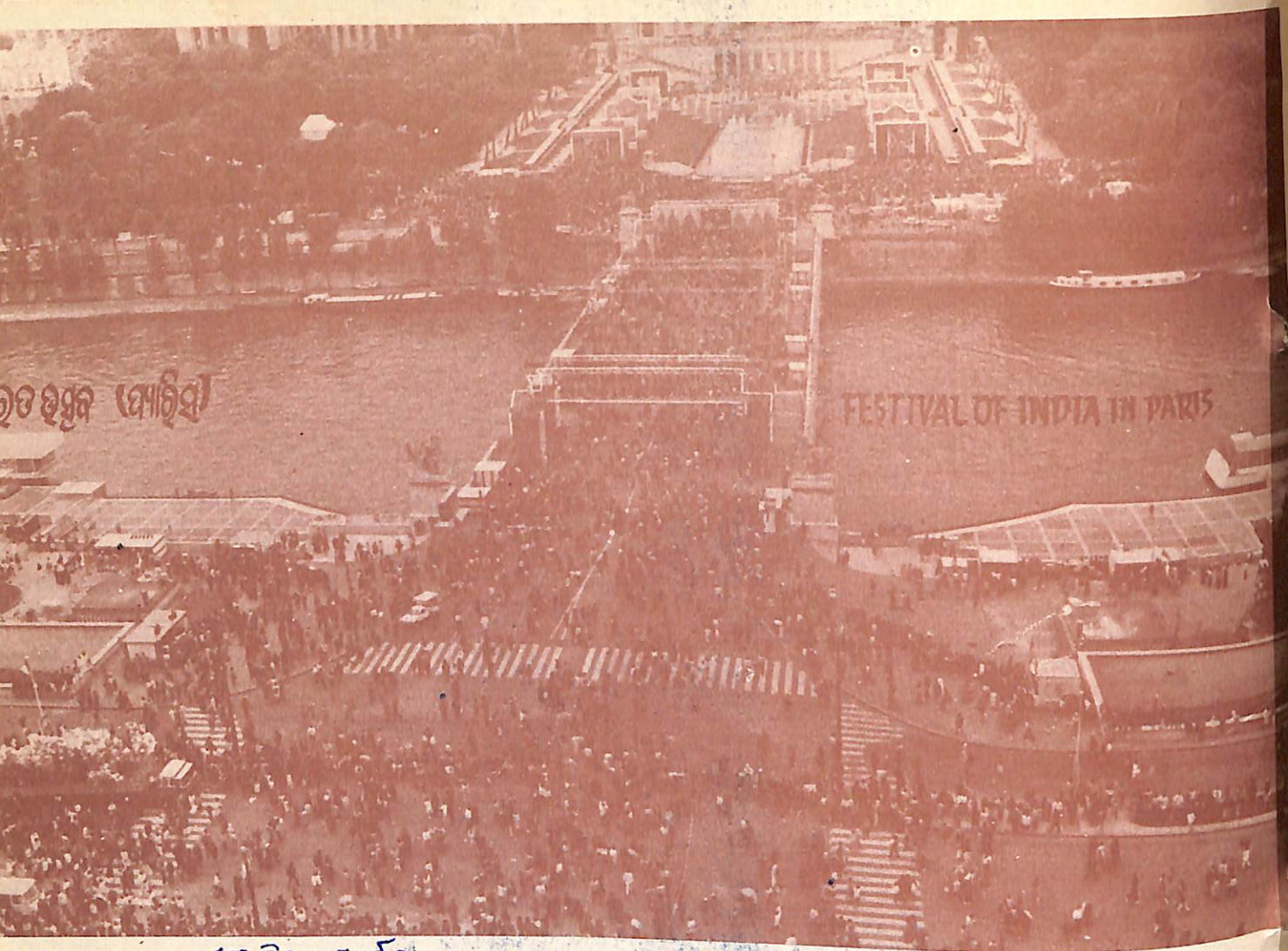
ORISSA REVIEW



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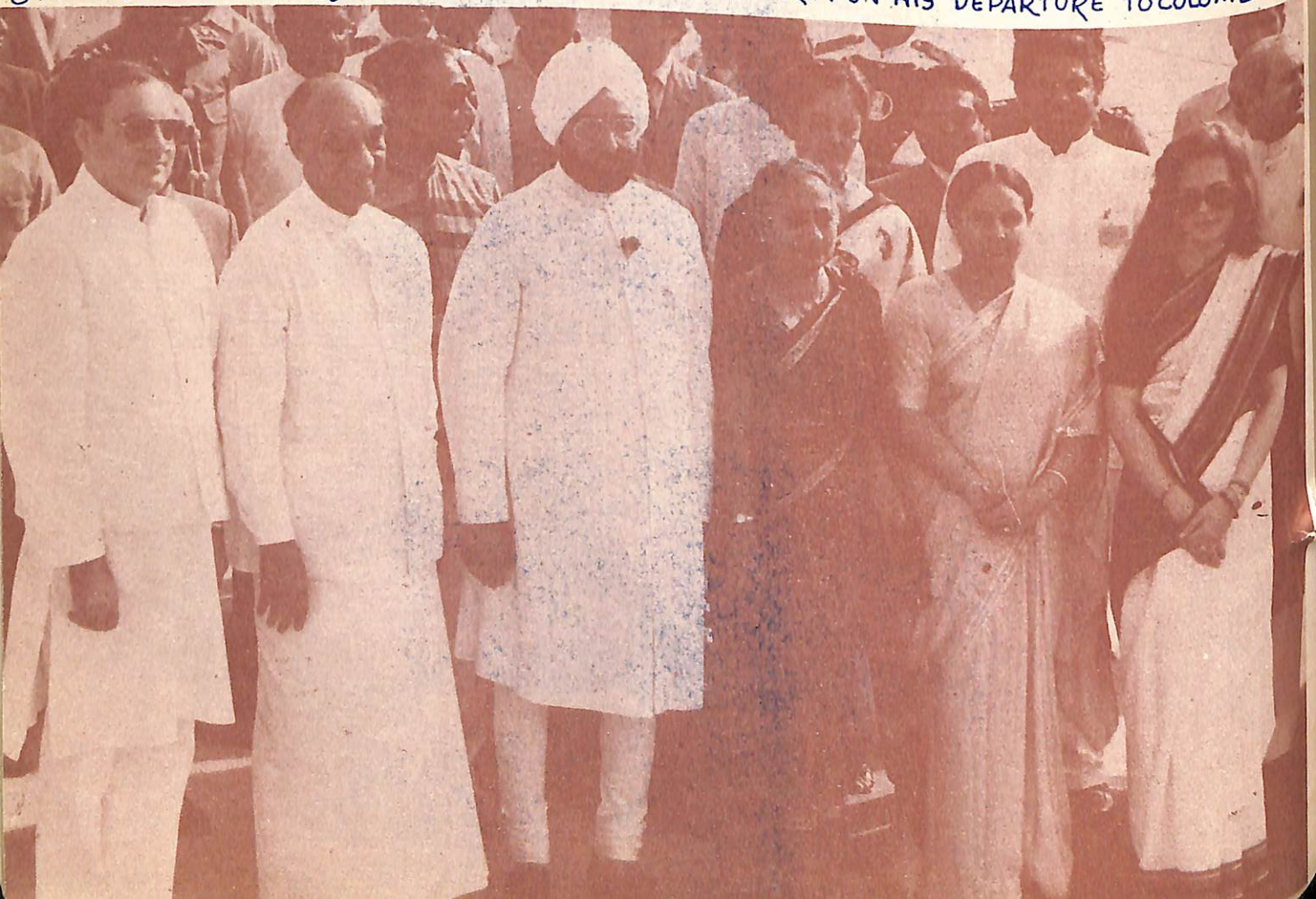

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ORISSA BUDGET 1985-86

Shri Gangadhar Mohapatra
Minister
Finance Law and Orissa

The Budget Estimates of 1985-86 along with the Revised Estimates of 1984-85 have been presented in the Orissa Legislative Assembly. This august House had passed the Vote-on-Account Budget in the month of March, 1985 as the State's Annual Plan Outlay had not been determined by the Planning Commission and the final intimation regarding our share in the Central Taxes, Central Plan assistance and levels of market borrowings had not been received from Government of India. The outlay of the Seventh Five-Year Plan has been quite impressive with Rs. 2,700 crores. It registers an increase of 80 per cent over the original Sixth Plan Outlay of Rs. 1,500 crores. As against an Annual Plan of Rs. 400 crores in 1984-85 we have got an outlay of Rs. 450 crores in 1985-86 as approved by the Planning Commission. Keeping in view the urgent requirements of various sectors and the need for accelerated development in the State we have decided to enhance the Annual Plan Outlay to Rs. 486·23 crores. While doing this we would simultaneously ensure that the deficit in the State Government's account remains within the limits prescribed by Planning Commission and the Ministry of Finance, Government of India.

We all know Orissa's economic development has lagged behind for very many historical reasons even though we are so rich in natural resources. The State has been categorised as a revenue deficit State by the successive Finance Commissions including the Eight Finance Commission, qualifying for grant-in-aid to bridge the gap between the revenue receipts and expenditure. This means that the State even with the Finance Commission's award is not left with adequate resources for plan financing. This calls for mobilisation of additional resources for having a plan of meaningful size. Orissa has not lagged behind in mobilisation of resources and commensurate with our efforts at resource mobilisation and in consideration of our special problems, the Planning Commission have given us Central Plan assistance. We have also an impressive programme in respect of externally aided projects which would enable the State Government to get substantial additionality to our resources in shape of Central Plan assistance.

In spite of the fact that the State has a narrow resource base and it is often affected by natural calamities, our achievements in the past have been impressive as would be disclosed in the course of my speech. Our growth rate during the Sixth Plan period is higher than all-India average. The gap between the national *per capita* income and the State's *per capita* income is being progressively narrowed down. As a rice growing State we have done well. We have diversified our cropping programme giving due importance to the production of pulses and oil-seeds. An ambitious programme for increasing the irrigation potential in the State had been taken up during the Sixth Five-Year Plan and we would continue to give the same emphasis to the implementation of

irrigation projects in the State. A viable industrial infrastructure and a new climate of industrialisation and entrepreneurship has been generated in the State during the last five years and we intend to accelerate this process in the coming years. A dent has been made in rural poverty through our massive anti-poverty programmes. 14·30 lakh families were assisted under the various anti-poverty programmes including 3·66 lakh Scheduled Caste and 4·27 lakh Scheduled Tribe families. 6,531 villages were electrified taking the total electrified villages in the State to over 50 per cent for the first time. Over 17,000 pump sets were energised during the Sixth Plan period alone in contrast to the less than 13,000 achieved till the end of the Fifth Plan. 22,357 villages out of the identified 27,077 having acute problem of drinking water, have been provided with tube-wells. In the background of the above achievements we have every reason to hope for sustaining the pace of development during the Seventh Plan.

The main objectives of the Seventh Plan will be application of resources for increase in output everywhere particularly food production and creation of employment opportunities for eradication of poverty. Adequate irrigation potential will have to be created for increasing food and other agricultural output. Infrastructural facilities will have to be provided in addition to power generation capacity made to facilitate expansion of the industrial base and ensuring a high rate of growth in the industrial sector.

While aiming for a higher overall rate of growth, however, our attack on poverty will be continued through different anti-poverty and rural development programmes and special programmes for the Scheduled Castes, Scheduled Tribes and other weaker sections of the society. Our aim would be to provide productive employment to the majority of job seekers. The standards of health care services would have to be improved. Educational facilities will have to be diversified so that education becomes more meaningful and relevant to our time. Our Prime Minister has laid great stress on far reaching qualitative changes in our educational pattern. This Budget is an exercise in that direction.

I like to present here some ofour programmes in various spheres of developmental activities. Agriculture being the main occupation of the people of the State, our Government have proposed a specific strategy for ensuring higher agricultural production. During 1985-86 we have fixed a target to cover 71·21 lakhs hectares to achieve production of 72·73 lakh tonnes of foodgrains. Besides under cash crops like jute and sugarcane also, there is a specific programme to cover 153,000 hectares under cropping. To achieve these targets in foodgrains and cash crops in the sphere of agriculture, we have adopted a strategy to increase the productivity under irrigated and rain-fed conditions through improved farming practices. Since a vast chunk of agricultural land in our State comes under dry land farming, there is a specific programme to adopt improved dry land farming practices and diversion of marginal paddy lands to ragi and maize. While covering the marginal lands under millets and other non-paddy crops, we have simultaneously got a specific programme to expand the area under High Yielding varieties of foodgrains. For maximising rice production in the State, a special Rice Production Programme was launched in 7 Blocks with Central assistance during 1984-85. The scope of the programme will be extended to additonal 56 Blocks in 1985-86 for the State to play its due role in the National Rice Production Programme. Under this Programme, it is proposed to distribute Minikits, Fertilisers, Pesticides and improved agricultural implements at subsidised rates to the farmers. During the current year, it is programmed to distribute 1·60 lakh tonnes of fertilisers as against 1·14 lakh tonnes of fertilisers supplied to the farmers during 1984-85 with a view to increasing *per capita* consumption of fertilisers by the farmers. It is expected that this will go up further in course of time.

The Orissa University of Agriculture & Technology is engaged in conducting research in various fields of agricultural science, besides imparting teaching to the Technical Graduates. Various Extension Programmes and Demonstrations for imparting technical knowledge both to the farmers and the students are also undertaken by the Orissa University of Agriculture & Technology.

Crop (Loan) Insurance Scheme for the first time was introduced in our State from 1981 Khariff on pilot basis in 15 Blocks. Paddy was the only crop covered under this scheme. The scheme was voluntary. Gradually it was extended to other Blocks and during the year 1984-85 the scheme covered 160 Blocks.

This scheme was withdrawn with effect from 1985 Khariff as per guidelines of Government of India. Government of India came forward with another new scheme known "Comprehensive Crop (Loan) Insurance Scheme". This new scheme is compulsory in the sense that whoever avails crop loan from Co-operatives, Commercial Banks and Regional Rural Banks automatically come under the scheme. It is envisaged that the new scheme will cover five crops, namely, paddy, wheat, millet, oil-seed and pulses and will be applicable throughout the State.

It is under active consideration of the Government that the scheme will be introduced in all 314 Blocks in respect of paddy only from the current Khariff season. Basing on experience other crops like wheat, millets, pulses and oil-seeds will be gradually covered.

During the Sixth Plan period under Soil Conservation activities, Water Harvesting Structures, Gully Control measures were given sufficient importance. During the current financial year, an estimated provision of Rs. 168·86 lakhs has been made under the State Plan for covering tree plantation in 8,411 hectares. Besides, 3 new River Valley Projects, namely—(*i*) Integrated Watershed Management in catchment of flood prone river Subarnarekha, (*ii*) Soil Conservation in Upper Kolab, and (*iii*) Soil Conservation in Indravati Catchment as well as a new Scheme, viz., Pilot Project under dry farming areas will be taken up at an estimated cost of Rs. 123·96 lakhs under Central Sector Scheme. Under 20-Point programme, 39·83 lakh trees will be planted and soil conservation measures will be taken up in 200 mini-watersheds.

Fisheries, Animal Husbandry and Dairy Development activities are allied to the agricultural sector. An annual plan outlay of Rs. 2·9 crores for 1985-86 has been provided for fisheries as against the last year's provision of Rs. 2·45 crores. In order to increase fish production, supply of quality fry and fingerlings is one of the important pre-requisites. 7·5 crores of fish seeds have been produced during 1984-85 and it is programmed to raise the fish seed production to 12·50 crores during 1985-86 for supply to the private pisciculturists and to the Community Grama Panchayat tanks in the rural areas. Under IDA-assisted Inland Fisheries Project, modern hatcheries with a total area of 77 hectares are being set up for production of 81 million fingerlings. 11 Fish Farmers' Development Agencies under the World Bank assistance have been set up with the object of development of pond area and for giving training to private pisciculturists. It is intended to develop 2,700 hectares of water area and train about 3,000 fish farmers during the year 1985-86. In 55 reservoirs, Reservoir Fisheries Development programme has been taken up. For developing Brackish Water Fishery in our State, there are two Brackish Water Fishery Development Agencies covering the four coastal districts. After an intensive survey, an area of about 14,900 hectares is found suitable for brackish water fish farming. So far in about 300 hectares in the State, brackish water prawn culture has been developed. We want to give a further boost in this programme during the current year. To improve marine fishery activities, several Marine Fishermen Co-operative Societies have been organised and there is a programme to construct a number of small jetties in the seacoast during the Seventh Plan period. It is aimed to have a total fish production of 120,000 MT. during the year 1985-86 as against 112,000 MT. of the preceding year.

The programme for Animal Husbandry and Dairy Development aims at improvement of livestock, better feeding, scientific management practices and improved health cover measures. The Artificial Insemination Programme through frozen semen technology is expected to be commissioned at Bhawanipatna, Balangir, Koraput and Phulbani. The frozen semen banks in these places are in the process of being established. Since the success of Cattle Development Programme depends on availability of fodder to a great extent, farmers are being encouraged to take up fodder cultivation in their own lands for which seeds and plant materials are being supplied.

During the current year, it was proposed to extend backyard fodder cultivation on a massive scale. Coverage of 625 hectares of Government land under this programme is also envisaged.

Even though our State accounts for just 5 per cent of the geographical area of the country, it has about 8 per cent of the country's forest area. Out of the total area of the State only 16 per cent is under the Reserve Forests and the rest forest area is under protected and unclassified forests. The State Government in line with the policy adopted by the Government of India while having a strategy for conservation of precious natural resources at the same time aims at harnessing the exploitable potential of the forests not only to meet the needs of the people but also to ensure flow of revenue to the State Exchequer. The main objective and strategy of the Forest Plan during the Sixth Plan was development without destruction. In keeping with this, a massive plantation programme was undertaken under the State Plan, Centrally Sponsored and Central Plan which all accounted for an achievement of 221,070 hectares during the Sixth Plan period. The target of plantation and rehabilitation for 1985-86 are 45,860 hectares and 45,962 hectares, respectively. As per the directives of the Government of India to increase the tempo of plantation, the State Government have constituted the Orissa Plantation Development Corporation recently. One externally aided Project known as Social Forestry Project founded by the Sweedish International Development Agency has been commissioned during the year 1984-85 and for the current year an area of 10,150 hectares is likely to be brought under plantation and rehabilitation for which 75 lakh seedlings are to be distributed free of cost at a total financial outlay of Rs. 4·70 crores. This is a people's programme which will be implemented in rural areas and will generate additional employment. This project has a bias for weaker sections of the society. Steps are being taken to strengthen the protection organisation of the Forest Department in order to check illicit felling and smuggling of timber. 5 Units of Armed Police Force are to be provided during the current year in strategic places to check organised smuggling.

Kendu leaf is an important forest produce in our State. Exploitation of kendu leaves is purely a labour intensive proposition and provides gainful employment to a large number of Scheduled Caste and Scheduled Tribe persons. Nationalisation of kendu leaf trade has succeeded in having better production of leaves and generating more revenue for the State Exchequer while ensuring fair wages to the pluckers and processors of kendu leaves.

In our State only 26 per cent of agricultural land is irrigated and therefore, bringing more additional crop area under irrigation facilities is an important strategy in our development programme. The State Plan outlay for the current year for Major and Medium Irrigation has been kept at Rs. 90·70 crores under the State Sector and with this investment it is programmed to create additional irrigation potential of 8,140 hectares in Kharif and 7,960 hectares in Rabi. Under the Central Sector Programme of Potteru Irrigation Project, an additional irrigation potential of 13,000 hectares in Kharif and 3,000 hectares in Rabi is programmed. During 1985-86 an outlay of Rs. 46·61 crores is provided for Major and Medium Irrigation Projects in the State and Central Sector under Tribal Sub-Plan to create additional Irrigation potential of 15,240 hectares in Kharif and 5,000 hectares in Rabi. The cumulative anticipated achievement by the end of 1985-86 would be 79,680 hectares in Kharif and 31,690 hectares in Rabi in the Sub-Plan area to benefit especially the tribal farmers.

The Lift Irrigation Corporation has programmed to install 500 Lift Irrigation points to create irrigation potential of 24,000 hectares both in Kharif and Rabi in 1985-86. There is also provision of Rs. 12·00 crores for completing a number of on-going Minor Irrigation Projects to provide additional potential of 4,000 hectares.

Orissa being prone to recurrent flood almost in every alternative year, the State Government have a specific responsibility to take measures for flood control and for this a provision of Rs. 3·00 crores has been made to strengthen various flood protection embankments.

In recognition of the great importance of building up of adequate capacity of power generation for the development of the

State, special emphasis will be given to this sector. Priority has been given to complete the spill-over Hydroelectric Projects of the Sixth Plan, viz., Rengali, Upper Kolab and the 7th Unit of Hirakud Power Project which will provide additional installed capacity of 377·5 Megawatt. It has been programmed to commission the 1st Unit of Rengali Hydroelectric Project in July, 1985 and the 2nd Unit in December, 1985 and the 1st Unit of Upper Kolab in December, 1986 and the 7th Unit of Hirakud Project in July, 1987. It will be our endeavour also to commission the 1st Unit of Upper Indravati Hydroelectric Project before the end of the Seventh Plan. A new Corporation for Thermal Power Project has been constituted for execution of Thermal Power Project in the coal bearing Ib valley in Western Orissa. Considerable progress has been made in this direction and all possible steps are being taken to obtain clearance of the Planning Commission for execution of this Thermal Power Project.

Rural electrification is of vital importance for giving boost to the productive activity in the villages. Till the end of the Sixth Plan period 23,762 of our villages have been electrified out of a total of 46,992 which is slightly over 50 per cent. Our endeavour will be to electrify at least two thirds of the villages of the State by the end of the Seventh Plan period.

Energisation of pump sets will keep receiving the importance which has been attached to it during the Sixth Plan.

As already mentioned earlier, a new climate of industrial progress and a new spirit of entrepreneurship has been created in the State during the last 5 years. The tempo of industrialisation would be maintained through the provision of different incentives and joint sector participation. Before 1980-81, there were only two Spinning Mills in the co-operative sector in the State. During the Sixth Plan period 3 Spinning Mills have been commissioned and 3 more are under implementation.

We will continue to provide the requisite marketing support to the small-scale units through the Directorate of Export Promotion and Marketing. As a spin-off of the NALCO Project a large number of ancillary small-scale units are coming up. To facilitate marketing of their product, the Testing Laboratory under the Directorate of Export, Promotion and Marketing located at Talcher would be upgraded with the necessary staff and equipments.

During the Sixth Plan period, 65,000 handlooms have been brought under the co-operative fold. Besides, over 53,000 looms were modernised. This is in keeping with our declared policy to improve the lot of the poor residing in the rural areas. This programme will continue.

During the Seventh Five-Year Plan, emphasis will be laid for Integrated Mineral Resources Survey in collaboration with the Geological Survey of India and other Agencies to establish the reserve of coal, graphite, strategic minerals, asbestos, gold and iron-ore. Among other important activities proposed to be pursued are Laboratory Scale Investigation to assess the beneficiation characteristic of low grade ores and minerals, recovery of mineral values from mine wastes, geo-technical investigations to assess the suitability of sites proposed for location of dams, projects and engineering structures and study of ground water conditions in problem areas.

One of the important objectives of our Government is to provide adequate medical facilities and services to the people. It is proposed to establish 7 additional PHCs. and 9 Subsidiary Health Centres. Expansion of Capital Hospital which has been taken up during Sixth Plan will be completed during the current Plan. Coronary Units will be provided in all the District Headquarters Hospitals. Units for special care for accident victims in important Hospitals will also be provided. 50 additional beds will be provided in the Paediatric Institute at Cuttack; and for treatment of Cancer, provision of 50 beds has been proposed in the Radio-Therapy Units at the Medical College Hospitals at Burla and Berhampur.

Greater emphasis needs to be laid on programme of population control. The State is committed to the effective implementation of this programme. The Area Development Programme with U. K. assistance has been implemented in five districts for development of infrastructure and provision of facilities in the field of health and famiiy welfare

and maternity and child welfare. A provision of Rs. 508·36 lakhs has been proposed for 1985-86 to continue the existing scheme. As against the achievement of 133,000 cases of sterilisation during 1984-85, we have fixed a target of covering 210,000 cases this year. Similarly against 68,000 cases on I.U.D. during 1984-85, we have kept a target of 100,000 cases to be covered during 1985-86.

Besides modern medical facilities, our Government have been according due recognition to the Indian systems of medicine and Homoeopathy and taking necessary steps for their promotion in the State. During the current year, it is proposed to have 7 Ayurvedic, 6 Homoeopathic and 2 Unani dispensaries. It is also proposed to establish two more Herbal gardens and to modernise the Government Ayurvedic Pharmacy at Balangir. A Research and Development wing in Ayurveda is going to be established at the State Headquarters.

Keeping in view the Prime Minister's strategy of linking education with technology and employment, we have given due priority to this sector in our programme of development of human capital. It is proposed to appoint a number of additional Primary School teachers with a view to increasing the enrolment of students at the primary stage with the objective of universalisation of elementary education. Provision for this has been made in the Plan and non-Plan Budget. In addition, a programme is being prepared for providing pucca buildings for primary schools which are at present functioning in kutcha buildings under the upgradation grant awarded by the 8th Finance Commission. Provision is also made in the Budget for special repairs to the buildings of the Universities and to take up the first phase of construction of Shri Jagannath Sanskrit Viswavidyalaya. Research in the field of social science is to receive additional encouragement with the establishment of an Institute of social sciences for which we have made a provision in the present Budget. Inservice Training Programme is to be introduced in teaching of Science and Mathematics for Secondary School Teachers with a view to improve their competence to cope up with the new curriculum. I am glad to inform this august House that Women's Education Programme is an important part of our Plan strategy. Government have decided that women's education would be free up to University level which means woman student will have free general education till she completes her Post-Graduate degree. It has also been decided to make secondary education free for all during the Seventh Plan period. Government have decided to pay pension and gratuity to the Primary School teachers at the rates applicable to their counterparts in Government service with effect from the 1st April 1985.

Adequate care is being taken by Government for planning and developing suitable man power to take advantage of the expanding industrial activity.

Provision has been made for providing adequate staff support for the Post-Diploma Course in Computer application in Berhampur School of Engineering. A Diploma Course in Electronics is being introduced in the Women's Polytechnic at Bhubaneswar.

Since a large trained man power in Electronic would be required during next few years, expansion of the facilities for Degree and Diploma in Electronics as well as for training at the I. T. I. level has been programmed.

Provision has also been made for conducting initial work for opening of Women Polytechnic from next year at Dhenkanal.

A course in 'Dress-making' and 'Stenography' with particular emphasis on handling modern office equipments will also be introduced in Women's I. T. I., Bhubaneswar from this session.

Appreciating the socio-economic problems on account of increasing number of slum dwellers in our State, we have started a scheme during the last Five-Year Plan for improving the environment of slum dwellers by providing street lights, drinking water facilities, drains and community latrines. This scheme will be continued during the Seventh Five-Year Plan. Under Integrated Housing Scheme, we have made a provision of Rs. 1·00 crore during the current year to construct 6,667 houses in the rural area to provide houses to the houseless rural workers. Out of 27,077 villages having acute problem of drinking water 3,461 villages were covered with

tube-wells up to the end of the Fifth Plan and out of the remaining 23,616 villages, 22,357 villages have been covered fully and partly by sinking of tube-wells during the Sixth Plan leaving a balance of 1,259 villages. An attempt shall be made to cover all these villages during the current year. There are also 19,915 unidentified villages in which only 13,400 tube-wells have been installed during the Sixth Plan. For the saline coastal tract of our State a special scheme has been taken up under a bilateral aid programme with assistance from the Government of Denmark. It is proposed to install 550 new tube-wells and 100 exploratory tube-wells and 3 piped Water-Supply Schemes in saline areas and 900 tube-wells in other areas of the State during 1985-86. As per the directives of the Government of India as well as of the State Government, a resurvey for fresh identification of problem villages has been undertaken recently and the final list will be prepared shortly.

With a view to implementing the State's avowed policy of ensuring supply of foodgrains and other essential commodities to the consumers in general and to the vulnerable sections of the society in particular through a chain of fair price shops in rural and urban areas, care has been taken to ensure that each Grama Panchayat gets at least one co-operative outlet. The number of fair price shops as on the 1st April 1985 is 19,676. For the current year a target of 50 additional co-operative outlets are proposed to be opened. The activities of Civil Supplies Corporation in the area of supply of essential commodities are gradually expanding and in order to support its activities we have proposed to provide further equity support during the Seventh Plan as well as during this year.

During the Sixth Plan period our endeavour has been to connect all the vital missing links in the road net work of the State so that more and more of the area opens up for communication facilities. The Government will keep this up and cover as much of the missing links in the road system as possible. Special emphasis would be laid on development of the road system in the tribal areas.

Tourism facilities have increased manifold in the State during the Sixth Plan period. Till the recent past, the tourism image of the State has been primarily cultural. Our strategy will be to project other facts of the tourism profile of the State like beaches, wild life and forest and also provision of recreational facilities such as water sports, etc.

The rich cultural heritage of our State has few equals. It is our responsibility to keep up this heritage and to create a climate in which our art and crafts will further prosper as a measure of providing social security, the Government will provide pension to indigent writers and artists. An institute of Odisi Dance, the first of its kind in the State, has been established in the State. The Odisi Research Wing established during the Sixth Plan has taken up some projects to codify different aspects of the Odisi Dance for research use of future generation.

For the first time a separate Department of Sports has been created in the Government. Broadly in keeping with the National Sports Policy, the State Government have formulated a Sports Policy designed to bring about all-round development of sports and games in the State and to provide opportunities to the young Sportsmen and Athlets of the State. With a view to spoting talents and nurturing them, Government have launched Sports School and Sports Hostel Programme during 1984-85. This will be further streamlined.

In the field of labour relations, the atmosphere in the State has been extremely satisfactory throughout the Sixth Plan period. The minimum rates of wages in bulk of the scheduled employments have been increased to Rs. 7·50 per day. Effective implementation of the Minimum Wages Act is being monitored constantly by the Government. To facilitate expeditious disposal of labour dispute, two more Labour Courts are proposed to be opened during the current year at Sambalpur and Jeypur.

Many Social Security and Social Welfare measures which were taken up during the Sixth Plan will be continued. Appreciating the need to provide Social Security to helpless widows of above 50 years of age, our Government have extended

the old age pension scheme to such widows. In order to help women deserted by their husbands and denied their rights for maintenance, our Government have prepared a scheme to extend legal aids to such women in suitable cases as that they can establish their rights in the appropriate judicial forum. A scheme to provide pension to the blind and the orthopaedically handicapped has already been introduced.

The Feeding Programme in the State for providing nutrition to the children and expectant and lactating mothers has been augmented. Under the programme of Intensive Child Development Scheme, a package of services in the area of Nutrition, immunisation and free school education is provided and these facilities will be extended by setting up 14 new projects during the current year which have been sanctioned by Government of India under Central Sector Plan.

Bonded Labour is a social evil. Under a Centrally Sponsored Scheme which was introduced from 1978-79, 40,300 bonded labourers have so far been identified of whom, 36,105 have already been freed. 24,871 bonded labourers have been rehabilitated. During the current year it is programmed to cover another 7,500 bonded labourers for which provision has been made in the State Budget with equal matching assistance from Government of India.

To co-ordinate, supervise and monitor all these Social Welfare measures a separate Directorate of Social Welfare has been created in the State.

Committed as we are to provide employment for all schemes of Rural Employment Programmes such as National Rural Employment Programme (N. R. E. P.) and Rural Landless Employment Guarantee Programme (R. L. E. G. P.) sponsored by the Government of India will be continued in the State during the Seventh Plan with due care and will be designed to create the much needed assets such as Rural Link road, Irrigation Channels, Social Forestry, Soil and Water Conservation Works, etc., in the rural sector. The N. R. E. P. for 1985-86 has a provision of Rs. 18·66 crores inclusive of Central contribution and it is expected to generate 17·5 lakhs man-days. Similarly under R. L. E. G. P. Government of India have allocated Rs. 17·38 crores for execution of different schemes in the rural areas. During the Seventh Plan, our policies and programmes for eradication of poverty would be further reinforced. Our Rural Development Programme and Anti-Poverty Programmes have made an effective dent on rural poverty. Our objective will be to give these programmes such as Integrated Rural Development Programme sponsored by the Government of India, special programmes for Small and Marginal Farmers' Programme and the Economic Rehabilitation of rural poor a greater thrust.

After touching upon the various development programmes that the Government has planned to undertake, I would now present before the Members the revised estimates for the year 1984-85. The revised estimates for 1984-85, placed before the Members in March last, had anticipated a year-ending deficit of Rs. 33·99 crores. These estimates had not taken into consideration the additional State Plan allocations totalling to Rs. 47·35 crores covered by the 1st and 2nd Supplementary Statement of Expenditure for the year 1984-85. Besides, additional doses of A. D. A. had to be sanctioned to the employees of the State Government, local bodies and aided educational institutions. As a result, the closing deficit came to be Rs. 84·50 crores.

The State Government's tax and non-tax revenue during the current year are estimated at Rs. 380·68 crores. Based on the formula of devolution recommended by the Eighth Finance Commission the State Government's share in Central taxes during the year has been estimated at Rs. 312.00 crores. The total receipts by way of grant-in-aid including the grant-in-aid receivable as per the recommendations of the Eighth Finance Commission add up to Rs. 102·30 crores. Thus the total receipts work out to Rs. 794·98 crores. As against this the non-Plan expenditure including debt service of Rs. 134·20 crores is estimated at Rs. 739.90 crores. This leaves a surplus balance of Rs. 55·08 crores from revenue receipts. The estimated non-Plan

expenditure takes into account additional payments on account of revision of pay scales of the employees and maintenance of capital assets like roads, buildings, irrigation works, drinking water-supply, etc.

The overall tally of disbursements and receipts in the non-Plan Capital Account results in a deficit of Rs. 44·40 crores.

The State's Plan Outlay has been fixed at Rs. 486·23 crores by the State Government. This includes the plans of Orissa State Electricity Board of Rs. 61·72 crores, O. S. R. T. C.'s Rs. 7·21 crores and plan expenditure of Rs. 1·75 crores to be incurred by Urban Local Bodies outside the State Government's budget. The balance, i.e., Rs. 415·55 crores is the plan expenditure of the State Government. In addition to this, provision is being made for Rs. 20·31 crores for disbursement of Special Central Assistance for Tribal Development, Rs. 1·29 crores for E. S. I. and other agencies and Rs. 7·11 crores for construction of buildings under upgradation grants as per the 8th Finance Commission's award. The total amount which works out to Rs. 28·71 crores would be fully received from Government of India and other agencies thus having no impact on resources of the State Government. The State Government is also required to provide Rs. 4·20 crores for expenditure on account of drought in 1985-86. A provision of Rs. 2·12 crores is being made under National Malaria Eradication Programme which is a Centrally Sponsored Scheme, towards the State Government's share. This expenditure is being made by transferring the provision previously made under Non-Plan to Plan as desired by the Ministry of Health, Government of India and Planning Commission. The total of all these works out to Rs. 450·58 crores as expenditure under the State Plan. It is proposed to finance the above Plan expenditure in the following manner :

	(Rs. in crores)
Balance from the current revenues. ..	55·08
Miscellaneous Capital receipts	(—) 44·40
Market Borrowing ..	72·37
Small Savings ..	35·00
Provident Fund ..	37·00
Negotiated Borrowings ..	7·62
Central Assistance for State Plan including Advance Plan Assistance.	220·63
Special Central Assistance for Tribal Development.	20·31
Grant for Upgradation of Standard of Administration.	7·11
Grants from E. S. I., etc. ..	1·29
Additional Resource Mobilisation.	45·00
Total ..	457·01
Total State Plan expenditure ..	450·58
Net surplus ..	6·43
Opening deficit ..	(—) 84·50
Closing deficit ..	(—) 78·07

This closing deficit of Rs. 78·07 crores would be deficit in the State Government's accounts at the end of 1985-86 as agreed with the Planning Commission and the Ministry of Finance, Government of India. I would like to elaborate on the subject of opening deficit of Rs. 84·50 crores to be reduced to Rs. 78·07 crores by the year-end. It is clear that this year's budget would end in deficit but this is the permissible deficit. Hon'ble Members may recall that the Budget Estimates for 1984-85 had assumed a closing deficit of Rs. 33·99 crores which should have been the opening deficit for 1985-86. But as mentioned earlier the opening deficit went up to Rs. 84·50 crores mainly on account of additional plan expenditure at the First and Second Supplementary stage warranted by essential needs of various sectors and payment of additional doses of additional dearness allowance. We had assumed a minimum grant of Rs. 34·95 crores under the 8th Finance Commission award. Hon'ble Members may kindly recall that the grant-in-aid recommended for Orissa for the year 1984-85 was of a much higher order, i.e., Rs. 67·55 crores. But since the Government of India decided, as a matter of national policy, to implement the 8th Finance Commission's award with effect from the 1st April 1985 only instead

of the 1st April 1984, Orissa, like many other deficit States, lost the grant-in-aid due in 1984-85. The total effect of additional plan expenditure, grant of additional doses of additional dearness allowance and non-receipt of grant-in-aid under the 8th Finance Commission's award in 1984-85 would have been a deficit of about Rs. 100·00 crores (Rs. 47·35 crores of additional plan outlay + about Rs. 18·00 crores for payment of additional doses of additional dearness allowance to the employees + Rs. 34·95 crores assumed as grant-in-aid under the 8th Finance Commission's Award), over and above the estimated opening deficit of Rs. 33·99 crores allowed to the State Government for Plan financing taking the total year end deficit to Rs. 134·00 crores. Because of strict measures of economy it has been possible on the part of the State Government to bring down the deficit to a total of Rs. 84·50 crores. This puts Orissa in a rather favourable light compared to the overdrafts of many other States in the country. I would also like to mention here that at the end of the year 1985-86 the State Government proposes to bring down the deficit to Rs. 78·07 crores inclusive of ways and means advance which is the agreed level of deficit with the Planning Commission and the Finance Ministry.

The State Government is required to mobilise additional resources of the order of Rs. 45·00 crores during 1985-86 for financing the Plan. The bill levying sales tax on works contract and certain other transactions is being introduced in the Assembly. Similarly, a bill levying Additional Electricity Duty at 6·5 paise per unit is also being introduced. The Excise Duty on country spirit, beer and I.M.F.L. would be increased. Stamp duties would be revised. An additional tax would be imposed on goods as well as on passenger vehicles. Additional receipts are envisaged from mining and minerals. It is estimated that all these measures would yield additional receipts of the order of Rs. 45 crores during the remaining part of the year. I would like to assure that the incidence of the above measures would be the least on the poorer sections of the community and are also not likely to exert any inflationary pressures on the economy of the State.

The Administrative Tribunal of Orissa : A study of the Rudimentary principles and functional parameters

Dr. R. C. Roy

The disciplinary authority constituted according to the rules framed by virtue of the power conferred under article 309 of the Constitution of India inflicts major or minor punishment on a civil service personnal of the State only on completion of a procedurally conducted enquiry into the nature of the misconduct committed by such a government servant in the State of Orissa. It assumes the character of the Disciplinary Tribunal on whose finding the whole life's career of a public servant depends. In order to enable the disciplinary authorities of different departments of the Government of Orissa to derive the benefits of such an enquiry being conducted by an independent authority, the Administrative Tribunal came to be established in 1951 under a separate set of rules framed according to the provisions of Article 309 of the Constitution of India. It functions as a domestic tribunal, each of its three members, with judicial approach, functions like a judge, exercising quasi-judicial power, being vested with part of the judicial power of the State.

The author proposes to make a survey of the functional parameters and study the rudimentary principles governing the Administrative Tribunal of Orissa. The author at the outset acknowledges with deep gratitude his limitless indebtedness in collecting profuse materials from the adjudicated laws announced by the learned judges in the highest judicial forums of the country and abroad, for which the relevant decisions as published in the All India Law Reporters etc., have also been cited in the list of references. The author finds it a virgin area invoking great interest of such a study, although in a presentation in an article of this sort there is hardly any scope for a detailed analytical approach.

It is a lesson of the political science that a soverign state discharges legislative, executive and judicial functions and in that can legitimately claim corresponding legislative, executive and judicial powers. Within the constitutional frame of the democratic republic of India, the judicial functions and powers of the State are primarily conferred on the ordinary courts in the hierarchy of an independent judiciary, a system constituted on the doctrine of separation of State's legislative, executive and judicial powers. Adjudication of all disputes between citizens and citizens as well as between the citizens and State is entrusted to the constitutionally recognised hierarchy of courts, described as ordinary courts of civil judicature. These courts are governed by their prescribed rules of procedure and they deal with questions of facts and law raised before them through a process called as judicial process. Their functions, powers and decisions are all of judicial character.

In the scheme of the constitution of India, tribunals fall within the purview of Article 136(1) which occupy a special position. Although only special matters and questions are entrusted to them for their decision they are also invested with the judicial functions of the State as distinct from purely administrative or executive functions. The procedure to be followed by the tribunals may not be so strictly prescribed but they have to adopt a judicial approach. They discharge the State's inherent judicial functions. Administrative Tribunals, as domestic tribunals, act like a judge, act quasi-judicially.

The constitution provided in Article 309 that the appropriate legislatures can enact requisite provisions for regulating the conditions of service and bring about a uniform standard for disciplinary tribunals. This is what has recently been enacted by Parliament, powers and procedure of disciplinary tribunal will be consistent with the mandates of the constitution and the present chaos of rules for guidance will be removed.

Indian jurisprudence has evolved three principles for guidance of the disciplinary/ administrative tribunal : (i) The Rules applicable must be strictly followed, (ii) The test of natural justice must be applied, (iii) Once the Courts are satisfied that the disciplinary tribunal acted within the Rules and complied with the principles of natural justice then the Courts of law will not sit in appeal on facts and merits of the findings of the disciplinary tribunal.

The reliance by the tribunal on certain documents without the knowledge of the petitioner and without giving him an opportunity to inspect them is a breach of the principles of natural justice.

The refusal to comply with the petitioner's request to examine the investigating officer is a breach of the principles of natural justice.

The refusal to grant adjournment for the purpose of cross-examination of certain witnesses is also a violation of the principles of natural justice.

I. Rules of Natural Justice :

(A) The first rule is announced by the maxim, 'Nemo debet esse judex in propria cause', i. e., no one should be judge in his own cause. A person with a bias is disqualified to act as a judge. A judge should be different from the party. The two characters of a party and a judge cannot be combined in same person. The law jealoously guards against such usurpation of duties of a judge by a party to the cause. Of course, as a matter of agreement, a party in the dispute may be authorised by his adversary to decide a dispute. However, a statute may authorise a person to act administratively and at the same time authorise to decide disputes arising out of and in course of his administrative duties. But the maxim seeks to eliminate all possible bias, coming into the decision. A least pecuniary interest in the cause disqualifies a judge. As a matter of public policy it is required to clear away every thing which might engender suspicion and distrust of the tribunal, and so to promote the feeling of confidence in the administration of justice which is so essential in social order and security. The Collector was the President of a Co-operative Society which applied for moter vehicle permit and he participated as the Chairman, in the proceeding of the Regional Transport Authority which granted the permit. It was held that the order granting a permit for the Co-operative Society was liable to be quashed. Justice should not only be done but manifestly and undoubtedly seem to be done. Nothing is to be done which creates even a suspicion that there has been an improper interference with the course of justice.

It is also violative of the 14th Amendment of American Constitution and deprives a defendant in a criminal case of the due process of law to subject his liberty or property to the judgement of a court, the judge of which has a direct, personal, substantial pecuniary interest in reaching a conclusion against him in his case. The fundamental principles of natural justice is that in case of quasi-judicial proceedings, the authority empowered to decide disputes between opposite parties must be one without bais towards one side or other in the dispute. It is the principle that justice should not only be done, but should manifestly ond undoubtedly be seen to be done.

In England the Parliament being supreme, a statutory law, however repugnant to the

principles of natural justice, is valid; whereas in India the law made by the Parliament or a State legislature should stand the test of fundamental rights declared in Part-III of the Constitution. Therefore official bias is tolerated in England but not in India. In regard to personal bias, the law in England and India is the same. The principles governing the doctrine of bias are : (1) no man shall be a judge in his own case, (2) justice should not only be done but manifesily and undoubtedly seem to be done. Thus, if a member of a judicial body is subject to bias (whether financial or other) in favour of, or against, any party to a dispute, or is in such a position that bias must be assumed to exists he ought not be taken part or sit on the tribunal. The same principles apply to authorities discharging quasi-judicial functions.

A person dealing with an enquiry is in a position of a judge and the rules of natural justice demand that he must be a person with an open mind, a mind which is not biased against the delinquent. He should be open to conviction and must not have prejudiced the issue. He must act with detachment of a judge since he is professing to exercise that dignified position.

The officer selected to make an enquiry should be a person with open mind and not one who is either biased against the person against whom action is sought to be taken or one who has prejudged the issue. If this fundamental principle is not followed by Government in selecting a person to make an enquiry the enquiry would be a farce and would not in any sense of the term be said to be a reasonable opportunity to the officer concerned to defend himself.

The judge must come to adjudicate between two or more parties with an independent mind, without any inclination or bias towards one side or other in the dispute; a person cannot combine in himself the two capacities of a judge and a witness.

It is the duty of the judge to decide the dispute before him on the evidence adduced by the parties before him and that according to his own judgement, and in doing so he should not be influenced by other.

Although ministrial officer can appoint a deputy a judicial officer can not. The strict provision as laid down in the Indian Evidence Act are not applicable in a departmental proceeding. But the rules of natural justice must be observed. It is of course unnecessary to import the strict procedure applicable to judicial trials. In case of trial of charges the enquiring officer has to hear the delinquent and his witnesses in that respect the procedure adopted is to a certain extent like judicial trials. He should hear the evidence of witnesses, evaluate them and observe the demeanour of witnesses, where necessary, he has to elicit answer to doubtful questions. These functions cannot be delegated. In England, law recognises the omnipotence of Parliament and tolarates encroachment on the common law of the land. In India the statutory law must stand the test of the fundamental rights guaranted by the Constitution. Any encroachment on the rule that man shall not be judge in his own cause has not been tolerated in India. The authorities empowered to decide the disputes are different legal personalities than the authorities created to carry on particular public purposes.

In the context of this maxim, it can be summoned up : (1) a person is disqualified to be a judge when he is a party to the dispute ; (2) he is further disqualified if he has any interest whatsoever in the list before him, such interest may be pecuniary or otherwise, big or small; (3) he is also disqualified if he be interested in the result of the proceeding; (4) he must give his own decision on the evidence placed by the parties before him, he should not import his own knowledge as he cannot combine in his own self two capacities of a judge and a witness, and lastly; (5) he must act according to his own judgement and not at the dictation of others.

(B) The next rule of natural justice is in the maxim, 'Audi alteram partem' which literally means hear the other side. It forbids the passing of exparte orders or decisions, it casts a duty upon the tribunad to hear the defence of the party sought to be proceeded against before passing orders contrary to his interests. A fair hearing has two elements : (1) an opportunity to be heard must be given and (2) the opportunity must be reasonable.

A learned judge observed that even God himself did not pass sentence upon Adam before he was called upon to make his defence. God says, 'Adam where art thou. Hast thou not eaten of the tree whereof I commanded that thou shouldest not eat : The same question was put to Eve also The rule has been held to consist of (1) notice to the party affected of the proposed action or accusation; (2) notice when the judge proposes to proceed with the matter and (3) affording a fair opportunity to the affected party to show cause against the proposed action or accusation. The rule has been adopted in India by its incorporation in the various procedural codes, forbidding exparte order or decisions by judges and magistrates, except passing interim orders in very urgent cases or where the whereabouts of the opposite party and all attempts to fix him with notice have been abortive. This rules applies to all persons acting judicially or quasi-judicially.

The vital elements of 'reasonable opportunity'—, which has not been defined anywhere in our Constitution, are timely notice and full opportunity to the person concerned to present all the evidence and arguments which he deems for the purpose of his case. The person concerned should be given personal notice of the charges against him; he shall be informed of the place where and the time when he shall so answer to his charges ; he shall be afforded an opportunity, if he so chooses, to cross-examine the witnesses produced against him; he shall be afforded an opportunity after all the evidence is produced and known to him to produce evidence and witnesses to refute it ; the decision shall be based upon and governed by the evidence at the hearing ; he shall be given an opportunity to make his representations as to why the proposed punishment should not be inflected upon him ; and the hearing is held before an unbiased and unprejudiced officer. The enquiring officer must conduct the enquiry with open mindedness, fairness and impartiality and must approach the hearing without bias and without prejudgement of the issues.

If the opportunity is given by the bias or prejudised officer it cannot be regarded as reasonable opportunity.

The person against whom an action is proposed should be given fair chance of convincing the authority who proposes to take action against him that the grounds on which the action is proposed are either non existent or even if they exist they do not justify the proposed action. The decision on this question will necessarily depend on the peculiar facts and circumstances of each case, including the nature of the action proposed, the grounds on which the action is proposed, the material on which the allegations are based, the attitude of party against whom the action is proposed, in showing cause against such proposed action, the nature of the plea raised by him in reply, the request for further opportunity that may be made, his admission by conduct or otherwise of some or all allegations and all other matters which help the mind in coming to a fair conclusion on the question.

The Government servant charged of misconduct should have opportunity to say that he has not been guilty of any misconduct to merit any punishment at all and also that the particular punishment proposed to be given is much more drastic and severe than he deserves.

He should be informed of the charges levelled against him and the evidence by which it is sought to be established, for it is only then that he will be able to put forward his defence. He should be allowed to show that the evidence against him is not worthy of credence or consideration and that he can only do if he is given a chance to crossexamine the witnesses called against him and to examine himself or any other witness in support of his defence.

A person shall not be removed from office or otherwise dealt with to his material disadvantage without fair, adequate and sufficient notice being given to him of what is alleged to his detriment, without giving him an opportunity to meet the accusations levelled against him.

The principles of natural justice require that the evidence on the basis of which a public servant is proposed to be penalised must be given in his presence.

According to the third element, opportunity of the rule, the opportunity must be real, fair and reasonable opportunity. It must be such as to anable the party to convince the authority to change his tentative opinion.

To sum up, reasonable opportunity means and includes :

(1) An opportunity to deny his guilt and establish his innocence, which he can only do if he is told what the charges levelled against him are and the allegations on which such charges are based ; (2) An opportunity to defend himself by cross-examining the witnesses produced against him and by examining himself or any other witnesses in support of his defence ; and (3) An opportunity to make his representation as to why the proposed punishment should not be inflicted on him, which he can only do if the competent authority after the enquiry is over and after applying his mind to the gravity or otherwise of the charges proved against the Government servant tentatively proposes to inflict one of the three punishments and communicates the same to the Government servant.

The witnesses to be examined by the complainant have to be examined in presence of the person sought to be proceeded against. Any evidence which was not taken in presence of the charged officer could not be relied upon against him. Evidence includes the entire evidence of the witness, and if evidence has to be taken in presence of the charged officer then no evidence which was not taken in presence of the charged officer can be made use of. The charged officer should be given the opportunity to cross-examine the witness examined by the complainant to test its validity, and also to adduce evidence on his behalf.

In a welfare state all power ought to be exercised fairly, both in appearance and reasonability and therefore the rules of natural justice will apply also to administrative acts according to the nature of a particular case. The following principles are necessarily to be kept in view in day work of an administrator, (1) The prescribed rules and procedure are to be observed, (2) In absence of rules to guide, the rules of fair play and impartial justice should be followed, he must act honestly and in good faith, (3) A decision should be taken after considering all the sides of the question—all concerned should be given notice and heard and on that basis a reasoned order should be recorded, (4) The requirements of natural justice can be relaxed only when the question of policy involve many matters of which a particular individual is only a part of it, (5) In an emergency objective test is subtituted by subjective test, however a speaking order is always insisted upon in all cases of subjective test. (6) An administrator is not required to follow the rules of natural justice in day to day work but he has to follow them whenever the nature of work requires him to act judicially.

2. Rules of Equity

In its broad popular sense equity is practically equivalent to natural justice or morality. Of course many matters of natural justice are not subjected to legal sanctions but are left to the dictates of public opinion or for the conscience of each individual. It is however, a portion of natural justice which, though suitable for judicial enforcement, was not so enforced for historical reason, an omission which was supplied by the court of Chancery in England.

There are twelve maxims of equity : (1) Equity will not suffer a wrong to be without remedy, (2) Equity follows the law, (3) Where there is equal equity, the law shall prevail, (4) Where the equities are equal, the first in time shall prevail, (5) He who seeks equity must do equity, (6) He who comes into equity must come with clean hands, (7) Delay defeats equity, (8) Equality is equity, (9) Equity looks to the intent rather to the form, (10) Equity looks on that as done which ought to be done, (11) Equity imputes an intention to fulfil an obligation, (12) Equity acts in personam.

Conclusion

In so far as the enquiry to be conducted by the Administrative Tribunal is concerned, these principles of natural justice and rules of equity are to bt observed. It is the discipline which is the foundation of an orderly Government and Society. The efficiency of Government certainly depends not only on the conduct and behaviour of

Government servants in the discharge of their duties, but also on their conduct and character in relation to the public with whom they have to deal, as ultimately it is public who are affected by any misconduct on the part of the Government servants. Any misconduct of the Government servants reflects on the Government itself and therefore, it is essential that the Government should regulate the conduct of the Government servants. Misconduct is the intentional doing of something which the person knows to be wrong or which he does recklessly not caring what the result may be. It is something more than mere negligence. The Government servants had not only to conform to a system of rules of conduct enjoined on them by the Government in the discharge of their official duties, but they should also observe certain standards of dignity, discipline and decorum in relation to their dealings with and duties to the public and even in their private life. This important function of Government is being shared by the Administrative Tribunal in Orissa.

The Prime Minister, Mr. Rajib Gandhi, after his assumption of the role of the leader of the nation, could see through the enactment of the Administrative Tribunal Act by Parliament. It is in the interest of society that the administrative tribunal in the States and in the Union of India will now be constituted as the statutory bodies, consequent on enforcement of the Parliamentary statute, for the purpose of regulating the conditions of services of Government servants.

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FINANCING AGRICULTURE BY UCO BANK IN ORISSA—AN APPRAISAL

Dr. Suresh Chandra Mallick

Maximisation of agricultural output necessarily depends upon irrigation, good & viable seeds and timely availability of credit. Credit, not only creates confidence in the minds of the farmers, but also makes the farmers business oriented. To-day's success in the agricultural sector, mostly owes its debt to the nationalisation of commercial banks in the country.

In the present analysis, we have studied the working of the United Commercial Bank in Orissa as regards its activities in financing agriculture and allied activities, which has a direct bearing on the rural people in Orissa.

The UCO BANK is a lead bank in four district of Orissa namely, Puri, Cuttack, Balasore and Dhenkanal with as many as 92 branches in these districts. The UCO BANK has an additional 33 branches in other 9 districts of the State. The bank has a divisional office in the State Capital at Bhubaneswar.

Performance of the Bank :

It is evident from table-1 that the bank bears a credit deposit ratio of 64·87 per cent and 61·38 per cent respectively for the first half-year ending in June 1983 and second half-year ending in December 1983. The percentage of agricultural advances to gross credit is 29·49 per cent and 28·18 per cent for the first half-year & second half-year respectively. On an average, about 30 paise per rupee of credit has been utilised for agricultural purposes. Out of which 15 paise per rupee (about 50 per cent of total agricultural credit) has been utilised for direct finance under agriculture. This is in confirmity with the suggestions of the Working Group which has suggested that a target of 14 per cent of total credit may be fixed for direct finance to agriculture.

The table further reveals that on an average the UCO Bank has financed 73 per cent of total gross credit in the priority sector. But the average of the priority sector advance in all the banks comes about more than 80 per cent. Therefore there is a justification that the bank should liberalise the procedure of sanction of loan in the priority sector and increase the quantum of finance in this sector. Unless there is easy flow of credit to agriculture and small-scale industry (S.S.I.) sectors, etc., the objectives of social control of banks and subsequent nationalisation of major banks will not be fulfilled in accordance with the national planning priorities. There can be accelerated rural development if the needy beneficiaries (such as weaker section and S.C./S.T., etc.) are financed through priority sector advance of bank.

The bank has about 70 per cent of accounts for the small farmers which is a praise-worthy achievement. But it can be increased further as Orissa is the poorest State in the country amidst plenty. We have vast resources of river belts, fertile land, forests and mineral deposits. These

untapped resources must be utilised for the benefits of the down-trodden and unpriviledged through the bank finance, Government support and people's participitation in the nation building programme.

The percentage of DRI (Differential Rate of Intrest) advances to total advances is less than 5 per cent and the recovery percentage is less than one-fourth of total agricultural advances. The number of DRI beneficiaries should be increased and the quantum of advances in the DRI scheme should be a minimum of 10 per cent in Orissa for the upliftment of the rural poor and have-nots. The recovery percentage should be enhanced by proper credit management through efficient field officers and by improving the infrastructural facilities including marketing. The political parties and social workers should not interfere with the banks during the realisation of credit from the loanees.

Advances to Agriculture & allied sectors :

The UCO BANK has financed a little less than 30 per cent of gross credit in agriculture & allied sectors. Table-2 reveals that it has given the highest advance (about 31 per cent) to the Orissa State Electricity Board and Orissa Lift Irrigation Corporation as these two corporations belong to the State Government. The advances given for the plantations and other horticultural crops and pledge of ornaments for agricultural purposes have not been financed adequately. In other words, these two sectors have been neglected. Moreover financing for land development, indirect finance to fertilizer dealers and agro-service centres could have been increased for the interest of the State and farmers.

The advance (about 9 per cent) made to the co-operative institutions is justified. Moreover the finance available for dairy farming, poultry farming, piggery, goatery/ sheep rearing, sericulture, bee keeping, pisciculture, inland river fishing, marine fishing, duck rearing, draught animals & cross bread calf rearing scheme is adequate but these sectors could be strengthened each years as there exists vast potentiality in these sectors. The annual income of the poor peasants can be increased substatially through these supplementary & complementary enterprises. The production finance (about 18 per cent) given by the bank seems to be adequate and can be increased further to save the farmers from the clutches of the unscrupulous money-lenders. Till to-day, the money-lenders play a vital role in agricultural credit in Orissa, particularly in the rural sector.

Conclusion :

The objectives of social control & nationalisation of banks are the epoch making legislations in the country. But there is every chance that the subsidy & loans may be misutilised and the rural poor may not be benefited. Therefore, we suggest that the Agro-Economic Research Centres & Agricultural Universities may be authorised to take up periodical evaluations in actual fields to study the impact of agricultural financing in the rural sector and to advise the Government and R. B. I., for increasing the efficiency of agricultural advances.

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TABLE 1

Performance of the United Commercial Bank in Orissa in the year 1984.

(Amount in lakhs of Rupees)

Sl. No.	Particulars	Achievements	
		June '83 1st half-year	December '83 2nd half-year
1	Total deposits ..	7,575·00	9,116·00
2	Gross Credit ..	4,914·15	5,596·00
3	Total priority sector advances ..	3,793·46	3,870·27
4	Total Agricultural Advances ..	1,449·31	1,576·98
5	Total direct Agricultural Advances ..	718·79	821·74
6	Total Priority Sector Advances made in adopted villages.	299·92	356·22
7	Credit deposit Ratio ..	64·87	61·38
8	Percentage of Agricultural Advances to Gross credit	29·49	28·18
9	Percentage of Priority Sector advances to Gross credit.	77·19	69·16
10	Percentage of Direct Agricultural Advances to Gross credit.	14·63	14·68
11	Percentage of Small Farmers accounts to total Advances for production Finance, etc.	70·00	70·00
12	Percentage of DRI Advances to total advances ..	4·82	4·34
13	Recovery percentage of total Agril. Advances ..	23·22	21·72

TABLE 2

Advances to Agriculture and Allied Sectors by the United Commercial Bank in Orissa in 1983

(Rs. in lakhs)

Sl. No.	Break-up	Balance outstanding up to 30-6-1983		Balance outstanding up to 31-12-1983	
		Ac/s	Amount	Ac/s	Amount
1	Farm Machinery and Implement ...	1,440	46·82 (3·23)	1,594	56·31 (3·57)
2	Financing Minor Irrigation ...	2,980	116·43 (8·03)	2,995	122-47 (7·77)
3	Financing plantations and horticultural crops.	204	2·96 (0·20)	322	6·64 (0·42)
4	Land Development ..	638	12·40 (0·86)	695	13·34 (0·85)
5	Pledge of Gold ornaments ..	72	0·75 (0·05)	77	0·79 (0·05)
6	Direct finance for Biogas plants and others.	266	8·15 (0·56)	316	15·20 (0·96)
7	Indirect finance for Agriculture to fertilizer dealers and Agro-Service centres.	73	19·83 (1·37)	82	20·43 (1·30)
8	Cold Storage ..	2	11·08 (0·76)	2	14·41 (0·91)
9	Loans through Co-operatives ..	228	129·38 (8·93)	229	135-95 (8·62)
10	Financing for dairy, farming Pisciculture, poultry, etc.	17,660	277·62 (19·16)	18,669	312·12 (19·79)
11	Production finance (Crop loan/cash credit for crop production).	13,949	253·66 (19·16)	15,529	294·87 (18·70)
12	Loans to O. S. E. B. and O. L. I. C.	2	434·39 (29·97)	2	513·77 (32·58)
13	Other indirect advances ...	148	135·84 (9·38)	173	70·68 (4·48)
	Total—Agricultural advances..	..	1,449·31 (100·00)	..	1,576·98 (100·00)

(Figures in the parentheses indicate percentages)

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Socio-cultural factors affecting the use and acceptance of Family Plannig methods in Cuttack district

Shri Debaraj Sahoo

The process of urbanization which takes place in certain areas with suitable and inspiring surrounding conditions is directly associated with the process of industrialization, cultural as well as the socio-advancement of the people. It seems clear that the emergence and development of urban centre was necessarily a function of four important factors such as the size of total population, the control of natural environment, technological and industrial development and developments in social organisation.[1] All these four factors play equally important role and they interact with one another to produce suitable environment for the concentration of population and growth of urban centres. So far as the Cuttack district is concerned, it is the most developed and leading urban centre in the State of Orissa. In the sphere of industrialization and technological development the Cuttack district is in no way less than other districts of the State. The Cuttack City, being situated at the core of the district acts as important centre of trade and commerce in the entire South-East India. Geographically, it can be stated that Cuttack district presently with a population of 4,628,800 and an area of 11,211 Kms.^{2} is the populous district in Orissa and it has been maintaining it's primacy since the beginning of the century.

So far as the decinnial growth of the population of the district is concerned, the number of population changes abnormally in a vertical trend (Fig. 1). The population of Cuttack district was 2,205,296 at the 1901 Census and grown over to 4,628,800 for 1981 (Table 1). But in the year of 1921, the growth of population in the district observed a negative trend due to high death rate caused by devastating famine and harsh diseases. After that the district possesses the rapid growth of population from 1931 onwards which is related with the factors which combindly exert their maximum influence i.e., fertility, mortality and mobility.

The genetic fertility of men and women of this district greatly determines the birth patterns. Normally the reproductive age of women in this district stands from 15 and continues till they reach 45. Again the reproductive age-group of female constitute 20·7 per cent of the population of the district, so such a long span of reproductive period and more percentage of female belonging to the reproductive age-group helps a lot to increase the number of births in the district.

Secondly the average *per capita* income of the people of this district is relatively higher so they are availing the opportunities of enjoying better medical facilities good, sanitary condition, relatively good diet causing the lowering down of the mortality rate in comparision with other districts of Orissa.

1. Doncan, Otis Dudley. "Human Ecology and population Studies" in Phillip M. Hauser and Otis Dudley, Dudley Duncan (Eds.). *The Study of Populction : An Inventory and Appraisal*, University of Chicago Press, Chicago, 1959, P. 681.

Lastly the migration or mobility play a predominant role to increase the population of the district because of the economic motivation of the district and employment potentiality of the district as the district associated with many important industrlal, commercial urban centres of the State. which attract more and more people from time to time from the surrounding regions and makes this region highly urbanised in comparision with other districts of Orissa.

So the increasing degree of urbanisation of the district is adding new dimension to the interrelationship existing between the urban centres and also among the urban centres with their surrounding rural areas of the district. The present rate of growth of population existing in this district making it quite evident that it effects the level of economic and social development of this district by reducing the *per capita* income and causing water pollution, noise, congestion, crimes, etc. So for the economic and social development of this district the population control is needed as the rise in living standard will be followed by reduction of fertility through family planning.

The objective of family planning would be one of two : to increase or decrease the population of children per couple, The first is not usually considered although its relevance in a given 'Placetine—object' dimension may be substantive. A society devastated by war or any other calamity may require family planning to raise the couple children ratio, as happened in many European societies just after the Second World War. Again, the dominent cultural outlook in a society at a given time. which is often vaguely indicated by the omnibus phrase the way of life' may promote the desire of many to have less number of childfen than required to replace the producing couples after their death.[1] The whites of the United States of America are presumably moving towards this outlook at present. In these cases the objective of family planning may be to increase the couple-children ratio in order to bring the growth rate of population at the replacement level.

The other objective of family planning i. e., decrease the production of child per couple is mainly observed in the countries or regions where the population growth rate affects adversely, the present rate of economic growth as in case of India. That is why in different five-year plans starting from 1951—1985 (From First to 6th Five-Year Plan) the Government gave more emphasis on successive operation of Family Planhing Programme in different States and Union Territories by giving sufficient financial allocations. The main policy appointed by the planning to reduce the net reproduction rate (N. R. R.) to one by 1996 for the country as a whole and by 2,001 in the States.[2] The method of family planning adopted in different countries of of the world are (1) The Rhythm method: (2) The Calendar method. (3) Self observation method, (4) The Basal body Temperature method, (5) The cosmorgratic method, (6) The condom, (7) Vaginal contraceptives, (8) Intravaginal contraceptive Devices (The Diaphragm. The cervical cap, Jelly method), (9) Intrauterine contraceptive Device (IUD, IUCD) 10 Post coital methods of contraception (Hormones, copper IU D) (11) Menstrual Regulation or conceptional methods of family planning (12) Menstrual Induction (13) The oestrogen progestogene pill, (14) Parenteral progestogen contraception (15) Female sterillzation (Laparoscopy. Tubectomy) (16) male sterilization (Vesectomy) (17) Abortions (Abortions Induced by Aspiration, by prostaglandins, by Hypertonic solutions).

Among all these family planning methods the methods used In India are : (1) Vasectomy, (2) Tubectomy, (3) Diaphragm and Jelly method (4) The Rhythm method, (5) The Condom, (6) The IUD (7) Aboration (8) Oral pills (9) Female Sterilization (Laparoscopy).

In case of Cuttack district the rapid increase in population creates difficulties to provide adequate education, health facillties, social and cultural amenities etc., for which the family planning is adopted in its urban as well as rural sectors. The

1. Mukherjee. R, "Family and Planning in India," orient Longman Limited, Bombay, P. 3.
2. Bhende, A and Kanitkar, T, Principles of population Studies" Himalaya Publishing House, Bombay Chapter 14, Page..454.

programme was reinforced with the introduction of new schemes nemely sterilization, I.U.C.D., mass media and educational activities, personnel training and orientation of community leaders and was extended to the rural areas. By now a network of Family Planning organisations cover the entire district. Mostly the methods used are categorised into two types.

(1) Surgical Method of Familty Planning

(a) Vasectomy

(*b*) Tubectomy

(2) Non-Surgical Method of Family Planning.

(*a*) The Condom

(*b*) Copper T

(*c*) Oral pills

(*d*) Injectable progesterone

There are several variable that influence adoption of family planning methods in this district, that is socioeconomic and demographic factors like *per capita* income, literacy, proportion of population living in urban areas, *per capita* energy consumption, health conditions etc.

The total land area of the district is 11,142·0 Sq. Km. The density of population in the district was 414 persons per Sq. Km. compared to an average density of 169 persons per Sq. Km. in the state as a whole in the year 1981. About 40 per cent of the total population of the district live in urban area. According to the 1981 census, the literacy rate was around 45·33 per cent compared to 34·12 per cent in the state as a whole. The population of Cuttack district is the multiple of Hindu, Muslim, Christians and other relations also, But among these religions the Hindu population predominates over others. In the state, the family planning activities were first introduced as early as 1952. During the year 1962-63 the massage of family planning was to be carried to every eligible couple, necessary group and contraceptive services, made available to each and every eligible couple in a ocially and psychologically acceptable manner. In addition to the offer of conventional contraceptives, such as condoms, Foam tablets diaphragm and jelly to eligible couples, sterilization services, especially for vasectomy were also offered free of charge as a limitation method. Facility for sterilization is made available both at camps and clinics. The recanalisation facility available in medical college hospitals goes further in raising popular faith in sterilisation operation. Financial benefits like compensation for loss of wages and transport charges are given to those who undergo vasectomy or sterilisation operation. The Government employees who accept these methods are provided with the services free of cost and leave of absence from duty for six working days in addition to the financial benefits. The Tubectomy method is available only in District Headquarters Hospital and Subdivisional Hospital. Those undergoing this operation are given free hospitalisation facilities and treatment. The Government servant taking to this operation were allowed special casual leave for 14 days. Every women accepting this method is compensated for loss of wages and is also allowed diet and transport charges. Vasectomy found increasing popularity among couples and as the most effective method of family planning in encouraged by the Government by increase of incentives, training of large number of medical personnel in sterilisation and providing sterilisation services through camps. The IUCD insertion is working out at the Block level and through the mobile unit follow-up services are rendered to the beneficiaries and complicated cases are referred to the consultant gynaecologists for advice and treatment. Tubectomy has also found increasing acceptance among the people as the women accepting this method is compensated for loss of wage.

Then the District Health and Family Planning Officers joined duty at the district mainly to impliment and evaluate the family planning programme in the district. There is also mobile family planning units in the district and primary health centres for motivation of eligible women for tubectomy and IUD and also encourage couples to use other methods of family planning such as condoms and oral pills. The data available for the study area with regard to the different family planning

methods adopted in different parts of the district, there annual target 1984-85 (From March 1st 1984 to 28th February 1985) and its achievements up to December '84 is given in Table 2. From the data it seems that IUD method which is a safe and cheap and simple method gains popularity among other methods and the percentage achieved is about 47 per cent. Sterilisation stood next to IUD by achieving the 29·3 per cent in the annual target 1984 to 1985 (up to December '84 only). Figure 2 gives a presentation of the trends in the number of acceptors of different family planning methods in the year 1984-85. Figure reveals that there have been more number of acceptors of Vasectomy and Tubectomy, that is related to sterilisation. The number of IUD, users of oral pill, C. C. users in the district are also quite high. It appears that, for the study area as a whole, the number of acceptors of family planning methods in terms of sterilisation is quite high.

The variables like per cent literate among females, *per capita* income and per cent of population living in urban localities, etc. help for implication of family plannings in this district.

Literacy had a positive effect on adoption of any method persisted irrespective of the levels of F. P. C. In case of Cuttack district the percentage of female literacy was 32·30 according to 1981 census, for which Tubectomy and IUD method are more dominant in comparison with other districts of the State.

Per capita income had also a positive effect on adoption. Adoption rates in high income districts like Cuttack districts of Orissa is higher by 29·3 per cent, 47 per cent, 27 per cent for sterilisation, IUD and Condom respectively.

The effect of urbanisation in this district is an important factor to increase adoption of sterilisation 29·3 per cent and IUD 47 per cent, Condom 27 per cent respectively. The positive influence of urbanisation is generally maintained irrespective of the level of F. P. C.

Lastly the direction of the relation-ship between adoption and the number of family planning centres is not quite consistent. F. P. C. had a positive effect on the adoption of I. U· D, or condom but a negative influence on adoption of sterilisation. The lack of a consistent relationship between F, P. C. and adoption could be due to the variations in the staff position in the family planning centres. Cuttack district have a high F. P. C. population ratio in comparisn with other district of Orissa, but many of the centres may not be sufficiently staffed with qualified personnel. Secondly, mass sterilisation camps could have to a certain extent, distorted an otherwise positive relationship between F. P. C. and adoption of this district.

In general, F. P. C. is hardly adequate to take care of the various dimensions in the district.

This programme can be well implemented in the district if, the individuals will control fertility as a result of an "independent" decision, if the rationality of doming so is properly communicated to them through film and other non-printed visual aids, through person to person contact is gaining acceptance for family planning and use of more incentive to promote family planning.

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TABLE I

Decennial variation of population of Cuttack District, 1901—1981

Year (1)	Totat population (2)	Rate of Decade variation (4)	Per cent of variation over previous census (5)
1901 ..	2,205,296	..	..
1911 ..	2,258,749	+ 53,453	+ 2·4
1921 ..	2,195,263	— 63,486	— 2·8
1931 ..	2,336,883	+141,620	+ 6·4
1941 ..	2,446,956	+110,073	+ 4·7
1951 ..	2,528,237	+ 81,281	+ 3·3
1961 ..	3,063,072	+534,835	+ 21·0
1971 ..	3,827,678	+764,606	+ 25·0
1981 ..	4,628,800	+801,122	+20·64

Sources—Census of India

TABLE II

Annual target and achievement of different Family Planning methods of Cuttack district 1984-85

(From 1st March 1984 to 28th February 1985)

Family Planning methods adopted (1)	Annual Target (2)	Achievement up to December 1984 (3)	Per cent of Achievement (4)
Sterilisation ..	38,840	11,385	29·3
Intra utrine device ...	13,360	6,330	47·0
Condom ..	35,160	9,813	27·0
Oral Pillusers ..	6,330	1,743	27·0

Source—C. D. M. O, Office, Cuttack

DECENNIAL VARIATION OF POPULATION OF CUTTACK DISTRICT

1901-1981

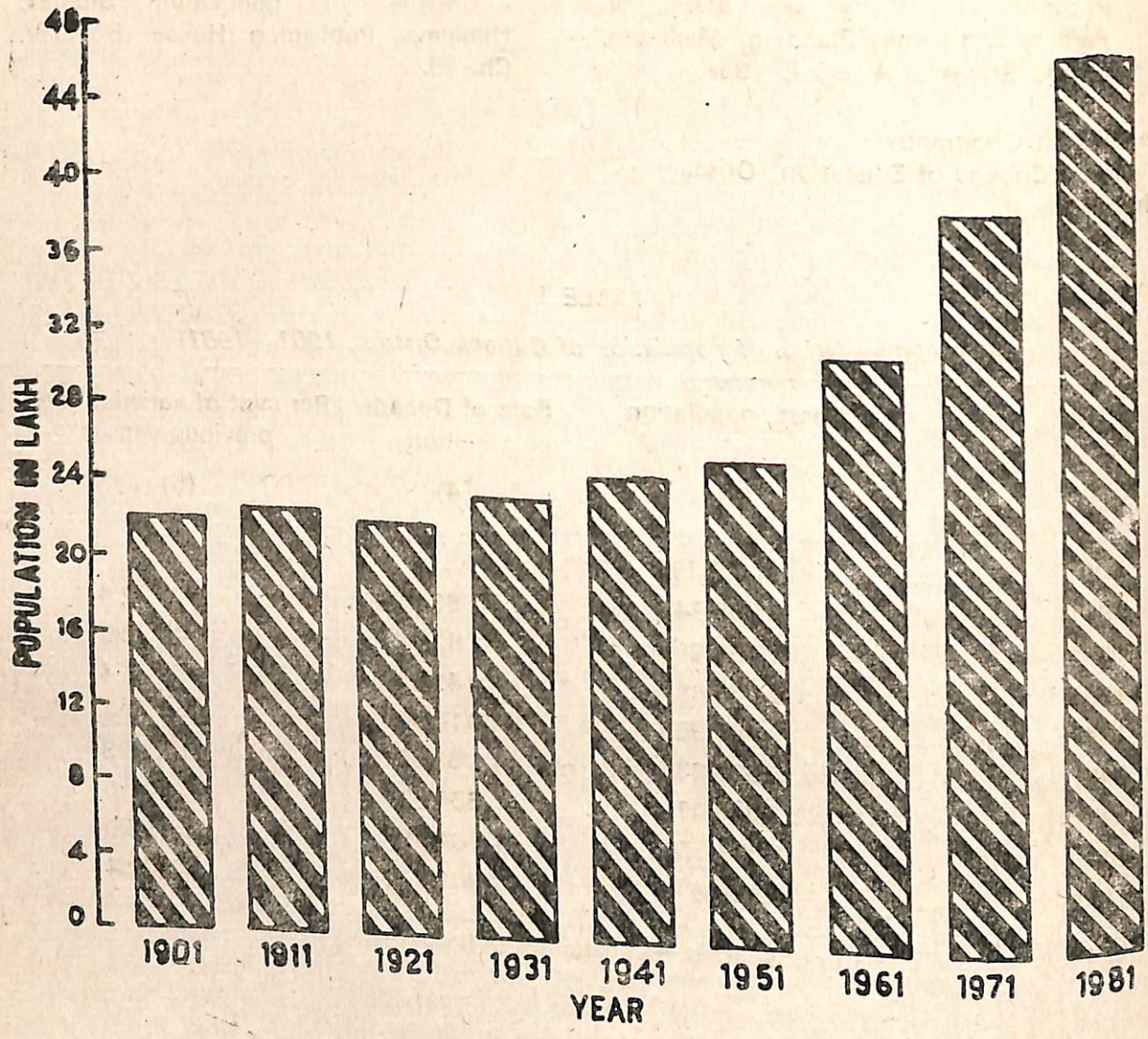


FIG-1

ANNUAL TARGET AND ACHIEVEMENT OF DIFFERENT FAMILY PLANNING METHODS OF CUTTACK DISTRICT

FROM 1ST. MARCH, 1984 TO 28TH. FEBRUARY, 1985

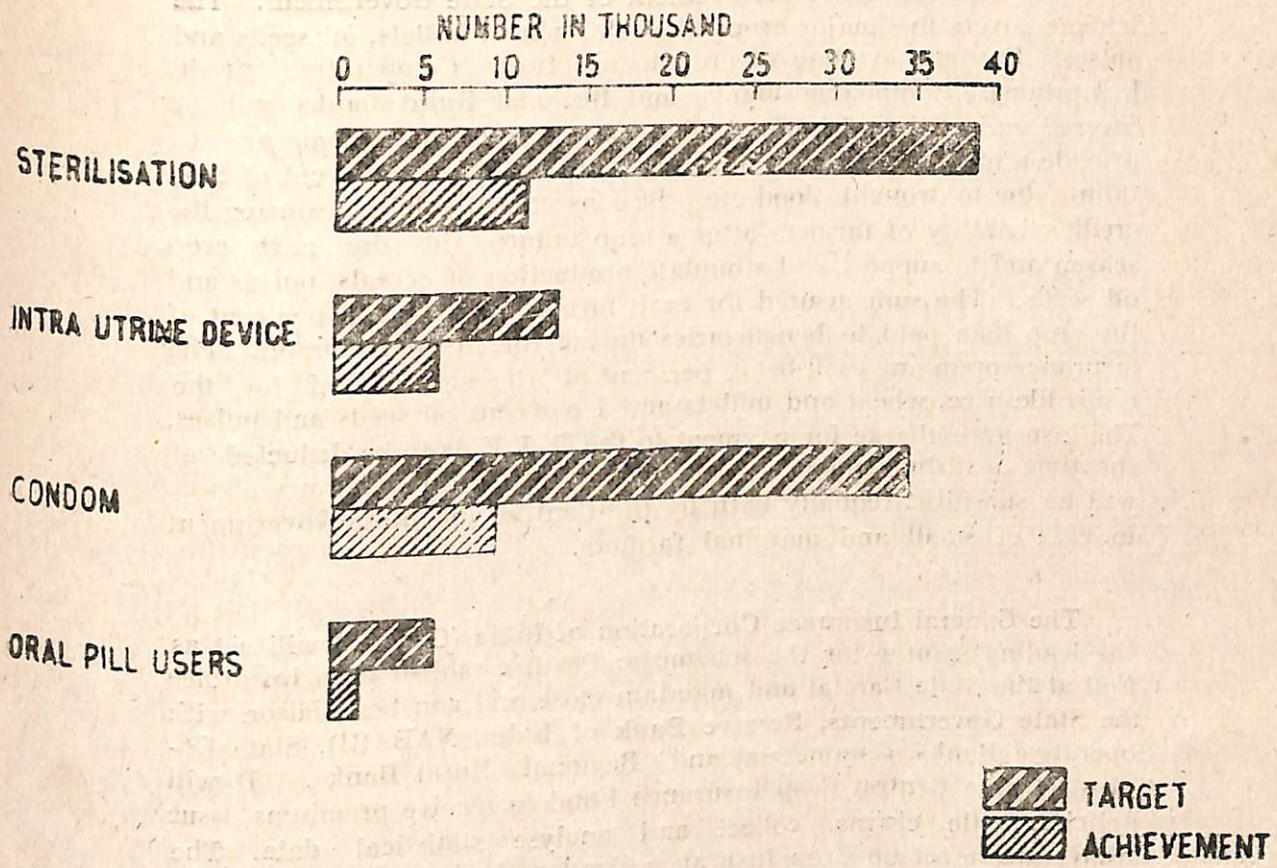


FIG-2

COMPREHENSIVE CROP INSURANCE SCHEME 1985-86

The Government of India has introduced a countrywide Crop Insurance Scheme from current year's Khariff season. The Scheme will be operated through the General Insurance Corporation of India (G. I. C.) with the active involvement of the State Government. The Scheme covers five major crops like rice, wheat, millets, oil seeds and pulses. Farmers availing of crop loans from Co-operative Credit Institutions, Commercial Banks and Regional Rural Banks, will be covered under the Scheme. The objective of the Scheme are to provide a measure of financial support to farmers in the event of crop failure due to drought, flood etc. Besides, it will help in restoring the credit eligibility of farmers after a crop failure for the next crop season and to support and stimulate production of cereals, pulses and oil seeds. The sum insured for each farmer shall be 150 per cent of the crop loan paid to beneficiaries during the insured season. The insurance premium will be 2 per cent of the sum insured for the crops like rice, wheat and millets and 1 per cent oil seeds and pulses. The insurance charge for payment to the G. I. C. is to be deducted at the time of disbursement of loan, 50 per cent of the insurance charge will be subsidised equally both by the Central and State Government in case of small and marginal farmers.

The General Insurance Corporation of India (G. I. C.) will act as the leading insurer for the scheme and will establish crop insurance Cell at the State Capital and maintain close and constant liaison with the State Governments, Reserve Bank of India, NABARD, State Co-operative Banks, Commercial and Regional Rural Banks. It will also set up a Central Crop Insurance Fund to receive premiums, issue policies, settle claims, collect and analyse statistical data. The States are to set up Crop Insurance Fund with an initial capital of Rs. 1 to 2 crores which will be equally contributed by the Centre and the State Government.

Orissa Government have decided to implement the scheme in all C. D. Blocks of the State with effect from July 15, 1985 in respect of krariff paddy only and it will be extended for other crops later. A State Insurance Fund Committee headed by Commissioner, Agriculture and Rural Development has been constituted. Other members of the Committee are Secretary, Agriculture & Co-operation, Secretary, Finance, Director, Bureau of Statistics & Economics, Registrar, Co-operative Societies, Orissa, Director, Agriculture & Food Production and a Representative from the Ministry of Agriculture Govt. of India, General Insurance Corporation of India, Convenor, Banks for State Level Co-ordination Committee, Reserve Bank of India, NABARD and Managing Director, State Co-operative Banks.

The Scheme which has since been implemented from July 15, 1985 shall also be applicable in respect of loanees who have taken short-term crop loan for Khariff Paddy between April 1, 1985 and July 14, 1985 provided they give option for the same.

World Bank on the Fisheries and Rural Development of Orissa

Shri Parthadev Roy

At a critical juncture, when the country faces such problems as population explosion coupled with rural poverty and unemployment one way to avert impending catastrophe is to harness our fresh water fish cuiture resources in tanks and reservoirs through latest scientific technologies. It is heartening that the World Bank have made significant contributions in the direction. Large number of rural people getting gainful employment through fish farming development programmes such as Fish Farmers & Development Agencies of the International Development Association (World Bank), Integrated Rural Development Programme and Economic Rehabilitation of Rural Poor, etc. Planning Commission defined—any individual gets a daily food intake of less than 1,400 K/Cal in rural areas and 2,100 K/Cal in urban areas is living below the poverty line. This relates poverty and food consumption.

Animal protein and fat provided concentrated sources of energy because of their high calarie value. They are now available in rural areas in form of fish. It is not only the most easily digestible of all non-vegetarian diets, it is the cheapest, weight per weight 200 gms. of fish provides :—

Protein	...	50%
Fat	...	80%
Calarie	...	25%
Phosphorous	...	45%
Iron	...	30%
Vitamin 'A'	...	100%
Vitamin 'B'	...	150%
Vitamin 'B'2	...	30%
Vitamin 'D'	...	1,000%

As a direct food, fish provides some of the essential amino acids lacking in many plant proteins. Fisheries is one of the poverty removal programmes is to steady income and enough calorie to the rural poor. There is no better scheme than fish farming which combines both open sources, reservoirs, lakes, rivers and the sea—are for the rich to exploit. The poor are allowed a piliferage if they are professional fishermen otherwise they have no share. Fish Farming in ponds or small tanks is the only and best solution to the problem. Agriculture alone cannot solve food problem. When we are about to reach a limit to land farming World Bank has cashed on the untapped field of water farming.

'Aquaculture' etymologically implies cultivation of water. As the land is cultivated to produce cereal, water can also be cultivated to rice proteinous food. Fresh water fisheries, in fact has contributed a great deal to remove the economic disparities in the State of Orissa. There is now an awareness among the people even in remote villages to the beacfit of fish farming, many have scitched over to fish culture from agriculture, converting past or whole of their farm lands into fish ponds and there is a growing demand for financial

assistance for excavation of new tanks. Financing Institutions have come up in a big way to finance pisciculture projects.

Endowed with 70 per cent of the cultivable water resources of the country, the States like Orissa, West Bengal, Bihar, Uttar Pradesh and Madhya Pradesh drew the attention of the Aquaculture Mission organised by Food and Agriculture Organisation (FAO)/UNDP, who recommended the visit of the World Bank Mission to this country in 1979 for planning the extension intensive pisciculture programme in these States. The Mission detected four major constraints on the way of rapid development of fish farming in the State of Orissa. They are—

(i) Shortage of quality fish seed,

(ii) Lack of long-term lease arrangement for public water bodies.

(iii) Lack of adequate long-term credit facilities for fish pond improvements and inadequacy of extension services.

and recommended formulation of the Inland Fisheries Project with I. D. A. assistance in the State.

The Inland Fisheries Project started in Orissa from 1980 in seven project districts, like Cuttack, Puri, Ganjam, Balasore, Sambalpur, Balangir, Phulbani and latter in two more district, Dhenkanal and Mayurbhanj. Government of India has approved for more two districts Kalahandi and Koraput during the current year and the State awaiting approval for Sundergarh and Keonjhar to cover all the thirteen districts of the State with the objects—

(i) To bring 16,000 ha. of pond area under intensive pisciculture, with modern fish farming technology of which 12,000 ha. are to be developed with institutional finance and 4,000 ha. out of individual own resources for increasing carp production in order to raise the socio-economic condition of fish farmers and to provide additional employment for unskilled and surplus family labour. The work is to be handled by autonomous Fish Farmers Development Agency one in each district.

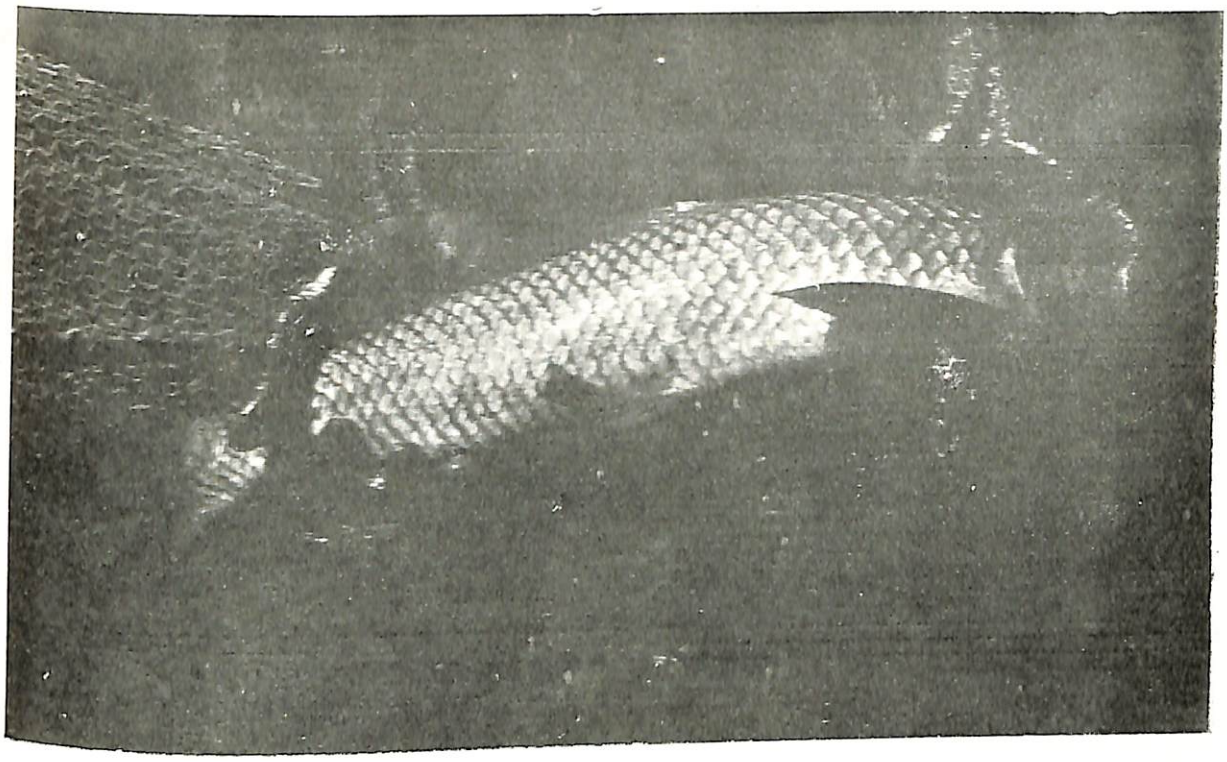
(ii) To meet the demand of quality fish seed requirement of the pond area developed by Fish Farmers Development Agencies by establishment of 70 ha. hatcheries with a production target of 74 million of quality fish seed for which Fish Seed Development Corporation has been set up.

Survey of culturable resources indicate that in Orissa, there are 54,000 ha. of tanks and ponds out of which 32,000 ha. can be made suitable with small investments. Unlike in West Bengal, where 94 per cent of the tanks and ponds are privateowned, the State of Orissa has only 25 per-cent of culturable pond resources under private ownership the bulk vested with Grama Panchayats and the Revenue Department. The majority of private owned ponds are quite small, the average size being 0·1 ha. whereas the public water bodies are large with an average area of 0·6 ha.

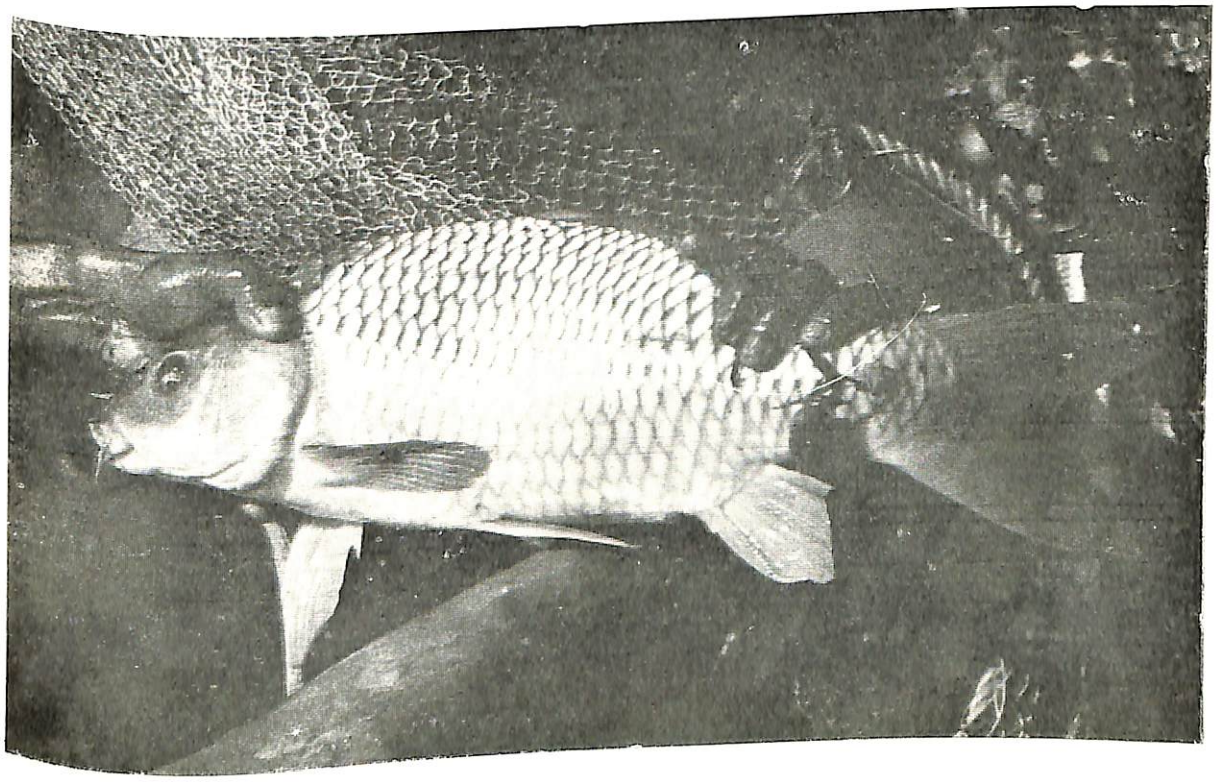
The private ponds are too small, deep silted, low in productivity. The ponds under public ownership although of suitable size, are weed infested and require renovation. In addition there was yet another problem. The Gramapanchayats instead of doing pisciculture by themselves lease out the ponds on short term basis, the period of lease being too short, the farmer took no interest for its development. On the other hand the farmer unable to make large scale investment in the ponds due to short lease period. Besides, institutional finance for short-term lease ponds were not available.

In view of these constraints of short term leasing policies for public water, Orissa Grama Panchayat Rule 86, was amended in 1979, where provision for long-term (10 years) lease to interested individual fish farmers or to group of such farmers, or to a co-operative society was made. Other priority groups to be selected as beneficiaries include with a view to transfer the fish breeding technology to common fish farmers to meet their quality seed requirements. Induced breeding kits were supplied free of cost through FFDAs and has produced 202·85 lakhs of induced breed spawn.

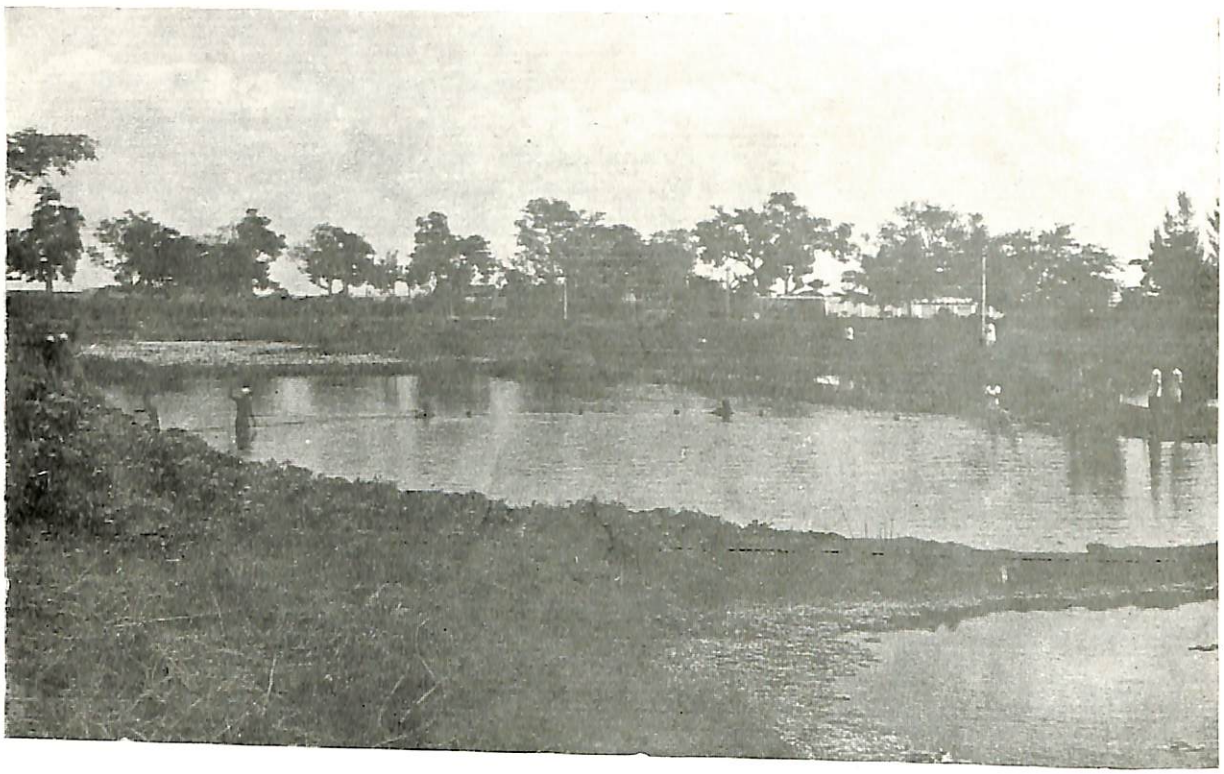
The agencies did not only limit their effort alone to spawn production in private sector.



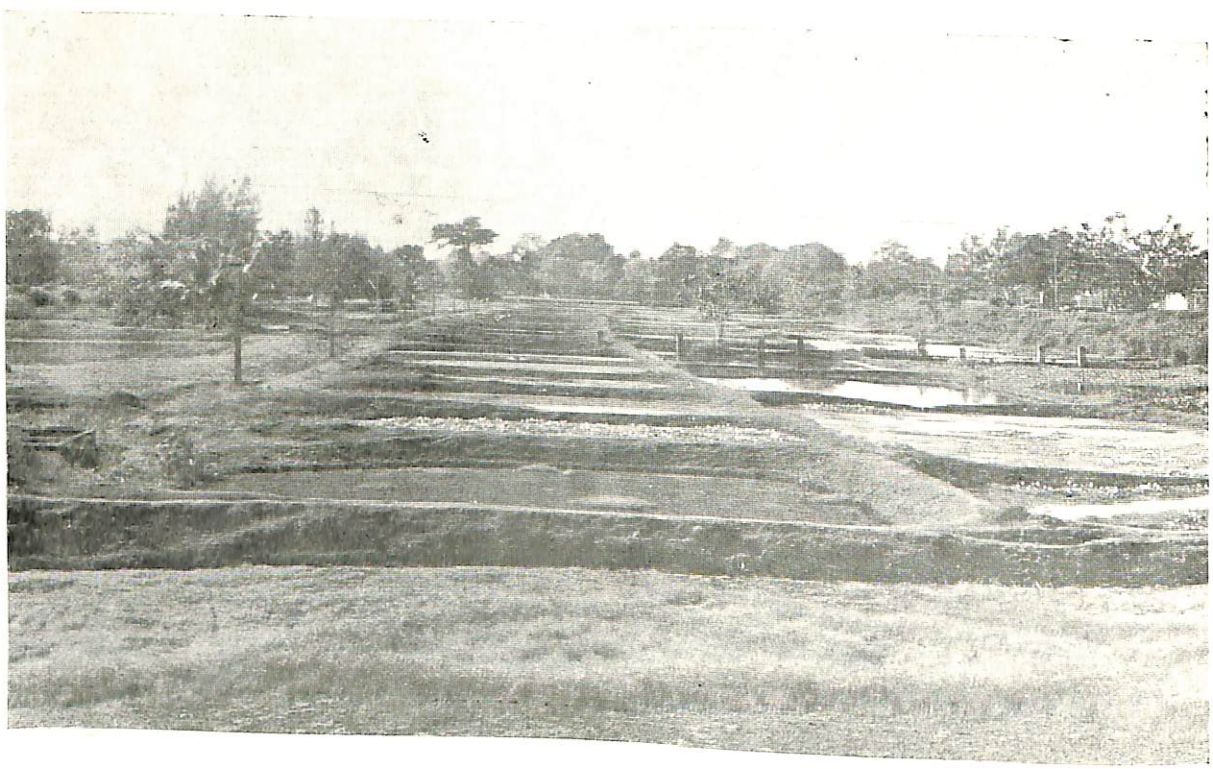
In one year weight—2 Kg.



A Sample during Harvest



Harvesting the Fish



Fish farms for Development

Popularising pisciculture through FFDA called for strengthening the extension infrastructure. This was done by posting qualified and trained Extension Officers in rural areas. The main duties of the Extension Officers are to arrange long-term tenures of public water and credit for pond improvment and to provide technical assistance to the farmers and implement demonstration programmes.

To attract the fish farmers to go for scientific fish farming and the participating Banks for easily flow of credit. Total Aquacultural Technology Centres were organised in rural areas.

World Bank has assisted in setting up eleven Fish Farmer Development Agencies in eleven out of thirteen districts to cater the exclusive needs of fish farmers. In the remaining two districts, the proposals for setting up F. F. D. As. are awaiting Government of India clearance. The Fish Farmer Development Agencies have developed 9,000 ha. of ponds.

The Agencies have settled 5,600 ha. of public water bodies vested with Grama Panchayats on long-term lease in favour of interested fish farmers who have no ponds of their own, have trained 6,000 fish farmers in scientific fish farming, arranged Rs. 40 lakhs subsidies to lessen the farmers from loan burden. A Fish Seed Development Corporation has been set up the world Bank to construct 70 ha. of modern hatcheries to meet the fish seed requirement of the fish farmers.

Deputy Superintendent of Fisheries,
the State Project Unit of the
Directorate of Fisheries, Orissa, Cuttack.

As per the requirement of the project National Bank for Agriculture and Rural Development (NABARD) in consultation with State Government prepared a Banking Plan for the first two years programme of allocating the programme under the development of existing fish ponds with first years input cost. The two years banking plan covered for water spread area of 4,600 ha. was sanctioned by NABARD's involving a total financial assistance of Rs. 683·368 lakhs and NABARD's refinance of Rs. 645·032 lakhs. This programme was allocated among 14 banks of which 9 are commercial banks, 2 co-operative banks and 3 Regional Rural Banks.

The Project Review Mission visited India from September 26 to October 13, 1983 to review the progress of project implementation and their findings indicated that the progress of Orissa with regard to pond development with Bank finance is at the peak among other project states, Bihar, West Bengal, Madhya Pradesh and Uttar Pradesh.

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Visit of Union Secretary, Tourism & Civil Aviation to Orissa

The Secretary, Ministry of Tourism and Civil Aviation Government of India, Dr. S. S. Sidhu, visited Orissa on June 12 and 13, 1985. He was accompanied by the Additional Director-General, Tourism, Government of India, Shri Ramesh Chandra. During his stay, Dr. Sidhu also called on the Chief Minister and Chief Secretary, Orissa.

During his discussions with the Chief Minister, Chief Secretary, Additional Chief Secretary, Secretary Tourism and other officials of the State Government, Dr. Sidhu indicated that the main objective during the Seventh Plan period would be to diversify from cultural tourism which had hitherto been the main focus of the tourism industry in India into other areas, such as beach tourism and leisure tourism. He also indicated that the Puri-Konark beach was one of those which had been selected by the Government of India for intensive development. The Government of India would provide assistance for setting up facilities for the tourists on the beaches including recreational facilities. He emphasised the need for establishment of way-side amenities such as restaurants and toilets on the roads connecting major tourist centres.

Dr. Sidhu during his brief stay visited Puri and Konark as well. He was impressed by the wealth of tourist attractions in the State and greatly appreciated the tourist infrastructure which had been created in Bhubaneswar and Puri, particularly in terms of hotel accommodation, by encouraging private initiative. He observed that the facilities created were of the right type and Orissa was now well equipped to receive international tourists in large numbers. For attracting foreign tourists, Government of India would take steps for projecting Orissa's tourist attractions abroad in a systematic manner. Groups of travel writers, travel agents and TV net works from other countries would be invited to come to Orissa to see the many tourist attractions that it had to offer and project these suitably abroad. He felt that cultural programmes such as dance festivals could also help to make Orissa more attractive for foreign tourists and the Government of India would support such festivals. The Union Secretary, Tourism, and Civil Aviation agreed that to promote international tourism the air services to Bhubaneswar needed to be considerably improved and further indicated that the Government of India would consider opening Bhubaneswar to foreign charters so as to attract larger number of international tourists. Dr. Sidhu also emphased the importance of domestic tourism which played a significant role in national integration.

Emerging Problem of Environment

Dr. Pramoda Chandra Pattanayak

I have already ventilated my views and some of the problems of environment through this esteemed journal (Vide January' 1983). The problem I have mentioned in the issue are established. But further problems are emerging and anticipated in the event of some developments in the world arena say in case of nuclear war.

I will put forth before my readers only two such emerging problems. (i) Acid rain and (ii) Sequel of nuclear war.

Acid Rain :

Before going through this point the readers have a right to know what 'Acid Rain' actually means. Because this phrase may appear very new to most of my readers although it is neither a new commer to the English vocabulary nor to the Science dom. This phrase was coined by a British Chemist, Robert Angus Smith 1872, but remained unnoticed for a complete hundred years till it attracted the attention of the Environmental Scientists and was dicussed in the conference of the United Nations on the Human..... Environment in the year 1972.

At the outset, the readers may take "Acid Rain" as probably the rain water is becoming gradually acidic. They are partially correct. Acid rain refers to a mixture of wet and dry acidic depositions front atmosphere. The wet part of it is the rain, dew, frost etc. But the dry part consists of gases and other solid particles that settle down on the earth. Here a pertinent question comes to common readers is that what dose acid mean ? Acidity of a substance is measured in the scale of PH i.e. Hydrogen on concentration. The PH value is a negative logarithm of this concentration. Therefore, the PH number rises as the acidity falls and the *vice versa*. A maximum value of PH can be 14. It is the most alkaline PH. The minimum PH may be one This is the PH of the acid solution used in the battery. Going up and coming down within this range, PH 7 is considered to be the neutral.

The rain and snow is usually slightly acid when atmosphere does not contain any other contaminants than Carbon dioxide. Because they are touched with Carbonic acid which is formed uninterupted by the reaction of carbondioxide and moisture in the atmosphere. This factor alone can influence the rain water to lower its PH value to 5·6 on the otherhand the dust in the atmosphere can raise the PH value up to 8. Nitrogen oxide formed during lightening, the chlorine from sea salt, decaying vegetation etc, either alone or concurrently can bring the PH value to a range of 4·5 to 5. This was recorded taking the PH of rain fall at places like mid pacific ocean, Indian ocean or say within the Amazon forest.

All these are natural sources of contamination of environment. But I am interested to put forth the sources of contamination that are man made. Fossil fuels like coal and petrolium when subjected to burn, charges the atmosphere with sulphur and nitrogen oxide, precursor of acid particles. The end product of the precursor is acidic and thus raising the atmospheric acidity. Industrial plants based on coal and oil, therefore, are the sources of the sulphurated acid precursor. Till now Scientists are in dark as to the amount of acid converted from such precursors although step to step re-actions have been found out i. e., the oxides recat with the oxidants like Ozone to form sulphates and nitrates. The

sulphates and nitrates combine with atmosphere water vapour and are finally converted to sulphuric acid and nitric acid.

The readers are now clear about the source and mode of acid rain. Now they should be clear about the extent of area to which the source can contaminate. It has been observed that the sulphur oxide after conversion to sulphates can travel hundreds of miles under favourable weather conditions. The cumulative effects of the wet and dry deposits of acid particles in the lakes and forests has been the matter of great concern. At this point I would like to aquint a scientific word "Linearity" which is a relationship of direct proportion between two quantities. If one varies by a certain percentage the other will vary by the same percentage. But non linearity is the norm of many of the atmospheric process. In study on this aspect of the atmosphere it was found that the relationship of industrial emissions and rainfall acidity appears to be non linear whereas in the eastern United States there exists linerity relationship between the emissions and depositions of sulphur. But Scientists are in dark about two important aspects of the problems (i) Source-receptor relationship. This is important because for application of control system one must be assured of its extents of effects. (ii) The second problem is to know the capacity of ecosystem to absorb such acidity without any harmful effects.

The effect of acidic deposition on the ecosystem has been demonstrated in the Laboratory. Acid rain fall and acid lakes provide the natural field study to compare the result of laboratory study.

Recently Scientists expressed grave concern on a news coming simultaneously from Vermount (U. S. A.) and Germany that there have been massive forest damages in the recent past. Undertaking a study on this aspect it was found that mobilisation of aluminium is induced by acid in the soils of the forest. It has been proved that such ions are toxic to the roots system of certain trees and hence the deplition of forest area. But some Scientists differ on this point claiming that draught pathogens and deposition of heavy metals to be the cause of massive forest damage.

Sequel to Nuclear War

In one of my articles published in this journal I have appraised my readers of an estimates of the effect of a nuclear war. The facts and figures mentioned therein were estimated basing on the figures of last explosion on Hiroshima. However, the present analysis is based on a three dimensional hydrodynamic models of the climate of the computor centre of Soviet Academy of sciences. It is estimated that within a month of explosion of ten thousand megatons the temperature of the North-West may come down 30°C below its normal atmospheric temperature. More lower temperature will be observed in places like Kamchtka peninsula. But this will not be limited to these countries, continents or hemisphere. Gradually it may spread to Southern hemisphere. As a result there will be massive cooling down of the global atmosphere altering the various atmospheric processes besides the nuclear pollutions over this planet. A contrasting situation is most likely to be observed that though the lower atmospheric temperature will cool, the planet the temperature at an altitude of 8-12 kilometers will rise abnormally causing that atmosphere super resistant. This will limit the vertical convection and vertical transfer of water vapour will be supressed upsetting the normal atmospheric hydrological cycle. Thus the self-purification reaction of the atmosphere will be much slower than the present rate.

The second impact is that the powerful explosion at high altitude will produce a lot of nitrogen oxide in the atmosphere. This nitrogen oxide will react with the ozone and deplete atmospheric stock of ozone to the extent that it can not filter the ultraviolet rays causing hazards to both animal and plant kingdom. On the other hand, low nuclear explosion will cause excess concentration of Ozone which when comes close to the Earth's surface is toxic to the flora and fauna.

These are but few effects of a nuclear war irrespective of its place of occurance. Thus people survived after a nuclear war will suffer from cold, face deficit of water, food, fuels and lead a cursed life in a moribund condition under psycological stress.

The patterns of internal migration in Orissa : An Analysis of Census Data

Shri Jyotirmaya Mohanty

Migration is an integral feature of demographic transformation. With the passage of time when population grows, pressure on natural resources, particularly on land, increases and this causes migration of people from one place to another. Migration may be due to a variety of reasons, but more often than not it is a reaction to the migrant's personal evaluation of socio-economic opportunities available both at the place of in-migration and out-migration. Migratory movements have also been "viewed as physical events shaped by environmental forces"[1]. Both historically and structurally, like every primary processes, the institution of migration is self-sustaining for which it is rightly said that, "almost all societies have been shaped at-least to some extent by migration"[2].

The subject of internal migration is gradually gaining importance because the movement of people within its national borders "is a necessary element of normal population re-distribution and equilibrium"[3]. It is also a topic of direct interest to the demographers and the sociologists, as it affects the distribution, structure and character of population in a given territory. It is an integral feature of demographic situation because the data on population mobility "are essentially pre-requisites for any development planning"[4]. In case of an under-developed region like that of Orissa it is of paramount importance to study the patterns of internal migration which reflects the disparity in development among regions.

Objectives

In this paper an attempt has been made to analyse the patterns of internal migration in Orissa depending on the Census data. The objectives of the paper include, (i) analysis of migration data for Orissa as per the 1971 and 1981 Censuses, (ii) explanation of the nature, extent and direction of population movements inside Orissa during 1961—71 and 1971—81, (iii) study of various aspects of internal migration in Orissa, viz., intra-district & inter-district movements according to sex and rural-urban composition, etc., and (iv) study of some of the differential features of the migrants—their place of origin and destinations and analysis of factors underlying such movements in Orissa.

Data Source

In India, like many of the countries, Census remains the principal source for the study of migration. Therefore, this paper depends on the secondary data of 1971 and the 1981 Censuses. There is also short analysis of the 1961 Census data for the purpose of comparison.

Beginning from the year 1881 attempts were made in every Census for the collection and compilation of data on migratory character of the people. From the first Census (1881) till 1961 migration results were obtained only through 'place of birth' statistics. The reply to the question put to every individual regarding his/her place of birth was the basis of the calculation of

internal migration in India. A person was considered as a migrant, if the place of enumeration during the Census differs from the place of birth. The information collected through place of birth statistics, however, only provides a 'crude index' of migration to be used for comparison with other Censuses and to know the main current of population movements. It fails to "measure the intermediate and multiple movements" for which the clear picture on frequency of population movement never comes out[5]. In order to make the analysis easier, information on the "duration of residence at the place of enumeration" was obtained for the first time in 1961 Census in addition to the collection of statistics regarding the place of birth with reference to rural/urban residence. And this practice was repeated in 1971 and 1981 Censuses. From 1971 Census there was a shift in the analysis depending on the 'place of last residence' instead of the 'place of birth' statistics. According to Census of India[6], a person is considered as a migrant by the place of last residence, "if the place in which he is enumerated during the census is other than his place of immediate last residence". For the first time in the 1981 Census an additional question regarding the 'reasons for migration' from the place of last residence was included in the 'Individual Slip' and in the schedule the alternative, viz., employment, education family moved, marriage and 'others' were given.

The migration data collected through Census suffers from a variety of shortcomings. Because of the non-availability of sufficient data from the Census results, it becomes extremely difficult to analyse the patterns of internal migration. According to Desai[7], the major difficulty faced in the analysis of migration "is the inordinate delay in the publication of detailed migration tables, whose format has at times changed from census to census". The 1971 Census migration tables for Orissa were published in the year 1981. The complete statistics on internal migration according to 1981 Census are yet to be published and in order to patch up the already much delayed process, a set of advance tabulations on the basis of the five per cent area sample have only been made available. Further, it is observed that, the 1961 and 1971 Censuses have only presented the migration statistics of the State, districts and urban units having 100,000 population, but they are silent about the migrating population of the Subdivisions, Blocks, small towns and villages. In order to have a better analysis a more detailed information about the migrants within the district is very much required. However, in the 1981 migration tables only the State figures are presented and they are silent even about the district figures unlike the previous enumerations.

Short Analysis of 1961 Census Data

According to 1961 Census[8] which is based on the place of birth statistics, only 31·2 per cent of the total population were migrants in Orissa. It is calculated that, the female migrants represented 77·7 per cent of the total migrant population of the State. In case of most of the districts the proportion of females to respective total migrating population is more than 70 per cent whereas it is even more than 80 per cent in certain districts. As in the entire country, marriage may be the most important factor responsible for more of female migrants in Orissa. In the State as well as in individual districts the percentage of the intra-district (short distance) migrants is the highest compared to other categories of migrants (viz., inter-district, inter-State and international). These short distance movers have occupied 81·33 per cent of the total migrating population of the State. In twelve districts these migrants have occupied much more than three-fourths of the respective migrating population whereas in Sundergarh the intra-district migrants constitute only 58·43 per cent of the total migrating population of the district. In this district the percentage of inter-State migrants (23·83 per cent) is the highest among all the districts. The establishment of the Rourkela Steel Plant during the 1951—61 decade in the district is mainly responsible for Sundergarh having the unique migratory picture.

The Census data again reveal that during 1961 the internal migration in Orissa was mostly rural oriented and industrialisation played a vital role for drawing the attention of migrants towards the industrial urban centres. A substantial majority of the short-distance migrants were enumera-

ted in the rural areas. In case of twelve districts (except Sundergarh) much more than 90 per cent of these migrants were enumerated in the rural areas and hence an insignificant proportion was enumerated in the urban areas. Among the inter-district (medium-distance) migrants, more people were also enumerated in the rural areas although the inter-district movement was less rural-oriented than the intra-district movement in 1961. In Sundergarh, urbanisation was followed by industrialisation for which 15·2 per cent of the intra-district migrants of the district were enumerated in the urban areas and this figure was the highest among all the districts. Again, 51·4 per cent of the inter-district migrants were also enumerated in urban areas of Sundergarh.

Analysing the statistics ragarding the 'duration of stay in the place of enumeration', it is revealed that the highest number of migrants have stayed in the place of enumeration for the longest period in the State as well as in the individual districts. Here, the majority of migrants may be the life-time migrants consisting of mostly women and in almost all cases marriage would have been the cause of migration. The 1961 Census also depicts that 44·44 per cent of the total migrants are workers in Orissa and the rest represent the non-working population. The cultivators have represented 20·26 per cent of the total migrant population which is the highest among all the categories of workers and this is immediately followed by agricultural labourers (8·22 per cent) and workers engaged in household industry (4·08 per cent). The percentage of the other categories of migrant workers seemed to be insignificant.

Analysis of 1971 Census Data

Unlike 1961 Census, place of last residence was the basis of the collection of migration statistics during 1971. However, the 1971 Census 9 has distinguished the migrants by their place of birth, According to statistics, 30·63 per cent of the total population of the State were enumerated outside the place of their birth. By comparing the 1961 Census data with the 1971 Census data, it is observed that in most of the districts the percentage of the intra-district migrants was slightly reduced in the 1961—71 decade, although in three districts the picture was different. Among the inter-district migrants the proportion of the total migrants has increased in nine districts and the State as a whole whereas the proportion has come down in rest four districts. Again, among the inter-State migrants, the proportion has come down in Orissa and in four districts while in rest nine districts it has increased in the decade. The pattern of internal migration according to the place of birth statistics appears to have remained more or less same during the 1961—71 decade.

The 1971 Census has also presented the inter-district population movements inside Orissa depending on the place of birth data. According to the calculations made regarding the number of in-migrants and out-migrants for each district of the State, it is found that Sundergarh, Koraput, Sambalpur, Puri, Keonjhar, Phulbani and Balasore represented the gaining districts while Ganjam, Cuttack, Mayurbhanj, Balangir, Dhenkanal and Kalahandi were the losing districts in 1971. The total number of in-migrants, as expected, has become equal with the total out-migrating population (i.e., 833, 005-833. 005-0) in case of all the districts taken together and hence, the migration figures of the State derived from the 1971 Census enumerations seem to be free from errors. According to critics, such type, of information does not deal with the movement of population in a given period; it only represents the results of the population movements of an "indefinite period in the past as it was reflected at the time of the Census" 10.

According to place of last residence which was the basis of the 1971 Census migration analysis, there were 6, 858, 495 migrants in Orissa and this figure represented 31·2 per cent of the total population. Out of the total migrating population, 86·7 per cent were enumerated in the rural areas of the State whereas the rest 13·3 per cent were enumerated in the urban areas. It is also calculated that, 17 per cent of the total male population and 45 per cent of the total female population of Orissa were migrants in 1971. Further, it is observed that, out of the total male

migrants, 75 per cent were enumerated in rural areas and the rest 25 per cent were enumerated in the urban areas. Similarly, out of the total male migrants, 91 per cent were enumerated in the rural areas while only 9 per cent were enumerated in the urban areas. The analysis, therefore, shows that in Orissa during 1971 Census, (i) more migrants were enumerated in the rural areas than in the urban areas, (ii) among the migrants, the number of female was larger and; (iii) in comparison with the female migrants, more male migrants were attracted towards the urban areas.

Table No. 1 depicts the district-wise migration picture during 1971 basing on the place of last residence analysis. According to the Table, the highest proportion of migrants to respective total population is recorded in Sundergarh (i.e., 37·4 per cent). The Table further indicates that excepting the districts like Balasore, Cuttack, Dhenkanal and Kalahandi, in rest cases the percentage of migrants to respective total population is more than thirty although it has never touched thirty-eight in either of the districts. From this analysis, it is clear that, majority of the people in the State were not mobile during 1971. The Table further reveals that, in all the districts as well as in the State the number of female migrants is more than their male counterparts. In Sundargarh the percentage of the female migrants to total migrating population of the district is the lowest (i.e., 52·6 per cent) and in Dhenkanal it is the highest (i.e., 84·6 per cent) among all the districts. The rapid industrialisation of Sundargarh is definitely responsible for the highest proportion of male migrants (47·4 per cent) compared to other districts.

Table No. 2 has classified the migrants by the source of migration, i. e., place of last residence being in some other place inside the same district (intra-district), in other districts of Orissa (inter-district), inside Indian but outside Orissa (inter-State), foreign countries (inter-national) and unclassifiable. The statistics show that, 79·52 per cent of the total migrants in Orissa are short-distance or the intra-district movers. 12·07 per cent represent the inter-district migrants, 7·54 per cent are the inter-State migrants while only 0·58 per cent had the last residence outside India. It is calculated that, 87 per cent of the total inter-State migrants are from the neighboring States like Bihar (26·4 per cent), West Bengal (23·2 per cent), Andhra (20·4 per cent) and Madhya Pradesh (17·0 per cent) and the rest 13 per cent constitute the inter-State migrants from all the remaining States and the Union Territories of the country. According to the Table, the intra-district movers have occupied the highest proportion in case of all the districts. As in 1961, Sundergarh has presented a different picture in the Table compared to other districts and this is possibly due to the massive industrialisation of the district. This district has attracted more and more inter-district and inter-State migrants for which the percentage of the intra-district migrants to the total migrating population is the lowest among all the districts of the State.

In the analysis of the pattern of internal migration, duration of residence' is generally treated as a vital aspect. According to all Orissa figure, only 8 per cent of the total migrants have reported in 1971 that their duration in the place of enumeration was less than a year. For 18 per cent of migrants, the duration was 1—4 years and 15·9 per cent of the migrants were staying in the place of enumeration for 5—9 years. Again, 21·5 per cent of the migrants in Orissa were staying in the place of enumeration for 10—19 years, 31 per cent were staying for more than twenty years and in case of only 5·6 per cent of the migrants the exact period of stay was not known. The data indicate that, in most cases the number of migrants has increased mostly with the increase in the period of stay.

The 1971 Census has also given statistics of the migrants to urban units having population of 100,000 and above. In Rourkela, the highest number of migrants (i. e., 72·32 per cent of the city's total population) were recorded and this was immediately followed by Bhubaneswar (67·80 per cent). The establishment to Steel Plant was the main point of attraction for the persons migrating to Rourkela while in Bhubaneswar the exodists in 1971 were due to the shifting of State Headquarters in the 1951—61 decade. In Cuttack,

Sambalpur and Berhampur comparatively low rate of migration was reported because these urban units were not followed by rapid industrialisation like that of Rourkela. Again, it is calculated that, in four such urban centres the percentage of the male migrants is higher than the percentage of the female migrants, but in case of Berhampur city the reverse is true. From this it can be said that, in most cases generally the males come to the Urban centres either for employment or any other engagement and the females follow them afterwards.

It is further calculated that, among the male migrants, 55·67 per cent are married whereas 40·84 per cent are unmarried and the rest 3·49 per cent are either widowed and/or divorced. The rate of female migration is higher due to marriage, since 66·60 per cent of the female migrants of all ages are categorised as married. The same pattern holds good both in rural and urban areas. Among the unmarried group, the male migrants have out-numbered the females in all cases. Although very small proportion of migrants are either divorced or separated, females are more in that category than the male migrants. It is also revealed that the percentage of the unmarried persons is gradually decreasing with the increase in the age group of migrants. By and large, one can find the preponderence of unmarried migrants moving to urban areas rather than to rural areas of the State.

Among the total migrants in Orissa, 25·64 per cent were reported as workers while the rest 74·36 per cent were non-workers during 1971 Census. It is pertinent to note that a substantial majority of the non-working migrants were females It is observed that, though the number of femals non-workers is high among the migrants, they are considerably less among the total workers and the individual categories of workers. It is found that, the participation of the migrating workers is comparatively higher in the categories like cultivators (7·63 per cent of the total migrants) and agricultural labourers (7·46 per cent). But the participation is less in the work categories like 'transportation, storage and communications ; 'construction ; 'mining and quarrying' and 'livestock, forestry, fishing, etc:

Analysis of 1981 Census Data

The complete tabulations covering all the aspects of the 1981 Census on migration are yet to be published. As mentioned earlier in the paper, a set of advance tabulations on the basis of five per cent sample date are only available. The statistics derived from such tabulations are not sufficient to analyse the patterns of internal migration in Orissa. Again, this 1981 Census 11 tabulations on migration are also silent about the individual district figures for which it becomes very difficult to assess the migratory trend in the districts during the 1971—81 decade.

Table No. 3 depicts the percentage distribution of migrants classified by the place of last residence and duration of residence in the rural and urban areas of Orissa as well as in the State as a whole. Firstly the Table has taken into consideration the case of the migrants enumerated in the rural areas of Orissa during 1981 Census. The migrants are also classified by their place of last residence, i.e., rural, urban and total. Out of the total migrants whose place of last residence, i.e., rural, urban per cent of them are staying in the rural areas of the State for the longest period, i. e., 'twenty years and above' and this percentage is the highest among all the durations for these rural-rural migrants. But 29·95 per cent of the total urban-rural migrants are staying in the place of enumeration for a period of 1-4 years and this percentage is the highest among all the durations for this category of migrants. Marriage may be the most important factor responsible for the highest number of rural-rural migrants being enumerated in the 'twenty years and above' group than the urban-rural migrants. Again, among the total number of migrants enumerated in the rural areas, the highest percentage, i. e., 30·71 per cent of them are enumerated in the 'twenty years and above' duration category.

Secondly, the same Table had shown the migrants enumerated in the urban areas of the State. It has also split up the migrants according to the place of last residence such as rural, urban and total. Among the rural-urban migrants, 28·40 per cent have stayed in the place of enumeration for 10—19 years and this is the highest

proporation among all the durations. Among the urban-urban migrants, the highest percentage (i. e., 25·83 per cent) is also recorded in the same 10-19 years duration group. The fact is also the same among the total persons enumerated in the urban areas of Orissa as 27·45 per cent of them are staying in the place of enumeration in the 10-19 year group duration and this figure is the highest among all the groups.

Thirdly, according to the said Table, the highest proportion (i. e., 27·28 per cent) of the total migrants of Orissa are recorded in the twenty years and above category. This is also a fact with the rural to total category as the highest percentage (i. e, 29·56 per cent) is recorded from the longest period of stay. But, among the urban to total group of migrants the highest number (i. e., 27·88 per cent) of them are staying in the place of enumeration for 1—4 years.

For the first time in the history of Census operations in India, reasons for migration were elicited in 1981 Census and the reasons for migration were broadly categorised as employment, education, marriage, consequent of family movement and other reasons. It is observed from Table No. 4 that, among the total number of migrants in Orissa, who reported employment as the reason for migration. 7·52 per cent of them have stayed in the place of enumeration for less than a year 19·20 per cent of them for 1—4 years, 16·49 per cent for 5—9 years and 54·41 per cent for ten years and above. Secondly, among the migrants who reported education to be the cause of their migration from their place of last residence, the highest number (i.e., 44·33 per cent) are staying in the place of enumeration for 1—4 years and this is immediately followed by 26·89 per cent in the "ten years and above" duration group. The largest proportion of such migrants is recorded in the 1—4 year duration group, because a large part of this group of migrants may be the students who have migrated for studies in Schools and Colleges as the duration of the course conforms to the above period. Among those who reported "family moved" as reason for migration, 41·62 per cent of them are enumerated in the "ten year and above" duration group and this is immediately followed by 29·80 per cent in the 1—4 duration year group. Further, more than 60 per cent of those reporting marriage as reason for migration have stayed in the place of enumeration for more than ten years and this is a fact with both males and females. Lastly, among other migrants the highest percentage is recorded in the "ten year and above" duration and this is also true with both male and the female migrants.

Summary and Conclusions

Analysing the migration data of the State for different Census periods, it is revealed that the patterns of internal migration of 1971 Census, tally more or less with the Census data as recorded during 1961. In both the Censuses, slightly more than 30 per cent of the total population were migrants in Orissa although in 1961 the migrants were distinguished by their place of birth while in 1971 place of last residence was the basis of analysis. During the 1961—71 decade, therefore, a substantial majority of the State population were not migrants. Among the migrants, females were much more in number compared to males in the State as well as in the individual districts in both the enumerations. Most of the migrants, especially the females, were enmuerated in the rural areas whereas more of male migrants appear to have been attracted towards the urban centres. Analysing the Census data up to 1981, it is also observed that, in most cases the highest proportion of the exodists have stayed in the place of enumeration for the longest period. This may be due to the dominance of the life-time female migrants which has become possible due to marriages. The conclusion can, therefore be drawn that marriage plays an important role in the migratory pattern of the State. This fact has further been confirmed while analysing the different causes of migration in 1981 Census.

During 1961 and 1971, the rate of inter-district (short-distance) movers was much higher in comparison with the inter-district, inter-state and foreign migrants in Orissa, as well as in most of the districts. However, the highly industrialised district of

Sundargarh has presented an unique migratory picture in both the Census enumerations. The percentage of the inter-district, inter-state and inter-national migrants to total population of this district was the highest compared to other districts for which the percentage of the short-distance migrants was the lowest. From the individual district figure it is found that both in 1961 and 1971 the percentage of the migrants to respective total population was the highest in Sundargarh and this was immediately followed by Sambalpur. It may be mentioned here that Sambalpur has followed Sundargarh due to industrialisation while the other districts are less industrialised. As to the patterns of migration of the big urban centres, it is revealed that the highly industrialised centre of Rourkela located in Sundargarh has attracted the highest percentage of exodists in 1971. The conclusion can be drawn that, industrialisation has played a vital role in accelerating migration. Apart from the role of industrialisation, as per the previous remarks, marriage is another dominating factor in the migratory scene of the State. Finally, it appears that the pattern of internal migration in Orissa has remained unchanged over the years.

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TABLE No. 1

Total Population, Migrants classified by place of last Residence and their Proportions

Place of enumeration State/ district	Total Population	Migrants			Percentage of total migrants to total population
		Total	Males	Females	
(1)	(2)	(3)	(4)	(5)	(6)
ORISSA ..	21,944,615	6,858,495	1,898,570 (27·7)	4,959,925 (72·3)	31·2
Sambalpur ..	1,844,898	676,400	241,475 (35·7)	434,925 (64·3)	36·6
Sundargarh ..	1,030,758	386,290	183,275 (47·4)	203,015 (52·6)	37·4
Keonjhar ..	955,514	307,065	98,385 (32·0)	208,680 (68·0)	32·1
Mayurbhanj ...	1,434,200	430,790	104,270 (24·2)	326,520 (75·8)	30·0
Balasore ..	1,830,504	520,495	99,105 (19·0)	421,390 (81·0)	28·4
Cuttack ..	3,827,678	1,113,005	277,830 (25·0)	835,175 (75·0)	29·0
Dhenkanal ..	1,293,914	327,910	50,590 (15·4)	277,320 (84·6)	25·3
Phulbani ..	621,675	223,740	65,215 (29·1)	158,525 (70·9)	35·9
Balangir ..	1,263,657	420,215	92,840 (22·1)	327,375 (77·9)	33·2
Kalahandi ..	1,163,869	277,780	86,125 (31·0)	191,655 (69·0)	23·8
Koraput ..	2,043,281	688,240	243,090 (35·3)	445,150 (64·7)	33·6
Ganjam ..	2,293,808	713,795	178,885 (25·1)	534,910 (74·9)	31·1
Puri ..	2,304,859	772,770	177,485 (23·0)	595,285 (77·0)	33·0

Note—Figures inside the brackets indicate the percentage of respective total migrant population

Source—Census of India, 1971—Series-16, Orissa, Part II-D, Migration Tables (Tables D I & D-V.)

TABLE No. 2

Percentage distribution of migrants classified by source of migration

State/District	Total Migrants	Last Residence				
		Elsewhere in the district of enumeration (intra-dist.)	In other districts of Orissa (inter-dist.)	State in India beyond Orissa (inter-State)	Foreign countries (inter-national)	Unclassifiable
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ORISSA ..	100·00	79·52	12·07	7·54	0·58	0·29
Sambalpur ..	100·00	72·00	17·53	10·06	0·41	0·00
Sundargarh ..	100·00	49·41	22·92	26·98	0·69	..
Keonjhar ..	100·00	70·79	18·10	10·86	0·20	0·05
Mayurbhanj ..	100·00	81·00	10·06	8·78	0·06	0·10
Balasore ..	100·00	78·59	12·08	9·00	0·29	0·04
Cuttack ..	100·00	86·51	9·42	3·68	0·38	0·01
Dhenkanal ..	100·00	89·78	9·03	1·16	0·03	..
Phulbani ..	100·00	81·85	16·51	0·43	0·01	1·20
Balangir ..	100·00	85·76	12·23	1·97	0·04	..
Kalahandi ..	100·00	83·64	12·40	3·90	0·06	..
Koraput ..	100·00	74·70	7·78	13·68	3·21	0·63
Ganjam ..	100·00	88·19	4·41	5·67	0·33	1·40
Puri ..	100·00	80·77	15·06	3·60	0·30	0·27

Source—Census of India, 1971—Series-16,Orissa,Part II-D Migration Table (Table D-V).

TABLE No. 3

Percentage distribution of Migrants classified by place of last residence and duration of residence in Rural and Urban Areas of Orissa

Place of Enumeration	Rural/Urban status of the place of Last Residence	Total Migrants	Duration of Residence In the place of enumeration in years					
			0—1	1—4	5—9	10—19	20+	Period not stated
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rural Areas of Orissa.	Rural ..	100·00	8·11	20·11	14·57	22·25	32·31	2·65
	Urban ..	100·00	17·43	29·95	13·51	18·40	18·17	2·54
	Total ..	100·00	9·10	21·31	14·43	21·80	30·71	2·65
Urban Areas of Orissa.	Rural ..	100·00	3·68	19·18	18·24	28·40	26·03	4·47
	Urban ..	100·00	4·55	27·25	18·15	25·83	20·74	3·48
	Total ..	100·00	3·96	22·04	18·18	27·45	24·11	4·26
Total Orissa ..	Rural ..	100·00	6·17	19·70	16·17	24·95	29·56	3·45
	Urban ..	100·00	7·51	27·88	17·08	24·12	20·15	3·26
	Total ..	100·00	6·43	21·69	16·38	24·73	27·28	3·49

Source—Census of India, 1981—Series-1,-India, Part-II, Special Report & Tables based on 5 per cent sample data (Table D-2)

TABLE No. 4

Percentage distribution of Migrants in Orissa by duration of residence for each reason for Migration

Reasons for migration	Persons Males, Females	Duration of residence				
		All duration	Less than one year	1—4 years	5—9 years	10 years and above
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Employment ..	Persons ..	100·00	7·52	19·20	16·49	54·41
	Males ..	100·00	7·58	18·76	16·30	55·14
	Females ..	100·00	6·85	23·95	18·49	46·53
Education ..	Persons ..	100·00	5·17	44·33	20 46	26·89
	Males ..	100·00	4·34	43·05	20·28	29·86
	Females ..	100·00	6·84	46·87	20·82	21·00
Family moved	Persons ..	100·00	7·83	29·80	18·51	41·62
	Males ..	100·00	7·57	27·59	17·84	44·60
	Females ..	100·00	8·03	31·46	19·01	39·37
Marriage ..	Persons ..	100·00	1·36	15·31	14·85	67·35
	Males ..	100·00	1·34	17·65	15·28	63·62
	Females ..	100·00	1·37	15·25	14·84	67·45
Others ..	Person ..	100·00	13·52	23·66	15·15	33·90
	Males ..	100·00	11·58	23·74	15·23	36·54
	Females ..	100·00	16·93	23·54	15·00	29·26

Note—All durations include unspecified durations for which the percentage may not add up exactly to 100·00.

Source—Census of India, 1981—Series-1, India, Part-II, Special Report and Tables based on 5 per cent sample data (Table D-3).

TOURISM D. G. VISITS ORISSA

The Director General, Tourism, Government of India, Dr. N. K. Sengupta, visited Orissa on 17th and 18th July 1985. During his stay in Orissa he had discussions with the Secretary Tourism and Culture and others officials of the Tourism Department and called on the Chief Secretary and Additional Chief Secretary. He also met representatives of the Hotel and Travel Trade and discussed with them regarding their suggestions for promotion of tourism to the State. He also visited Nandankanan, Puri and Chilika lake.

Dr. Sengupta was greatly impressed by the infrastructure that has been created for the development of tourism in the State, Particularly through the involvement of the private sector. He appreciated the number of good hotels which have been constructed by private entrepreneurs in Bhubaneswar and Puri. The completion of the marine drive directly connecting Konark and Puri was another major achievement. Dr. Sengupta was of the view that Orissa now had the required infrastructure for attracting international tourists in a big way. What was required was a major promotion and Publicity campaign in other parts of India and abroad for attracting tourists to the State. The Ministry of Tourism, Government of India, would be mobilising its net work of tourist offices abroad for this purpose and also senging a number of important groups of foreign travel writers and travel agents on familiarisation tours of Orissa.

The Director General, Tourism was of the view that there was very good scope for development of watersports near Konark and on Chilika lake. He also suggested that a marine park would be established on Chilika lake near Satpada. The Ministry of Tourism. Government of India, would give assistance for these projects and also construction of economy class accommodation for budget tourists and tourist facilities such as cafetaria, public toilets etc. at major tourist centres like Konark, Puri, Chilika and Nandankanan. With the infrastructure already created and the facilities proposed to be set up in the future, Dr. Sengupta felt that turism in Orissa has a very bright future.

Director General, Tourism, agreed that there was need for improvement of air-services to the State and introduction of convenient connections to Bombay and Hydrabad and Kathmandu via Varanasi. He also reacted favourably to the suggestion made to him by the members of the hotel and travel trade who met him that the flight from Calcutta to Madras and Visakapatnam should also touch down at Bhubaneswr.

MINIMUM WAGES OF 23 SCHEDULED EMPLOYMENT REVISED

The State Government have revised the rates of minimum wages in respect of all categories of employees working in the following 23 scheduled employments.

(1) Printing Press, (2) Kenduleaf collection, (3) Bamboo Forest Establishments, (4) Construction or maintenance of roads or in building operations, (5) Stone breaking and stone crushing, (6) Construction or maintenance of danms and embankments, (7) Irrigation Project, sinking of wells and tanks, (8) Saw Mills, (9) Timber Trading (including felling and sawing). (10) Minor Engineering Industry (employing less than 50 persons), (11) Tile and Brick making, (12) Shops and Establishment, (13) Oil Mills, (14) Rice Mills, Dal Mills and Flour Mills, (15) Hotel, eating houses and restaurants, (16) Refactory Industry, (17) Salt pans, (18) Distilleries, (19) Chemical Industry, (20) Tobacco (including bidi making) Manufacturer, (21) Cinema Industry, (22) Ceramic and Pottery Industry and (23) Collection of Sal seeds.

The rates of minimum wages for unskilled categories of workers in all these employments have been fixed at Rs. 7·50 per day. The minimum rates of wages for the semi-skilled workers have been fixed between Rs. 9 to Rs. 10 per day. Similarly, the minimum rates of wages for the skilled workers and the highly skilled workers have been fixed between Rs. 12 to Rs. 13 and between Rs. 15 to Rs. 16 per day respectively.

The rates of wages of piece-rate workers in all these employments have also been appropriately revised. The rate of rolling 1,000 bidis has been fixed at Rs.8·50. The rate for collection of sal seeds has been fixed at Rs. 0·95 per kilogram of dry decorticated seeds and the rate of manufacture of salt has been fixed at Rs. 150 per gadisa (each gadisa comprises of 60 bags each bag weighing 75 kilogram). All these rates of wages are exclusive of the wages for the weekly holiday to which the worker is entitled . The worker will therefore, get wages for the weekly holiday at the above rates.

Earlier, Government had revised the rates of minimum wages for agricultural and unskilled workers in 35 scheduled employments to Rs. 7·50 per day. In this connection it would be pertinent here to mention the minimum rates of wages of agricultural labourers and other unskilled categories of workers in the scheduled employments which was Rs. 4 per day in 1980 have since been revised 3 times.

The rural workers, Scheduled caste/Scheduled tribe workers working in the forests, unorganised workers and the bidi workers will be highly benefited by this revision.

CASES FILED FOR VIOLATING WEIGHTS AND MEASURE ACT

2,630 cases were filed in the Court on charge of violating Weights and Measure Act in the last financial year following stringent Enforcement measures taken against the unscrupulous traders. They were detected while using unstamped and defective weights and measures. During this period, 1,351 cases were disposed of and fine to the tune of Rs. 1,10,961 was collected.

This field staff of Weights and Measure Organisation of the State verified weights and measures of 1,16,226 traders and collected Rs. 35,60,365 as annual stamping fees which is 5 lakhs more than that of 1983-84.

CHIEF MINISTER INAUGURATES PANTHASALA AT JAJPUR

For the facility of pilgrime and tourists coming to goddes Viraja, the presiding deity of Jajpur, the Department of Tourism has set up a Panthasala near the temple. Shri Janaki Ballav Patnaik, Chief Minister of Orissa inaugurated the Panthasala. The Panthasala has been constructed on an area of 0·43 acre at a total expenditure of Rs. 8,73,700. It has eight well furnished double bedded rooms and eight dormitories which will provide accommodation to 64 persons. The charge for double bedded room is Rs. 20 and for each bed in the dormitory is Rs. 5.

JAJPUR MILK CHILLING CENTRE

Chief Minister Shri J. B. Patnaik will lay the foundation stone of a Milk Chilling Centre at Jajpur Road on the 11th June 1985. The estimated cost of this plant is Rs. 10 lakhs and will be completed by the end of 1986. The capacity of this Chilling Centre is 4,000 liters per day and about 10,000 families will be benefited by establishment of this Chilling Centre. On the occasion of this foundation laying ceremony, among others, Miss Frida Topno, Minister of State for Fisheries and Animal Husbandry and Shri Sarat Rout, Minister of State for Planning & Co-ordination & Information & Public Relations attended the function. Shri Rama Chandra Khuntia, M. L. A., Korei presided.

NEW MOTOR YACHT FOR TOURISTS ON CHILIKA LAKE

The Minister of Tourism and Civil Aviation, Government of India have sanctioned a sum of Rs. 4 lakhs for a 34-seater FRP Motor Yacht for use of tourists visiting Chilika Lake. This will overcome difficulties for package tours for large groups of tourists to the lake by two motor boats at present deployed there having seating capacity of only 15 persons each. The New Motor Yacht is expected to be received at Chilika Lake by coming October. The Yacht will fulfil a long felt need of tourists visiting Chilika Lake.

AN APPROACH TO SOLAR ENERGY IN INDIA

Shri B. C. Pradhan

The sun is the primary source of all forms of energy on Earth, including all life forms. The food-stuff essential for all living beings are nothing but products of solar energy. The fossil fuels also are different forms of solar energy. Even wind, tidal, hydro and geothermal sources are also forms of solar energy. These fuels seem no longer adequate to sustain the present life style. The fossil fuels in coal, oil and gases of the world will be exhausted in the near future if the present rate of energy consumption is not abated. The other form of energy like nuclear energy is limited to the production of electric power. It also poses very serious problems of pollution and public health hazards. The hydroelectric power does not count much in view of limits and obvious constraints. So is the case with other non-conventional source of energy wind, tidal and geothermal, etc. The only alternative source of energy is the sun which is almost a limitless reservior of pollution-free energy.

The reasons that have mainly compelled the develop and developing countries to review their energy programmes in recent years are due to like in oil prices and rapid decrease of world's fossil fuels. Estimates of world's fossil fuel resources differ widely depending on the method of evaluation. Energy needs will grow at the rate of 6·5 per cent per annum, the National Committee on Science and Technology (N. C. S. T.) Report estimates. Unless the present patterns of energy production and consumption is changed, it is unlikely that this demand would be met. Three alternative patterns of energy consumption are suggested for (1) villages with a population of less than 1,000 (ii) Small towns and (iii) industrial areas and large towns. The daily average consumption of a village of less than 500 has been estimated at 200 to 300 kwh., 100 kwh. for cooking, 100 kwh. for irrigation, 50 kwh. for lighting and entertainment. Most of the smaller villages in the country are remote and inaccessible. Due to low power demand potential and uneconomical they can not be covered by the existing electricity net-works. Fossil fuels cannot substitute for electricity as there is a shortage of such fuels. For cooking in the villages, fire-wood and animal dung provide the energy needs. But increasing use of fire-wood will lead to the depletion of forest areas and deleterious results on the ecosystem. Gobargas plants could thus profitably serve the needs of the village and also be a source of rich compositing material. In the long run, solar energy will be an attractive alternative. It is a freely available source of energy and will meet the energy demands of small localised needs. The solar energy could thus provide the only solution to supplying energy to the villages with a population less than 500. For the larger villages, mini-solar power plants could be developed with a capacity of 5 Kw. or more. To tap solar energy for various applications like heating, drying, distilling, solar engines and pumps, work has already been started in the country. Thus the priority goes to the rural sectors. For this, the geographical location of India is an added advantage.

This sun releases through every second 380 billion trillion kilowatts of energy through fusion re-action. Of the total solar energy that is interecepted by Earth is about 173 trillion killowatt (173×10^{12} killowatts). About one third is reflected back as short-wave radiation. About half is absorbed by the atmosphere, occeans and the land. About one-sixth is used in the hydrological cycle-evaporation-convection and precipitation (400 billiontons of water is evaporated each year). A small fraction powers air movements and oceanic circulations. A small fraction i.e., 40 billion killowatts goes into photosynthesis. This small fraction has produced our fossil fuel reserves. The known recoverable energy from fossil fuel reserves is about $23 \times 2{\cdot}98 \times 10^{14}$ Kw. The sun sends out radiation in a year with a heat equivalent of 400 billion trillion (4×10^{23}) tons of anthracite coal. The total solar energy that we use to sustain the present civilisation is barely ($1/6 \times 10^{5}$) th of the solar energy that reaches the earth. Thus attempts have been made to tap the small fraction of solar energy for various applications.

Solar technology and its utilisation :

Application of solar energy can broadly be divided into three categories—

(1) Solar thermal devices and systems,

(2) Solar energy conversion to electricity,

(3) Biological conversion of solar energy.

Solar thermal devices and systems :

The solar visible radiant energy better known as light can be converted into thermal energy. Solar energy is available in India in dispersed forms with an average dislocation rate of only 5 to 8 kwh per square meter of horizontal surface per day. For whole of India, the total annual incidence of solar energy is of the order of 6×110^{17} kwh. A small fraction of this may be enough to meet our energy needs. Flat plate collectors can be used for temperature upto 100°C. These Collectors are capable of heating water from 15°C to 60°C for domestic purposes and 90° to 95°C or above for industrial purposes. These are being used in solar water heating systems, solar swimming pool heating systems, and solar power generating system. The temperature range may be increased upto 150°C with some booster arrangement. Solar energy thus may be utilised for commercial utilisation for wide spread water heating systems, in domestic as well as industrial sectors. It can also be used for projects like grain dryer and cold storage plants.

Solar water Heaters :

The system comprises of a flat plate Collector and storage tank solar water heaters can be used both for domestic and industrial purposes in the country. A well designed commercial water heater using flatplate collectors has 40 per cent over all efficiency. Such water heaters could cater to the needs of Individual family, a hotel or hospital. Solar water heating systems are useful in food processing, chemical, textile, pharmaceutical, sugar, diary and many other industries. Such systems have also relevance for many agricultural village industries.

Solar space heating and cooling :

Solar energy can be applied for space heating and cooling. Considerable work has been done on heating and cooling systems.

The heating system comprises of collectors, heat storage unit and appropriate heat distribution and control arrangement. Solar heating is quite competitive with electric heating and has become cheaper than gas and oil heating.

For an efficient solar heating, it must be able to perform four distinct functions (i) Collection of the Sun's energy (ii) storage of energy as heat (iii) distribution of heat throughout the whole house and retention of the heat at night and on cloudy days.

In cooling system it is essentially based on the absorption cooling cycle using heat from solar collectors. Designs are made for integrated solar water heating, space heating and cooling systems.

Solar Drying :

Solar air heaters can be used for drying foodgrains, fruits, vegetables and wood, etc. The quality of products are as good

as that of conventional dryers. The air heaters have shown a collection efficiency of solar energy to the extent of 75% while raising the temperature of air through 20 to 25°C above ambient. The air heater is thus very suitable for crop drying purposes.

Water Distillation :

There is a need to supply fresh drinking water to some of the areas of the country where fresh water is not available. Solar distillation makes brackish or Saltish water potable. The technique used in the manufacture is very simple. Solar stills become economical as the capacity is increased. The yield from a solar still ranges between 3 to 4 litres on a clear sunny day. The distilled water is also required in Health centres, school laboratories and workshops.

Solar Cooker :

It can be used for cooking, roasting, backing and boiling purposes. The process takes 30—90 minutes under clear sky condition and does not take more than 150 minutes in cold weather. It can also be used as a hot case and retains heat for 5 hours after cooking is over.

Solar Refrigeration :

It is very suitable for small villages and remote areas where there is no power supply. It is estimated that 30% of food grains lost due to improper storage can be saved. Their is lack of cold storage facility in the rural areas. Running of large refrigeration plants is not always available. Solar Refrigeration is the only effective solution for an agricultural country like India where 80% of the population live in 5 lakhs villages. 10 ton capacity cold storage unit has been designed and developed in the country.

Solar water pumps :

Irrigational needs in rural India can be fulfilled with the help of solar water pumps. 1 kw/2 kw capacity solar pumps based on organic vapour Rankine cycle has been planned and developed in the country. B. H. E. L. has planned to design and develop 20 K.W. capacity. Such units will be utilised for pumping water or electric power generation.

Solar power generation :

Solar energy can be utilised to generate steam. This is done by concentrating the solar radiation. Using concentrating collectors like parabolic line focussing systems, paraboloidal point focussing systems, or plane reflector central tower systems. Temperature as high as 1000°C or more can be achieved. The steam thus generated can be utilised in industry to operate engines or to generate power. In a Solar thermal plant, solar radiant energy is first converted into electrical energy. The efficiency of the system is low.

Direct conversion of Solar energy into electricity :

It is achieved by using photovoltaic effect. The basic unit of this type power system is a solar cell. The major application of solar cell was in providing power to various equipments in satellites. For drinking and micro-irrigation purposes in rural areas, the photovoltaic system may be utilised to energize the water pumps. The other areas benefited through this technology are community radio and T. V. sets, navigation, communication, cathodic protection of oil pipe lines, monitoring of weather, railway signaling and battery charging, etc. The range of applications of photovoltaic system is growing steadily. Photovoltaic devices are providing power in the range of a fraction of a watt. to hundreds of killowatts. This system is suitable for the rural areas as it makes power generation at all places possible. It is also pollution free, durable and reliable. The maintenance cost is minimised as no fuel is required.

Biological conversion of Solar energy :

This concept is a new one and termed as energy plantation similar to food plantation. The Basic idea is that first growing trees having high photo-sythetic efficiency. These are harvested and steam is produced by burning them, similar to that used in thermal power station.

Prospects of solar energy :

Out of the three types of conversion system, i.e., thermal devices, direct energy conversion and biological conversion, considerable development has been done in

case of thermal devices and application but the efficiency of the system is low. The other two systems are promising and needs a lot of research and development in the country. Initial cost is no doubt very high. But due to little maintenance it is ideally suitable for solar energy utilisation. Nearly 70% villages of less than 500 population will be benefited by the utilisation of solar energy.

Assistant Director (Technical)
Information & Public Relations Department
Bhubaneswar.

A SAMPLE SURVEY OF FOREIGN TOURISTS IN THE GOLDEN TRIANGLE CONDUCTED IN THE MONTH OF MARCH 1984 BY TOURISM DEPARTMENT

1. The pleasure, vacation and sight seeing are the main purpose of the visit to Orissa and their per cent being 92·8 out of the total tourists interviewed i. e. 500.

2. 56·8 per cent of the tourists interviewed, arrived Orissa by air

3. Majority of the tourists have business and service as occupation forming 75·4 per cent of the total tourists interviewed.

4. Maximum number of tourists belonged to middle income group constituting 42 per cent of the total tourists interviewed.

5. Majority of tourists belonged to age group of (31-50) years which is 46·4% of the total tourists interviewed.

6. 34·86% of the total tourists came in group, 33.46% were individual tourists.

7. It is observed that 83·6% of the tourists are first time visitors and the remaining are repeat tourists.

8. 40% of the total tourists came to Orissa with the recommendation of their friends, travel magazines, advertisement in papers draw only 28% of the tourists and travel agents draw only 6·8% of the total tourists interviewed.

9. It is seen that average expenditure of a foreign tourist per day in Orissa is Rs. 187/- only.

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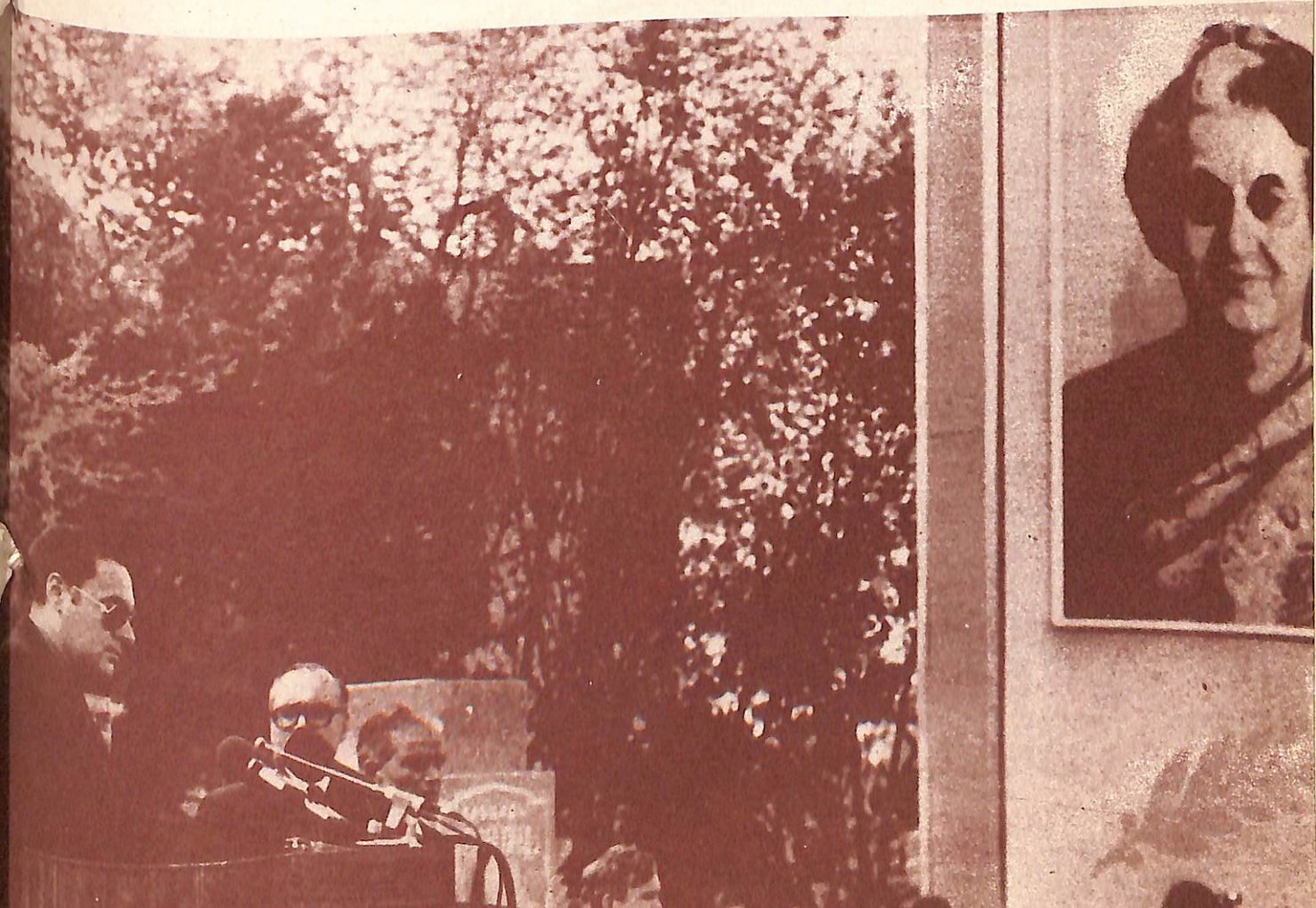
P.M. SRI GANDHI AT A PRESS CONFERENCE IN MOSCOW. ସାମ୍ବାଦିକ ସମ୍ମିଳନୀରେ ପ୍ରଧାନମନ୍ତ୍ରୀ ଶ୍ରୀ ଗାନ୍ଧୀ

ମସ୍କୋଠାରେ ଶ୍ରୀମତୀ ଇନ୍ଦିରା ଗାନ୍ଧୀଙ୍କ ନାମରେ ଏକ ଗୁଦାର ଉଦ୍‌ଘାଟନ ଅବସରରେ ..... ↓



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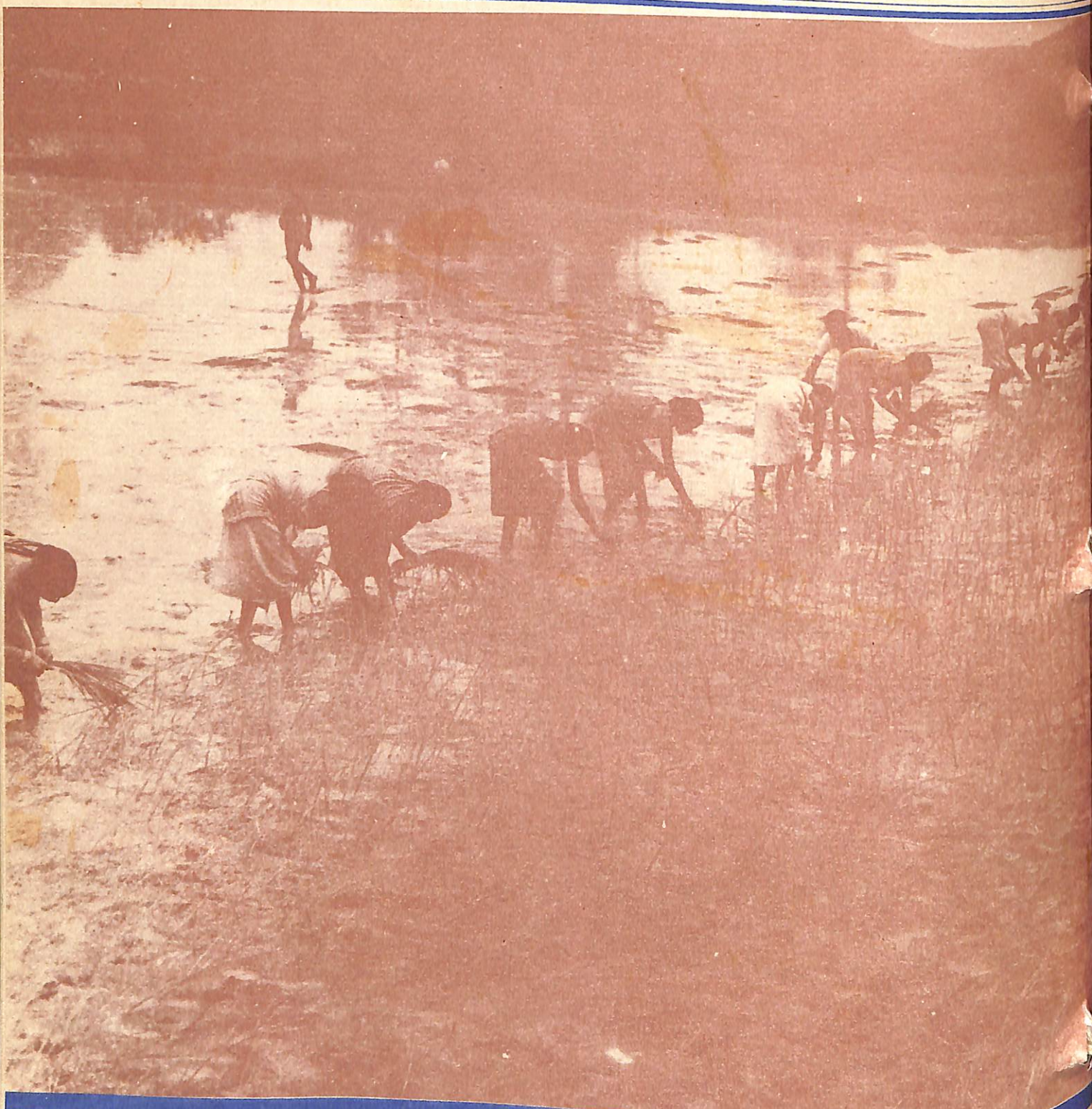

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