.T.; and Nambudhri, N.V. (1976) "Hold of irrigation on farm economy in Gujarat," Eastern Economist, Vol. 67, No. 26 (December 24), pp 1222-1223

The main objectives of this study are:

(a) the impact of irrigation on (i) cropping pattern and (ii) crop protection, (b) A comparative study of dry and irrigated area regarding input structure and crop production and (c) General economy of the dry and irrigated farms.

This study is based on the two talukas of Gujarat viz., Anand and Dholka. The data used in this study relates to the agricultural year 1972-73.

The main findings of this study are:

1) Cropping intensity was higher by 27 per cent in Anand than in Dholka due to intensive use of water in Anand. (2) In Dholka, the farmers did not take the risk of increasing outlay on various inputs due to lesser availability of water for irrigation.

Patel N.T.; and Patel, M.S (1977) "Impact of irrigation on crops - case of Gujarat," Economic Times, Vol. 16, No. 316 (January 19).

This paper attempts to examine (a) the cropping pattern and utilisation of land (b) the quantum of inputs used for various crops and output produced, (c) profitability of cultivation of different crops.

This study reveals that irrigation has a significant role to play (in agriculture dominated economy like India) in terms of greater utilisation of land and depends to a large extent on the availability of water.

Patel N.T. (1977) "Higher Cost - benefit ratio - case study of agriculture in Gujarat," Economic Times, Vol. 16, No. 317 (January 20). p.5

This paper attempts to examine the impact of water use on (a) the cropping pattern and the utilisation of land (b) the levels of use of other inputs and outputs of crops (c) profitability of cultivation of different crops.

To study the above objectives Anand Taluka (wet area) and Dholka Taluka (Dry area) of Gujarat was selected. The farmers of these two talukas were randomly selected for the study (sample size 62 farmers, from each taluka).

This study has revealed the following:

(1) The cropping pattern and utilisation of land were highly related to the availability of water. (2) Because of inadequate availability of water, the farmers of Dholka area are prevented from using HYV's on various crops. (3) The farmers of Dholka denied the opportunity of using high nitrogen content fertiliser because of poor availability of water (4) The study also reveals that due to non availability of water the farmers of Dholka did not utilise their land to a large extent, as their average cropping intensity is one while in the case of farmers of Anand it was 1.25. (5) Also the study bring out the following information of statistical interest. The cost of cultivation per acre of gross cropped area in Anand (Rs. 912.80), which was about eight times more than that in Dholka (Rs. 113.43), this is basically due to the fact that the farmers in Dholka are not willing to take the risk of rising the use of inputs for farming in the absence of water. Hence the net benefit per acre of gross cropped area in Anand is about nine times more than that in

Dholka (Rs. 113.07) while the benefit - cost ratio in Anand (Rs.1058.70) was 1.16, compared to 1.00 in Dholka.

Patel, N.T.; and Gopinath C (1978) Water use efficiency in canal irrigated farming in Gujarat - Ahmedabad : I.I.M., CMA Monograph No. 72.

This project aims to evaluate the irrigational practices, efficiency of water utilization, extent of utilization potential and problems faced under central irrigated conditions. The project area is located in Bhavnagar district.

Mukherjee, Shishir K; and Mehta, Ashok (1978) "A linear programming model for optimal water Transmission system A Case study of Ahmedabad," Opsearch Vol 15, No. 4, (December) pp. 169-83.

This paper presents and illustrates a methodology for the optimal design of a water transmission system along a given alignment from a source of supply to various zonal distribution centres with known daily demands. The linear programming model developed for an open loop system considers the detailed design of the water transmission system, including the choice of pipe lengths and diameters, and the computation of pressure losses due to friction, to meet minimum allowable discharges pressures at each demand centres from a given pumping head at the source.

Patel N.T. (1980) "Use of resources - A study of padra Taluka in Gujarat," Economic Times Vol. 20, No. 223 (October 31) pp. 4-5.

The paper examined the following objectives:

- (1) To examine the utilization of the farm resources viz., land and lift irrigation devices for the different sizes of farms.
- (2) To examine the output - cost ratio and the allocation of cost of production of different inputs for different sizes of farms.

This study is based on Padra taluka of Gujarat. 106 farmers having electric motor for irrigation are randomly selected, and the data are collected from them for the agricultural year 1976-77.

This study yields the following findings:

- (1) For estimating the utilisation of land, the author has used "cropping intensity" as a tool of measurement. Accordingly it was found that the percentage of irrigated to the gross cropped area was roughly the same for small and large groups, while in the case of medium size group it is the lowest. (Here small sized group refer to those having landholdings upto 5 acres while those whose land holdings range between 5.01 to 10 acres are considered as medium sized group, while those possessing above 10 acres are considered as large sized group).
- (2) The total utilization of irrigation resources and the size of the holding are not highly related. But the average use of lift water used on our farms formed positive relationship with the increase in the farm size.
- (3) The per acre gross cropped area, output and cost have increased roughly in the same proportion from the small to the medium sized groups. But from the medium to the large size group the rate of increase are significantly higher than that in cost per acre of gross cropped area.

Dholakia, Bakul H and Asopa V.N (1983) The performance appraisal of Gujarat water resource development corporation (Monograph)

This study assesses the financial commitment of the Government of Gujarat and evolves a programme for improving the financial performance of Gujarat water Resources Development Corporation. This study consists of three volumes. Volume I gives the summary and recommendations of Gujarat water resource development corporation. In Volume II financial performance of GWRDC is estimated and the questions relating to subsidies payable to it by the Government of Gujarat are examined. Volume III provides field studies conducted on GWRDC tubewells.

The study reveals that the poor financial performance of the corporation tubewells is reflected in their under utilisation, which is due to the reasons - more emphasis given to construction activities, improper location of tubewells, erratic power supplies and voltage fluctuations etc.

The study makes the following 'key' suggestions for the overall improvement in the performance of GWRDC.

(a) Within the Corporation the maintenance and operation tasks must be clearly distinguished from the utilization tasks. Hence, a separate wing should be created for undertaking the responsibility of utilisation tasks. (b) All tubewells to be constructed in future should be backed by a systematic proper demand survey so as to determine the number of users as well as the extent of likely use. (c) Poorly performing tubewell must be reassessed to determine whether their performance can be improved. (d) The economic water rate should be calculated on the

basis of capacity utilisation of 2000 hours per annum per tubewell. These rates should be calculated every two years keeping in view cost escalation. (e) A hike in irrigation charges as a tool to improve the financial performance of the corporation should be avoided. (f) Differential water rates based on farm size need to be avoided for operational reasons. (g) Differential water rates as maintained at present for cereal and cash crops should be continued. (h) Efforts must be made to involve beneficiaries in operations and management of tubewells. For this purpose tubewell cooperative societies could be organized on the pattern of lift irrigation societies. This would minimize the overhead expenditure at the tubewell level. (i) Calculation of subsidy on current account and capital account must be distinguished. In calculating subsidy on current account, the following should be considered: (i) M & R expenses, (ii) establishment cost, and (iii) interest charges brought in the profit and loss account. (j) A system for cost monitoring should be developed. (k) A management information system should be established to monitor both development and utilization on a time scale.

Sharan, Girja, and Agrawal, B.D. (1984) Water Resources utilization and development plan for panchmahals : Study of tank irrigation (Research Project)

The objective of this study is to find out why the minor irrigation tanks, of which there are nearly 60 in Panchmahal, are under utilized. This study is based on case study of six tanks.

Asopa, V.N. and Patel, B.C. (1986) Management of Irrigation : A Case study in Mehsana, Gujarat Ahmedabad : I.I.M. CMA Monograph No. 116.

The study aims at developing an understanding of the development and management of irrigation water from different sources so as to establish conjunctive relationships.

The study has been carried out from users perspective in four selected villages in Patan Taluka, Mehsana. While selecting the farmers, it was ensured that users of different sources of irrigation (canals, tubewells and wells) were adequately represented, according to different farm holding size in the sample.

Results and Conclusions:

(i) Use pattern of supplemental irrigation was largely supportive to subsistence agriculture. Neither the full potential available was utilised nor the agriculture technology advanced. There was a lag in agricultural development under irrigation perhaps attributable to reliability and adequacy of irrigation supplies from different sources, constitution such as land and infrastructural development and provision of complementary inputs conducive to adoption of irrigation agricultures remained to be developed. (ii) In Kharif supplemental irrigation is merely protective. There was little conjunctive use of irrigation. (iii) In rabi, private sources of irrigation are relied upon in the case of cash crops where both investment and risk are equally very high. (iv) By and large, the number of irrigations reported by the users of private irrigation

sources are less than the irrigation from government sources.

Agriculture : Allied Industries

Ranade, C.G; Mathur, D.P. Ranqarajan B., and Gupta, V.K. (1984)
Performance of integrated milk cooperatives (A Case study of selected cooperations in Gujarat and Maharashtra) Ahmedabad : IIM, CMA Monograph No. 111

The objective of the study involves examining structural characteristics of different segment of milk commodity cooperative system in respect of production, marketing and processing sub-systems. The study analyses the functional aspects of backward and forward linkages, also evaluates the performance of various systems and tries to estimate the direct and indirect economic and social benefits due to vertical integration by the members of the cooperatives. It also suggests ways to improve operational efficiency of the subsystems in the integrated cooperations. The study is analysed based on the Dairy cooperatives in Gujarat and Maharashtra.

Desai, G.M. (1984) "Prospects of Growth in Fertilizer Consumptions in Western region," Working paper.

This article tries to examine the prospects of growth in fertiliser consumption in the western region. The study includes four states namely Gujarat, Maharashtra, Goa and Madhya Pradesh. The study has selected in western region for two main reasons

(1) it accounts for one third of the total cultivated land in India (2) Very low irrigation potential associated with this region.

This article suggests that the following 'key' aspects would help to promote fertilizer consumption:

(1) State government should improve and strengthen the functioning of agricultural extension system. (2) "Promotional efforts" should be adopted by the fertilizer industry. (3) Better infrastructural set up for fertilizer distribution; and (4) Reasonable credit system should be made available.

Desai, G.M. and Nambudhri, C.V. (1984) Generating Sustained rapid growth in Gujarats Fertilizer Consumption, (Research Project)

This project is a sequel to the Report of the working group on fertilizer Distribution system in Gujarat. Its main objective is to undertake the groundwork necessary to implement strategy fertilizer consumption. This would involve compilation of talukawise data on the relevant variables, classification of talukas into meaningful categories, and translation of recommendations of the working group into action strategies for different categories of talukas.

Desai, G.M.; and Nambudhri, N.V. (1983) Fertilizer distribution System in Gujarat Ahmedabad : I.I.M., CMA Monograph

The objectives of this project are to study the salient features, factors behind the fertilizer distribution system in Gujarat with a view to study the rapid growth in fertilizer consumption. The study is confined to the districts and talukas of Gujarat.

Moulik, T.K., (1982) Introduction of Community biogas plant in a Gujarat Village : A case of technological and organisational intementions, working paper No. 420.

It presents an analysis of community biogas plant in kudadthal village of Ahmedabad district, that has been installed and operated by a voluntary agency - the vimla gram seva samay Trust (VGSS). It also brings to light the socio-political organizational and economic problems and limitations, faced by the trust, during the course of plan, indicating the positive impact of the biogas plant in the village life.

Srivastava, U.K. Reddy, Dharma.; Subramanyam S; and Gupta, V.K.; (1986) Impact of Mechanisation on Small Fishermen : Analyses of case studies concept (R.P)

The main objectives of this study is

a) To understand the existing socio-economic status of small fishermen (b) to evaluate the changes in socio-economic life styles of small (traditional or artisinal) fishermen because of mechanization; (c) To study the benefits to small fishermen from various government programmes and (d) To identify the problem areas in the development of small fishermen.

The methodology involves the utilization of data from primary and secondary sources.

Krishna, P.V. ; and Ramachandran, V (1974) "Gujarat Cooperative in Fertiliser, distribution and marketing, Indian Cooperative Review, Vol 11, No. 4 (July) pp 493-505.

This paper studies the progress of Gujarat State marketing cooperative society in the distribution of fertilizer between 1961 and 1972.

This paper reviews the following:

- (1) Consumption of fertilizer in Gujarat from 1961-62 to 1971-72 (Quantity in tonnes)
- (2) Turnover of GSCMS : 1960-61 to 1971-72 (Rs. in crores)
- (3) Share of fertilizer distributed by GSCMS in the total consumption in Gujarat from 1961-62 to 1971-72 (Quantity in Tonnes)
- (4) Relative share of different kind of fertilizers in the total sales of GSCMS in different years in Gujarat
- (5) Distribution of fertilizers by GSCMS from 1961-62 to 1971-72.
- (6) Value of fertilizers obtained by GSCMS from different sources (kg. in crores)
- (7) Quantity agreed upon by GSFC and the percent of this quantity actually supplied (Quantity in tonne).

Gupta, Tirath (1979) Some financial and natural resources management : Aspects of commercial cultivations irrigated eucalyptus in Gujarat, India (R.P)

This paper while presenting an in-depth scenario of eucalyptus plant in Ahmedabad district yields important results.

- (a) Individual farm entrepreneur expects significantly higher returns by practising tree culture than crop-culture and
- (b) Forestry activity with fixed investments averaging about Rs. 2500 per acre is economical
- (c) Necessary steps should have to be formulated for planting trees on waste lands.

Srivastava, U.K. ; and Reddy, Dharma M (1982) Management of Marine Fishing Industry : An Analysis of problems in Harvesting and processing New Delhi. Oxford and IBH

This study is designed to analyse from catch to final disposal of marine fish. Specifically the objectives are as follows: (1) The study looks into pricing systems, the relationship between catch and price, various costs of catch and fishermen income (2) Pricing systems and the operations of agents and merchants involved in marketing of fish are reviewed to understand their margins, break-even returns on investments, and the supportive infrastructure required. (3) Cost of raw materials, processing, pricing of processed fish, and margin of exporters are studied.

The study is based on primary as well as published data in Veravel zone of Gujarat. The data collection was based on multistage stratified random sampling. The major findings and the recommendations of the study are as follows:

- (1) Both boat and gear mix must be considerably improved as it is expected that this would help avoid competition in the same depth range and also increase the productivity of vessels.
- (2) It is found that the fishery market is oligopolistic rather than competitive. In order to make them more competitive the study suggests the following.
 - (a) Statutory provisions be made to introduce weights and measurements
 - (b) Fish markets should be regulated on the pattern of agricultural markets, also auction system must be made compulsory for disposal in primary markets.
 - (c) Standard grading practices must be evolved and enforced through market committees on the lines of agricultural markets.
 - (d) Institutional finance should be made available to fishermen
 - (e) Cooperative structure should be strengthened - Development of

cooperative organisations at wholesale and retail levels must be considered fully (f) New investments should be made only on OBM's and large-sized trawlers.

Mathur, D.P; and Gupta V.K. (1978) Management in small poultry farms (A study in Maharashtra and Gujarat regions) Abhinav Publications

The basic objectives of this study are:

(1) To identify the structural characteristics of commercial poultry entrepreneurs in relation to their socio economic characteristics, managerial skills, terms structure and poultry farming practices (2) To examine resource availability and its utilization in commercial poultry units; (3) To study the input structure of egg production and the relationship between input and output (4) To identify marketing channels and their effectiveness in relation to the structure of the units.

George P.S. (1977) Indications of commanding position of dairies: A Case study of Ahmedabad, Baroda, Bombay and Poona dairies Ahmedabad: I.I.M., CMA Monograph

The major objectives of this study is to explore the possibilities of using various indicators of a commanding position. Instead of depending entirely on market share as a criterion for determining the commanding position, an attempt has been made to study the possible impact of achieving a commanding position. The variables considered include procurement price, market price, quality of milk supplied and consumer's attitude towards the dairy.

This study was conducted in four major cities of the western region, viz. Ahmedabad, Baroda, Bombay and Poona. Data was collected from these dairies based on their current operations. In addition to this, consumer survey was also carried out in all the four cities to ascertain the consumer's attitude towards the price and quality of milk purchased from the dairy and private traders. Also milk samples from different parts of the cities were analysed to determine the quality of milk supplied by the private traders.

This study has suggested the following:

(a) The following six indicators viz: (i) Market share (ii) Difference in quality between dairy milk and milk supplied by private traders, (iii) Difference in sale price between dairy milk and milk supplied by private trader (iv) Difference in procurement price between dairy milk and milk supplied by private traders (v) Difference in the Share of middlemen (Sale price-procurement price) (vi) Effect of a dairy price change on market price, will be very useful to measure whether the dairy has achieved a commanding position in the market or not?

Also the study observes that the concept of achieving commanding position, is directly linked with the dairies' procurement price, sale price and quality etc.

Fichholiya, K.R. (1974) "Dairying in Girforest" Indian dairyman, Vol. 26, No. 8 (August) pp 297-99

This article brings forth dairy development potentialities in Gir forest. Some of the important suggestions made in the

paper viz. setting up of milk collecting agencies, systematized grazing of cattles, regularizing market, monetization etc., will be very helpful in promotion dairy growth in this area.

Moulik T.K. and Srivastava, U.K. (1975) Bioqas Plants at the village level : Problems and Prospects in Gujarat, Ahmedabad : I.I.M. CMA.

This paper examines the system of installing, servicing which are crucial for the successful operation of gobar gas plants. Also, the paper examines other prominent functional areas, viz. financial aspects, managerial perspectives, Research and Developmental needs of the plant. The study is based on the sample of about 170 individually owned plants and about 25 institutional plants. While the study calls up for improvement in the maintenance of installed plants, also stresses the 'need' for 'higher subsidies' in case of small plants.

Rural Economy

Rural Development : Issues and Cases

Patel S.M., and Patel, (1969) Studies on Economics of Rural Electrification and Lift Irrigation (Gujarat State) Ahmedabad I.I.M., CMA Monograph No. 17.

The motive of this study is to help all those who are concerned with the planning and implementation of lift irrigation programme in Gujarat State. With this aim in mind, the authors of this article presents an indepth study of various problems

associated with rural electrification and lift irrigation processes, and also bring to light vital issues connected with the promotion and progress of lift irrigation.

Some of the major conclusion drawn up from this study are:

(1) The cost of a dieselized pump does not cross the cost line of an electrified pump at any level of operation, which clearly indicates that the electrified pumps are cheaper than dieselized pumps for operation at any level. (2) The BEP for an electric motor was 350 acre inches of water/year, whereas for a dieselized pump it was 650 acre inches of water/year. (3) If the pumps are operated below BEP level, the owners would loss in irrigation activity and would get less contribution towards overhead expenses.

Some of the important suggestions as recommended by the authors:

(a) Priority given to agricultural electrification should be continued. (b) In lieu of subsidizing dieselized pumps, the state government and other banking institution should help electrify the wells of the farmer by providing adequate loans/funds. (c) Necessary steps should be taken to educate the farmers with regard to certain crucial aspects of agricultural electrification.

Asopa, V.N., and Tripathi, B.L., "IADP in Gujarat" Economic Times, Vol. 14, No. 346 (February 28) pp 5 & 8

This article aims to examine the role Integrated Area Development programme in Gujarat, specifically at improving

reciptivity farmers to irrigation agriculture and reduce unutilised capacity.

The agriculture phase programme comprises of soil survey, supply of water from the government outlets to farmer fields, land levelling, delineation of field boundaries to obtain land consolidation new cropping pattern, efficient use of irrigation water, establishment of localised irrigation research and demonstration farms, drainage requirement, problems of water management, building and strengthening of the cooperatives, and the development of agro-industries and ancillary activities.

The study suggests that a co-ordinated approach among the irrigaion, agriculture, cooperative, revenue and general administration departments leading to planned development is essential.

Vyas, V.S. (1979) "Academic and Rural Development - Lessons from Dharampur project" Working paper No. 285.

This paper is intended to bring out the experiences of project team of IIMA working on the project "Rural Development for Rural Poor: Dharampur Project" in order to bring to light the strength and weaknesses of an academician vis-a-vis the 'activist' in rural development.

Vyas, V.S.; Moulik, T.K. Desai, B.M., and Gupta, Ranjit Rural Development for Rural Poor Dharampur Project : The setting Ahmedabad : IIM, CMA Monograph No. 62.

Objectives

- (1) To evolve in selected geographical areas a package of viable activities which can ensure a threshold income to the rural poor
- (2) To prioritize improvements in quality of life and to suggest programmes for achieving this with a view to improve the productivity of the rural poor with the least possible opportunity cost.
- (3) To examine various organizational patterns with a view to ensure that the opportunities of earning an income above the minimum threshold or improving the quality of life are provided to the rural poor, and that the suggested organizations satisfy the conditions of economy, replicability, continuity and involvement of beneficiaries
- (4) To ensure that the designs prepared with these objectives in view, are implemented by viable agencies, officials, non officials or both.

The first phase of the study covered the tribal taluka of Dharampur in Valsad district of Gujarat. The study identified some important constraints which have impeded the development of the taluka and specified the areas which needed further study.

The second phase of this study gives an overview of an approach to rural development in which three components, viz., economic opportunities, quality of life and organizational frame are examined. Further, for programmes under each one of the components certain basic criteria are evolved. A broad outline of the organisational framework for implementing the proposed programme is presented.

Sharan, Girja (1975) "A village in South Gujarat", Working paper No. 102

This article based on the experiences of an underdeveloped village in Gujarat (Dharampur Taluka) suggests remedial measures to ameliorate the conditions of the people living at Dharampur taluka and hence forth to improve the developmental potentialities of the area. Upon indepth study of the village, and also based on the findings the author makes important suggestions, speeding up the process of development, correcting and eventually eliminating biasness, destruction of parasitical agrarian relations, breaking the hold of minority on the village scene, full utilization of productive assets, introduction of agrarian reforms, application of agricultural technology in farms and implementation of various developmental and welfare profits.

Vyas, V.S. (1977) "Macro Economic Policies and Rural Sector in Gujarat" Vishleshhan Vol. 3, No. 1 (March) pp.1-14.

A review of the policy measures affecting rural workers discloses the dilemma which the policy makers in developing countries face. At the understanding of the processes of an economy is not very perfect, the indirect measures yet distorted by the time their incidence percolates to the last link in the social chain. On the other hand, as there is no grass root organisation of the beneficiaries, the direct measures are nullified by series of leakages, of which some are deliberate and others are created by the inefficiency of the system.

Gaikwad, V.R. and Parmar, D.S. (1980) Rural Development under Democratic Decentralization Ahmedabad : I.I.M. CMA Monograph No.78.

The basic purpose of this study is to develop an understanding of that segment of district administration which is primarily responsible for the welfare and economic development of rural people. Also this study looks into (a) the number of functionaries operating under the DDO (District Development Officer) and how well they are organized (b) the purpose for which the funds are utilised by these functionaries. In addition to this, the study focusses on regional variation within the district in terms of density of population, number of villages, literacy, occupation, land use location of administrative head quarters etc., and the response of administration to these variation in terms of the organizations and expenditure.

This study based on Rajkot district of Gujarat State the reference year being 1973-74, some of the main findings of the study are as follows:

(1) The administrative machinery of the district has been strengthened in recent years, primarily due to the creation of new posts such as Extension Officers, and multipurpose village level of workers (VLW) (2) The majority of district administrative machinery is composed of primary school teachers, (64.5%), while a very meagre percentage of staff existed at the technical level, say technical officers, Supervisor, thus technical office staff comprised a meagre 5% of the total segment

of district administrative machinery (3) Majority of the fund are spent on famine relief works, distantly followed by welfare services like education medical facilities etc., only a small portion of fund is spent on production-oriented activities like agriculture, irrigation, animal husbandry, industry etc., Also a very meagre percentage of funds are spent on infrastructural activities, like road construction, buildings etc. (4) Out of 225 district level development schemes, only 106 such schemes are implemented in Rajkot district.

Shingi P.M., Seetharaman, S.P., and Patel M.S. (1985) "Evaluation of the Training and Visit System of Agricultural Extension in Gujarat" (Research Project)

The objective of the study is to evaluate the T&V system with reference to groundnut crop in two districts of Gujarat. The Central focus of this project is to investigate the quality of supervision mechanism developed for the field level functionaries to guide farmers. On the basis of the study the government of Gujarat would be given a suitable management information system (MIS) to improve the working of the extension system.

Sharan Girja (1984) "Cooking fuels in Rural North Gujarat" Energy Management Journal National Productivity Council, Vol. 8, No. 3 (July - September 1984)

This study has been conducted in rural north Gujarat to examine the energy consumption and related aspects. The entire study encompasses the domestic, agricultural, industrial and artisanal sectors.

This study is based on a set of 15 villages drawn from three districts - Sabarkantha, Banaskantha and Mehsana. In each village a sample of cultivators and landless labourers were taken up for study.

This study outlines the following inferences and suggestions:

* The usage of conventional cooking fuels in North Gujarat has outpaced the availability. To overcome this 'shortage' situation, (a) the consumption rates can be lowered to improved chulahs, (2) production of conventional fuel can be increased (3) New fuels like for instance, Gobar Gas can be introduced.

Gupta, Anand P and Vyas V.S. (1982) Towards Fuller Employment in Gujarat Thrust policies and programmes (Research project)

The purpose of this study is three fold:

(a) To take a close look at the picture of poverty and unemployment in rural Gujarat; (b) To examine various programmes implemented in Gujarat during the last two decades, especially in the '70s, with a view to get an idea of the impact of these programmes on employment situation in rural Gujarat, and (c) to figure out ways of effectively teaching rural unemployment in Gujarat.

The study is divided into five sections. Section I presents a profile of Gujarat. Section II depicts the picture of poverty and unemployment in rural Gujarat. It also examines the link between rural unemployment and rural poverty in Gujarat. Section

III discusses and evaluates the various strategies and programmes affecting rural employment in Gujarat. Section IV deals with the subject concerning with the formulation of employment policy in Gujarat. Final section presents some thoughts on the formulation of a strategy for tackling rural unemployment in Gujarat.

The methodology adopted includes review of literature and discussions with knowledgeable people.

The study come up with an effective strategy for tackling rural unemployment in Gujarat. The various components of the strategy relate to population control, growth in Gujarat economy, local planning, organization and employment guarantee schemes.

Moulik, T.K., Vyas, V.S. Desai, B.M. Tripathi BU and Patel, M.S. Dharampur Block Level Planning Ahmedabad : I.I.M. CMA Monograph.

The objective of this study is to do a resurvey of Dharampur taluka in order to prepare an action plan with the objectives of the planning commission's block level planning.

The methodology includes socio-economic survey of all households, based on a randomly selected village, evaluation of ongoing development projects, a broad survey of the beneficiaries and secondary data on development projects.

Pichholiya, K.R. and Parmar, D.S. (1987) "Rural Technology and Employment : A study of solar cooker project in Gujarat," 28th Conference of Indian Society of Labour Economics, held at Trichy, January 16-18.

This article attempts to study the rural technology project, e.g. solar cooker of the Gujarat state from the point of view of

technological performance, implementation and employment generation etc.

This study has made the following observations:

- (1) Solar cooker project is successful because of simple technology and reasonable price tag attached to the project.
- (2) Solar cooker has helped in the saving of costly energy for cooking.
- (3) It has increased the employment potential of skilled and unskilled worker. More importantly, it has not thrown out any labour out of work, it infact created new jobs in rural as well as in urban sector.

Dholakia, Ravindra H; and Iyengar, Sudharshan (1988) (RD)
Planning for Rural Development : Issues and case studies Bombay :
Himalaya Publishing House

This study is based on the author's first hand experience of action - research project carried out in the Gujarat State. It presents five specific case studies of different schemes/projects covering different aspects of micro - level planning for rural development. A general discussion based on author's varied experience of action - research raises pertinent issues of both methodological and practical nature in micro-level planning.

The book highlights issues and problems one is likely to face while planning any intervention for rural development under the present circumstances.

Organisational Structure and Processes

Misra, Sasi, Sambrani, S., Sheth N.R. and Shingi, P.M. (1975)
Agriculture Development Administration in Gujarat (Research

Project)

The objectives of this study are to evaluate the administration of agriculture development programme at the district level and below, and recommend measures to streamline it.

An indepth study of eight projects in two districts of Gujarat reveals that the district administration is effective in carrying out tasks, especially among the market oriented progressive farmers. Their impact on the subsistent farmer is not so impressive. This would be due to lack of support structure and resources needed to carry out extension work among such farmers. Based on the study, the researcher suggests restructuring of the organization within the framework of the decentralization through panchayat Raj institutions.

Krishnaswamy, M.S.; and Prakash, Hari (1977) A Report on the problem of delay in Agricultural Administration in Gujarat Ahmedabad: I.I.M.,CMA Monograph 64.

The main objective of this study is to explore possible ways and means to expedite the disposal of cases at the level of the Heads of departments and at the secretariate level. This paper also studies the organizational pattern, both at the secretariat and at the directorate level, in addition it makes a phenomenal study on existing power structure, procedural delays and methods adopted for planning and budgeting.

The study is based on the interview of 26 officials, 16 at the secretariat level and 10 at the office of the Director of Agriculture. The study pertains to the period May 28 -June 23, 1971.

The process of interviewing the officials and the analysis of 52 cases that were selected for the study indicate that the delay in disposal of cases occur for a variety of reasons, more specifically it is due to (1) Procedural delays, (2) Delays due to organizational deficiencies (3) Delays inherent in the existing power structure and delegation of functions (4) Delays due to delay in mechanics of budgeting and lack of effective planning, (5) Delays due to the human element involvement, in which are included inadequate training and orientation and motivation on the part of the officials, more particularly at lower levels staffs.

While listing down the various factors responsible for the delay in agricultural administration the study classifies the following - organizational deficiencies, existing power structure and delegation of responsibilities and functions, partly due to human element, especially in terms of inadequate training, orientation and motivation on the part of officials for promptness in the disposal of cases.

The study reveals that the large part of the delay in the pattern of administration was due to the number of levels through which papers had to pass through before final decisions can be taken since the largest amount of delay occurred at the relatively lower levels. i.e. at the level of the assistants/noting clerks, section offices and superintendents, the authors suggest that these levels be eliminated and instead an officer-oriented administration be introduced both at the secretariat and at the director's office.

Drought Identification Studies

Pichholiya, K.R. (1977) "Afforestation in drought prone areas : A case study of panchmahal districts of Gujarat" Eastern Economist, Vol. 68, No. 4 (January)

This article attempts to study the role of afforestation in drought prone district of Panchmahals in Gujarat.

Some of the inferences derived from the study are:

(1) Since the bulk of the rural community depends on forestry resources for fact, hence it would be better if more forest wood trees are planted. (2) Adequate supply of fodder is one of the essentials necessary for overcoming problem associated with drought region. (3) Protection of agricultural land/fields against wind. (4) Farmers should be motivated to promote farm forestry or social forestry (5) A better way to promote 'afforestation' is by farming association like tree planting ones in the villages, involving the rural. Youth and farmers in the village, with the Sarpanch as its Chairman.

Singh Gurdev; Desai G.M.; and Sah, D.C. (1980) Impact of society on farm economy and significance of relief occupations (A micro study in Gujarat) Ahmedabad : I.I.M., CMA Mono. No. 84.

This study is based on the experiences of Dhandhuka Taluka in Gujarat, during the period between 1973 and 1975 (a mix of normal and a drought year). The study attempts to understand the impact of drought on different facets of the economies of rural households and the adjustment mechanism used by them, and to look into the significance of relief operation in perspective.

The study has outlined the following important interrelated questions, which can be debated and discussed at length.

(1) What is the impact of drought on such facets of the economies of rural households, as crop production, employment and income from farming sector, off-farm employment and income, market transaction and consumption. (2) How does the impact differ among the households of different categories such as cultivators and labourers and also among cultivators with farms of different sizes (3) What are the adjustment mechanism of the households to minimize the impact? (4) How significant are the relief operations in reducing the impact? Also, how are the benefits generated by these operations distributed among households of different categories?

The study presents varieties of results and recommendations. One such suggestion/guidelines is that the most important reason behind persistent low agricultural development in drought prone areas seems to be that of technological stagnation.

Other important recommendations that emerges from this study are:

(a) Developing a suitable agricultural technology and (b) Focussing on the non agricultural sector for development of these areas.

Murthy, Nirmala; Gupta, V.K.; and Desai, D.K.; (1984) Disaster Management in Saurashtra Region of Gujarat (Research Project)

This study tries to prepare various cases, with the following objectives in mind.

(a) To understand the management problems pertaining to the three phases of disaster management before, during and after. the emphasis would be on post disaster management problems. (b) To draw on the experiences gained from the actions taken by various units of the social system during the three phases in the context of latest disaster that happened in Saurashtra region of Gujarat State. (c) To provide a link in the chain of studies of disaster management at all India level. (d) To draw inferences of a generalized nature pertaining to disaster management from the case studies.

All the information (both from secondary and primary sources) would be collected on the basis of the administrative units, such as district, taluka and villages.

Two districts viz. Junagadh and Amreli would be selected for indepth studies. The information about the management problems would be collected from different levels.

Sharan, Girja' Shah, Nitin; and Gupta, K.K. (1987) "Drought Identification Procedure and Rainfall Pattern" Vikalpa, Vol. 12, No.1 (January-March)

Since drought occurs frequently, method of identifying it and procedure for the consequent declaration of scarcity have been laid out. The current 'annawari' method has an element of subjectivity in it, and the present procedure takes so long to be completed that there is very little time to plan and successfully implement the measures to alleviate the conditions in the drought affected areas.

The authors, suggests in this article a more objective

method which can identify early enough to enable the authorities to take timely steps.

Miscellaneous Studies (Pertains to agriculture and allied sector)

Desai, B.M. (1973) "Economics of resource use on sample farms of Central Gujarat" Indian Journal of Agricultural Economics Vol.34, No. 4 (January-March) pp. 71.85

This paper examines whether or not the returns on the resource use for a sample of farms located in two parts of Central Gujarat, given their respective production functions, are maximized and if not, why not.

Two different methodologies for studying this question are based on linear programming and production functions, (the author has selected the latter). The second major objective of the study is to analyse the economic and statistical implications of selection of (a) functional forms, and (b) variables for estimating production functions for a cross section farms.

The functional form used in the study are Transedental, log log inverse and cobb-douglas function.

The purpose of these functional forms is to investigate whether (1) the marginal productivity of resources are increasing, decreasing and negative it is just decreasing (2) the production elasticities are constant or varying.

Ramachandran, V; and Singh, Gurdev (1974) "Economic life in districts of Gujarat", Gujarat Economic Conference held at Gujarat Vidyapeeth, Ahmedabad on November 9 and 10.

The basic objective of this paper is

(1) To review the growth in population in Gujarat State as revealed from 1971 census data. (2) To identify the indicators which measures the disparities between areas (districts) and (3) To study the disparities between the districts with the help of selected indicators.

To examine the above objectives, the study makes use of the following variables density of population, infrastructural set up, foodgrain production. These variables are used to serve as indicators of (i) General Development, (ii) rural facilities, (iii) urban facilities, and (iv) agricultural development.

This study reveals that there is wide disparities in the economic life of people in different districts in Gujarat. The analysis shows that the economic life is better in the districts of Kheda, Vadodara, Surat and Ahmedabad and is backward in districts of Surendranagar, Jamnagar and Banaskantha.

Patel, N.T. and Patel, M.S. (1976) "Impact of farm energy on the cropping intensity, levels of use of inputs and the profitability of farming in Anand Taluka of Gujarat, Indian Journal of Agricultural Economics Vol. 31, No. 3, (July-September) pp.232.

This paper attempts to examine

(1) The utilization of land and lift irrigation by small farmers, and (2) To study the allocation of the cost of production on different inputs and net benefits according to them.

The following villages viz., Khungher, Vagdod, Gungral, and Sankheri of Patan Taluka in Mehsana district of Gujarat was purposively selected for the study. Data for the study is based on the agricultural year 1973-74. The data analysis was made

possible by classifying the farmers into three groups viz., those owning upto 2.00 acres, those owning between 2.01 to 4.00 acres and those owning between 4.01 to 5.00 acres of land.

Patel, N.R. (1977) "Operational Research in Planning for Dharampur", Working Paper No. 166.

This paper attempts to explore the application of operation research techniques in planning infrastructure for Dharampur Taluka in Gujarat.

This article covers four principal areas:

(a) Design of a road network (b) Location of service centres (c) Development of an interactive computer programming and graphics (d) Phasing of service centres.

Patel, N.T. and Parmar, D.S. (1979) "Contribution of Extension services in Agricultural production" Indian Journal of Agricultural Economics Vol. 34, No. 4 (October-December) pp.49-54.

This paper attempts to examine (a) the level of significance of extension services, and (b) the marginal contribution of extension services to increase agricultural production and to compare the marginal contribution of extension services in high productivity area with that in low productivity areas.

To study the above objectives, the data on the expenditure on extension services, the gross agricultural production in rupees (at 1960-61 prices), gross cropped area, gross irrigated and quantity of fertilizers (in WPK) were collected from different secondary sources for all the 19 districts of Gujarat State. The data is collected both from the high productivity and

low productivity areas, with the reference year being 1976-77. This study uses a double-log regression function.

The results of the regression analysis indicate that the extension investment has played a significant role in increasing agriculture production only in the high productivity areas, while in the low productivity areas, it has played an insignificant (and negative) role.

Also the study reveals that the marginal contribution of extension investments is the highest in high productivity areas, while it is very much low in low productivity areas. In other words, the study reveals that the marginal profitability of extension investment is positive in the high productivity areas and negative in the low productivity areas.

Patel, N.T. (1980) "Wage profit relationship in agriculture" Indian Journal of Labour Economics, Vol.22, No.4, January pp.7-15.

The major objective of this paper is to examine the relationships: (1) between wage rate for human labour and profit, and (2) between wage rate for labour and its marginal productivity.

The scope of this study is limited to the padra taluka of Baroda District in Gujarat State. The data collected from 108 irrigated farmer (more than 50 per cent of their gross cropped area irrigated by them in 1976-77) and 102 dry farmers (no area irrigated by them in 1976-77) for the agricultural year 1976-77. The methodology involves the usage of double-log (cobb-Douglas) production function.

The following conclusions are derived from the study:

(1) the wage rate and profit per acre of gross cropped area are positive and highly significant (2) The results of the production functions for irrigated and dry farmers in each group and at the aggregate level indicate that the human labour forms a significant input in the processes of agricultural production. (3) Marginal productivity of human labour is positively related with the wage rate.

George, P.S. and Gupta, K.K. (1981) "Gujarat Agriculture Growth and Stability in output" Economic Times Vol. 21, No. 82 (May) pp.4-5.

This paper summarises the findings of the study based on the performance of Gujarat agriculture in the area of growth and stability of agricultural production during 1953-54 to 1977-78.

This study reveals that the growth rate of output of rice, pulses, oilseeds, tobacco and ground nut have increased at a fasterrate in the seventies as compared to the sixties when these commodities had experienced a decelerated growth rate. While at the same time, wheat, bajra, other cereals, total cereals and total food grains which had experienced an accelerated growth rate during the sixties as compared to the fifties have experienced a decelerated growth rate during the seventies.

Inspite of the technological changes, growthrate in output of a number of commodities are still dependent upon the growth rate of area under the crop. Also, the study shows that the fluctuations in the output of many commodities during the sixties is further aggravated during the seventies-while the sixties had experienced some decline in the fluctuations in area under many

crops, during the seventies the fluctuations in area have widened. The fluctuation in productivity during the sixties also donot show any declining tendency as it was during the seventies.

Patel, N.T. (1981) "Small Scale Farming in patan Taluka of Gujarat" Economic Times Vol. 21, No. 116, (June 29) pp. 5 & 7.

The objective of this article is to study:

(1) The cropping intensity, (2) the human employment (3) the profitability of farming different crops, and (4) the marketable surplus of food grains for the small farmers.

To study the above objectives patan taluka of Mehsana district in Gujarat has been selected, 43 farmers from eight villages of this taluka are randomly selected.

This study has brought out the following findings:

(1) The average cropping of the selected small farmers were above one hundred percent. (2) Most of the selected small farmers used their own family for various agricultural operations, as the statistical results shows that overall about 84.4 per cent of the labour are derived from their own family and only about 15.6 per cent of labour are hired from outside. (3) The benefit-cost ratio calculation indicates that the selected farmers of this taluka has good prosperity to increase production by increasing the cost of cultivation. (4) The profitability of farming in this region is maximum for bajra, followed by jowar, cotton, mustard, paddy and wheat. At the aggregate level, the return to scale was found increasing as benefit-cost ratio reached about 1.32.

George, P.S.; and Kumar, Krishna (1982) "Growth and Instability in Gujarat Agriculture", Working Paper No. 412.

This paper attempts to study the performance of growth and instability of agriculture in Gujarat during 1953-54 to 1977-78.

This paper analyses the growth rates and coefficient of variation in area, production and productivity of major crops and the effect of area and productivity on crop output. The contribution of each component element viz., area, yield, interaction and cropping pattern to crop output through decomposition analysis is also dealt with very elaborately in this paper. In addition to this, the paper also discusses about the crucial factors mainly responsible for increasing productivity.

Industry : Growth and Development

Pathak, H.N. (1968) Growth of Diversified industries in Baroda (Research Project)

This study tests whether the entrepreneurial manifestations in India can be termed only in terms of a variety of complex factors and aspects and/or in the interaction between such factors and aspects.

This study is divided into three parts. The first part deals with the growth of industries from 1901 to 1949 and the second part from 1949-50 to almost the present day (i.e. upto 1968). The third part contains the conclusion of the first two parts and gives a perspective for the future.

The study concludes that the first phase industrial development, was the outcome of induced entrepreneurship,

Entrepreneurship in the second phase was attributed to the general tempo of industrial development in the country, and other important policy measures foreign collaborations etc.

The major recommendations are as follows:

- (a) Industrial units in Baroda should be studied along the lines of an inter-industry study.
- (b) Prototype production units should be planned to meet the needs of industrial units for spare parts and components.
- (c) Specialized technical courses should be introduced to overcome the shortage of middle level techniques.
- (d) Organizationally and structurally, the creation of a development council and a consultancy services within the federation is very much required.

Malya, Meenakshi; Nambudhri, C.N.S., Paul, Samuel and Vora, M.N. (1969) A study of the market potential for Gujarat based manufacturers of plastic products (Research Project)

The purpose of the study is to estimate the demand for a variety of plastic goods in the market region that could be economically serviced by Gujarat-based manufacturers. The target year for forecasts was 1973-74.

The study estimated that the total demand for polyethelene PVC, and polyesterene in the Gujarat market region in 1973-74 would be about 21000 tonnes. It is expected that this demand would account for nearly 30% of the total production of thermo plastics being planned to be manufactured at the Baroda petrochemical complex by 1973-74. Since at the time of the study, production capacity of plastic conventors in Gujarat was

well below 2000 tonnes, it was pointed out that there is scope for increasing the production capacity in Gujarat almost ten-fold to cater to the projected demand. It is also pointed out that over 30 per cent of the demand for plastics in the Gujarat region will arise from the industrial sector. An analysis of the machinery requirement of Gujarat-based plastic manufacturers showed that shortages, were likely in most types of machinery in 1974.

Pathak, H.N. (1974) Problems of Small Scale Entrepreneur - A study based on Gujarat Ahmedabad : I.I.M. Monograph No. 1

This study is restricted to small scale units in five major industrial groups (textiles, chemicals, metal based, machinery and miscellaneous) located in about 15 districts in the Gujarat state.

Its main objective is to examine the problems that entrepreneurs in the small scale sector face. Data for the study is collected from 200 entrepreneurs belonging to the above groups. The data collection work is carried out in two phases.

(1) The inception phase where factors were analysed in terms of family background, education, training, previous experience of entrepreneurs etc. This is done mainly to highlight the perception of opportunity by the entrepreneurs. (2) The operational phase which was examined in terms of problems faced during the initial years and against the background of the overall business and economic environment.

The study emphasises the importance of systematic project planning by entrepreneurs at the inception stage to ensure better results, reduce the time period between the inception and operational phases, and examine problems of their units during both the phases.

It recommends the introduction of two training programmes.

(1) Project planning and project Evaluation, and (2) Management Appraisal on operational problems. It also recommends the establishment of a training-cum-consulting organization.

Papola, T.S. (1974) Location of Industries in Gujarat (Research project)

The objectives of this study is to study the geographical pattern of the location of those factories in Gujarat that were set up during 1969-70 and also to assess the impact of fiscal and financial incentives on these industries.

The study portrays the locational pattern of the new factories started during 1960-70 in Gujarat. The aspects examined are: shares of incremental industrial activity going to each district both in aggregate as well as at the level of individual industry groups, relationship between initial and incremental shares and association of certain characteristics of districts with their share in new industrial activity. An attempt had been made to identify (1) the trends in spatial diversification of industries (2) industries which show high/low potential for diversification, and (3) the role of certain district characterisation and institutional efforts in changing the locational pattern.

In the short span of a decade the manufacturing activity has not only shown potential for spatial diversification, but has also actually got diversified to a significant extent. Quite a few industrially backward districts have attracted significant shares in new industrial activity. Most of the industries have shown considerable locational flexibility and the structure of industries is changing in favour of such industries. Infrastructure is found to be a necessary but not a sufficient condition for favour of location. But the effectiveness of the efforts of public institutions have further supported the view that there is nothing specific in an area that prohibits industries from going there.

Pathak, H. N. (1974) Locational Industries in Gujarat (Research Project)

The basic objective in this project, is to study the localised industries in Gujarat, primarily to understand the factors that help in the growth of industry and entrepreneurship. Three localized centres of industry were selected and in all the centres the artisan class had transformed into the industrial entrepreneurial class. Some hypothesis about the necessary and sufficient conditions for industrial and entrepreneurship growth were arrived at.

Pathak, H.N. (1976) "The GIIC Technicial - An Analysis of Induced Entrepreneurship" Industrial Researcher, Vol.13 No.1 (April)

The central focus of the study is to examine the various problems faced by the entrepreneur. In all, 230 units were chosen

for the study—mostly pertaining to small scale units. This study also includes a few technician entrepreneur who are financed by Gujarat Industrial and Investment Corporation (GIIC), the GIIC technicians were included mainly to examine if in any important respect the problems faced by the technicians were different from those faced by the entrepreneur of voluntarily enrolled small units.

The problems of entrepreneurs has been viewed in terms of (1) faced during the inception period (ii) the interval between the point of time the opportunity is perceived by the entrepreneur and (iii) the operation stage covering a period of roughly two years when the unit has started manufacturing.

The data for the study is collected during 1973, from the following main industrial centres—Ahmedabad, Baroda, Bulsar (Vapi), Rajkot, Surendranagar, and Junagadh.

The study also bring to light different nature of problems faced by different set of entrepreneur and calls for the need of a project planning exercise to bring success to the enterprise.

Pathak, H.N. (1978) GIDC and Industrial Development of Backward Areas (Research Project)

The main objective of the study is to analyse the problems associated with industrial development in backward districts (with GIDC as an agency evaluating growth potential). The analysis was more in the nature of a contribution to strategy formulation by a development corporation.

The important findings and recommendations of the study are:
(1) GIDC's strategy for industrial development rests heavily on

its reading of the industrial potential of a certain location. (2) GIDC takes various decisions on developing an industrial estate and infrastructure, primarily on industrial potentiality and various other reasons. (3) GIDC also matches the incentive structure with industrial potential and entrepreneurs from district level and outside (4) GIDC's strategy can be used with some modifications by other development agencies.

Moulik, T.K., (1970) "On entrepreneurial achievements in an industrially progressive rural setting : Anand (Gujarat)," Administrative Change, Vol.6 pp. 1-2.

This paper attempts to bring out a comprehensive empirical understanding of the entrepreneurial functions performed by the entrepreneurs in an industrially progressive environmental complex. Apart from this, it also discusses the significance of entrepreneurship in the region, the study also provides necessary and sufficient information regarding the nature of constraints that inhibit the progress of entrepreneurship development in the region.

The selection of entrepreneurs is done based on the following criteria (a) Entrepreneurs must be engaged in the enterprise as full time occupation (b) small and part-time enterprises are not considered for the study (c) only those enterprises which are in operating conditions and run for atleast, two years at the time of investigation are considered for study.

This empirical study provides sufficient information regarding (a) The pattern of change in occupation of the entrepreneurs over previous generation, (b) Initialization of

entrepreneurial activities and nature of ownership (c) opinion regarding factors responsible for business success (d) Response of sample entrepreneurs regarding factors affecting limitation of business expansion. (e) Important help received by the entrepreneurs from different sources and (f) opinions on entrepreneurial functions.

Also the empirical research has worked out the following: (a) Average investment on fixed capital and average Annual percentage increase over investment in initial year. (b) coefficient of correlation between relevant variables related to business success (c) canonical correlations estimated for different sectors (d) Predicted business performance.

Based on the empirical findings the author suggests that the entrepreneurs in an industrially progressive region like Anand is confronted with many sharp limitations inhibiting the expansion as well as diversification of their enterprise.

Gupta, G.S. (1980) "Locational factors for industries in Valsad District" Arthavikas Vol. 16, No. 1 (January-June).

This paper identifies various factors which are important for the location of industries in Valsad district. Valsad district is taken up for this study, because it holds an important place in the industrial map of Gujarat.

The industrial units are chosen on the basis of stratified random sampling method. For stratification process, the following variables were considered viz.,

(a) Industry type (b) Location (c) Size and (d) Region Taluka.

The locational factors of the study comprises the

availability of cheap land, availability of cheap/skilled labour, availability of raw materials, proximity to market, presence of parent unit, Government facilities in the form of land and building, availability of water, advised by other people, better industrial atmosphere, fast growing area, place of origin other factors.

The findings of the study are discussed under the following heads: (a) Local factors by industry group (b) Local factors overtime (c) Local factors for shifted factories (d) Local factors for factories in industrial estates.

Bhattacharya, G.D. (1981) Standard Costs Variance analysis and management in related industrial units at Ahmedabad (Research Project)

This study is designed to provide information about the use of standard costs and variance analysis in a few selected industrial units in Ahmedabad.

Misra, P.N. (1981) "Infrastructural Needs of Small Scale Industry in Gujarat, Working Paper No. 498.

The main purpose of the paper is to ascertain the infrastructural needs of small industry in Gujarat on the basis of secondary information and then to match the same with what is already supplied by existing organisations to arrive at an idea of existing gaps. The paper also deals with how best these gaps could be bridged in the short run, as well to suggest the preparation that ought to be initiated by the government to avoid or tackle such problems that may arise in long run.

This paper brings out a summary on (1) birth, death, sickness and problems encountered by small scale units in Gujarat, (2) Description of infrastructural needs of various kinds relevant to small industry and (3) the organisational preparedness of the state (Gujarat) to meet the needs of small industry.

This paper recommends preparation of "master plan" keeping in mind the prime objectives of effective utilisation of resources accessible to the state with minimum possible cost to the people.

The author is of the view that such "Master Plan" would satisfy the following considerations.

(1) Location and allocation of production of goods and services are optimal in minimising the total cost subject to utilisation of local resources in a feasible manner. (2) Determination of such configuration of these units so that infrastructural planning for the configuration in question leads to best utilisation of infrastructural assistance thus provided: (3) Allocation of infrastructural needs so determined to relevant organisations and phasing of implementation of the same to avoid delay and inconvenience to users of the same. (4) Maintenance of continuity to revise the Master Plan under changed circumstances and to monitor implementation of the same.

Pathak, H.N. and Hermon, R.R. (1981) "Industrialisation in Gujarat: Strategic role of small scale industry" Seminar on development of Gujarat - Problems and Prospects, Sardar Patel Institute of Economic and Social Research, Ahmedabad.

This paper has two principal objectives:

- (a) To analyse the existing industrial structure in Gujarat and
- (b) To examine the viability and efficacy of the promotion and development programmes of small scale industry. The study is based on the data collected during the period 1960-78 for large scale industries and between the years 1960-74 for small scale industry.

The methodology of the study involves the usage of data from published sources, also includes statistical instruments such as location quotient and coefficient of location.

Some of the important conclusions of the study are:

- (1) Industrial Development offers a picture of concentration in terms of location and product lines
- (2) States' industrial economy depends more on Textile based industries
- (3) Industrial growth is highly unbalanced in the districts.
- (4) SSI's industrial growth depends to a large extent on large scale industries.
- (5) Discrimination element in the promotional policies of SSI could be based on the location quotient and the coefficient of localisation.

Pathak, H.N. (1987) Dynamics of the Diamond Industry of Surat (Research Project CRMS, I.I.M.A)

This paper presents a detail study of Surat based diamond units. Also, it attempts to establish some correlation between growth of exports and spread of diamond units in Surat.

The study reveals that majority of diamond units in Surat are small enterprises, discusses in detail about the nature and operation of diamond units in Surat, presents a brief summary

about the economics of running diamond units at Surat.

The study has yielded the following main findings:

(1) The profitability of diamond units based on job-work data ranges from 12-18 per cent. While the profitability of medium units is around 14 per cent, the large units' profitability is much higher than medium and small units by nearly around 18%.

(2) The investment turn-over ratio and capital-output ratio for diamond units has been worked out. The study outlines that the investment turn-over ratio ranges between 0.047 and 0.0896 while capital output ratio lies between 0.15 to 0.16.

Tripathi, D; and Mehta, M.J. (1973) "The nagarsheth of Ahmedabad : History of an urban institution in a Gujarat City" Working Paper No. 255.

This paper outlines the history of the institution of "Mahajans" (traders organization), who played a prominent part in the socio economic life of the country from time immemorial with Ahmedabad in particular. The Mahajans evolved gradually to the position of the 'nagarsheth', or the chief merchant of the city. The paper analysis the 'nagarshethship' - the role of the nagarsheth in the socio economic life, his priveleges, powers, position and finally the decline of such an institution.

Tripathi, D (1980) Kasturbhai Lalbhai and his Industrial Enterprises (Research Project)

The objective of this study is to examine the entrepreneurial initiative and 'continue' in the Lalbhai Group of industries from the beginning upto the retirement of Kasturbhai Lalbhai from active leadership. The study aims at analysing the

role of Kasturbhai Lalbhai in the evolution of these enterprises.

The study is based on the analysis of company records including the annual reports and balance sheets of various companies in the group and personal interview with key personalities including Kasturbhai Lalbhai himself.

The study concludes that the progress and expansion of the Lalbhai group of industries is largely due to Kasturbhai's ability to perceive new opportunities and exploit them in the context of his personal values and business ethics.

Tripathi, D (1984) "Class character of Gujarati Business Community", Business Communities of India : A theoretical perspective, D. Tripathi (ed.) New Delhi : Manohar Publications, pp 151-72.

This paper presents an analysis of "Business Community" with particular reference to Gujarats. The author has chosen Gujarat, since pre-industrial times 'Commercial' and 'trading' activities were flourishing mostly in Gujarat. While summarising in brief the historical background of Gujarati business community, the author highlights various socio-cultural and socio-economic aspects of Gujarati business community upto the beginning of the present century.

This paper also brings to light the occupational mobility among various castes and also provides data on occupational affiliation of hindu population in Baroda.

The study concludes with the following findings:

(a) By the beginning of the present century Business profession

had ceased to be the sole monopoly of vaishya castes. (b) As the centuries roll by, collaboration based on occupational affiliation rather than purely socio-cultural has become much more visible amongst the Gujarati businessmen.

Tripathi, D; and Misra, Priti (1985) Towards a new frontier : History of the Bank of Baroda 1908-1983, New Delhi : Manohar Publications

This article traces the genesis and growth of largest nationalised bank in India, it throws light on the banking developments in the country. More importantly it provides valuable insights into the business developments in princely India, and the process of transition from a feudal system to the modern age, due to the help rendered by the bank.

Tripathi, D (1987) "Business and the Princely states : The case of Baroda" State and Business in India : A Historical Perspective D.Tripathi (ed) New Delhi : Manohar Publications, 1275-301.

This paper, while reviewing the history of Baroda state presents an in-depth view of various economic activities that has prevailed in the past more particularly this article bring forth the evolution of industrialisation and banking, which currently plays a key role in the development of Gujarat economy.

This paper also provides the organisational structure of various institutions that existed during the period of Sayajirao-III (1875-1939) and before. The author recalls that Sayajirao-III's period as the Golden age of Baroda, which in effect saw the establishment of two reputed organisations in the country today viz., Alembic Chemical works and Bank of Baroda.

Investment and Banking

Rangarajan, C; and Das P.K. (1971) Investment Forecasting in private sector in Gujarat, Economic Times (May 28)

This article attempts to forecast the likely level of investment in the private sector industry of Gujarat in 1971. The findings are based on an analysis of the memorandum of appraisals of the loans sanctioned by the leading term-lending financial institutions viz. Gujarat Industrial Investment Corporation, Gujarat State Financial Corporations and other institutions like ICICI, IFC etc.

Some of the important results of the study are:

(a) The likely private sector investment in Gujarat in 1971 as sanctioned by AIIS and GSFC will be of the order of Rs. 17.5 crores. (b) The capital expenditure likely to be incurred in 1971 on the basis of projects sanctioned in 1970 by ICICI and IFC will be of the order of Rs. 7 crores. (c) The likely investment in 1971 will touch around Rs. 35 crores. (d) On the basis of industry-wise classification of capital expenditures as approved by these two leading institution in Gujarat, shows that the chemicals, pharmaceuticals and engineering industries are the leading sectors in the early seventies. (e) Region-wise study shows that south Gujarat has shared major amount of capital expenditures incurred from these two institution.

Mampillay, Paul (1979) Performance of Commercial Banks in Gujarat (Research Project)

The objectives of this study are to examine the validity of

the position taken by the government of Gujarat to show that commercial banks have been consistently under utilizing their lending capacity in Gujarat, to identify the factors leading to such underutilisation; and to chalk out measures that could remedy the situation.

Rangarajan, G; and Padia, Veena (1981) Forecasting private corporate investment in Gujarat for 1981, Working Paper No. 362.

In this paper an attempt has been made to forecast the growth in private corporate investment in Gujarat, in 1981. The corporate investment covers gross capital expenditure of all companies in the private and joint sectors. The study also provides a overall scenario of the level and composition of corporate investment in Gujarat in 1980.

Pricing Policies and Issues

Paul Samuel (1968) "Pricing Gujarat Natural Gas : An Alternative approach" Economic and Political Weekly Vol 3, No. 37. (September 14) pp 1405-08.

This article, which is basically a rejoinder to Prof. V.K.R.V. Rao's paper on pricing of Gujarat Natural Gas published in EPW earlier. In this paper, the author suggests an alternative approach on pricing of Gujarat's Natural Gas.

Prof. Rao article on pricing based on the "cost plus profit" formula. In his estimation of cost and profit, Prof. Rao has virtually ignored the relevance of crude in ONGC's operations - he implicitly assumes that in a multiproduct firm prices should be set by estimating the cost of individual products and adding a

uniform rate of return on the investment in each product.

However, the problem of allocating joint costs in a multiproduct firm has yet to be solved even theoretically. Moreover the rate of return is meaningful more from the point of view of the enterprise as a whole, rather than that of each product, so that a product capable of contributing to profit would be earning higher than the average rate of return to the enterprise, offsetting the lower returns earned by the firm's less profitable products. The argument that oil operations have little relevance in the gas price dispute is, therefore valid only upto a point.

Seth Shanti (1980) "Short term forecasts for ground nut oil prices in 1981 (Research Project)

The study is based on wholesale price per quintal of groundnut oil for a period of 12 years in the city of Ahmedabad. The data on prices are collected every fortnight. The objective of the study is to arrive at a good, rather the best forecast in the short-term based on time series model. Various time-series models were applied and tested. The ARIMA - Auto regressive integrated moving averages model gave better forecasts. Further testing of the model with the updated data is also carried out.

Dholakia, Bakul H (1982) "Comparative economics of uses of gas for power generation in Gujarat (Monograph)

The purpose of the present study is to examine the comparative economics of the two alternative sources of generating electricity in Gujarat, viz. coal and gas. The study aims at carrying out the objective in terms of (a) the

comparative analysis based on the current market prices of the inputs; and (b) the comparative analysis based on the economic prices of inputs indicating their respective opportunity costs. (The study is based on the period between 1960 to 1979).

The basic data required for conducting this study has been obtained primarily from the existing records of Gujarat Electricity Board, Also the author has used the data from project proposal on thermal units at Mahuva.

The methodology employed in the study is similar to the one adopted by the working group on optimum utilization of Gas (1979). It is based on the application of the techniques of project appraisal for estimating the imputed economic values of scarce natural resources such as gas and coal.

This study brings to light the following

(a) Total generation of electricity in Gujarat in 1981 have registered a phenomenal growth say 730 million units, which is 20 times, more than that of power generated in 1961. (b) There is a tremendous improvement in the degree of capacity utilization of power generation in Gujarat over the years. (c) The average cost of saleable energy per KWH at 1981-82 prices turns out to be 16.62 paise for the gas - based thermal unit at Mahuva, whereas it works out to 27.96 paise for the coal-based thermal unit at Ukai. (d) The analysis of comparative cost of energy at shadow prices of alternative fuel also shows that coal is a costlier fuel for generating power as compared to gas. The statistics works out to 96.37 paise at Mahuva and 111.73 paise at Ukai. (e) The estimation of imputed economic value of gas

indicates that the opportunity cost of this scarce natural resource in its alternative uses, is found to be much higher in the power sector as compared to the fertilizer sector. (f) The study forecasts that the average loss in power generation attributable to irregularities in coal supply is likely to increase sharply from the level of around 290 million units during the period 1979-81 to 660 million units per annum during the next five years.

In the light of the above findings, the author recommends that highest priority should be given to the power sector in the overall allocation of gas in Gujarat.

Sharan, Girja, and Krishna P.V. (1974) Identification problems in Management of Custom Hiring Centres (Gujarat) Ahmedabad : Indian Institute of Management, CMA Monograph (RP)

The main objective of this paper is to study the characteristics of custom hire formers, examine the working of the selected custom centres; and to find out the fleet utilisation pattern of the chosen centres. The paper also examines the management pattern of the fleet.

Also this paper tries to bring out the relationship between the size of holding and tractorisation the use of tractor and water availability.

Desai, D.K.; Gopinath, C; Basu, S.K; Nambudhri, N.V. Patel, I.T; Patel, M.S. Patel, N.T. Ramachandran, V; and Ravalji, H.R. (1975) "Impact of Tractorisation on productivity and employment in Gujarat State Ahmedabad : IIM (Research Project)

This study is basically aimed at exploring the impact of

tractorisation on agriculture, in terms of yield (productivity), employment potentiality etc. The data for the study are collected from two regions viz., irrigated and unirrigated region for the agricultural year 1972-73. The study is based on a sample of 182 farms in the irrigated area and 50 farms belonging to unirrigated areas. The main findings of the study are (a) Investment in farm buildings is higher in tractor farms as compared to other farms. (b) Investment in milch animal is higher in bullock farms.

The application of private cost benefit analysis shows that the investment on tractor and tractor equipment in the present situation with the existing level of custom hiring is profitable in all talukas except in Dholka in the year 1972-73, which was a drought year. It is also found that in optimal situations, investments on tractor and tractor equipment are not profitable without custom hiring in Anand Taluka.

Patel, N.T. (1975) Growth of oil engines (1975), electric motors and pumpsets in Gujarat Financing Agriculture (Annual) p. 94-97.

This article attempts to examine the growth pattern of the use of oil engine, electric motor and pumpset for irrigation in Gujarat and to study the factors influencing the pumpset usage in the districts of Gujarat.

The study yields the following results:

(1) Between 1951-52 to 1972-73 the number of oil engines, electric motors, and pumpsets in use in Gujarat State has increased at a compound growth rate of 19.5, 23.5 and 19 per cent per year respectively (2) The net irrigated area per pumpset is

inversely related to the number of pumpsets used.

Also the study emphasizes the need for expansionary role by land development banks for the promoting agricultural development in the districts.

Patel, N.T. and Patel M.S. (July) Impact of farm energy on the cropping intensity levels of use of inputs and the profitability of farming in the Anand Taluka of Gujarat Indian Journal of Agricultural Economics, Vol. 31 No. 3 (July-September) p. 232

This paper brings to light the impact of ownership and utilisation of farm energy on cropping pattern, cropping intensity, input utilization, and profitability of farming.

The methodology of the study is based on the classification of farmers into four categories, viz. the farmers with tractor and pumpsets (F1), with tractor only (F2) with pumpset only (F3) and those who neither possesses tractor nor own pumpset (F4). From each category about 25 farmers are selected randomly. The study is based on the data collected during the agricultural year 1972-73. The findings of the study are (a) The average size of holding of F1 is higher than F2, F3 and F4 (b) The cropping pattern and the cropping intensity and the inputs per acre of net cultivated area of F1 is higher than F2, F3 and F4. (c) The utilisation of human labour (in terms of labour days per acre) is greater in F1 closely followed by F2, F3 and F4.

Patel, N.T. (1980) "Farm tractorisation : Its impact on agricultural inputs and output" Economic Times Vol. 7, No. 207 (October 20) p. 5 & 7.

This study brings forth the impact of tractorisation on cropping intensity, inputs utilisation and profitability of cultivation.

This study is based on Sidhpur taluka of Gujarat. To have the comparative picture, 40 cultivators with tractor and 40 cultivators who do not use tractors are selected randomly. The agricultural year 1976-77 serves as the data base for the study. The findings of the study are: (1) Investment on farm resources by tractor are much higher than that of bullocks. (2) Empirical results shows that cropping intensity in tractor farms is higher than that of bullock farms (about 17%) (3) Tractor farms are used very extremely in the cultivation of paddy, wheat and mustard, while it is used moderately in the cultivation of bajra and cotton. (4) However the tractor farms, the profit that of its farms study show cotton cultivation are very much higher than closely followed by wheat, paddy, bajra, jowar and mustard. In the case of bullock farms, the ranking are as follows: Cotton, paddy wheat, bajra, jowar and mustard.

Fiscal Aspects

Misra, P.N. (1981) "Optimal Government Expenditure Policy - A Case study of expenditure on social services in Gujarat, India" Working Paper No. 433

The objective of this project is to provide an empirically valid as well as theoretically sound optimal expenditure policy for the state of Gujarat. The project covers the following key areas viz., Education, Health, Family Welfare, rural water supply and rural housing, which incidentally is the major expenditure

incurred' areas of social services, which incidentally is one of the dominant expenditure area in the states' budget.

Three taluka of Gujarat viz. Dhoraji, Sanand, and Dharampura on the basis of categorization say high, medium and low level of development are selected for the study.

Misra, P.N. and Jayaraman, T.K. (1981) "Performance evaluation of sales tax administration : A case study of Gujarat" Vikalpa Vol. 6 No. 2

In most Indian states, sales tax is the largest source of finance. Yet no major attempt has been made towards a quantitative assessment of performance of tax administration to realize its full potential. For this one must study the factors involved and decide on those which play a comparatively important role in tax administration irrespective of the kind of tax structure in vogue or the variations in methods and styles in different states. This paper studies the problem in detail with regard to Gujarat though the approach could be equally well applied to any other state or region.

Misra, P.N. "Quantification of optimal role of Government expenditure on education for Regional development in Gujarat, India" Working Paper No. 510.

This paper, while acknowledging education as one of the key sector to foster growth and better distribution of goods and services in the maximisation of social welfare, provides an approach to achieve this task both in conceptual as well as quantitative sense.

While proceeding in this direction, this article tries to

resolve the following analytical cum policy questions.

(1) How to quantify impact of educational variables on other variables and vice versa (2) How to use these estimates to arrive at an optimal expenditure cum achievement policy? (3) Should such a decision be arrived at state level or at taluka level and if yes what are the likely benefits?

The study relates to the three typical talukas of Gujarat, viz. Dhoraji, Sanand, and Dharampur, representing developed medium level and backward regions respectively. The data is collected for the year 1961-62 to the year 1977-78.

The major findings of the study are: (a) Growth rates corresponding to regional decisions are much higher than the state level decisions, in respect of expenditure, domestic product and employment, which means that the absorptive capacity of expenditures, growth possibilities, and employment possibilities can be improved via regional decisions. (b) Expenditure on technical education should be given bigger push in backward regions than relatively developed regions. (c) Expenditure on technical education should be given highest priority, followed by primary education, secondary education and the rest of the other education.

Human Resources Development

Goyal, R.C. (1970) Labour Market Survey of Ahmedabad - Baroda Industrial region (Research Project)

The objectives of the study are: (1) To examine employment trend in the year 1970 and the employment situations in the late sixties of the selected region. (2) To review the activities of

the employment services say vocational training, and technical education programmes of central and state governments and company training programmes. (3) To appraise available market information and workers awareness of job opportunities. (4) To attempt to measure the degree of workers commitment. (5) To determine the exact and pattern of labour mobility, of technical and skilled manpower in various occupational categories. (6) To locate and identify various constraints and incentives operating in the regional labour market (7) To arrive at some helpful suggestions for better organization of the regional labour market in order to improve skills in short supply.

Two questionnaires were designed - one for the industrial establishments and the other for skilled and technical workers. Data was collected through personal interviews. The study gathered data on the characteristics of the labour force, the demand for and the supply of skilled and technical workers, sources of job information, pattern of labour mobility and recruitment attachment to industrial work, and training facilities.

Dholakia, Bakul H (1977) "Estimates of the working force in Gujarat An Analysis of the 1971 census data", Journal of the MS University of Baroda, Vol. 24 No. 2 (February)

The paper analyses the workforce participation rates among males and females in the Gujarat State for the year 1971, as obtained from the 1971 census, it compares these rates with the corresponding rates obtained for the year 1961, from 1961 census. Applying the detailed age-sex-area specific rates from 1961

census to the 1971 population, it tries to bring out the contribution of changes in the definition of a worker between the 1961 and 1971 census. The paper finds that changes in the definition of a worker between the two censuses - 1961 and 1971 plays an overwhelmingly important role in the observed decline in the overall worker population ratio. The age-sex-area composition describing the demographic factors play negligible role in the observed decline of WPR between 1961 and 1971 in Gujarat.

Pichholiya K.R. (1978) "Women Workers in metropolitan city : A study of Ahmedabad" Indian Journal of Labour Economics Vol. 20, No. 4 (January)

The basic objective of this paper is to (a) to examine the women at work in view of their socio-economic conditions based on sample survey data and (b) to support the ways for development of women employment opportunities.

The reference period of the study is April - 1976 to March 1977. The sampling process consists of three states (1) Selection of the city ward (2) selection of blocks from the selected ward (3) selection of households from the selected blocks.

This study is based on the data analysis of 46 households, comprising 53 women workers. This study pertains to Dariapur ward-II of Ahmedabad City.

Some of the very important findings observed in the study are: (1) Those households who are in dire need of economic necessities send their women for work. (2) Women working in office are endowed with a minimum standards of education (3) Women illiterates workers come from low income group segment of

households. (4) Also, unskilled women workers come from low income groups.

The author has made the following suggestions: (1) Work participation rate of women specially those coming from low income groups can be increased if government promotes self employment among those women through credit assistance and skill formation training. (2) Welfare organisation should take steps to promote self employment particularly for those section of households who are economically backward.

Maru, R.M., Murthy, Nirmala; and Satia J.K. (1978) Multipurpose worker scheme - A study of the pilot implementation in primary health centre-channi, Gujarat (Research Project)

This study is carried out to assess multipurpose workers schemes' strengths and weakness by evaluating its functioning in one PHC in Baroda district.

The study revealed that there are definite gains in terms of job satisfaction for the workers, and their credibility in the field. In this scheme, field supervision is more and better and workers waste far less time in travel. However, these gains do not seem to have enough considerable improvement in the performance of various programmes, Ahmedabad have been made to understand the reason for lack of improvement in the performance based on this study, the authors have recommended changes in work methodology, supervision, record keeping, community involvement and team work between male and female workers.

Pichholiya, K.R. (1980) "Child Labour in metropolitan city: A study of Ahmedabad, Indian Journal of Labour Economics, Vol. 22,

No. 4 pp. 99-106.

This paper attempts to pictorise the overall scenario of child Labour in Ahmedabad. The main objective of this study is (1) to examine socio-economic conditions of child labour, (2) To study the nature of their employment (3) to suggest wage for reduction of child labour. This study is based on personal interview.

The study makes the following observations: poverty is the major cause for increasing the number child labour in the country. Because of poverty many families are forced to send their children to work. In this situation it is reasonable to conclude that total eradication of child labour is neither feasible nor desirable at best it would be proper to eliminate the adverse working conditions of child labour.

Maru, R.M., Bhatt, Anil; Prabhakar, A.S and Upadhyay Bharat (1980) "CHW scheme in Gujarat - An evaluation" Working paper No. 395.

The main objectives of the study are: (1) to measure the performance of community health workers (CHW's) and to explain variance in performance. (2) To study the implementation of the scheme. This project draws the findings based on the data collected during a national study on CHW scheme.

Joshi, N.U. (1969) "Unemployment among the educated : A case study in Gujarat" Economic Times (October 28 and 29)

This article while analysing the acuteness of educated unemployment problem in Gujarat, provides an outlook of the problem which are likely to accentuate in the near future. The paper also comes out with some valuable suggestion after a very

careful and thorough diagnosis of the whole crux of the problem.

The data base "Graduates registered with official employment offices between the years 1965 and 1969" serves as the base of this article.

While forecasting that during the fourth plan about 10,500 engineers, 21,800 science graduates and 20,000 commerce graduates will be left unemployed. This paper predicts employment opportunities during the fourth plan are likely to increase. The paper forecasts that during the fourth plan about 10,000 weavers, 7000 window, 5700 computing workers, 2100 furnacemen, 1700 machines repairmen, 1400 blacksmiths, 4000 electricians, 8000 wiremen and cable jointers. 4500 plasterers and bricklayers and 10,500 machine tool operators would be required.

This article summarises some of the traditional causes responsible for unemployment, viz., inadequate educational preparation, racial and religious discrimination, high salary expectations and immobility or unwillingness to work in other places of the country, in addition to this, it also identifies that the basic cause of graduate unemployment in the country is because of greater preference attached to "white-collar" jobs. Some of the other causes identified by the study are:

- (1) Rate of economic growth is very much insufficient
- (2) Ill equipped economic policy particularly the one which is not oriented towards making the best use of human resources
- (3) Lack of information about job availability.
- (4) Lack of facilities to work in rural areas, i.e. existence of limited economic

incentives for graduates to work in villages. (5) Low salaries paid to "blue collar jobs" discourages unemployed to take up such jobs.

This article concludes with the following suggestion, to mitigate the problem of unemployment particularly the educated unemployed in Gujarat.

(1) To accelerate the rate of economic development, by tapping unused human resources (2) To ensure in our economic plans that expansion in all different sectors is oriented towards making best use of human resources. (3) Jobs should match the academic background of the candidate, for instance he suggests that engineers should work in construction and production processing, scientists should be employed in exploration and utilization of natural resources, while arts and commerce graduates should be given the task of managing the administration. (4) Academic system should be oriented towards the man power requirement of the economy, i.e., admissions to academic institutes should be in harmony with manpower needs of the economy. He calls for a link between the academic institutes and other development sectors of the economy (i.e. employment generation sectors). In this connection, he suggests that the syllabus of the academic institutes should be made flexible i.e. frequent changes should be made to suit the needs of the employer.

Finally he suggests that the technological base should be improved (increased) in different sectors of the economy to alleviate the overall problem, of unemployment.

Sheth, N.R. (1981) "Industrial relations in Gujarat", Working

Paper No. 391.

The author examines the popular beliefs about the industrial relations system in Gujarat in the light of some quantitative data and other information based on personal observations and discussions. It is argued that the relatively peaceful and consiliatory climate of labour management relations in Gujarat is a product of the Gandhian legacy the cultural pattern of the region, the nature of leadership in industry and tradeunion, the main characteristic of the working class and the positive approach adopted by politicians and administrators are concerned with labour issues. The paper also points out that industrial relations in Gujarat have undergone rapid changes in the context of changes taking place in the industrial structure, the socio-economic composition of workers, the systems of management and the ideological basis of trade union leadership. The author suggests that it would useful in the long run for all sections of the industrial community in Gujarat to make a realistic assessment of the changing situation and find ways to retain the strength of the traditional system in the face of the challenge posed by a variety of factors.

Urban Development

Pichholiya, K.R. and Tripathi B.L. (1975) "Urbanisation in Gujarat : (1) Rapid growth in last decade (2) Disposal of urban centres" Economic Times Vol. 1 No. 59,60 (May 6 & 7) pp. 7 & 5.

This paper examines the process of urbanisation and the factors leading to the growth of urban development, particularly during 1961-71 in Gujarat.

While summarising the growth of urbanisation over the years from 1961 to 1971 this article identifies the following factors as some of the many important which behaved very crucial for urbanisation in Gujarat. The important ones are agricultural development, particularly the growth of cash crops, industrialisation, trade and commerce, and transport facilities.

Bhatt, Anil "Baroda's experiment in Urban centralisation" Working Paper No.179.

This project evaluates the overall performance of urban decentralization scheme of the Baroda Municipal Corporation; the methodology of the study, includes collection of data, and other techniques like on the spot observation, interviews etc.

The major findings of the study are: (a) The urban decentralisation scheme has been successful in providing more services very efficiently and quickly than before (b) However some major administrative defects, which if removed could make the scheme more effective. (i) Too much paper work (ii) confusion and conflicts among the centre office and (iii) Lack of planning and scheduling etc.

On the basis of the above findings, the author has recommended the following (i) Setting up of a coordination committee with the commissions as Chairman at the head office level to avoid confusion and conflicts about powers and functions. (ii) Reduction of paper work and procedures (iii) Setting up of citizens committee at each ward level to determine and adhere to the planning and scheduling of work. (iv) extension of the scheme to cover the whole city.

Pichholiya, K.R. (1982) "Poor and the Government (A case study of Ahmedabad" Indian Economic Almanac, Vol. 2, No. 3 (September-October).

In the present paper an attempt has been made to portray and examine the position of urban poor, on the basis of indicators, such as housing, education, medical and health care. This study is based on a random sampling of 200 households in Ahmedabad. The reference period of the study is between April 1976 to March 1977.

The study reveals, that during the period 1956-69, under the slum clearance scheme, only 8,044 tenements were built for the whole of Gujarat, as compared to the total need of 80,000 such tenements for Ahmedabad city alone and that only for hutment dwellers. Thus the progress made in housing for the poor was highly unsatisfactory.

The study, further reveals that municipal and government schools catered by and large to "low socio-economic groups" however, since the standard of teaching is very poor at the Municipal and government run schools even the poor (33%) were compelled to send their children to private schools for better education.

Also the study finds that the poor received very perfunctory medical treatment, for instance nearly 50 per cent of the urban poor have taken up medical treatment under private doctors.

An assessment of the note of the government has brought forth the harsh fact that only 9.9 percent of the respondents replied that government had taken steps to remove poverty.

Bhatt, Anil; Giridhar, G; and Monappa, A (1984) The urban community development evaluation (Monograph No. 56)

The objectives of this project are: (a) to extend basic civic services to the identified urban poor living in slums (b) to encourage participation of the community on a local neighbourhood basis and (c) to enhance and coordinate various activities by sectoral departments and voluntary organisations to reach the urban poor.

This study is based on a community based evaluation.

The methodology of this study comprises : field survey of UCD beneficiaries, discussions with UCD officials, programmatic information recorded by the field workers etc.

Ganapathy, R.S. (1984) "Urban agriculture : Urban Planning and the Ahmedabad Experience" Working Paper No. 530.

This paper, based on experimental study of Ahmedabad, brings forth the historical transition of urban food system and develops alternatives for urban planning with a special focus on urban agriculture.

The author of this paper observes that the present urban development programme is basically concentrated on creating physical structures, which are discriminative to the large segment of poor living in urban areas, suggests promotion of urban agriculture to meet the minimum needs of the urban poor.

This paper also discusses the planning issues involved in urban agriculture in India, reviews the specific case studies and

experiments in Ahmedabad and generate public policy options for urban agriculture.

Ganapathy, R.S. and Padmanabhan G (1984) Household energy behaviour and urban development : The case of Ahmedabad" Working Paper No. 548.

This paper develops a conceptual framework and describes a case study of household energy behaviour in Ahmedabad. Household energy is assessed from the demand and supply sides. This case study is based on a survey of 300 households and also involves the usage of secondary data. The results link energy consumption to cooking patterns, technology and source availability. These scenarios for the household energy use in the year 2000 are constructed and policy instruments and programmes to achieve a desirable scenario that is sustainable, equitable and efficient are developed. Some general policy options are also discussed.

Pichholiya, K.R. (1984) "Rural to urban migration : A case study of Ahmedabad Indian Economic Almanac (October-December) p.71-72.

This article attempts to study the migrant households in Ahmedabad city in the light of their pre-migration status and also their status after coming to Ahmedabad city. Also, this article studies the role played by the rural 'push' and urban 'pull' factors. The reference period for this study was April 1976.

The main findings as revealed in this study are: (1) Majority of the migrants to urban areas come from smaller villages. (2) Rural to urban migration takes place purely due to economic reasons, (3) Majority of rural migrants being unskilled

hence they were recruited more in low paid jobs. (4) The percapita income level of rural migrant settled in urban areas is very much below the poverty line.

Pichholiya, K.R. (1987) "Economic activities of urban poor : A case study of Ahmedabad" National seminar on Development programmes for the urban poor, held at Indian Institute of Public Administration, on February 2-3.

In the present paper an attempt has been made to portray and examines comprehensively the economic activities of the urban poor of Ahmedabad City. The study uses a sample of 200 families of the city drawn by random sampling method. This study has worked out "Poverty line" as those families whose percapita monthly income is less than Rs. 85. This study is based on the reference year 1978.

This study has yielded the following results: (1) Majority of poor developing in the city are engaged in the informal sector. (2) Slow pace of growth of the formal sector, has reduced the employment opportunities of the poor living in the city. (3) Unskilled and low level of education among the urban 'poor' has denied them employment in the formal sector.

Based on the above findings, the study suggests that: (a) Government should strengthen and promote the formal sector. (b) Informal sector should be well organised, so that the productivity and earning skills should be inter-linked. (c) Introduction of large cooperative organisation would not only improve the earning potential among the urban poor, but would also help to reduce the unemployment problem among the urban

poor, and hence alleviating poverty in the city.

Transportation

Mote, V.L. Patel, N.R., Raghavachari, M. and Paha, J.L. (1975)
Study for computerized Bus scheduling at Gujarat state Road
Transport Corporation (Research Project)

The GSRTC is increasing its trips at the rate of 10 per year and it is now operating 25000 to 30000 trips a day. The preparation of the time table for operating so many trips takes three to four months. A computer-based procedure for preparing the time-table will have advantages over the manual system (i.e.) the number of buses and servers required can be reduced, fuel cost can be brought down, and more data will be available for scheduling decisions.

Ankolekar, Suresh and Pantya, Kamini (1984) Operational planning for Surat Division of GSRTC (Research Project)

The objective of the project is to explore the possibilities of using or techniques and computers for operational planning in state Road Transport Corporation's. The scope of the present project has been extended to include finalization of trip timings in addition to the vehicle scheduling part of the operational planning. This is expected to result in substantial savings in the fleet size requirement.

Housing

Issac, A.M. (1978) "A blue print for the design of a human settlement in Ahmedabad" Working Paper No. 219.

This paper presents a blue print for developing an integrated human settlement in Ahmedabad City. The paper provides design specification for constructing nearly one lakh houses of which atleast about 50 per cent of them will be reserved for economically weaker sections. Also, this paper explores the ways and means of finding settlements for slum dwellers in the city. In addition to this, it discusses certain organizational prerequisites which are very necessary for the successful implementation of the project.

Issac, A.N. and Papola, T.S. (1975) A study of the working of the Gujarat Housing Board (Research Project)

This paper's central focus is to examine the following specific areas making suitable recommendations and guidance improving the performance of the Gujarat Housing Board.

- (1) Augmentation of financial resources
- (2) Activity mix of the board
- (3) Gestation period and technology of housing projects
- (4) Demand surveys for housing.

Issac A.M. (1977) Management of Slums in Gujarat (Research Project)

The study covers the following seven cities of Gujarat having a population of more than a lakh. Thus, the study selected Ahmedabad, Baroda, Surat, Nadiad, Rajkot, Jamnagar and Bhavnagar. The main objectives of the study are: (1) To evolve effective steps so as to improve the environmental conditions of existing slums which are unlikely to be cleared in the near future. (2) To take effective steps to promote employment potential of slum dwellers and to create suitable conditions to promote the quality

of life. Provision of minimum necessary socio-economic facilities. (3) To strengthen the internal organisation of the Gujarat slum clearance board, in order to tone up the efficiency of slum management in the state.

Dholakia, Bakul H (1978) "Economic benefits of public housing - A case study of Ahmedabad City" Working Paper No.266.

This article tries to explore the economic benefits of public housing in Ahmedabad city, based on the following objectives. (1) Examining the general economic benefits of public housing using indicators such as household life, level of education, housing conditions and household income; (2) to measure the effects of public housing based on the savings potential of the occupant households, (3) assessing the impact of public housing on the general level of productivity of the workers in the occupant households; and (4) examining the factors underlying the demand for public housing.

Primary data for this study was collected from 298 households of Ahmedabad City during the period February and November 1978.

The methods of the study involves the benefits derivation of the values of selected variables such as income, saving, productivity, etc. for different categories of households belonging different period of time.

The major findings of this study are: (1) Economic benefits of public housing derived by the occupant households are of a significant magnitude and varied in nature. (2) Availability of public housing leads to a marginal increase in the household size

and also in the general level of education of the members of the occupant households. (3) Availability of public housing lead to a significant improvement in the general housing conditions for the occupant households. Also the study indicates a positive relation between availability of housing and educational level. (4) Availability of public housing exercises a favourable influence on the average household income and leads to an increase in the average annual expenditure on consumer households, both of which indicate a significant improvement in the general living standard of the occupant households. (5) Availability of public housing leads to an appreciable improvement in the general level of health of the occupant households.

Finally, the study lists out the following major factors underlying the demand for public housing viz. desire to own a house; desire to have more space, better accommodation and a better locality on the part of the prospective users of such houses.

Demography

Satia, J.K. Maru, R.M. Murthy, Nirmala and Pathak H.N. (1984) Strategy formulation for fertility reduction in Gujarat (Research Projects)

This paper is intended to help the Gujarat's Health and Family Welfare department, in order to develop new alternative strategies for fertility reduction. During the year, three interrelated set of research exercises were done.

(1) A target setting exercise with the aid of a computer

model. (2) Analysis of macro performance data to study regional variations in inputs and outputs. (3) Management of diagnostic case studies in three districts of Gujarat.

Subramanian, A.K. and Mehta, Mona (1984) " A profile of voluntary health effort in Gujarat" Working Paper No. 509.

This paper presents a profile of voluntary health agencies in the state of Gujarat. It is based on a survey of about 100 such agencies in the state. The paper discusses the pattern of distribution of voluntary agencies in the state, their services and reach. Their work in reaction to the state is also discussed. Satia J.K. Murthy, Nirmala Maru, R.M. Pathak, H.N. and Baktha, M.R. (1985) Strategy formulation for family welfare programme in Gujarat (Research Project)

This study tries to examine the following questions: (1) What should be done to increase the acceptance of family planning methods in Gujarat to achieve the objective of NRR (net reproduction rate) of one by the year 1991? (2) Is change in strategy necessary in the current family welfare programme? (3) If so, what should the changes be?

The methodology, of the study involve discussions with officials, literature survey, trend analysis of performance, a case study of three districts a client survey a small survey of funtionaries and a case study of family planning programme in Maharashtra.

The study yields the following 'key' results:

(1) There is considerable variation in performance due to under/unutilized resources and administrative bottle necks. The main strategic move is to strengthen monitoring. (2) Clients fear

failure or physical harm through family planning methods. This requires improving quality of services and relevant information tools say educational materials, should be given. (3) There is need to change the method mix from sterilization to non-terminal methods. (4) The study calls for the need to change or restructure urban family planning programme. (5) Non government organizations are not systematically involved especially in low performing areas. Strategy for involvement of community organizations need to be developed. (6) Family planning system should be strengthened at the district level in order to facilitate better match between client needs and organizational effort. (7) In the long term, the strategy should be to reduce infant mortality, increase female literacy and institute a system of incentive for small family.

Social Welfare

Saiyaddin, M.S. and Monappa Arun (1978) A study of Employees State Insurance Scheme in Ahmedabad (Research Project)

The study tries to investigate and bring out the major problems faced by the insured person under the ESI scheme. More specifically, the paper looks at the concerns of insured persons in such areas of social security as medical care, cash allowance, maturity benefits, funeral allowance, and death and disablement compensation. Also the paper highlights the insured persons knowledge level about the scheme and help provided by factory, unions and various ESI offices. In addition to the above explorations, this study intends to suggest modifications, if any to make the scheme more meaningful.

Rangarajan C and Srivastava U.K. (1978) Cost effectiveness of Beggars Homes, Children's Home and after - Care home in Gujarat (Monograph)

The objectives of the study are to: (1) measure the benefits of existing activities undertaken by selected institutions in relation to costs incurred (2) examine the relevance of activities being undertaken in relation to employment opportunities of inmates after leaving these institutions. and (3) examine the viability of these institutions and reduce dependence on public funds without diluting the objectives of these institutions.

The study is based on primary and secondary data for the four categories of institutions; viz. beggar's homes, women protection centres, certified schools and Vikas Griha.

Some of the recommendations made in the study are: (1) In expenditure allocation, it is necessary to economize expenses on supervisory and clerical staff and strengthen both the craft instructor -inmate ratio (particularly in the case of beggars and children's home) and the infrastructure for psychological and physical rehabilitation of inmates. (2) In the training programmes at beggar's homes and children's home (certified/special schools), it is necessary to draw up a proper syllabus. Since the inmates in these type of institutions stay for a longer time, it is necessary to devise a plan by which able to died inmates (who constitute a large percentage of the total inmates) can yet involved in relevant training and they can then be put to activities generating revenues for the institutions.

This type of arrangement will have two advantages: (i) the inmates will find the training useful after their release. (ii) the dependence of institutions on government resources will be reduced. Since the magnitude of people needing help of the type rendered by these institutions is very large in relation to inmates actually catered to, the lesser these institutions are dependent on government the more is the possibility of opening similar such institutions elsewhere.

Pathak, H.N. and Bhatt, Anil (1979) Training Needs of Mamlatdars. (Research Project)

The study has been undertaken to ascertain the training needs of mamlatdars an important district level functionaries and to recommend to the Government of Gujarat a package of training programmes with details such as types, duration, curriculum periodicity, pedagogy, faculty development etc.

The methodology includes : field survey, indepth unstructured interviewing and use of government records.

The main recommendations of the study are: (1) core training programme for all promoted mamlatdars of six weeks duration (2) The programme would include modules on (a) social and political issues and processes (b) organisational behaviour (c) office organization, (d) Indian administration and (e) public management. (3) Periodical interface workshops of mamlatdars, their administrative supervisors at district level, and political leaders of the area. (4) Periodical reinforcement and refresher workshops (5) Training for special functions e.g. floods, famine, crime management visits and disturbances etc. (6) Training agency should plan to have a minimum core of trainers of their own

instead of depending predominantly on guest faculty for executing the training programme. (7) Attempts should be made to develop relevant material and participants in the programme should be asked to collect and bring some of the material before the commencement of the regular training session.

Ganapathy R.S. (1983) "A nutrition profile of Ahmedabad" working paper No. 483.

This paper surveys the nutrition position in Ahmedabad in relation to its socio economic context, identifies and analyses major problems associated with it, also reviews the emerging trends and suggests some tentative recommendations for its improvement in future.

This paper is based on secondary data comprising informal discussions and observation. The highlight of this paper apart from very useful suggestions is its identification of number of unexplored researchable areas.

General Management Studies

Bhatnagar, S.C., Jajoo B.H. and Jain Rekha (1987) Government of Gujarat, Computerisation of applications at the district levels (Research Project)

The objective of this project is to identify and implement applications on computers at the district level.

Bhatnagar, S.C. Bhatt, Chetan and Pandya, Kamini (1987) District Information Centre : Surendranagar Experiment (Research Project)

The central focus of this study are: (a) to install a computer system in a district headquarter and implement various

decision support application for different sectors (b) To train district officials to run the computer centre and implement new applications (c) To develop software which can be used in other districts and (d) to enable the centre to function as a demonstration site for other districts.

Chokar, J.S. (1987) Organisational climate of GSRTC (Research Project)

The purpose of this project is to study the organisational climate of selected depots/divisions of Gujarat State Road Transport Corporation.

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