



ORISSA REVIEW

रघुपतिराघव राजा राम पतित पावन सीताराम,
ईश्वर अल्ला तेरे नाम सबको सन्मति दे भगवान ।



ब्रह्मना दीक्षाया ब्रह्म यज्ञेन ब्रह्म

दार्शनिक-शास्त्र



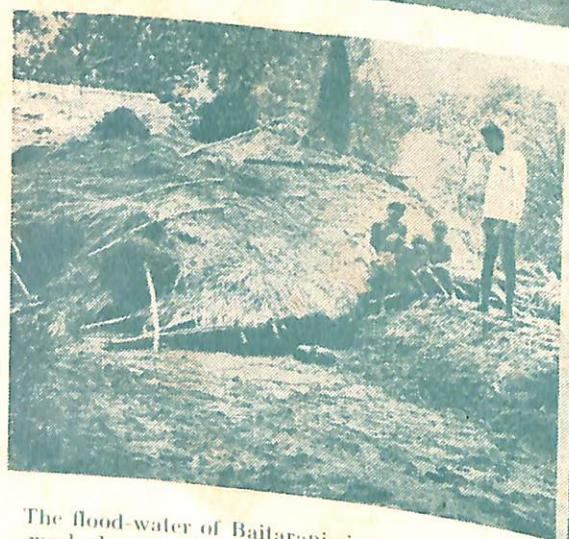
OCTOBER ISSUE, 1975





Shrimati Nandini Salpathy, Minister, receiving donation the Relief Fund from the Principal and Students of Devi Women's College, Bhubaneswar

A breach on the Bhalukhai embankment and mad rush of flood-water (Cuttack district)



The flood-water of Baitarani river has completely washed away the houses of the Kasipur Block



The large-scale devastation caused by the flood-water of Baitarani river in Panchu Gochhia Gram Panchayat

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TO-MORROW'S PEOPLE

Ten years from now India will be a different country. When you stop and talk to an Indian in the street whether it is a street in New Delhi or in a village, the chances are that he will be bright, literate and well informed especially if he is young. The reason, the National Policy for the welfare of children commended by the Rajya Sabha in December, 1974 and adopted by the Government Department of Social Welfare.

The National Policy for children is not the beginning of public concern for the welfare of the child; it spells out and defines measures that have been taken right from the First Plan. However, the tempo has accelerated over the years covering more and still more children. Some of the objectives of the National Policy for children are to cover all children by a comprehensive health programme; to provide nutrition services; and to provide free and compulsory education for all children up to the age of 14. The Government of India has formed a National Children's Board with the Prime Minister, Shrimati Indira Gandhi as President to

provide a forum for planning and reviewing services to meet children's needs.

Good, nourishing food is even more important to a child than any schooling the state has to offer. Lack of proper nourishment especially in the first five years of child's life retards mental growth. So, first things first, an immense chunk of public money is being spent on providing nourishment to children. A considerable amount will be spent on 35 million children in the Fifth Plan on nutrition programmes. In addition, 400 million pounds of food will be supplied by CARE during the Fifth Plan for the Supplementary Nutrition Programmes and the mid-day meals programmes. The UNICEF has a commitment of U. S. 56,800,000 for an unprecedented five-year programme of inter-related services for children and mothers of India. UNICEF will place greater emphasis in the Fifth Plan on the pre-school child. Child welfare has been accorded the highest priority in the social welfare sector in the Fifth Plan. To ensure healthy growth of children in the age-group of 1—6 years

a schme of integrated child care service with an emphasis on implementing nutrition, immunisation, health check up and referral service is to be launched in the Fifth Plan. Conditions of grants for the purpose of existing voluntary institutions will be liberalised.

Nutrition programmes in the Fourth Plan covered 28.4 million children. There were as many as 40 schemes of nutrition under the heads of supplementary feeding, production, processing and supply, nutrition education and health based nutrition programmes. The outlay for nutritional feeding in the Balwadis was Rs. 60 million. In 1970-71 a special non-plan programme with a budget of Rs. 400 million was launched to supply children in the age-group 0—3 nutritional food to supplement the diet they would get in their homes. This "Special Nutritional Programme" is being operated in the urban slum areas and tribal areas. Feeding centres in urban slum areas cater to 200 children each and those in the tribal areas to 100 children each. The outlay on direct child welfare programmes increased from Rs. 40 million in the First Plan to Rs. 2290 million in the Fifth Plan.

There has been sustained expansion in primary education. The enrolment of children in the age group 6—11 years has risen. In 1950-51, four out of every ten children were in primary school; in 1960-61 six out of every ten children were going to school; in 1973-74 eight out of ten were enrolled in school. Facilities for free lower primary education exist in all States. Education at the upper primary stage (age-group 11—14) is also free in many states. Approximately 95 per cent of the rural population has been provided with primary education facilities within a walking distance of one mile. The percentage of enrolment in rural areas to total enrolment was 81.6 per cent in 1967. The outlays for elementary education are being stepped up from Rs. 2,390 million in the Fourth Plan to Rs. 7,430 million in the Fifth Plan. This steep rise is credited to the Government's policy to integrate child care services. Rs. 1,120 million have been allotted to nutrition under the school feeding programme.

India is doing its best to fulfil the rights of the child. As the United Nations Declaration says "Mankind owes the child the best it has to give." They are tomorrow's people.



FINANCIAL ASSISTANCE TO RESEARCH SCHOLARS

The Board of Scientific and Industrial Research, Orissa is providing necessary financial assistance to research scholars to take up research work of applied nature in the fields of Food and Agriculture, Mining and Geology, General Engineering, Physics, Chemistry and Industries.

25 new and 3 continuing research schemes were recommended by the Research Co-ordination Committee which met at Bhubaneswar on September 2, 1975, under the Chairmanship of the Additional Chief Secretary. These schemes will be placed before the Board of Scientific and Industrial Research for sanction of necessary funds.

A SUCCESS STORY—

Dugwell Programme in Village Tandigaon

Village Tandigaon is located on the bank of the river Tel in Tentulikhunti Panchayat Samiti of Balangir district. The entire village is inhabited by the tribal people chiefly belonging to Gond, Kandh and Saura tribes. After the inception of the S. F. D. A. at Balangir in the year 1974-75 a spectacular change has taken place in this village specially in the agricultural front. For the first time the District Central Co-operative Bank of Balangir has financed nine dugwells in this village in 1972. The tribal farmers availed the loan and started digging the wells. It was an interesting site to see, the tribal farmers with all their family members being engaged in digging the wells throughout the day. In the month of April, 1975 when Shri S. C. Hota, I.A.S. Project Director, S. F. D. A., Balangir visited this village with the Block Development Officer, Tentulikhunti he found in the vicinity of the village an

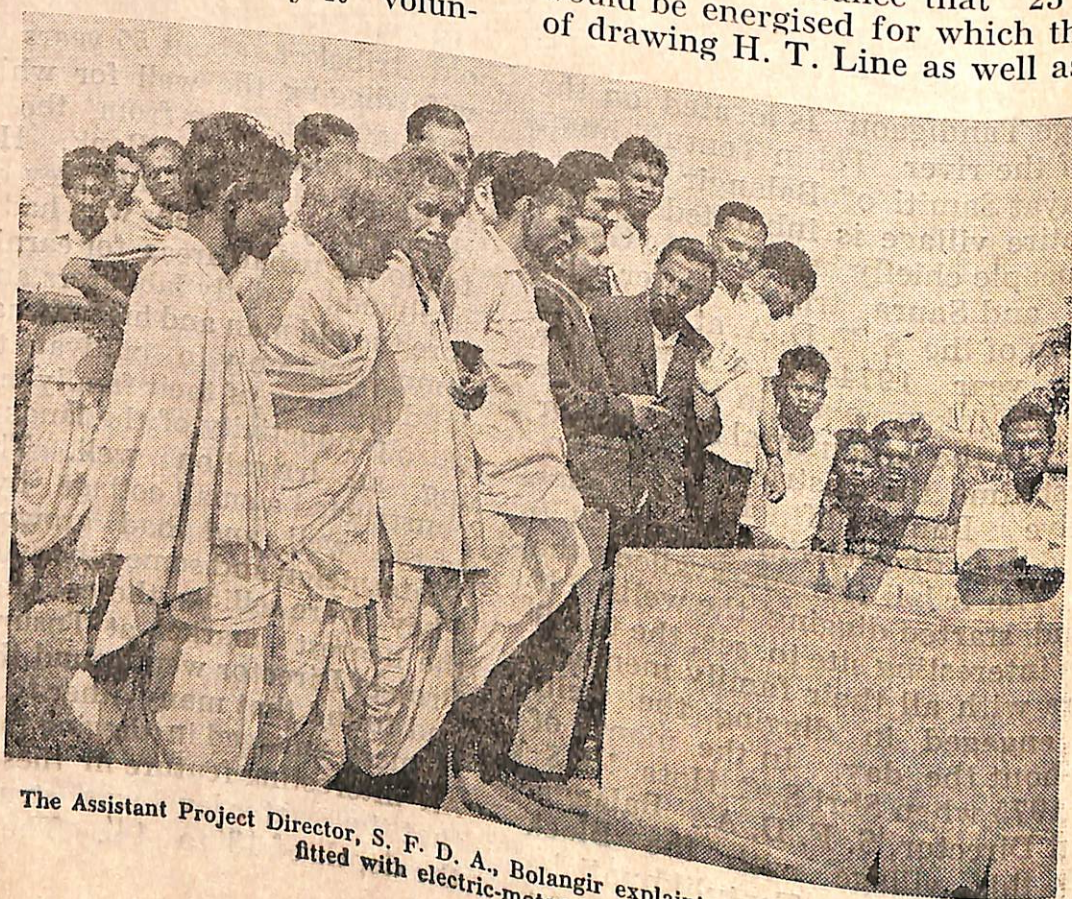
old tribal of about 55 years with his wife digging the well for which they have availed loan from the District Central Co-operative Bank. He talked to them and learned that they had been deserted by their sons who had migrated to the urban areas for earning their livelihood as daily labourers and therefore the old man and his wife had taken a moto, not only to cultivate the small land holdings of their family but also to raise productivity of the lands by digging an irrigation well. They had constructed a small cottage by the side of the well and had grown Onion, Watermelon and some other vegetables. They were selling these vegetables in the nearest market at Tusura. The Project Director went round the village and found that many other tribal small farmers engaged in digging their wells. An interesting feature in these wells is that the water level was struck up at the depth of 13' to 14'. The Project

Director talked to many other villagers who had still then not given any mind in the dugwell programme and he explained to them that how Government through special project like S. F. D. A., would help them in this programme. He received encouraging response from the village folk and they promised the Project Director that almost each family would go for a dugwell.

Later on the Project Director persuaded the Agricultural Development Branch of State Bank of India, Bolangir to extend its credit facilities in shape of term loan for financing dugwell in this village of Tandigaon. Initially the Bank was reluctant to finance mainly because the village was in an off-beaten track and the tribal farmers were very poor. However the Project Director was successful in prevailing upon the Bank and the Bank was nice enough to advance dugwell loans to a few small farmers in this village at the initial stage. Subsequently it volun-

tarily financed more number of small farmers as it found that these tribal farmers were properly utilising the loan amount.

Presently the Agricultural Development Branch of State Bank of India had financed dugwell loans to as many as 29 tribal farmers and out of them 23 were small farmers. Besides this, the District Central Co-operative Bank has financed to 10 small farmers in this village for dugwell loan. After availing dugwell loans, this villagers showed much interest for installing electric motor pumps to cover more area under the command by their dugwells. The State Electricity Board was requested by the S. F. D. A., Bolangir to extend the electric line from the adjoining village Nuapoda to the village Tandigaon. The S. F. D. A., got the area surveyed and the estimate prepared by the Executive Engineer, Electrical and they gave a clearance that 23 wells would be energised for which the cost of drawing H. T. Line as well as L. T.



The Assistant Project Director, S. F. D. A., Bolangir explaining the benefits of a dugwell fitted with electric-motor to the farmers

Line from the nearest village Nuapoda would be Rs. 81,000.00. The State Electricity Board requested that these amount should be deposited by way of advance by the S. F. D. A., which the Board would refund subsequently. Presently the H. T. Line has already been drawn to the village, transformer has been installed and 12 pumps are in process of being installed. By the end of September, 1975 all these 23 wells financed by the State Bank of India (Agricultural Development Branch) would be installed with electric motor pump and in the coming Rabi would command an area of at least 70 acres in this village. It is needless to say that this village would be an eye opener to other villagers and would be one of the most important village in this district in the sense that it would be a village inhabited only by tribal population where 23 electric motor pumps would

be functioning besides a number of other irrigation wells would also be irrigating the lands. It would, after completion of the energisation of these wells explode the traditional idea that the tribals are animal hunters in the Jungle to whom agriculture is alien. Instead it would carry the message to the agriculturists of the other parts of the State that the tribals under the special efforts of the S. F. D. A., can not only prove themselves to be an agriculturist of first order growing not the traditional varieties of crops, but improved and high yielding varieties thereby raising their own existence from the brink of disaster to a high economic level.

The Agricultural Development Branch of State Bank of India, Bolangir has also extended credit facilities to



Surplus labour of S. F. & M. F. Families are being engaged in transplanation work

these dugwell loanee farmers by way of advancing crop loan to the tune of

Rs. 21,568.00. The total credit facilities accorded by this Bank towards

dugwell is Rs. 48,750-00 out of which already an amount of Rs. 26,499-00 has been disbursed. It is sincerely hoped that these credit facilities extended to these poor farmers of this village would never be a burden to them rather would help them to raise their annual income and out of the incremental income the farmers can easily repay their loans. After completion of dugwell pro-

gramme in this village the S. F. D. A. contemplates to extend other facilities like giving loan for dairy firm and goat keeping. It is a matter of great pleasure that all the Officers of this district who have associated with the S. F. D. A. programme are eager to see that poverty from this village is eradicated and gives place to economic prosperity.



Sericulture in the Tribal Economy of Orissa

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The nature and development of the economic institutions in the tribal regions have been conditioned by the topography and climate of those areas and the socio-religious standards of the tribals. Any project contemplated for their economic betterment must first take note of such environmental setting. All the tribal projects undertaken so far seem to have been modelled to suit the peculiar socio-economic

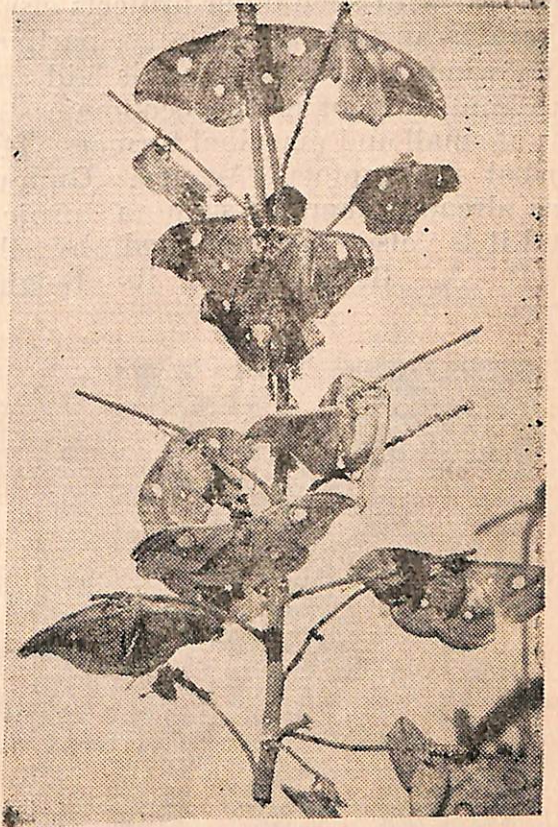
set-up of the community. Sericulture which has been a traditional means of livelihood for the tribals need urgent reorientation on scientific lines. Projects for the purpose in suitable regions and places are urgently needed to improve the economic well-being of the community. As a labour intensive industry with a high capital output ratio, sericulture has got the potential for effecting a transformation in the

ways of living of those engaged in this occupation and to improve their standard of living provided traditional methods of cultivation are replaced by modern technically sound and economically viable projects. This paper is intended to explore the possibilities of expansion of the industry on scientific lines.

The natural silk is produced by mulberry and non-mulberry worms. Mulberry is the best of natural silk but India contributes only 5 per cent to the total world production led by Japan (60 per cent), China (22 per cent) and Russia (8 per cent). In India it is cultivated in Mysore, West Bengal and Jammu and Kashmir. The worms are domesticated and their feed mulberry is cultivated in the same way as cultivation of paddy. The possibility of its cultivation on an extended scale in Orissa is great since mulberry plants are traced in Kalahandi, Bhawani-patna, Potangi and G. Udayagiri. Attempts are already under way for mulberry silk production in this State. The initial attempts taken in the year 1973 to plant mulberry of Karnatak variety at Potangi and Khurda have been successful and ten crops of silk worm have been raised so far. Encouraged by the out-come, the State Government in its Directorate of Textiles have launched a crash programme extended for five years involving an outlay of Rs. 1.2 crores to broadenbase the industry. Under scrutiny of the Central Silk Board the scheme consists of mulberry plantation and silk worm demonstration farms, rearers and reelers' societies in the Co-operative sector, seed organisations, research, training and marketing. It aims at an annual production of 15 thousand Kgs. of mulberry yarn leaving a margin of 7 lakhs of rupees over the outlay of 30 lakhs on raising 2 lakh Kgs. of cocoon. The State's consumption is 20 thousand Kgs. of mulberry yarn per year. And its

export value is quite tempting for a developing country like India.

Of the non-mulberry species, muga a semi-domesticated worm is confined to the Brahmaputra basin of Assam and no where else in the world. Experiments for its expansion has not succeeded in other places.



Female moths. These will be taken to the forests for copulation

Eri is cultivated in Assam, Bihar and Orissa. The worm lives on castor leaves which is cultivated in those states for extraction of edible oil. The worm is reared at home and in Orissa its cultivation is confined to Cuttack, Puri, Koraput and Sundargarh districts. The cultivation of this species is the cheapest and easiest of all other kinds of silk worm as it is a domestic operation dependent on the by-product of castor. The people of Orissa, mainly the small and marginal cultivators take it as a side occupation and more or less know the techniques of its operation. The supply of disease free eri-

seeds is however much below the actual demand. Recently the Government of Orissa in its Textile Directorate is taking steps for the supply of eriseeds from its multiplication stations at Khurda and Potangi and it is a move in the right direction. Further research and propagation in collaboration with the Directorate of Agriculture and with such other projects elsewhere is an urgent necessity, particularly when increasing stress is laid on the improvement of the economic status of small and marginal farmers. The Tribal Development Agency, Gunpur has already taken up such a project and it is also contemplated by the T. D. A., Balliguda in its Belghar area.

and followed by Japan and Vietnam. In India tassar is cultivated in Bihar, Orissa, Madhya Pradesh and West Bengal, their respective contributions of the total output being 50, 20, 16 and 14 per cent. To be specific, districts of Singbhum and Santal Pragana of Bihar, Mayurbhanj, Keonjhar and Sundargarh of Orissa, Bilaspur, Bastar and Rayagada of M. P. and some areas on the fringe of West Bengal, Maharashtra and Andhra Pradesh are the regions where tassar is cultivated.



The Worms in the process of eating

Tassar worm are the best among the non-mulberry natural silk producers and incidentally the cheapest to rear. They live on the leaves of the wild grown trees like sal, asan, Arjun, sidha and Dha. Consequently, tassar is a wild cultivation. It is being cultivated in the tribal inhabited forests of India since pre-historic days. At present India is one of the largest tassar producers in the world led by only China



After the Worms have eaten up the plant they are again transferred to another plant

The importance of tassar in the tribal economy was first recognised in Orissa by the Raja of Mayurbhanj who trained people in the art of tassar weaving at his Purnachandra Industrial Institute, Baripada, which assured a fair deal to the producers and export earnings to the State exchequer. Under the national Government, Co-operative Societies have been organised among the tassar rearers and such societies look into various problems of tassar cultivation. They provide credit to the rearers and look into marketing of the produce. As a first step in this direction, societies take lease of the forest coupes. In their absence, a private trader would have won the bid and would have employed the tribals as wage labourers paying them a very low wage. It would have been exploitation pure and simple. The societies prevent this and their

endeavour to improve the condition of its members otherwise is examined hereinafter.

KULIANA TASSAR REARER'S CO-OPERATIVE SOCIETY LTD. KULIANA—A CASE STUDY

The Kuliana tassar rearers co-operative society, Ltd., bearing registration No. 133 was organised at Kuliana in the district of Mayurbhanj in the year 1957 with a view to advancing loans to members on the pledge of their produce, to manage the sale of members' produce to their best advantage to take

lease of forest coups on behalf of the members, to disseminate improved methods of rearing and do all such things incidental or conducive to raise the economic standard of its members whose main occupation has been the production and collection of tassar. The society encompasses Pitihinja Pidha and Nodha Pidha covering forest ranges of Deuli and Pithabata in part as its area of operation which inculcates a sense of fellow feeling among members who have steadily grown in number as recorded in the quinquennial table below :—

Table I
Growth of Membership and share capital for the last Five Years

Year	Member ship	Share capital
(1)	(2)	(3)
1970-71	632	5,107
1971-72	647	5,530
1972-73	683	6,042
1973-74	706	6,201
1974-75	706	6,213

Of the 706 members as on 30-6-1975, 100 are scheduled caste, 558 scheduled tribe and 48 belong to other backward classes.

The society is managed by a Board of Directors, consisting of 9 members of whom 5 are tribals and 3 are nominated. It has one Senior Tassar Assistant-cum-ex officio Secretary subsidised by the Government, a Supervisor

and Chawkidar maintained by the society on whom it expended Rs. 1,617 as salary during 1974-75.

An average of 250 members take to rearing every year. But of the approximate cocoon production of 650 Kahans per annum, the society purchases only 306 kahans and sales Rs. 39 thousand on average as the last 5 years figure below may indicate.

Table II
Quantity and value of cocoons collected and sold during the last five years
(Rupees commuted to thousands)

Year	Collection		Sale	
	Quantity in kahans	Value	Quantity in kahans	Value
(1)	(2)	(3)	(4)	(5)
1970-71	183	24	183	30
1971-72	315	48	315	62
1972-73	585	72	..	121
1973-74	190	24	257	43
1974-75	257	27		

No stock was sold in 1972-73 because the tassar sale rate had recorded un-economically low. Next year the business was carried on with finances obtained from the Apex Society (1 kahan = 1600 cocoons in Orissa).

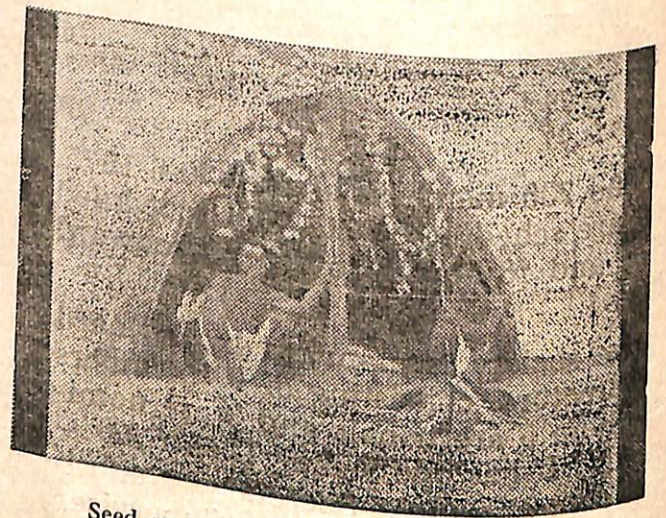
The society advances loans to its members both for production and consumption purposes. The investment and collection position of the society for the last 5 years is indicated in table III below :

Table III
Investment and collection of loans from the members during the last Five Years
(Rupees commuted to thousand)

Year (1)	Investment (2)	Collection (3)
1970-71	5	5
1971-72	11	9
1972-73	10	11
1973-74	6	5
1974-75	11	10

To cover the lease money and the advance, the society used to avail itself of the working capital loan from the State Government in its Tribal and Rural Welfare Department. With the repayment of Rs. 24 thousand in 1973 all such loans were liquidated. The present working capital of the society consisting of shares, current account with the bank, savings bank deposit and loans outstanding on members is of the order of Rs. 6, 38, 2 and 7 thousands. Besides, the society has other assets worth Rs. 9 thousand in the shape of land, building, godown and staff quarters.

The society holds lease over a part of Deuli range having 36 rearing fields only and has been paying royalty at the rate of Rs. 2,440 per annum for the last three years. But due to illicit felling of trees rearing fields are shrinking every year resulting in lesser yields. In a rearing field 10 to 15 rearers operate. They cultivate in different contiguous trees, but guard the worms in turn. Surprisingly, there is no theft of cocoons, a fine trait in the tribal character to be noted



Seed cocoons are kept in a thatched house till the months average which is most conducive to growth of co-operative institutions among them. The society like most of its kind is exposed to exploitation through price mechanism and smuggling by its competitors. The private merchants always offer a higher rate than the society as they escape payment of the lease part of the cost. The simple tribals allured by higher rates get cheated in grade and counting and bring loss to the society as such as they sustain it themselves and that is the reason why we don't notice any

marked improvement in their material wellbeing although the price of cocoon has gone up 3 times from Rs. 50 the initial price at the time the society started. Again, the society operates on the lease hold for tassar only. Others holding lease for other forest produce operate in the area and steal away cocoons. Society bye-laws provide for operation in other minor forest produce which should urgently be negotiated with the Forest Department to ensure employment for a

longer period and enjoy economics of scale.

Lease is taken by the Apex, the State Tassar Co-operative Society, Baripada, on behalf of the primaries. The primaries share the lease amount according to the proportion of the area they operate in. The Apex finances the lease which is reimbursed afterwards by the primaries. The Apex studies the market and guides in respect of rates, collection as well as sale of cocoons. The service charge is



The cocoons are being collected

only 2 per cent of the sale price of primaries obtain. In view of the services rendered the changes appear to be so low that the Apex deserves a study in passing as is done in the following section and more so in view of the similarity of pattern contemplated in case of mulberry so that it may be emulated.

THE STATE TASSAR CO-OPERATIVE SOCIETY, Ltd., ORISSA

To co-ordinate the activities of the Tassar rearers and weavers' societies, to analyse market, fix rates, negotiate sales and to do all such things incidental or conducive to raise the economic standard of those in the

industry, the State Tassar Co-operative Society was organised at Baripada in the year 1972. There are in all 25 rearers and 7 weavers societies on roll besides the apex handloom weavers co-operative society and the State Government. The members' and Government's share contribution is of the order of Rs. 46 and Rs. 270 thousands as on the 30th June 1975. Besides, the society has received working capital subsidy from the State Government to a total of Rs. 2.28 lakhs so far.

The apex society takes lease of forests on behalf of the Primary Weavers' Societies. Presently it holds lease in Mayurbhanj, Keonjhar and Karanjia divisions including Nilgiri, Sukinda and Kamakshyanagar ranges and intends to expand its activities in

Bonai, Sundargarh and Pallahara divisions. The lease is held at upset prices on negotiation with the Forest Department. The society paid Rs. 66,53 and 28 thousands as lease money during the years 1971-1972, 1972-1973 and 1973-1974 in order in partial payment of the lease held. This lease money is now realised to be an extra cost in cocoon prices which reduces the capacity of the society to compete with other tassar producing States. Therefore, the Government have subsidised the society during the last three years at the rate of Rs. 40,40 and 70 thousand respectively.

The loaning operation of the society to meet the working capital needs of the primaries in collection of cocoons for the last three years is given in table IV :

Table IV

Loans advanced by the apex during the last three years and the share of Mayurbhanj district from out of it.

Year	Total amount advanced	(Rupees commuted to lakhs) Advances in Mayurbhanj district
(1)	(2)	(3)
1972-73	3.96	3.90
1973-74	4.42	2.46
1974-75	2.54	0.94

From this it may be inferred that the societies in Mayurbhanj district are gradually getting self-supported and therefore the decision of the apex to expand its activities through other tassar rearing regions is wise.

Dissemination of improved practices of tassar rearing is within the objective of the primaries as well as the apex. Research must be associated with an industry to maintain its growth through time and the experiments done in this field at Ranchi are available to us. But under varied local conditions experiments have to be localised as is done in Orissa for the last two years. The existing and improved practices are compared in the following section.

IV EXPERIMENTS IN THE IMPROVED PRACTICES OF TASSAR REARING IN ORISSA

Traditionally they raise one crop in Mayurbhanj between September—November and two crops in Keonjhar between September—January. For this the seed cocoons are obtained by pluckers from deep inside the sal forests in the months of July-August. These cocoons are hung in a thatched house till the months emerge by middle of September. The female moths are then taken in a branch stick to inside the forests for copulation. The bearer moves from place to place throughout the night, guarding the lady moths

waiting for their mates. Copulation takes place after midnight. The paired moths remain as such till they are forced to separate after 12 hours and female moths are caged in a bamboo basket for laying which continues for three days. The egg hatches in about 8—10 days and the worms collected in the leaves are let loose on the feed plants in the forests. The worm continues feeding for 45—50 days till they start to spin. During this stage more than half of the worm are destroyed by predators. Besides, diseases may destroy the whole crop. In the process of eating when the leaves of one tree are eaten up the branches are cut and transferred to another tree. Therefore, the rearer always maintains two rearing fields to be operated in alternative years.

For expansion of the industry on the existing practices we require the requisite quantity of seed, expansion of feed plants through searching out of alternative and secondary sources of feed and improved methods of rearing with a view to minimise loss due to predators. To tackle the problems the Government of Orissa in its Textile Directorate started a research wing at Baripada in the year 1958 which works under the guidance of the Central Tassar Research Station at Ranchi. The problems before the researchers are to examine the :

- regional and seasonal variation in the wild and cultivated population.
- study of voltinism of different breeds under similar climatic conditions.
- hybridisation
- effects of different feed plants on the size and contents of cocoon.
- effects of host plants on the growth and development of worms.

- the growth and sprouting of feed plants.
- effects of density of population on the growth of worms; and
- study on the controlled rearing of worms.

The findings so far are that there is less deterioration in cultivated seed multiplication as against wild variety culture. The cocoons collected from the sal trees of Orissa are the best in quality for its stiffness, size and contents and three cycles are recognised in the wild population. But the commercialisation of this variety depends on the availability of seeds which now sells at 2-3 cocoons per rupee. Therefore, hybridisation of this variety was taken up with 'daba', a semi-domesticated worm of Bihar to find out a suitable race which will give more production of cocoon thereby increasing the income of a rearer.

Similarly, Sal is observed to be the best feed plant as it flushes in 10 days as against Asan 25 days and Sidha and Dha 30 days on average. Ber and Jamun are traced to be the alternative feed plants.

The traditional rearers are in the habit of putting more worms on a single tree and spreading them as they grow. This facilitates watching, but makes the worm weak and susceptible to infection and contamination. Researches have shown that if the population is kept thin there is less possibility of occurrence of disease and the yield is high having good qualitative character.

The method perfected to lessen loss of worms in the first stage is controlled rearing as evolved by Central Tassar Research Station, Ranchi. This programme has been vigorously taken up at five different places inside the State to find out the suitability in respect of local race according to the ecology of the place. Under this method the worms are fed indoors under controlled conditions till the first moulting after

which they are let loose on the trees. This lessens loss by predators.

These researches are now carried on in the Durgapur farm with 15 acres of natural feed growth acquired from the Forest Department since 1965. The hybrids passing through their 8th generation shall be let out for commercialisation after few more generations are tried. There are tassar seed supply stations at Bangiriposi, Kaptipada and Thakurmunda in Mayurbhanj district and Harichandanpur in Keonjhar district. The seed cocoons are preserved in the grainage and after laying the moths are examined for diseases. If found free, their eggs are put to commercial use.

Leaving aside their traditional socio-religious ceremonies and rites, it is possible to diffuse improved practices among the tribals through demonstrations repeatedly and vigorously undertaken side by side in the same rearing field as they. This is exactly what the extension centre of Central Tassar

Research Station under the aegis of the Central Silk Board established at Bangiriposi in June 1975 aims at. Besides both the Central and State Organisations have their in and outdoor training programmes. Another important factor is the illicit felling of trees and deliberate clearing of forests to use the land for other purposes which reduces feed plants resulting in dwindling yield every year. Of the feed only Sal has got resin, seed, leaf and timber value which as a quick growing plant is a good feed of the tassar worm. Asan has got some timber value and Arjun barks are used in certain medicines. Other feed plants are used as fuel. Tassar worm feed on the leaves of those trees causing negligible loss to the forest resources and since the industry can go a long way in improving the economy of the tribals, the need of the day is plantation, not deforestation. The Director of Textile agriculture and forestry counterparts so far as this industry is concerned.



QUICK DISPOSAL OF PENSION CASES

The State Government are very anxious that pension cases should be disposed of most expeditiously in order to enable retired Government employees to get the full amount of pension and gratuity on the first day of the month following that in which they retire. Accordingly provisions were made under the rules and detailed instructions were issued several times in the past specifying the responsibilities of the Government employees and also the pension sanctioning authorities. Nevertheless delay in the sanction of pension was noticed mostly on account of non-verification of pensionable service rendered by a Government employee. Instructions have now been issued by the Chief Secretary to all pension sanctioning authorities to accept written statements and collateral evidence in support of the service rendered in the absence of prescribed service records. This arrangement will enable a Government employee to receive at least 3/4th of his pension on the date of his retirement if not the full amount of pension.

Barmul: A Hidden Treasure of Nature

SHRI BIJOY KUMAR DEO

BRANCH MANAGER
OSTDCS LTD., BALLIGUDA

Situated right on the embankment of Satkosia Gorge, having the full view of the river Mahanadi, emerging from its virgin form to the lap of the Plains, Barmul a picturesque beauty spot of nature, surrounded by sky reaching lofty hills, tall teak and Sal trees, offers a complete mental consolation after the daily hubnubs of the routine life, to an ordinary tourist.

Barmul is really a hidden treasure of nature. The cool and singing wind, the dark blue water of the gorge, the mango groves, the dense vegetative forest, the wavy echoing voice of birds, passing here passing there, the

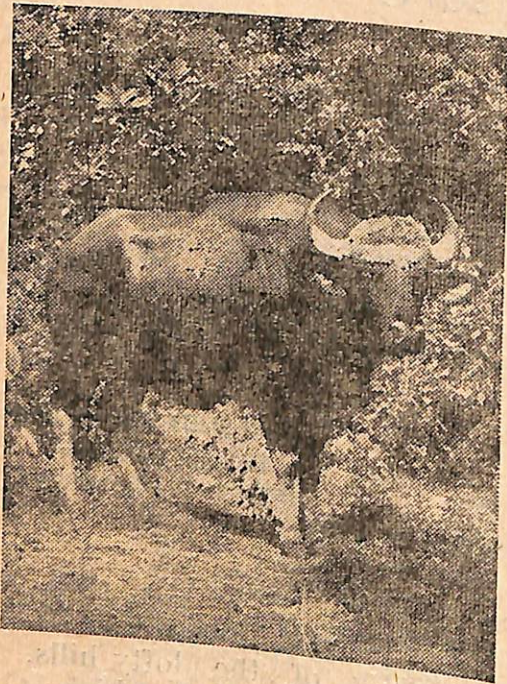
magnanimity of the lofty hills, all combined give a feeling, which is so rare in our far reaching ambitions of day to day life.

Unfortunately the good values of such a fine place has not yet been taken up what it offers in its own virgin form.

Connected by a metalled fair weather road, from Daspalla, it is only 30 miles, and is about 107 miles from Bhubaneswar. There is a fine Bungalow, right on the embankment of the gorge on a high patch of land, on the stone gradation of the hill at a height of 200 to 250 feet offering a

majestic view of the river, flowing right below the terrace of the bungalow.

History, has its own story about the importance of Badmul. During 1495 A.D. there was no separate Daspalla State in existence. This area was under the ruling of Boudh State Shri Shal Bhanj, a brother of the then ruler of Boudh, Raja Shri Bir Bhanj, had some misunderstanding with his brother and came away to this place, where he started his own ruling, taking in the first instance 10 scattered Kondh villages of this area.



He had his capital at Badmul. Raja Bir Bhanj did not take much notice of this, as he had terrific soft corner for his younger brother. On the other hand he gave his younger brother all the neighbouring areas on which the present Daspalla State is now in existence. Later, in the year 1498 or some time after that, the Capital of Daspalla state was shifted to Daspalla.

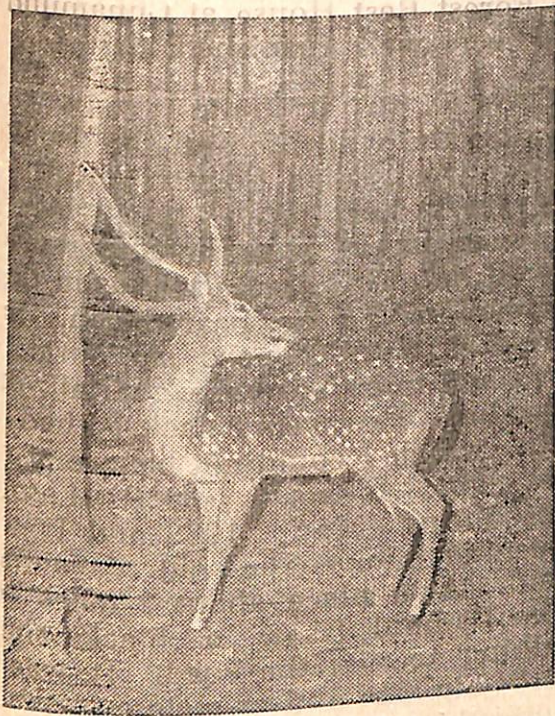
There is also another important feature about the importance of Badmul. During 1798, when the

Marahatta soldiers invaded the coastal feudal states, the feudel kings with the help of the British, fought a severe battle here, near the "Padma-tola" Ghat, very close to Badmul. These are all, now the bygone tales and time has rolled over several centuries, but the antiquity of nature has remained as it was before.

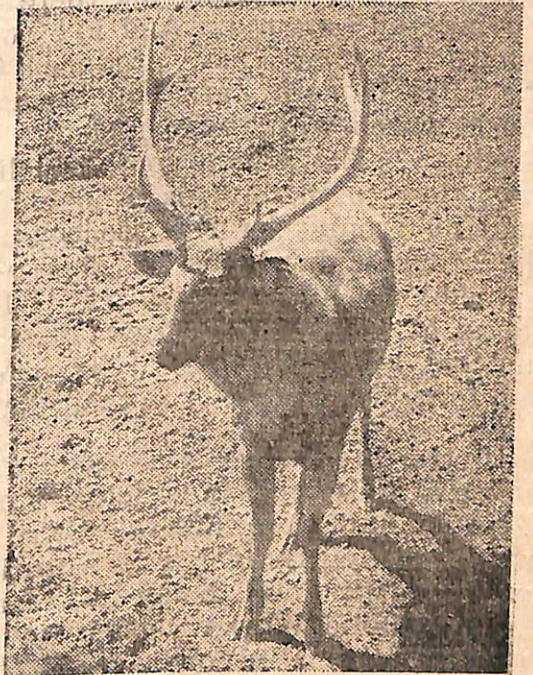
The most magnanimous of all the charms this place offers is boating along the Satkosia gorge from Barmul to Tikarpada a distance of 14 kilometres. The deep blue water of the gorge, having tall, steep, and fully clothed hills on both its bank, is a sight really enchanting. During the winter months an uncommon sight is the basking of the crocodiles in the early morning sun along the bank of the river.

The old Jagannath Sarak (road) passes through Badmul parallel to the river up to Tikarpada. Though much improvement to this road has not been done, still a drive on it will testify the pleasure-packs stored for the tourist. The serpentine curls, along the slopy edge of the river bank hills, washed below by the deep blue water of the river, guarded by the dense vegetative forest on both sides of this road, is something which gives a sort of unforgettable feeling combined with a sense of admiration while you drive on this road. The worth of enjoying this scenery is the full moon period. If you take the chance, you will feel what it is worth. As your vehicle slowly crawls in between the lofty hills rising on both sides up to 2000ft. that has imprisoned the mighty Mahanadi, you will hear the morning sob of the river that dashes on both sides always trying to free herself. And specially as you pass on the road in the moon light, the inter-play of light and shade on the mirror of the waterface reflecting the silvery moon and the blue sky, that will be peeping you behind the tall trees and the forest, is a hide and seek feeling of

love, that can only be felt by those who will fall in love with the virginity of nature of this area. But, alas, this feeling of love is felt by those who are not worth to give shape to the feelings they get.



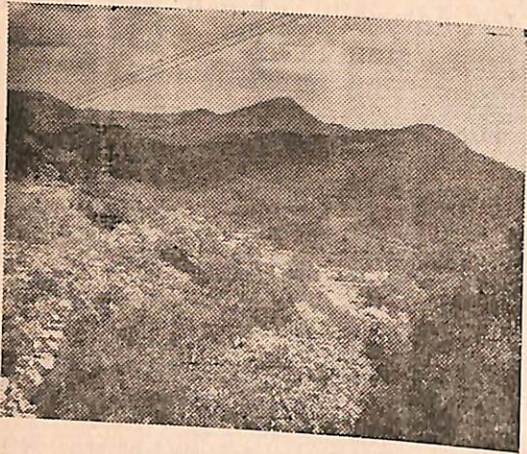
them. If it is noon time, you will find the herd near a cool place, specially near the revulets, where the leader, naturally a big tusker will be on guard standing below a tree and swinging from one side to another as if 'His majesty' is engrossed in a humming melody. Most enjoying sight is the playing of the little ones, who like big mechanical toys run here, run there throwing the dust on each other with their trunks. All these are worth enjoying so long you never scare these little ones. But once you scare them and they run here and there, the hell will let loose on you and you shall have to take to your heels to a place of safety. Another spectacular sight is, suddenly coming across of a herd of bisons in the turnings, who suddenly raise their head and look at you and at the same time drum their feet toying the idea of standing or running. Your position during that time is to, simply sit calmly and watch these magnificent animals with their crescent moon



Close to this area is the Baisepalli forests covering an area of 130 square miles having a population of only 1,384. This area is rich with all sorts of forest produces and wild animals. This has been declared as a Sanctuary since 1961. Thanks to the steps taken in preserving the wild life, this area is fast coming up as a place abundance with all sorts of animals and birds. So much so, even in the day light, as you pass in the nearby forest roads, you find herds of spotted deer grazing in the open field who stare at you from a distance raising their ears and then slowly walk taking step after step as if vanguarding you to their area of uncommon sights. And as you pass, if you are so fortunate, you come across a herd of elephants who always remain busy in playing within themselves and never notice what is happening to the rest of the world behind

shaped horns. deep brown body with shining white bellies, who dance and dance and when they decide there is

something fishy, rush a gust of breath from their nostrils and then take to heavy gallops.



The bird life in this area is so rich that seeing will be the only factor for believing your eyes. Never have I seen such beauty in colour and such life in their movements as is there with these little birds. There is no colour that is left as you sit under the tall teak trees and dense bamboo bushes and watch the passing spots of colour moving here, moving there and moving all around. And lo! what beautiful sound they produce! Can the ultra modern Jazz Hip Swinging music match with their melody and rhythm? The grassy spot which is very close to Badmul, is probably the dancing ground for the peacocks. All the time I have passed this way, immediately after the sunset, I have found at least half a dozen Peacocks dancing by raising their tails. Who can forget such regality in their dance?

In this area there is a good forest house at Chhamundia which is 5 miles from Badmul. Besides this there is one Inspection Bungalow at Kuturi and another at Badmul, being looked after by the Public Works Department and the Irrigation Division, Angul. Even though most of the times these bungalows remain vacant still as per rules for occupation of these bungalows prior reservation is necessary from

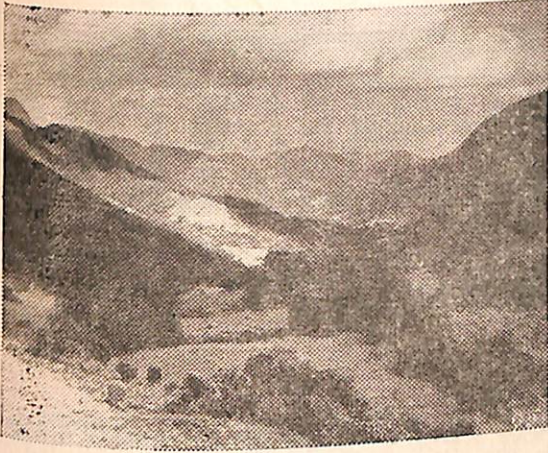
Divisional Forest Officer, Nayagarh for Chhamundia Forest Rest House, Subdivisional Officer, P.W.D., Nayagarh for the Inspection Bungalow at Kuturi and the Executive Engineer, Irrigation, Angul for Badmul Bungalow. Of all these bungalows the Forest Rest House at Chhamundia has been well furnished.

There is an intimate relationship between the wild life and the geological conditions of a Country. And so, in order to keep proper tune, there is at present great need for conservation of wild life. This area abounds in deer sambhar, wild bear, bear, bison, barking deer, tiger, leopard, all sorts of birds and more so, huge gharial and crocodiles. Few years back I had a sight which I could not believe at my first sight. It was 5-30 P. M. some time during May 1968 and I was returning along the old Jagannath Road. At a place about 2 miles off from Badmul, I saw a black shape walking across the road. It was of fairly big size and on close watch I found this to be a big black Panther. On hearing the sound of the Jeep, it gave a surprise look and with two big leaps, disappeared into the nearby bushes.



With such sort of rich heritage it is necessary to improve this area as much as we can afford.

The first and foremost thing is the improvement of the road conditions which this area is badly lacking. The road which connects Badmul with Das-palla needs improvement for making it an all weather one.



Secondly, there are few forest roads which connect the dense forest areas of this Block, which need improvement in order to give opportunity to the outside tourist to come in contact with the flora and fauna of this area. In order to observe the wild animals few watch towers are most essential in this part of the area.

As I have said before, the serpentine road on the slopy gradation of the hills along the river embankment from Badmul to Tikarpada offers a magnificent and pleasant drive if it is rightly improved, making picnic spots at short distances. This will really offer what it is worth, which is so rare now in our fast growing civilisation.

Apart from all these, the most important factor is the improvement of Badmul. The Bungalow with its panoramic and magnificent view of the river, is bound to offer rapturous thoughts to one's troubled mind. It is most enjoying only in winter morning when there is rising mist from the river and up above there is the bungalow as if floating on a ocean of clouds. All that is necessary is the improvement of the bungalow in the 'OBEROI' style, providing polished cemented steps up to the river and bathing facilities with a river side lawn. Three to four power boats are most essential in order to provide the tourists the opportunity of boating as well as fishing. There is now an all weather road up to the other side of the river exactly opposite Badmul. In case proper ferrying facilities are made, tourists also can come from Cuttack side via Narasinghpur with this much of arrangement.

The whole of this area is a real beauty spot—a hidden treasure of nature. The undulating land scape with barren and forest clad hills, the dark blue water, the pleasant cool breeze, melodious chiroping of birds and occasional cry of animals are the virginity of nature, are all covered under the veil of ignorance. Such beauty can only be enjoyed if this veil is lifted by providing all sorts of facilities that will attract tourists from far and near.





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NEWS IN PICTURES



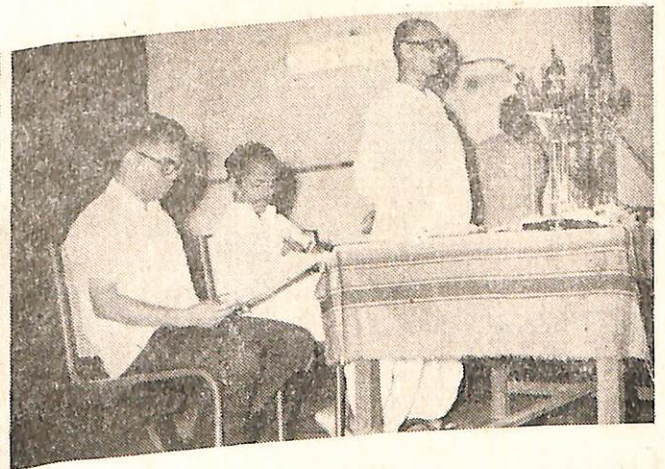
Ten persons were awarded old age pension at Dhenkanal on the Independence Day. Shri Somanath Rath, Minister of State for Health is seen with the recipients of old age pension



Shri Akbar Ali Khan, Governor of Orissa, laying the foundation of Gymnasium at Utkal University, Bhubaneswar



Odissi Dance Seminar at Kalamandap, Bhubaneswar Picture shows : Kavichandra Kalicharan Pattanaik addressing at the Seminar



Shri J. N. Das Mohapatra, Minister, Cultural Affairs & Chairman, Orissa Sangeeta Nataka Akademy, addressing at the Odissi Dance Seminar held at Kalamandap, Bhubaneswar on July 28, 1975

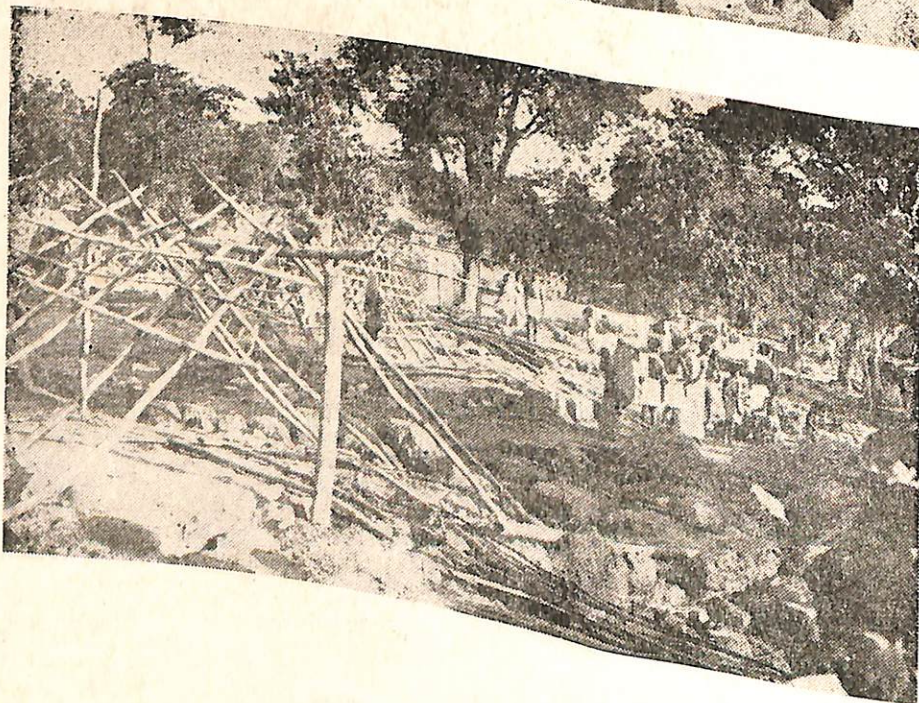


NEWS IN PICTURES

Shri J. N. Das Mohapatra, Minister for Education & Youth Services, addressing the State Level Conference of Writers and Poets sponsored by Rajadhani Sahitya Sansad at Rabindra Mandap on September 7, 1975

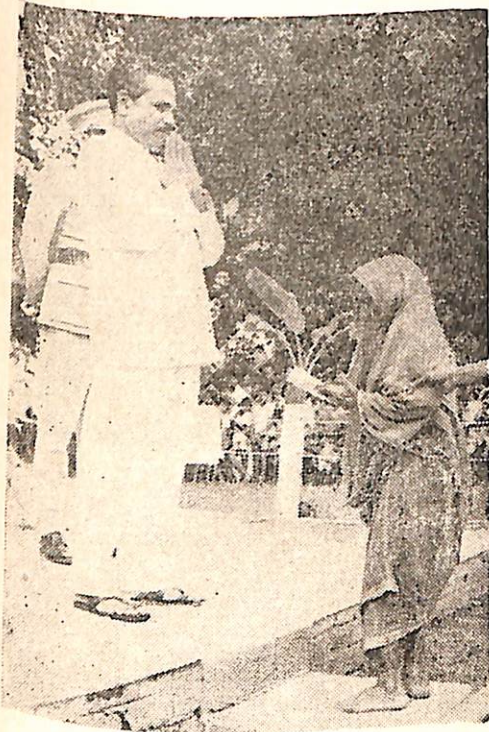


Shri J. N. Das Mohapatra, Minister for Education, addressing at the annual function of the Srikhetra Chintan Chakra on Sept. 2, 1975. Shri A. N. Tiwari, Secy. Cultural Affairs inaugurated this function

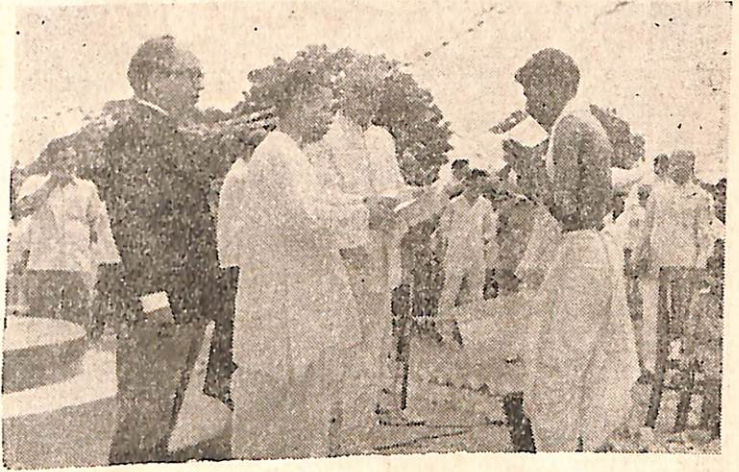


Large-scale devastation caused to Sahanadapur village of Anandapur Sub-division by the flood-water of Baitarani river

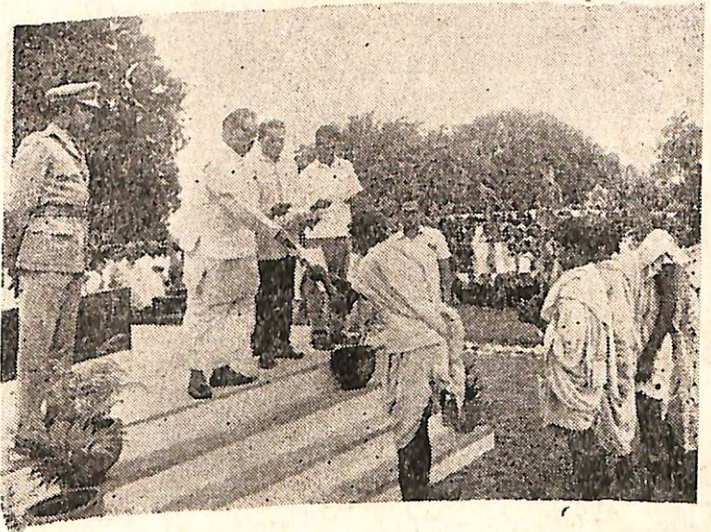
NEWS IN PICTURES



Shri Somanath Rath, Minister of State for Health, awarding old age pension to Smt. Jira Bewa of Dhenkanal on the Independence Day



Shri Brahmananda Biswal, Minister of State for Law, distributing Pattas to landless people of Balasore district on the Independence Day



Shri D. L. Sekhar Deo, Minister of State for Irrigation & Power distributing Pattas to landless people at the Independence Day Parade held at Bhawanipatna

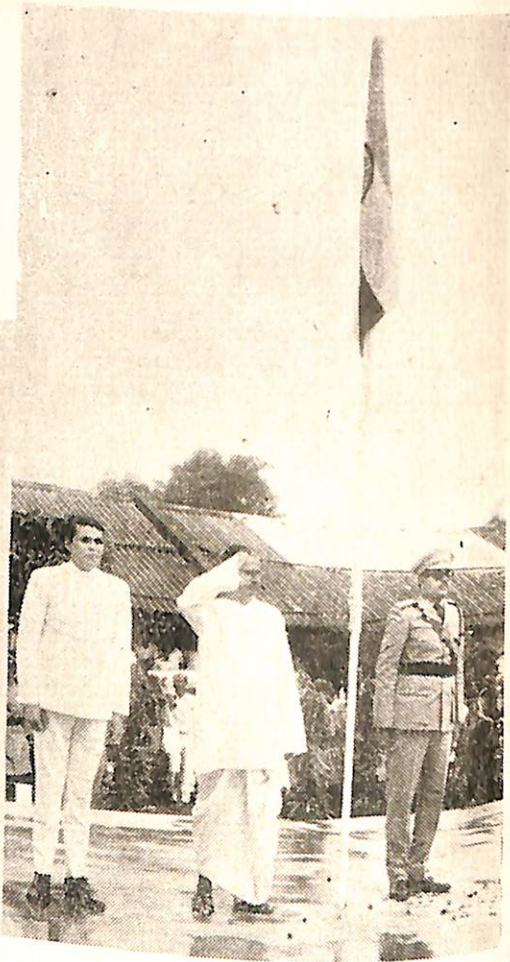


Dr. Krupasindhu Bhoi, Minister of State for Mining & Geology, distributing Pattas to the landless Adivasis of Phulbani district on the Independence Day

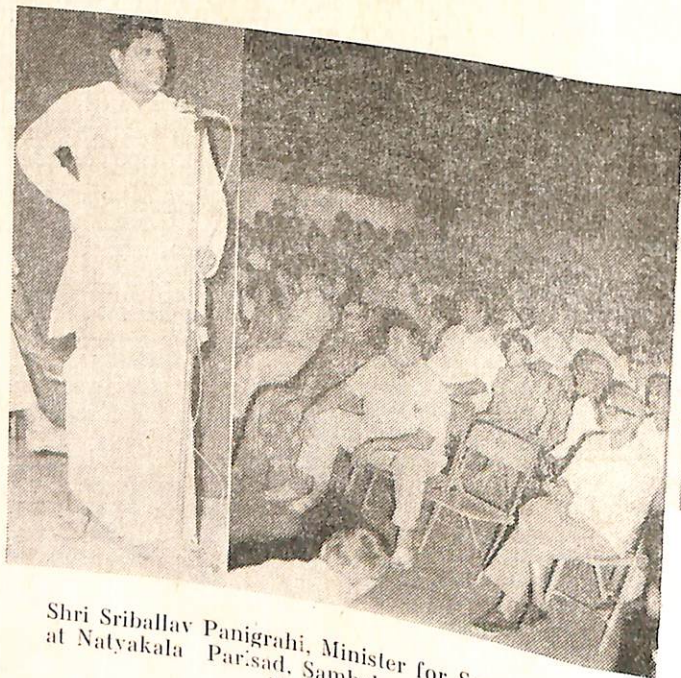
NEWS IN PICTURES



Shri Ramachandra Ulaka, Minister of State for Tribal & Rural Welfare presenting Tamra Patra to Shri Baishnab Charan Palata, a renowned freedom fighter at the Independence Day Parade at Keonjhar



Dr. Benudhar Baliarsingh, Minister of State for Labour & Employment taking Salute at the Independence Day Parade at Rourkella



Shri Sriballav Panigrahi, Minister for Supply, speaking at Nityakala Parśad, Sambalpur on the occasion of Nuakhai Veta



Shri Kalvan Ray, Collector, Phulbani inaugurating the SITE T. V. Centre at Purunakataka on August 4, 1975

The Students of Puri College Make Ideal Villages

Shri D. G. Mohapatra

FIELD PUBLICITY OFFICER

Fifty-nine youngmen—50 students of Samant Chandrasekhar College, Puri and the rest of Puri Sadar area under the Centrally-sponsored 'Youth Against Dirt and Disease' scheme slogged for 15 days in gruelling summer (May 26 to June 9, 1975) at Beladal and Beleswarpatna under Sadar Block of Puri district in Orissa with a view to transform the above two villages into ideal ones.

The dedicated students renovated, expanded and remodelled two tanks in the villages which were lying silted up for years past. These tanks (100' × 80' × 8') now not only ensure provision of water to the villagers, but also irrigate the kitchen gardens of village housewives. In order to supply fresh fish at

moderate rates a well-planned pisciculture programme has also been taken up.

Besides, the students sank three tube-wells, two in both villages and the third one at Beladal Upper Primary School for school children. The materials like pipes, handles etc., were bought out of the amount donated by Orissa's Chief Minister Shimati Nandini Satapathy. This removed the long-felt demand of the villagers for continuous supply of drinking water. They also repaired and remodelled the dilapidated wells of Harijan colony which were laying unserviceable since long. The students have created two orchards in the above two villages where the plantation of cocoanut, mangoes,

bannana, pine-apples, etc., have been taken up.



The students in close collaboration with the members of Jagulei Club opened a Reading room-cum-library and an Adult Education Centre at Beleswarpatna which was named after the ex-President of India Shri S. Radhakrishnan. By the unstinted efforts of the campers and small savings

officials, 42 members out of 42 families in Belandal and 30 out of 40 families in Beleswarpatna opened Savings Bank accounts. Accordingly the Governor of Orissa Shri Akbar Ali Khan declared the above two villages as savings villages on the closing day function of the camp.

During this period, the students with the help of the F. C. I. Field Unit organised a Demonstration Programme through which the villagers were brought home about the improved method of cultivation and use of fertilisers. Besides, they deweeded three tanks, disinfected 12 wells, dug 15 compost pits and got 160 persons vaccinated.

Thanks to Shri Bhagaban Mishra and Shri Prasant Kumar Misra, NSS Officers and above all Dr. Satyabadi Mishra, Principal of the college under whose personal guidance and inspiration the students did all these miracles.



EARNING SON

Sri D. G. Mohapatra

The cultivation of groundnut in Brahmagiri block area of Puri district in Orissa is earning popularity year by year. Introduced only a year ago, the crop is now construed an 'earning son' of farmers of the area.

Out of many, Shri Gadadhar Biswal, a poor but progressive farmer of village Srikat-Nuapada was fortunate enough to reap the highest yield during the last Rabi season. Under the active technical advice and guidance of Shri

N. C. Dwivedi, Additional Agricultural Extension Officer of the block, Shri Biswal undertook cultivation of groundnut in his one acre-patch of land located in the bank of river Bhargabi. As advised 5 tons of cow-dung, 20 Kg. of calcium, one quintal of super phosphus and 20 Kg. of muriate potash were applied to the land during ploughing and levelling, etc. and then 40 Kg. of Hyv seeds were sown. The land was thrice irrigated, water being lifted from the approaching river by help of local appliances. During this period a mixture of one Kg. of sevin with one Kg. blitox was sprayed as a pesticide. After due hoeing and weeding, 10 Kg. of uria was also sprayed for growth of the plants.

The day of harvesting (20-4-1974) i. e., from seed to seed was momentum one for Shri Biswal. The result, of course, was beyond his expectation. The yield was 14 quintals and 40 Kg. which according to the District Agriculture Officer, Puri was highest in the said block. The net profit after meeting the cost of cultivation came to Rs. 1,658 (Rs. 2,160.00—Rs. 502.00) which has stirred other farmers of the area, to take up this new crop. Shri Dwivedi is hopeful that a good number of farmers would come forward to follow the suit of Shri Biswal in coming Rabi season.



UPPER KOLAB PROJECT

The river Kolab originates in the Eastern Ghats in Koraput district at an elevation of about 1,200 m. On its course it is joined by a number of small tributaries and two major tributaries, namely the Karandi and the Guradi rivers. After the joining with the Guradi, the Kolab river flows through a series of rapids and small falls, the biggest of them of about 10 m, being at Bagra. Further down stream the river is called the Sabari and flows in south-western direction forming the common boundary of Orissa and Madhya Pradesh for certain length and then

flows alternatively in Orissa and Madhya Pradesh territory and ultimately forms the common boundary in her lower most reaches. There the Cileru river joins with the Sabari which ultimately joins the Godavari river.

The Kolab river traverses through three defined plateaus, the upper one—the Koraput plateau, the intermediate one—the Jeypore plateau and the lowest one—the Mattili plateau. There is a good dam site on the river near the village Koranga—18 K.M. from Jeypore town. The Upper Kolab Multipurpose Project has been planned here to utilise the head available between the upper

and the intermediate plateaus for hydro-power generation and for irrigating the fertile Jeypore plateau.

Further development of the water resources of this river can be done by constructing a dam above the ancient cave temple of Gupteswar and utilising the head available between the Jeypore and Mattili plateaus for power generation and for irrigation of the lands in Mattili plateau also. This is the second stage of development of the water resources of the Kolab (Sabari) river and is called the Lower Kolab Project. These two major projects fit well into the overall development of the basin. The Lower Kolab Project is now under investigation for preparing a detailed Project Report.

The Upper Kolab Project has been approved by the Planning Commission. The foundation stone for the Project has been laid by the Chief Minister of Orissa on 11-6-1975. The preliminary work both Civil and Electrical have been taken on hand.

Details of the Project

The Upper Kolab Project is planned as a part of the scheme for development of the Kolab river for production of hydro-electric power and for irrigation. The project envisages the creation of a reservoir on the river near Jeypore town, by constructing a masonry dam and two small dykes. The regulated discharge from the reservoir will be led to the power house for power generation by utilising a head of 253 meters. The water from the reservoir will be taken first through a channel and then through a tunnel of 4 K. M. long cut inside the mountains. After that the water will be taken through three steel pipes or penstocks on the mountain slope to the power house located at the foot of the mountain.

In the power house there will be three generators of 80 M. W. capacity each. i. e. a total of 240 Megawatts capacity will be installed here. The

power station is capable of supplying 95 M. W. power continuously over the entire year.

All electrical equipment for the power station will be available from manufacturers inside the country. The power generated at the power house will be fed at 220 KV to the Orissa grid at the sub-station at Jeypore. This power house will also be connected with the Indravati Power Station by a 220 KV transmission line at a later date.

Irrigation

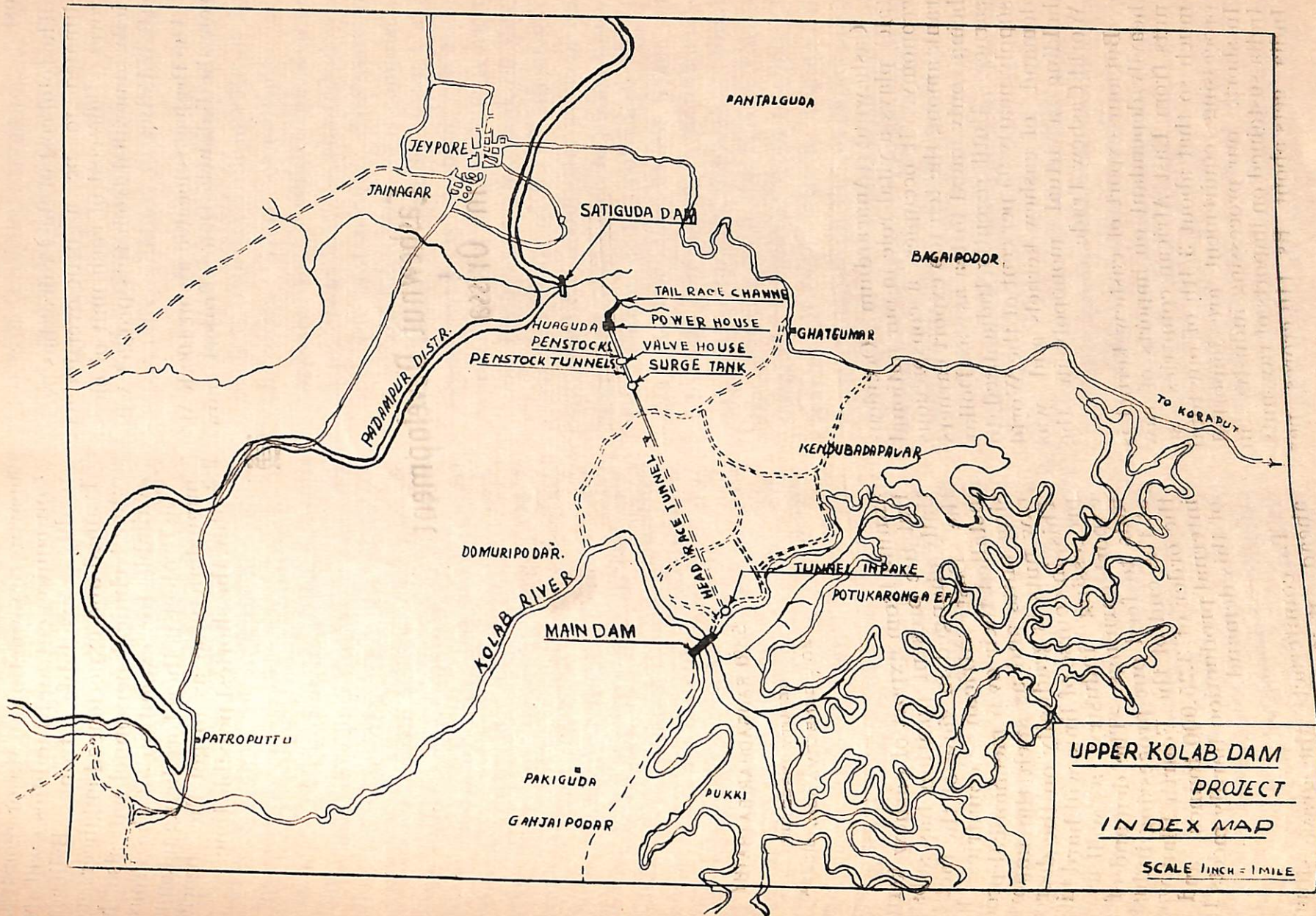
The water released from the power station can be utilised for irrigating 44,544 Hectares in Jeypore plateau. As the Kolab is a tributary of the Godavari, the question of sharing the waters of the Godavari between the neighbouring States is being settled to enable this State to plan and execute the irrigation canals and structures.

The water supply to Jeypore town can be easily taken care of, if needed in future, from the water released from the power house. The tanks near the town can be fed from the canal and the surplus water after meeting irrigation needs can be made available for the use of Jeypore Municipality. The domestic needs of the people living along the canal route will also be met from the irrigation canals.

Pisciculture & Tourism

The reservoir will also serve for pisciculture of economic and quick growing variety of fishes.

The reservoir area being located in the picturesque mountain ranges of Koraput plateau, will quickly grow into a tourist and recreation centre. As the project is very close to N. H. 43 and is situated between two important towns namely Jeypore and Koraput, the project will be very attractive for tourists and will be developed to a recreation centre in the region.



**UPPER KOLAB DAM
PROJECT
INDEX MAP**

SCALE 1 INCH = 1 MILE

Cost

The total cost of the Project has been estimated to be a little over Rs. 64 Crores. The cost of each unit of electricity generated from this project will be 6.37 Paise.

The Project is located about 100 K.M. from the Balimela Dam Project now

nearing completion. Major construction equipment and facilities will be readily available from Balimela. Trained and experienced engineers and other technical personnel will also be available for execution of the Project. The Project is therefore being taken-up immediately so as to get the benefits within the shortest possible time.



Cashewnut Development in Orissa

SHRI RANGADHAR SATPATHY

DEPUTY DIRECTOR
SOIL CONSERVATION, ORISSA

Cashewnut (*Anacardium Occidentale*) plays a vital role in our national economy. It occupies a conspicuous rank among the ten top export earners being only next to tea as a Dollar earner. Until recently India used to supply nearly 95 per cent of the World demand of cashew kernels and was holding a virtual monopoly in the World Cashew Trade.

But our export of cashew kernel is heavily dependant on imports of raw nuts from East African countries, so much so that about 3/4th of our total processing requirement are imported. In short, our processing industry in India sustained on imports of raw nuts. India gets about Rs. 110 crores per

annum from export of cashew kernels. But the present position has substantially changed in view of the fact that the East African countries have installed their own mechanical processing units and as such the import of raw nuts is gradually on the decrease. This, in course of time will hard hit our processing industry as well as our export earnings. The demand of raw nuts to feed our processing industries at the end of the Fourth Plan was of the order of 3,25,000 tonnes and our internal production hardly meets 1/3rd of this demand.

To counteract the grave situation ahead, it is necessary to take up

suitable steps to substantially increase our internal production of raw nuts.

In Orissa the total area under cashewnut, at present about 80,000 acres of which the major portion (66,000 acres) has been planted under the public sector. Only about 14,000 acres of cashew plantation are owned by private growers. Expansion of cashew plantation in private sector has been slow and not very encouraging. Under the soil conservation programme, cashew has been planted over 51,000 acres mainly to reclothe the eroded and degraded land against erosion hazards. Due to its wide adaptability to different agro-climatic zones, drought resistant characters and quick growing habits, cashew was favoured among all other species for plantation under soil and moisture conservation programme without much consideration for yield of nuts. But to be an economically sound project and to act as a base to sustain the processing industries through increased production, the existing plantations need a high level of management with adequate inputs. The State Soil Conservation Organisation with the assistance from Government of India, have already launched a programme for improving production of nuts through vegetative propagation by side grafting. Scions are obtained from selected parent plants of proven merit which are grafted *insitu* with the young plants in the field. Further attempts are being made to provide required package of practices which includes clean cultivation, digging contour trenches for moisture conservation, application of recommended

dose of fertiliser, adoption of plant protection measures against insect and fungi attack, etc.

For raising a plantation, seeds are normally dibbled with a spacing of $20' \times 20'$ in pits prepared for the purpose. The normal time for dibbling seeds is between 15th to 20th of June. However, from experience it is suggested that seedlings raised in polythene bags may be planted in early July for best results. The polythene bags are filled with soil, compost and sand in the proportion of 3:2:1 and a single seed is dibbled. Water is applied almost daily. This work has to be taken up by 3rd week of May so that a seedling of 6"—9" in height is obtained by about 1st week of July. Care has to be taken to punch holes in the bottom of the polythene bag for draining out the excess water and Phytolan spraying is to be undertaken against attack of diseases. Finally the seedling with the ball of earth is carefully removed from the bag by tearing off the polythene bag and the same is planted in the prepared pits of $1\frac{1}{2}' \times 1\frac{1}{2}' \times 1\frac{1}{2}'$ size filled with soil and organic matter. Other cultural operations like weeding, application of fertilisers and plant protection measures are taken up in normal course.

Cashew survives up to 40th year. A carefully raised and well maintained plantation starts fruiting from 4th to 5th year and reaches optimum fruiting stage by about 10th year. It is estimated that an acre of cashew plantation requires about Rs. 10,000 for establishment and maintenance up to 40th year. During this period it will

produce 8 tonnes of raw nuts and about 32 tonnes of apples which cost Rs. 23,000. Leaving aside the apples, an acre of plantation, therefore, will give a net profit of Rs. 200—250 per year.

Schemes are now in operation for development of cashew in private sector sponsored by Government of Orissa. Loans to an extent of Rs. 500 per acre is made available through the Co-operative Land Development Banks on the recommendation of the Soil

Conservation Organisation. The Bank in turn is financed by Agricultural Refinance Corporation. This scheme is in operation in the districts of Cuttack, Puri, Ganjam, Balasore and Mayurbhanj and is proposed to be extended to the district of Dhenkanal. The farmers of the State can conveniently take benefit of the schemes and undertake cashewnut cultivation in their lands for their own benefit as well as for the economic development of the country.



The Agency Marketing Co-operative Society Ltd., Tikabali: A Kingpin in the Tribal Welfare Effort

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The Agency Marketing Co-operative Society Ltd., Tikabali operates in the district of Phulbani. The area of the district is a little over 11 lakh hectares. Of this 67 per cent is scheduled and the activities of the society are mainly in this region comprising the Balliguda and Phulbani Sub-divisions. Of the total area about 44 per cent is covered

by forests and 26 per cent is barren, leaving only 30 per cent for cultivation most of which lie in the Boudh Sub-division. The forests are rich in forest produce. There is plenty of turmeric cultivated in the hill slopes. Scheduled tribes and Scheduled Castes constitute 40 and 18 per cent population of the district.

The Society under the name of "The Turmeric Growers' Co-operative Society", which was organised in November, 1947 with 20 tribal members, was an humble beginning at the dawn of independence to improve tribal economy through the co-operatives. After two years the society took on a new nomenclature and expanded its objectives. Besides extending loan and market facilities for turmeric, it

also markets other agricultural products, takes lease of forest produce and processes some of them to ensure employment at fair wages. It purveys consumer articles in the interiors. And what is more, it promotes cultural activities and education among the tribals.

Members of the Scheduled Tribe constitute the majority in the society as indicated in Table I. They are the 'A'

Table I

Members break up	Number	Per cent of total	Population in lakhs	Per cent of population
Tribals ..	4,815	66	2.51	9.6
Scheduled Caste ..	947	13	1.18	4
Other individuals ..	1,523	21	2.53	3
Institutions ..	2

class members of the society, right to vote and taking part in Management being exclusively reserved for them. Thus out of 11 members in the Board of Management of the society 7 are tribals, the rest being nominated by

the State Government. The tribal members have exclusive right to profit in the society which they receive in the shape of bonus and dividend. Such payments for some audited years are shown in table II.

Table II

(Rupees in thousands)

Year	Bonus		Dividend	
	No. of recipients	Amount	No. of recipients	Amount
62-63	746	9	2,518	1
63-64	1,748	12	2,613	2
64-65	1,701	28	2,755	6
65-66	2,329	27	2,824	6
66-67	2,698	29	2,934	9

The payments made in the General Body Meetings both in cash and kind are a great allurements to the Adivasi members.

The working capital of the society as on 30-6-1974 consists of the following :

Share capital (including Government share of Rs. 1.85 lakhs)
 Funds created from out of profits
 Reserves
 Cash credit accommodation (S. B. I Phulbani)
 Government loan for syndicate
 Government loan for construction of godown

(Rupees in lakhs)

Share capital	2.09
Funds created from out of profits	2.73
Reserves	3.52
Cash credit accommodation	10.39
Government loan for syndicate	1.00
Government loan for construction of godown	0.53
Total	20.26

The assets of the society on the same date consists of:

	(Rs. in lakhs)
Blocked in buildings, vehicles, shares and securities	4.62
Loans and advances made	4.87
Stocks in trade	6.77
Total	16.26

**Business activity of the society :
Turmeric :**

Turmeric produced in the hill slopes of the area are estimated at seven thousand tons annually valued at Rs. 2 crores. Prior to the formation of this society turmeric business was exclusively in the hands of the private merchants. Low price coupled with

malpractices like short weight and deductions of all kinds deprived the poor illiterate Adivasis from getting his legitimate share of the produce. The society with limited resources has at least demonstrated fair play in business and worked as a balancing factor. The loaning activity of the society for turmeric cultivation is in table III.

Table III

Year	No. of beneficiaries	(Rs. in thousands)	
		Amount of advance	
47-48	7		0.5
51-52	217		5.0
55-56	780		24.0
59-60	411		7.0
63-64	671		16.0
67-68	1,689		50.0
71-72	750		26.0

The advances after the year 1967-68 have declined because of the fact that the Service Co-operative Societies gradually took over some of these

activities. The turmeric business transacted by the society during the last 5 years is in table IV.

Table IV

Purchase and Sale of Turmeric, Agricultural produce and forest produce

Year	Turmeric		Agricultural produce		Forest produce	
	Purchase	Sale	Purchase	Sale	Purchase	Sale
	(Rupees in lakhs)					
69-70	12.00	1.78				
70-71	1.42	2.80	2.35	2.53		
71-72	0.42	2.57	3.39	1.04	5.48	9.87
72-73	0.68	2.32	1.79	4.60	8.26	11.93
73-74	0.55	1.57	0.05	0.27	5.52	12.69
			1.79	1.67	7.16	13.27
					3.78	12.98

Agricultural produce :

Besides turmeric, the other forest based agricultural produce of the area are Niger, Mustard, Maize, Groundnut, Black-gram, Hill-gram and the like which the Adivasis produce in small quantities. This too the society deals in, in order to ensure a fair return to the Adivasis of the area. The volume of transaction of this item is shown in table IV.

Forest Produce :

Forest products such as Siali leaves and fibres, Hill-brooms, Tamarind Arrowroot, Sal-resin, Genduli gum, Sabai grass, Mat grass, Simuli cotton, Sunari bark, Marking nut, Mohua flowers and seeds, Sal seeds, Kusuma seeds, Sikaya, Nux-Vomica, Harida Bahada, Anla, Honey and the like used to be leased by the Forest Department. The private lease holders who

collect the produce through the Adivasis seldom paid them fair wages. They made huge profit in the business. So the society started taking lease itself at upset prices. This has ensured employment for the Adivasis at fair wages. Processing is also undertaken to augment employment and wages. Drying and sticking 'Siali' leaves into plates, binding Hill-brooms,

into sticks with plastic, tin or other materials, preparation of arrowroot, processing of Sal-resin and Genduli gum, in fact collection and treatment of all forest produce for preservation had to be demonstrated to the members through instructors, training camps and exhibitions. The other processing activities undertaken are bone-crushing, oil milling, turmeric milling and packing. The number of persons employed in collection and processing and income derived by them are in table V.

Table V

(Rupees in lakhs)

Income derived

Year	Persons employed	Income derived
57-58	2,312	0.54
61-62	12,419	3.46
65-66	22,592	7.34
69-70	25,948	8.48
73-74	16,743	3.78

It may be noted that the employment is only seasonal and part-time. Women and children also participate. The value of products transacted by the society during the last 5 years is in Table IV. The disposal of the stocks is through tender, auction, negotiation and retailing.

Consumer Goods :

The tribal habitats are in remote inaccessible areas interspersed here and there throughout the forest region. Weekly hats at central places are the only avenues of exchange open to

them. They move long distances carrying their stuff on head or shoulder. A simple honest but illiterate lot they deal with a group of dishonest merchants cheating them right and left both in purchase and sale. Trying to ameliorate it the society started purveying consumers' articles at its procurement centres spread in the nock and crany of the forest area. The main consumer items dealt in are rice, salt, cloth, kerosene, match box and the like. The value transacted by the society was 20 lakhs in 1950 but it rose spectacularly to over 7 lakhs of rupees in 1973.

Staffing :

There are 110 employees working in the society of which 5 including the Secretary are deputed by the State Government. Of the rest 75 are Adivasis. Thus the percentage of Adivasis to total employees is 68. This facilitates communication with the tribal mass who speak different dialects without

alphabet. The cultural and educational activities tribal song and dance arranged during General Body Meetings held in remote areas are organised through them. Popularly known as 'Society Jatra' this is attended in large numbers which inculcates a sense of ownership among the tribals. The cost of the staff as a percentage of turnover is in Table V.

Table V

Year	Business turnover	Establishment cost	Percentage of cost to turnover
69-70	33.47	1.31	4
70-71	24.58	1.88	7
71-72	14.16	1.73	12
72-73	23.47	1.85	7.8
73-74	17.96	1.63	9

Godowns and machineries :

The society owns 24 and hires 20 godowns. It has 25 permanent and 17 seasonal collection, storage and sales centres. Besides, it opens over a hundred temporary centres at collection points in season. It has machinery for bone and turmeric milling, ghani for oil crushing, a jeep, motor-cycles and trucks for transportation of men and material.

Difficulties faced :

The society, attempting to maintain a base price for turmeric made purchases worth Rs. 12 lakhs in the year 1969-70. The transaction resulted in a loss of Rs. 6 lakhs in the next three years over and above which interest at 13.5 per cent compound had to be paid on the cash credit loan. This depleted capital; and there has been an inroad into assets. The tribals have certainly benefitted from the transaction, and when there is so much planning and expenditure for their upliftment, help turn from no quarter to support the society that serves them.

The annual royalty paid on the lease of forest produce in 1962 was 53 lakhs which has grown to 1.68 lakhs in 1973, an increase of over 200 per cent overtime. This has saved forest revenue from uncertainty and ensured steady income to the State exchequer. In spite of this the lease is kept annual instead of being made quinquennial or longer as would benefit the tribals. Trouble is that, pending lease operation cannot be undertaken. Instances of 4 to 5 month's delay resulting in Sal-resin, Siali leaves etc. being over is not rare.

Another difficulty is that the private parties are allowed lease for the same product in the area of operation of the society. For example Siali leaves of Phulbani and Phiringia ranges are leased to a private party for a period from 1971 to 1974. This results in smuggling of the produce and consequent loss to the Society. And these happen in spite of the two forest officers serving in the Board of Management of the Society.



The Role of Animal Husbandry and Veterinary Services in Orissa

In view of the large scale prevalence of protein hunger and poverty in a developing State like Orissa the importance of the stepping up the production of protective foods such as milk, meat, eggs, etc. and marketing the same can not be overemphasised. This problem has also posed an unprecedented challenge in view of the population explosion necessitating a fight against the time. It is therefore imperative that a major thrust is given for augmenting livestock production and marketing. Extensive programmes of Livestock Development have been launched in the State and year after year the programmes are increasing in nature. The achievements in this regard during the year 1974-75 are briefly summarised below :—

Cattle Development Programme :

One Intensive cattle development project has been set up at Jeypore in the district of Koraput, where infrastructures were available for the purpose. The aim and objective of such project is to augment the milk production and increase the economic

standard of the farmers of a compact milk-shed area through improved method of breeding, feeding-management, disease control, marketing and fodder cultivation. One K. V. Block with ten units have been established at Betnati in Mayurbhanj district. Besides, 20 more A. I. centres have also been established in different parts of the State to extend the breeding facility to more areas. Cross breeding has become very popular in the State. Hence, it has been decided to provide cross breeding facilities throughout the State extensively by replacing gradually the present method of breeding with the Indian bulls of Red Sindhi and Haryana on receipt of more number of exotic bulls for which constant efforts are made, as a result 32 nos. of exotic bulls, Jersey brown Swiss, Holstein have been received from other States and we have opened 9 semen collection centres in addition to the existing 14 centres. So that the entire State will have independent collection centres in all the districts to increase the efficiency in the breeding programme and also side by side to intensify the A. I. activities.

Poultry Development Programme :

Poultry development programme offers a good scope to supplement the farmer's income in a short time with less amount of investment. The Department have procured 8,000 chicks of 3 high yielding strain of birds from Bangalore to rear at Poultry breeding farm, Angul as foundation stock to cater the needs of the Poultry farmers. The hybreed progenies produced out of the crosses of the above strains are being supplied to different farms.

An intensive egg and Poultry production-cum-marketing centre has been started functioning at Berhampur. Under this programme 300 farmers will be assisted with supply of feeds and services for maintaining 100 layers Poultry units. Steps have been taken for organisation of co-operative societies of small and marginal farmers with a view to allow them to use available facilities of the defunct Poultry units started under A. N. P.

The cost of feed has been reduced to a reasonable extent by inclusion of Agricultural and Industrial by-products like deoiled rice bran, deoiled sal seeds, cake, distillery residue, etc. without affecting the quality of the feed. Costly mineral supplement has been replaced with inclusion of bone ash and other trace elements. The existing 4 feed mixing centres of the State have started producing cattle feed in addition to Poultry feed at a reasonable price.

In order to expand the Poultry development programme co-operative societies have been formed to obtain necessary financial assistance in the form of loan from different Co-operative Commercial Banks and to take up marketing of eggs and poultry-feed.

To increase the high-yielding duck population of the State, custom hatching programme of duck eggs has been taken at Veterinary dispensary, Pipili and A. I. P. D. Centre, Khapuria.

To ensure optimum quality of poultry feeds a voluntary feed quality control programme has been initiated at Orissa Veterinary College, Bhubaneswar.

Fodder Development Programme :

Fodder development programme has been given maximum emphasis with a aim to provide nutritious green fodder to the improved milch cows. A second seed farm has been established at Salpada in Keonjhar district from where planting materials and seeds will be supplied to the small and marginal farmers working under the M. F. A. L. and S. F. D. A. areas.

To encourage the cow keepers and milk producers to take up fodder cultivation in the areas of I. C. D., K. V. Blocks, A. I. Centres, incentive in the form of free seeds, planting materials and fertilisers have been provided to set up fodder demonstration units in the farmers land. Preliminary work has been done to set up 3 fodder banks. Efforts were initiated by interested farmers in raising catch crops in their land.

Sheep and Goat Husbandry Programme :

Sheep and Goat keeping have become very popular with the farmers under M. F. A. L. Programme. We have achieved cent per cent result more than the target. A Scheme in sheep in mixed farm economy has been introduced to increase the mutton production in the industrial belt of Bargarh, Hiraakud, Burla, Brajaraj-nagar, Rourkela and Balangir. One unit of sheep having 5 ewes and one ram is supplied to a farmer under agreement that he will return the same number of sheep after 18 months. This is a self-generating scheme which has created interest in the minds of the farmers.

Animal Health Cover :

With a view to render adequate Veterinary aid to the public, 8 Veterinary Dispensaries and 15 Livestock Aid Centres have been opened during the year 1974-75. The Orissa Biological Products Institute, Bhubaneswar is being strengthened to increase the production of vaccines and to manufacture new vaccines such as Tissue Culture Vaccine against Rinderpest. To start with, the testing of Government animals against T. B. and Johns disease is being undertaken.

Dairy Development Programme :

To encourage the milk production in the rural areas and sale of milk in urban areas, the milk supply schemes which were started in Sambalpur and Berhampur are now under active operation. 35 number of milk producers and marketing co-operative societies have been established and farmers have been subsidised to purchase good milch cows. A Dairy wing has been opened under Agro Industries Corporation, which will subsequently take the shape of State Dairy Corporation.

Training and Research Programme :

To meet the shortage of trained Livestock Inspectors, 2 training centres at Balangir and Chiplima have been opened to impart training to 200 candidates.

87 Emergency Diploma-holders have been given opportunity to prosecute the B. V. Sc. & A. H. condensed course in the Orissa Veterinary College under the Orissa University of Agriculture & Technology, Bhubaneswar. Officers from different branches have been deputed to other institutions to gain experience in various branches of Veterinary Science and Animal Husbandry in the field of education and extension. The department as well as Orissa Veterinary College,

Bhubaneswar, is having a close co-operation and co-ordination with a view to find out solutions to the field problems.

The Bacteriology and Pathology departments of the Orissa Veterinary College, Bhubaneswar are assisting in the diagnosis of complex diseases. The Professor of Surgery is conducting a Surgical Clinic at Buxibazar Veterinary Hospital, Cuttack on every Wednesday. The Animal Nutrition Department is undertaking experiments on feed samples to ascertain the quality standard. The College and Department are similarly associated with the implementation of operational research and the ambulatory clinic programme. The inservice training has been undertaken in the department.

Information and Extension Services Programme :

Information and extension services of the Animal Husbandry Department has been geared up to educate the farmers, to adopt the improved techniques of Animal Husbandry practices and to make them aware of the new schemes of this department through various mass media and audio-visual programmes. Besides, to help the field staff in their intensive activities in order to keep them abreast with newer scientific development, a monthly Animal Husbandry Bulletin is being published and distributed regularly from the month of November 1974.

A number of fair and shows in different parts of the State were arranged. The Gosambardhana week was celebrated with great pomp and ceremony in different places of the State. A souvenir and a booklet were published on the occasion of Gosambardhana week during the year 1974 which have been proved very useful in disseminating information on the management of exotic and cross breed cattle.



NEW-FRONTIERS IN COLLEGE EDUCATION

The introduction of College Education through Correspondence Courses was started in India with the object of helping those sections of students who were deprived of realising their aspirations due to handicaps—economic or otherwise. Though open for all sections of students this caters mainly to the needs of (i) employed persons to improve their qualifications (ii) housewives who find it difficult to attend a regular college, for obvious reasons (iii) disabled persons for whom education, except through Correspondence is impracticable.

But over the years, the character of Correspondence Courses have undergone a change. It has been let open for admission to students who could not be accommodated in a regular college. Opening of a regular college entails a lot of expenditure to a State Government. That

Role of Correspondence Course in educating the Society.

apart, very few students who have the opportunity to reside with their parents or near relatives in nearby places and have at the same time merit enough to compete for admission into the limited number of seats 'usually available in a subject of their choice' can complete their studies through the college within reasonable expenditure. But a large section of students are denied the facility of education through the college due to their deficiency in merit and/or monetary capacity.

A well-organised scheme of Correspondence Course education is an effective answer to such a challenging social problem. It is therefore an imperative necessity that the authorities of the Indian University who have undertaken the role of spreading higher education, without lowering its standard in the country and the State Governments who must also pioneer the cause of education, should give a fresh but reoriented look into this really innova-

The sympathy it deserves from the State.

ting method of instruction. Further, this method of instruction gains an added significance in the present times when the talk about educational reforms is so much in the air.

One is conscious of the hitherto existing idea in this country that Correspondence Course education is necessarily an inferior method of instruction. Fortunately however this is not a fact. The belief had gained ground because of the inertial non-practice of this system of education by recognised bodies like Universities or autonomous Institutes till quite recent times. The idea of education through Correspondence Lessons originated in the Nineteenth Century in many foreign countries like U. K. Germany, U. S. A. and U. S. S. R. It has come to a stay as a most natural and potent way of instruction in those countries and has gained wide publicity.

Is it an inferior method of instruction? The open University of London which has thrown its doors open to persons even without formal education is selling its published materials to four American Universities and some in Japan—such is the recognition of a University which caters to the needs of its students through correspondence.

Delhi University was the first to pioneer the experiment of Correspondence Course education as a Pilot Project in 1962. At present the Delhi University School of Correspondence Courses is a well established institute with nearly 15,000 students all over the world on its rolls. Since then more and more of Indian Universities have come forward with abounding enthusiasm to introduce this method of instruction to meet the challenging situation of effectively fulfilling the demands of the underprivileged classes of society and the underdeveloped regions of the country.

Evolution of Correspondence Course education in India through Universities.

Though it goes by the name 'Education through Correspondence' there are

also other avenues of contact like the 'Personal Contact Programme' (P. C. P.) Under this Programme regular class room lectures, for about two weeks in a year, in places of high student concentration are arranged. The core teaching staff of the Correspondence Course deliver the lectures and the students get an opportunity to clear all their doubts which are ordinarily difficult to clear through letter correspondence. In some cases lectures through Radio are also delivered by teachers after prior intimation to the students. But the two main channels of instruction are (i) The Lecture Scripts written by learned and experienced college teachers on the prescribed Courses of Study of the various subjects offered by the student concerned and (ii) The response sheets which a student is required to submit to the Directorate for proper valuation and suggestion by the core teaching staff of the Directorate.

The working of the system.

No doubt the Directorate of Correspondence Courses can for all practical purposes be called a college, but it has a distinctness of its own as regards the new system through which it operates for fulfilling the same ultimate objective for which colleges are established. Its distinctness is also primarily due to its offering opportunity to the underprivileged section of the society to educate themselves with less expenditure at their own home and what is more at their own choice of time for study. This should not be confused with any of the commercial institutes of Correspondence Course study (of which there are also many in the country) which are coaching institutions. But when a University takes up the responsibility it has definitely to look to the maintenance of proper standard of education as in regular colleges under its jurisdiction.

Further the students here are treated as regular students (not private) of the

University. They study the same Courses of Study, sit for the same University Examinations and get the same Diplomas/Certificates as the regular students of the colleges after successful completion of their study.

The students are regular.

Any person residing in India and having the requisite qualifications can enrol himself/herself as student of the Correspondence Course of this University. The Utkal University is probably the 15th or 16th University in India to introduce the Correspondence Course Scheme. This being the starting year the University is enrolling students into the 1st year of the I. A. and B. A. Course with only seven Optional subjects, viz. Oriya Optional, Political Science, History, Economics, Logic/Philosophy, Sanskrit and Mathematics. There is provision this year for imparting instruction through English medium only. With the success of the scheme, imparting education through Oriya medium in addition to English and enrolling students for I. Com./B. Com. Examinations and providing more optional subjects of the I. A./B. A. Courses shall also be taken up. In all the Universities which have introduced this, the scheme has been a success and more of students get themselves enrolled. The success of the scheme in this State would depend largely upon a general awareness and sympathetic appreciation of its ideals.

The introduction in the Utkal University.

The success of the scheme in this State would depend largely upon a general awareness and sympathetic appreciation of its ideals.

A very casual, non-receptive, pessimistic view on the part of the people (who really have not been exposed to such ideas ever before), at this well-tested, non-formal method of instruction just because it is a deviation from the seemingly scintillating formal way would be unfortunate. Let it be known that a survey reveals that the students taking their education through Correspondence are not necessarily of inferior calibre and do really match with the students

Public should be sympathetic to this novel way of instruction.

of the regular college stream in their performance in the examinations.

The Utkal University has taken all steps to keep itself in readiness to start the instruction through Correspondence from August 1975, i. e. the effective time of start of the academic Session 1975-76. The following preparations have been made.

(i) The Directorate of Correspondence Courses, under the supervision of an Officer on special duty, has been formed. (Dr. R. S. Rath, formerly Reader of the Post-Graduate Department of Mathematics of the University has taken over as the Special Officer in the last week of November 1974 and is organising the Directorate). A complete unit of Office Staff has been appointed in the Directorate. Steps are being taken for the appointment of a Director, two Assistant Directors, more office staff to cope with the volume of work of the Directorate which are continuously on the increase.

(ii) 15 experienced lecturers have been allotted to the Directorate to work as full-time core teaching staff.

(iii) Experienced college teachers including many Professors of this University and the other Universities of Orissa have divided the Courses of Studies of their subjects for the I. A. and B. A. Examinations of 1977 into suitable number of lesson units. Experienced teachers of the State of the subjects have been requested to write the lesson and many have already completed the writing of such scripts. The scripts will be printed (or Cyclostyled) after they are reviewed by Committees.

The preparation of the Utkal University.

(iv) Attempts have been made to create an awareness about the scheme amongst the interested public by the writing of articles about the Correspondence Education in the columns of the daily newspapers of Orissa and by broadcast through the A. I. R. Three

articles written in Oriya by the Special Officer. Dr. R. S. Rath one each in 'The Samaj', 'The Prajatantra' and 'The Dharitri'. A script written by him has also been broadcast on the 24th May from the A. I. R., Cuttack Station.

(v) Prospectus and Application forms (Priced at Rs. 2.50, Rs. 4.50 by Post) have been printed. Admission Notice has been issued in newspapers of local and All-India Circulation. Many prospectus have already been sold out and applications have been received for enrolment. Many enquiries are received every day, which definitely indicate a lot of interest on the part of the writer in this way of instruction.

(vi) Steps have been taken to amend the regulations of the University to identify the Correspondence Course students as regular students.

The cost of Education through Correspondence is much cheaper than that of the collegiate way. An I. A. student has to pay about

Less costly than
collegiate way of
education.

Rs. 225 per year (i. e. Rs. 450 during the two years of study) in two instalments of Rs. 145/-

and Rs. 80/- and a B. A. student has to pay Rs. 275/ per year in two instalments of Rs. 175/- and Rs. 100/- to cover the tuition fees and postal expenses.

It is hoped that this Directorate of the University shall bloom under the active encouragement of the State Government and the U. G. C. to serve the best interests of this State for years to come.



SEMESTER EXAMINATION OF THE STATE COUNCIL OF TECHNICAL EDUCATION AND TRAINING

The Winter Semester Examination of the State Council of Technical Education and Training, Orissa will be held towards the end of 3rd week of November 1975.

Candidates, who are normally eligible as per the Rules of Examination and intend to appear in the said examination as Private and Back Paper examinees should obtain prior permission from the State Council by submitting the preliminary application in the prescribed form available in all Engineering Schools and Polytechnics affiliated to the State Council. The application should be submitted to the Registrar, State Council of Technical Education and Training, Orissa, Cuttack through the respective Heads of Institutions so as to reach him on or before the 10th October 1975, positively. No application received after the above date shall entertained.

A SYSTEMATIZED FLOOD CONTROL PLAN FOR ORISSA

THE PRESENT SITUATION

Orissa is a land of many paradoxes, poverty amidst unexploited riches of nature. Recurring floods amidst chronic drought.

While a severe drought gripped the western districts this year, scorching lands and crops, drying up tanks and wells, parching the throats of large populations scrambling for drinking water, the coastal districts were visited by furious floods of unprecedented magnitude in living memory. The coastal rivers were in high spate. The Brahmani and the Baitarani rose to levels higher than ever, burst their embankments, and swept turbulently over inhabited villages and agricultural land, visiting death and destruction. The flood waters entered over 7,000 villages, submerged over 5.8 lac hectares of land covered with life sustaining cereal crops. 56 human lives and 990 cattle perished, a few villages were swept away, 30,000 houses collapsed and fell to the ground, another 1,00,000 houses were made uninhabitable. Several thousand homeless men, women and children, finding no shelter in their own villages, submerged under



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6 to 10 feet of water, ran for refuge to the elevations of the none too safe river embankments, which were themselves bursting under the fury of the swollen rivers. On these embankments, under the grey and threatening clouds, sheltered by frail mats provided by Government, they waited for the floods to abate, and waters to recede from their hearths and homes.

Apart from the incalculable human suffering and misery, the total loss to Orissa's economy by the single flood is estimated at several crores of rupees. The cost of relief, repair and restoration alone will exceed 25 crores of rupees. But the State's resources are too meagre except for emergent relief and repairs. When some assistance arrives from the Central Government some more work can be undertaken until then time moves slowly.

This is not a new feature. Orissa is visited intermittently by droughts and floods over the decades and the losses over the years have been colossal and perhaps more than what it would have cost to finance an integrated plan of flood control. A few years ago the mighty Mahanadi was tamed by the Hirakud Dam and the deltaic levees or else the floods this year would have been even more catastrophic. But there are many rivers still waiting to be tamed.

NEED FOR SYSTEMATIZED FLOOD CONTROL

What Orissa requires is an intelligent and dynamic flood control programme in which all measures—geophysical, engineering, social, economic and administrative—are integrated and implemented within a reasonable space of time. Such a programme will enable the entire community living in flood-prone areas, to live harmoniously with the natural phenomenon of excessive precipitation and resultant floods.

The outmoded system of inadequate flood control reservoirs, partly planned and partly haphazard embankments

without the concomitant measures of sediment control, river stabilisation, drainage cuts, diversion channels, safety devices, earth platforms and public participation, cannot cope with the continuing and increasing situations of floods in Orissa. Prediction and timely warning, changes of attitudes and approach are still far from the ideal.

A PLAN FOR ORISSA

The present solidified concepts flowing from past policies and techniques of flood control must give way to the changing criteria of flood control. For instance, structural flood control of dams and embankments do minimise flood risk, but without the concomitant action of soil conservation, sediment control, drainage channels and social and administrative changes, dams often result in increased risk and increased damage. According to Vujica Yevjevich, Professor of Hydrology, Colorado State University, flood control measures may be divided into five groups—prevention, protection, proffing, physical control and insurance. He further advocates a possible approach of designing the most suitable combination of these classifications to suit the river systems of any area.

Following this principle, the river situation in Orissa appears to lend itself to the combination of flood control measures set out hereinafter. It must, however, be pointed out that atmospheric processes have high degree of striking at random. Excessive precipitation can take place in unexpected areas and flood plains cannot escape inundation of flood for all times. People of these areas must learn to live with floods whenever they occur.

1. STRUCTURAL TYPE FLOOD CONTROL MEASURES

(a) Multipurpose Reservoirs and Dams:

Taking into account heavy and sudden precipitations that occur in the catchment areas of the Brahmani,

Baitarani and Subarnarekha and the experience gained with the multi-purpose reservoir of Hirakud as a flood control measure, the first and important flood control measure to protect the flood plains from excessive damage is the creation of storage space for retention of floods and for reducing sudden out-flow into the plains. Brahmani, Orissa's river of sorrow, with a catchment of 14,000 sq. miles, discharges over 9 lakh cusecs into the plains suddenly within 24 to 48 hours and often bursts its embankments creating havoc until it reaches the sea. A multi-purpose flood control and power project—the Rengali Dam over the Brahmani estimated at Rs. 57.9 crores with joint participation of the State and Central Governments, was commenced with the laying of the foundation stone by Prime Minister in 1973. But the rate of investments should be substantially increased to ensure its early completion and to prevent the flood plains from remaining unprotected for too long a time. The estimated cost of damage of one year's flood is sufficient to build such a multipurpose reservoir. This fact alone justifies increasing investments and early completion of the dam within a space of five years. This would reduce the peak flood to less than 4.5 lakh cusecs and make it possible to contain the damage by other flood relief measures suggested later on.

Similarly, the Bhimkund Dam Project on the flashy and turbulent river Baitarani could reduce the peak flood from 7 lakh cusecs to 2.5 lakh cusecs in addition to generating considerable power and irrigating 3.8 lakh acres. This project could be taken up by the Central Government to synchronise with the Rengali Dam Project and minimise the flood potential in the plain areas of Cuttack and Balasore districts considerably and provide the irrigation and power facilities for a big break-through in agricultural production. Similar results could be obtained by damming the Subarnarekha at the proposed site of Chandil protecting

large tracts of the States of Bihar, Bengal and Orissa.

(b) Embankments, Dykes:

Embankments and dykes have been raised from time immemorial to ward off flood waters. In Orissa we have several hundred miles of embankments and channels including irrigation canals to carry the flood waters towards the sea. But pressure of population growth and the attraction of good soil near the beds of these channels have led to extensive encroachments and narrowing of channels. Further, haphazard construction of embankments has led to contradiction of flood control. Once the release basins in the reservoirs are to be operated to flush excess water the need for increased channel capacity becomes obvious. This involves widening or deepening the existing channels to increase flow area, shortening the twisted curves of streams and canals to accelerate the flow and to control bank erosion. Where existing channel capacity cannot hold the releases, parallel channels, diversion channels must be tried to provide the excess capacity. An integrated flood passage plan based on topographical and hydrological survey is called for.

Several islands of habitations inside the flood areas have rich agricultural lands, dense populations and industrial complexes which need to be insulated against inundation. In Orissa ring bundhs or encircling embankments have been tried in the past. These could be strengthened and more of them could be planned.

(c) Drainage :

Rivers are running from West to East. The national highway, the railway lines, both on high elevations run from North to South with inadequate vents and block the natural drainage slopes of the coastal rivers. In addition the low flat plains and slow meandering streams slow down

the flood discharge particularly during high tides. In such situations opening of more ventways on the highways and drainage cuts including the Madanpur cut on the Brahmani, Batgaon cut on Subarnarekha and Gobakund cut on Bhargavi to carry the surplus waters quickly to the sea should be attempted.

2. FLOOD PROOFING

(a) Sediment Control & Soil Conservation :

The reservoir basins behind the dams and the channels transporting the water can soon be neutralised by accumulation of large quantities of soil and sediment carried by the river from its upper reaches. It, therefore, becomes necessary to conserve and protect forest lands, grass lands and hill slopes. Conservation of soil and growth of plantations are effective instruments of flood control. The flow of rain water is checked and retained at the point of contact with the ground for a longer period. This in turn softens the flood peaks and increases surface and sub-surface accumulation of water in the higher reaches. The minimising of erosion and sediment saves reservoirs and channels from silting up too rapidly and provides larger holding capacity. In the catchment areas of Brahmani, Baitarani and Subarnarekha a programme of preventing deforestation and accelerating quick growing plantations together with contour bunding, soil conservation and land shaping will produce significant results over a period of time.

(b) Flood-Plain Proofing :

Society must adjust to natural phenomena. Flood is one such weather hazard in Orissa. The inevitability of severe floods sometime or the other has to be accepted. The society must live in harmony with the situation that results despite all flood control measures. The behaviour of the people will have to conform to the needs of the physical situation. Living and working in the low lying flood

areas should be adjusted to the probability of floods. For instance, towards the sea coast where lands are low and plain and where discharge of the rivers to the sea is slow and tardy, floods can become critical for lack of communications and inundation. Raised platforms or high plinths or structures for human habitations, institutions and factories should be considered as a measure of flood plain proofing. More specifically all schools, hospitals, offices, co-operatives, grainolas, rice hullers and small scale industry units should be built on raised platforms or as double storeyed buildings to serve as evacuation points, safe storage spaces and relief control centres. All embankments in plain areas should be raised above peak flood levels, and their tops firmly surfaced to provide quick communications and rallying points for relief administration. Wherever possible helipads should be provided for air dropping.

3. FLOOD PREDICTION

The Meteorological Station at Bhubaneswar and the Radar Unit at Paradeep together with the various meteorological forecast stations over the eastern coast are now capable of giving timely warning of heavy rainfall and occurrence of cyclones and their likely point of contact and intensity. As pointed out earlier, atmospheric circulation changes so rapidly that long range forecasts may not be made correctly. Regardless of this uncertainty it is possible to develop a fairly reliable system of flood warning through wireless stations, radio, and village receiving sets, to enable administrators, local bodies and even individuals to operate their emergency defence plans. A number of useful steps can be taken.

(1) The reservoirs and their channels could be emptied to receive larger volumes of precipitation and reduce peak floods thus spread them out over a longer period.

(2) Evacuation from low lying plains can be carried out in an orderly fashion to safe and higher elevations.

(3) Weak points on the dykes and channels can be located and strengthened.

(4) The local administrators can build up requirements of foods, essential supplies, medicines, flood control materials at convenient points, relief boats, vehicles and organisations can be alerted to a state of readiness.

A well planned system of prediction of flood warnings and implementation of the flood contingent plans is bound to result in a substantial diminution of loss of human and animal lives and property.

4. FLOOD PREVENTION

In more advanced countries flood is controlled by prevention of excessive rainfall. This is also known as weather modification. Hail-storms have been controlled by cloud seedings. Efforts are still under way to control large hurricanes, typhoons and such weather phenomena. Such weather modification measures are not within practicable reach of Orissa in the immediate future. But in any future strategy of systematizing flood control measures this possibility and its implications will have to be kept in view.

5. INSURANCE

While no insurance or compensation is due or paid under the present laws, generous relief grants and loans are being extended to all sufferers of flood year after year by Government. In addition, international, national and local voluntary organisations come

forward with food, shelter, medicines and services to those affected. These form an indirect insurance against damages caused by flood. But these are in the nature of palliatives and not commensurate with the losses. The organisation of the people such as the Panchayats, Municipalities, Women's Organisations, Student Bodies, all need to be involved deeply in the process of educating and preparing the people, analysing and solving problems of flood and relief. A statutory flood control fund contributed by the administration and private agencies and operated jointly by local administration and the inhabitants would perhaps result in a more effective machinery for providing relief, insurance and compensation for losses and for improving the attitudes and approaches towards such disasters.

CONCLUSION

A combination of the flood control system suggested for the State in this deliberation may not be agreed to by some who have different ideas on various aspects of flood control. It is also likely that a better combination of these and other measures can be suggested. But the need for developing a sound strategy taking into consideration the physical conditions, the social complexities, the administrative possibilities and the various constraints of technology, finance and public co-operation cannot be denied, nor is it possible to deny the need for systematizing of flood control measures in Orissa, with a more dynamic and modern approach. If this article can

provoke rethinking on the present system of flood control and set in motion an organised administrative action for formulating a dynamic flood control programme of preven-

tion, prediction, proofing, physical control and insurance, the prevailing solidified inertia would have been broken for the good of the flood prone areas.

ACKNOWLEDGEMENT

Systematization of Flood Control Measures—Vujica Yuvjevich—Journal of the Hydraulics Division.



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Calendar of Events

August 1975

- 1-8-1975 ... Shrimati Nandini Satapathy, Chief Minister of Orissa, inaugurated the Satellite Instructional Television Experiment Programme at village Ankarantipur in Dhenkanal district.
- State Assembly adopts the Orissa Reservation of Vacancies in Posts and Services (For Scheduled Castes and Scheduled Tribes) Bill, 1975, with an amendment.
- 2-8-1975 ... Shri Bhagirathi Mohapatra, a former member of the Rajya Sabha and a prominent freedom fighter passes away.
- Orissa Government instructs District Collectors to take expeditious action in leasing out Government land up to 2 acres to educated unemployed for their self-employment.
- 4-8-1975 ... Orissa Legislative Assembly adopts the Orissa Land Revenue (Re-imposition) Bill, 1975, as amended by the Select Committee.
- State Industries Development approves the proposal for starting a Spinning Mill (Kalinga Weavers' Spinning Mills Ltd.) at Govindapur near Dhenkanal.
- 6-8-1975 ... Orissa Government decides to abolish the Parban Pancha Tax which was levied for maintenance of idol "Kichakeswari Thakurani" of Bahalda area in Mayurbhanj district.

Parliament adopts the Election laws Amendment Bill, 1975 which empowers the President to determine the period of disqualification of any candidate on the basis of the opinion of the Election Commission.

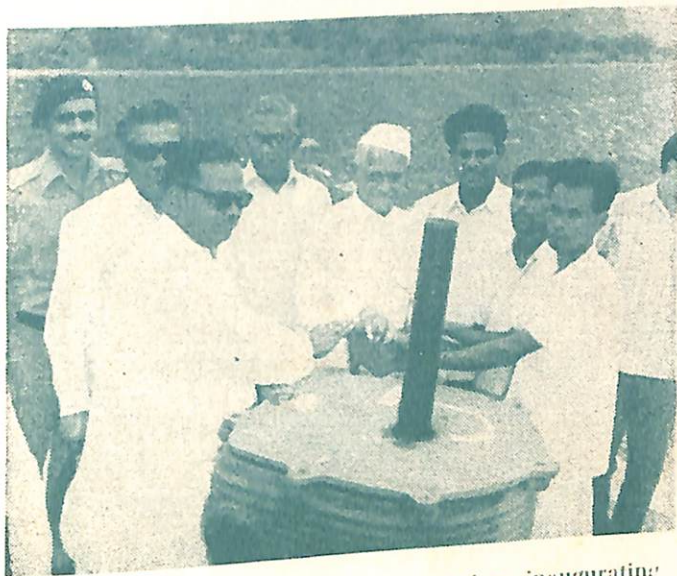
- 7-8-1975 ... Orissa Government decides to conduct Swimming Competition among children in the age-group 12—14 in rural areas for development of rural sports.
- 8-8-1975 ... Parliament adopts the Constitution (39th Amendment) Bill, 1975, providing for a new Parliamentary Forum for deciding disputes relating to elections of the President, the Vice-President, the Prime Minister and the Speaker.
Shri Rama Chandra Ulka, Minister of State for Tribal and Rural Welfare, lays the foundation of a Hostel for the Tribal Girl students of Phulbani College in Boud-Kandhamals district.
- 9-8-1975 ... Orissa Assembly ratifies "the Constitution (39th Amendment) Bill, 1975, as adopted by Parliament.
Rajya Sabha adopts the Constitution (Fortieth Amendment) Bill, 1975, giving legal immunity to the Prime Minister like the President of India and State Governors for the exercise and performance of the powers and duties of that office and for acts done or purported to be done thereby.
- 10-8-1975 ... 6th Century A. D. Swarna Jaleswar temple discovered at Bhubaneswar.
- 11-8-1975 ... Orissa Government launches a massive 21—day Clearance Drive to liquidate arrear Government work.
- 13-8-1975 ... State Government decided to extend the E. S. I. Act to cover employees working in News Papers and Road Transport Establishments, Shops, Hotels and Restaurants.
- 14-8-1975 ... The Chief Minister, Shrimati Satapathy, lays the foundation of two students' hostels to be constructed at a cost of Rs. 31 lakhs at Vani Vihar, Bhubaneswar.
- 15-8-1975 ... Foundation of a working women's hostel laid at Bhubaneswar by Chief Minister, Shrimati Nandini Satapathy.

- Subscriber's Trunk Dialling system between Bhubaneswar and Calcutta starts functioning.
- 16-8-1975 ... Orissa Government grants special remission to female prisoners to commemorate the International Women's year.
- 17-8-1975 ... Floods in Orissa. Forty seven families of Bira Narsinghapur village in Puri district reported marooned due to flood in river Bhargabi.
- Orissa Government abolishes lower and upper class in passenger buses and revises the fare and freight rate.
- 18-8-1975 ... Orissa Khadi and Village Industries Board employs Leprosy patients in spinning and cottage industry schemes.
- 19-8-1975 ... Orissa Government imposes restrictions on use and sale of psychotropic drugs in the State.
- Orissa Governor Shri Akbar Ali Khan, inaugurates "Pani Paila" Minor Irrigation Project in Nayagarh Block of Puri district.
- 20-8-1975 ... Twenty-five lakh persons reported marooned due to floods in the district of Mayurbhanj, Keonjhar, Dhenkanal, Balasore, Cuttack and Puri.
- 21-8-1975 ... Army and Air Force go in to action to rescue and aid the flood victims.
- 24-8-1975 ... 'Old Men's Hostel' to house 16 old men opened at Chandragiri in Ganjam district.
- Shri Somanath Rath, Minister of State for Health and Urban Development lays the foundation of a Primary Health Centre in village Mahipur under Nuagaon block of Puri district.

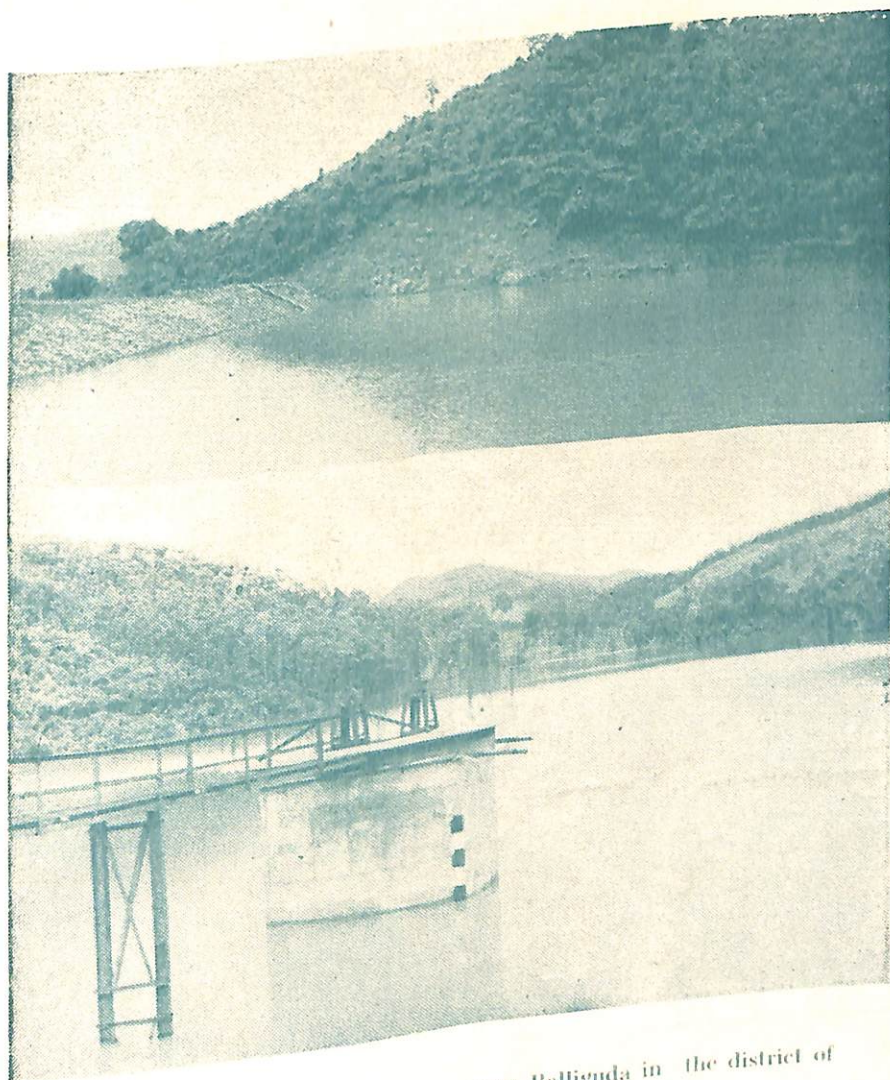
TRAINING FOR APPRENTICESHIP

The Government of Orissa in the Education and Youth Services Department have selected 30 candidates to undergo apprenticeship training in the Text Book Press, Bhubaneswar. The tenure of the training will be for a period of 3 years and the trainees will get monthly stipend at the rate of Rs. 90, Rs. 100, Rs. 106 in the 1st, 2nd and 3rd year respectively. After completion of the training, they have to appear at the examination to be conducted by the Apprentice Advisory Board and the successful candidates will be awarded a certificate of Diploma.

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Shri Akbar Ali Khan, Governor of Orissa, inaugurating the Panipoila Minor Irrigation Project in Nayagarh Block of Puri district on August 19, 1975



Katari Minor Irrigation Project near Balliguda in the district of Phulbani



Shrimati Nandini Satpathy, Chief Minister of Orissa, distributing clothes to the flood-affected people of Bhandaripada village of Jajpur Subdivision

