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A delegation of Govt. of Japan discussing with Chief Minister Shri J.B.Patnaik.



Chief Minister Shri J.B. Patnaik inaugurating the historic Bali Jatra at Cuttack on 14.11.1997.

# ORISSA REVIEW

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*P.K.Jena*

## **BALI JATRA AT PARADEEP INAUGURATED BY CHIEF MINISTER**

Inaugurating the historic Balijatra festival in Paradip port town on 13.11.1997 Chief Minister, Shri J.B.Patnaik reminisced how Paradip was the nerve centre of ancient Kalinga's maritime trade. This Port was established thirty five years ago and is now considered a major port in India. The Calcutta Port, Chief Minister observed, was slowly gathering silt and the Haldia Port was not suitable for providing anchorage to large vessels. Orissa's neighbouring States, Madhya Pradesh and Bihar were also deprived of port facilities and as such, the Paradip Port would be of immense help in the eastern part of the country. The port town was growing up fast to that of a sea-coast city. The emerging city would soon witness a mega Fertiliser Industry by Oswal Co, Oil Refinery by Mittal Co and Indian Oil Corporation and Industrial Park (over 17,000 acres of land to be set up by a Thai Company) which would usher in a new era of employment, decent rehabilitation, infrastructural development and port-based subsidiary industries etc.

In another meeting organised by the Paradip Port Trust Authority on 14.11.97, Chief Minister Shri J.B. Patnaik exhorted the youth to display valour and a sense of adventurism. In his address, Shri Patnaik pointed out that ancient Kalinga had earned an all-India fame in overseas trading and sea-faring. Naval historian Sridharan had also referred to the presence of Kalinga mariners in Indonesia in 78 AD. "The archipelago still bears the mementos of Kalinga culture. The merchants of Kalinga set up their colonies in Brahmadesh, Thailand and Indonesia. Like the traditional ritual in Orissa, in Thailand too, people on the day of Kartik Purnima sail off boats made of banana peels, stuffing in them betel, betel nut, coins and lamps. The famous Konark temple (comparable to the magnificent Tajmahal) which was said to have been built on the State's twelve-year revenue was probably met from the overseas trade" - the Chief Minister said. He reiterated that the 'Boita vandana' is only a symbolic commemorative celebration of Orissa's rich maritime trade.

On the eve of the celebration, the Chief Minister handed over consecrated earthen pots to the sea-faring merchants (Sadhavas) and later witnessed the ships at the harbour. The meeting was presided by Sri S.K. Mohapatra, Chairman Paradip Port Trust. Eminent persons like Shri Laxman Mallick and local MLA Shri B.K.Nayak and others were present.

# GROWTH OF NATIONAL CONSCIOUSNESS AND FREEDOM STRUGGLE IN ORISSA

*Dr. Sidhartha Kanungo*

Orissa came under the British Rule in 1803. In that year on 17 December, the Maratha Chief Raghujji Bhonsala surrendered to the East India Company "the province of Cuttack including the port district of Balasore". In 1849, Sambalpur came under the British Rule and by 1858, the whole of Orissa was under the British Crown.

In the 19th Century India witnessed social movements and the growth of national consciousness. It happened due to two factors; first the rise of middle class intelligentsia with the spread of western education and secondly the growth of mass media and communication like press, railways and postal services. In addition to this, the people of Orissa faced the disastrous famine of 1866 that aroused national consciousness among the middle class intellectuals of Orissa. They organised themselves to agitate for the amalgamation of all outlying Oriya tracts with the thought that food could at least move from the Oriya speaking tracts to the other parts of Orissa during such calamities in future.

In the sphere of education, the condition of Orissa was very miserable. The condition even did not improve very much by 1947. As per the reports of Inspector of Schools, South West Bengal for the year 1987-88, there were three Zilla Schools in the head quarters of three districts i.e. Puri, Cuttack and Balasore. There was an Anglo - Vernacular School at Bhadrak and 16 Vernacular Schools in the whole province.

After the great famine in 1866, the Government took a decision to upgrade the Cuttack Zilla School to a High School (Intermediate College). In that year, Mr. Madhusudan Das passed the faculty of Arts and in 1870, he became a graduate. He passed M.A. in 1873 from Calcutta University. It may be pointed out that

Mr. Das was the first Orissa Post Graduate and the first Oriya to get B.L. degree. Though the progress of education was very slow in Orissa, the educated minority formed the hand-core of the socio-political movements in Orissa during the later decades of the 19th Century.

The Cultural renaissance awakened love for Oriya literature that kindled the spirit of Oriya nationalism and revival of the past heritage. After the famine of 1866, Fakir Mohan Senapati, Madhusudan Rao and Radhanath Roy gave a modern twist to Oriya literature and these nationalist poets contributed a lot of the growth of national consciousness and established the claim of Oriyas as a distinct homogenous entity within the British empire. Pandit Gopabandhu Das and his Satyabadi colleagues were both poets and writers, who breathed nationalism through their robust literature. In this way socio-political ferment took place in Orissa after the Second half of the 19th Century.

It will not be out of place to mention here that prior to the formation of Indian National Congress in 1885, Oriyas took several attempts against the British Rule. The Paik Rebellion of 1817, Ghumsar Rebellion of 1835 and the Great uprising of 1857 deserve special mention here.

## THE PAIK REBELLION :

The Paik Rebellion of 1817 was a landmark in the history of Orissa. The Paiks of Khurda, began the first organised resistance movement of the Oriyas against the British. The rebellion took place in the last week of March 1817 with the march of a body of Khonds from Ghumsur into Banpur area. The Khonds were joined by the Paikas and Dal Beheras of Khurda under the leadership of Buxi Jagabandhu. The rebels attacked the police station and looted treasury. But the rebellion was

ruthlessly supported by the British. Buxi Jagabandhu surrendered himself to the British Police in 1825.

#### **GHUMSUR REBELLION :**

In 1835, a rebellion broke out in Ghumsur under the leadership of Dora Bisoi, the Khond leader. The British Government took several measures to suppress the rebellion. Dora Bisoi was captured and died as a state prisoner at Ooty near Madras. After Dora Bisoi, his nephew Chakra Bisoi took the leadership. He continued the rebellion upto 1846-47. The Khonds under the leadership of Chakra Bisoi did not hesitate to give trouble to the British till 1856.

#### **THE GREAT UPRISING OF 1857 :**

The great uprising of 1857 triggered off on the 10th may 1857 at Meerut where the Indian soldiers in the British army rose in mutiny and murdered many Europeans. It had its impact in Orissa also. Surendra Sai of Sambalpur, Ramkrishna Samantasinghar of Balia, Rajum Singh of Purhat (Singhbhum) and his Dewan Jagu took active part in Anti British activities during the 1857 rebellion. The Government took several attempts to suppress the rebellion in Orissa. After a continuous struggle against the British till 1862 Surendra Sai surrendered himself to the British. He at least died on 28th February 1884 as prisoner.

#### **PARTICIPATION OF ORIYAS IN THE INDIAN NATIONAL CONGRESS :**

It may be pointed out that only one delegate from Orissa attended the first session of the Indian National Congress. However, a public meeting was held at Cuttack on 3 March 1886. Mr. Madhusudan Das presided over the meeting. The meeting discussed the resolutions adopted by the Congress in its session at Bombay. Madhusudan Das was the first leader to introduce the liberal ideas of the Congress. Second session of Indian National Congress was held in Calcutta in December 1886. Seven Representatives from Orissa including Madhusudan Das and Raja Baikuntha Nath Dey attended the session. The third session of Indian National Congress was held in Madras. It was attended by Gauri Sankar Ray, Madhusudan Das & others. Thus year after year the leaders of Orissa attended the Congress sessions. In fact Congress became an organisation under whose leadership the struggle for India's freedom from foreign domination was launched.

#### **AGITATION FOR THE AMALGAMATION OF ORIYA SPEAKING TRACTS :**

The amalgamation of Oriya speaking tracts into one administrative unit and then formation of a separate province agitated the minds of educated Oriyas. They continued their sustained efforts in this respect.

The abolition of Oriya as court language in Sambalpur caused deep resentment among the Oriyas. In 1902 the Oriyas of Ganjam sent a mammoth memorandum to Lord Curzon in which they explained of their disassociation from their Oriya brethren and they prayed not for a patch work re-distribution but hoped that the Government of India would be graciously pleased to bring together the scattered divisions inhabited by the Oriya-speaking people under the Government of Bengal or under any one Government and one University.

The year 1903 was a landmark in the struggle for a separate province. The Utkal Union Conference in its first session in December 1903 emphasized that Oriya speaking people had a right to preserve their distinctive cultural heritage and that linguistic identity was perfectly compatible with loyalty to the motherland. Thus the primary purpose of the Conference was to build an organisation to fight for a separate province of Orissa. In this regard, the first resolution of the conference welcomed the proposal of the Government of India regarding territorial adjustment outlined in the famous Risely Circular sent to the Government of Bengal on 3.12.1904. The circular proposed to unite the whole of Oriya speaking people, both hill and plain. But the greatest blow to the proposal came from Madras Government. In April 1904, Lord Curzon proceeded on leave. During his absence Lord Amphill, the Governor of Madras officiated as Viceroy of India. On his suggestion, the Home Department turned down the proposal of transferring Ganjam area to the Orissa division but approved of the transfer of Sambalpur and five adjoining Oriya feudatory states such as Patna, Kalahandi, Sonapur, Bamra and Rairakhol to the Orissa Division from the central province along with two states of Gangapur and Bonai from Chhotnagpur Division. On 16th October 1905, Sambalpur and the adjoining feudatory states were amalgamated with Orissa Division, thereby fulfilling

the long-cherished desire of the people. Thereafter in spite of all agitations, the boundary of Orissa remained unchanged till 1st April 1936 though Orissa and Bihar became a separate province 1912.

#### **ORISSA'S ENTRY INTO NATIONAL POLITICS :**

The Indian National Congress in its session at Nagpur in 1920 decided to organise provincial congress committees on the basis of linguistic areas. On return from Nagpur, Gopabandhu Das and Jagabandhu Singh attended the Utkal Union Conference held at Chakradharpur from 30.12.1921 to 01.01.1922. The conference decided to accept the objectives and aspirations of the Indian National Congress. At the same time, the Conference also whole-heartedly supported the decision of the Indian National Congress to form the provincial Congress Committees on linguistic basis. Gopabandhu Das later on explained that acceptance of the ideas of Indian National Congress would not hamper the cause of Oriya movement. He also explained that a satisfactory solution to the problem of unification of Oriya tracts could be achieved with the attainment of Swaraj. The goal of national movement was Swaraj, which ultimately became the aspiration of the Oriyas. Orissa thus joined the mainstream of national politics.

#### **NON CO-OPERATION MOVEMENT :**

The Indian National Congress in its session at Nagpur held in December 1920, decided to launch Non-Co-operation movement against the British Government under the leadership of Mahatma Gandhi. A total number 35 delegates from Orissa including Pandit Gopabandhu Dash Niranjana Patnaik, Jadumani Mangaraj, Jagabandhu Singh and Harekrushna Mahatab attended the session held at Nagpur. On their return to Orissa they set up Utkal Pradesh Congress Committee under the chairmanship of Pandit Gopabandhu Das. He was the organiser of the non co-operation movement in Orissa.

The most important event of 1921 was the visit of Mahatma Gandhi to Orissa. He came to Cuttack and addressed a public meeting at Cuttack on the sandy bed of the river Kathajori. He also visited Bhadrak, Satyabadi, Puri and Berhampur. At each place he addressed vast gatherings explaining the significance of non-violent non-co-

operation movement and the duties of the people including women in the national struggle. Visit of Mahatma Gandhi created unprecedented enthusiasm among the people. Meetings were held in different towns and interior parts of Orissa. Village panchayats were formed.

Boycott of courts and foreign cloth was carried on vigorously. Satyagrahis were arrested and summarily convicted.

On the wake of non-co-operation movement college students such as H.K. Mahatab, Nityananda Kanungo, Nanda Kishore Das, Raj Krishna Bose and others left the colleges. Lawyers such as Bhagirathi Mohapatra and Jagabandhu Singh gave up their legal practice. Gopabandhu Choudhury, who was a Deputy Collector resigned from Government Service to join the movement.

National Schools were established in several parts of Orissa such as Puri, Cuttack and Sambalpur. A number of Swaraj Ashrams were established at Cuttack town Jagatsinghpur (Alka Ashram), Sakhigopal, Puri, Balasore, Soro, Bhadrak etc. These Ashrams became the regular centres of Congress activities.

#### **CIVIL DISOBEDIENCE MOVEMENT AND SALT SATYAGRAHA IN ORISSA**

The Lahore Session of Indian National Congress held in December 1921 adopted the resolution to launch mass Civil Disobedience. The civil disobedience movement began on 12 March 1930 with the Dandi March. Like Dandi on the west coast, Inchudi on the Balasore coast was selected by Utkal Pradesh Congress Committee for breaking the salt laws. Satyagrahis led by Gopabandhu Choudhury and Acharya Harihar Das began their journey from Cuttack to Inchudi. On 13 April 1930 Acharya Harihar Das and other Satyagrahis picked up salt at Inchudi in violation of the salt laws.

The Satyagrahis were arrested. More Satyagrahis, batch by batch, arrived at Inchudi to break the Salt laws. Many women led by Rama Devi offered Satyagraha at Inchudi.

#### **FORMATION OF ORISSA PROVINCE :**

The new province of Orissa, the first linguistic state of India, came into existence on 1.4.1936. The Congress made preparations for the election to Orissa Legislative Assembly in



November 1936. The Congress captured 36 seats out of 60 and Orissa was one of the Provinces where Congress got absolute majority. But the Congress party refused to form ministry as the Governor was not willing to give up his special powers of interference with regard to constitutional activities. An interim ministry under the leadership of Maharaja of Paralakhemundi was formed. The ministry continued upto 13 July 1937. The congress ministry under the leadership of Biswanath Das assumed office on 19 July 1937.

#### **ROLE OF ORISSA IN QUIT INDIA MOVEMENT :**

Mahatma Gandhi's visit to Orissa in 1934 and his subsequent Padayatra created consciousness among the people of Orissa. Like their brothers in other provinces, people of Orissa participated in the Quit India Movement in 1942. Many people lost their lives in police firing and many others died in jails. Laxman Nayak a Congress leader of Koraput was hanged.

#### **STATE PEOPLE'S MOVEMENT :**

The year 1938 witnessed the political awakening of the people of the Feudatory states of Orissa like Nilgiri, Ranpur, Nayagarh, Dhenkanal, Talcher etc. Prajamandals were set up in the state and people came forward to be its members. Peasants were burdened with taxes, *salamies*, levies etc. There was total absence of civil and political rights.

Gradually with the advance of national movement in Orissa the people in the native states became conscious of their rights. It may be pointed out at this stage that in 1938 at the Haripur session the Congress had declared that the goal of Poorna Swaraj also included the independence of princely states. In Orissa, Prajamandals (People's Association) were formed in 1938 and under their banner struggle started to secure democratic rights. Popular movement came to an end only after merger of the states on 1st January 1948.

#### **INTEGRATION OF NATIVE STATES :**

After the declaration of Independence in August 1947, the Rulers of the native states were not interested to join the Indian Union and considered themselves as independent sovereign states. But this was a temporary affair. The wise statesmanship of Sardar Patel in the centre and Dr. H.K. Mahatab in the state succeeded in prevailing upon the rulers to merge their states with Orissa. Then Orissa became a state with thirteen districts.

Thus the glorious chapter of the freedom movement in Orissa came to an end. The state now entered into the mainstream for her all-round development.

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#### **Sincere efforts to be made to reduce infant mortality: Chief Minister:**

In a special meeting organised by the State Child Welfare Board, Child Welfare Department and UNICEF on 15.11.1997 at Rabindra Mandap Chief Minister, Shri J.B. Patnaik while gracing the occasion as Chief Guest asserted that sincere and honest attempts would be made to reduce the rate of infant mortality in the State to that of the national average. Remembering Pandit Jawharlal Nehru's love for children, Shri Patnaik said that 'healthy children are a treasure to the nation'. He lamented that "many children are dying of malnutrition and health hazards. They need balanced diet, free vaccines and timely treatment".

The Chief Minister further said that the Central Government was paying a sum of Rs.300/- to pregnant women. Besides, under the Integrated Child Development Scheme, the Anganwadi activities should be geared up efficiently. The State has already formulated Child Development Policy. Though the infant mortality rate in the State has been reduced to 95 from 100, it is far behind the national average.

Shri Jagannath Patnaik, Minister, Revenue and Smt. Bijaya Laxmi Sahoo, Minister of State, Women and Child Development and Shri Chinmoy Basu, Secretary, Women and Child Development also addressed the meeting. Smt. Sabitri Sahu, Secretary, State Child Development Board proposed a vote of thanks.

# SECOND MINOR IRRIGATION CENSUS (1993-94) IN ORISSA

## RESULTS AND FINDINGS

*B.K. Tripathy*

### 1. Introduction :

1.1. Development programmes on Minor Irrigation Sector in our State are implemented by more than one Deptt/Organisation. At national level also, different Departments deal with M.I. Development. Due to involvement of multiple agencies in MI development and lack of coordination among them, a credible and realistic data base for planning purpose was felt to be of paramount importance. In order to achieve this goal, Ministry of Water Resources, Govt. of India decided to conduct a detailed census of Minor Irrigation works on quinquennial basis and sanctioned a Centrally sponsored scheme with 100% grant-in-aid for the purpose. The 1st M.I. Census was conducted in all States (except Rajasthan) and U.T.s for the reference year 1986-87. The 2nd census has been completed recently for the reference year 1993-94 for which the Director, Economics and Statistics as Minor Irrigation Census Commissioner and the entire machinery of the Directorate of Economics and Statistics were engaged to conduct the census in all the villages of the State. The census was launched in the field in Mid-November, 95 and was completed by Mid-May, 96. Orissa was the 1st state to complete the census in time.

### Coverage and agency utilised :

1.2. In our State, the 2nd M.I. Census has been conducted during the Agricultural year 1995-96 in all the 50,000 (fifty thousand) revenue villages under 314 Blocks of 30 districts. The field agency of the Directorate of Economics and Statistics, Orissa viz, Statistical Field Surveyor, Statistical Field Inspector, Senior Statistical Field Inspector and district level Supervisors like Statistical Assistants/Statistical Investigators as well as

officers and staff of State headquarters were engaged for the purpose as in the previous census. They performed/supervised the census work in addition to their normal duties.

### Field work and period spent :

1.3. The field work for the census in each revenue village covered plot to plot enumeration of 5 (five) different Minor Irrigation Schemes viz, Dug Well, Shallow Tubewell, Deep Tubewell, Surface Flow and Surface Lift Schemes. Schemes, if actually existed and were either in use or not and in use as on 31.3.94, were taken into account. Thereafter detailed data were collected on enquiry method from the concerned scheme owners as per Government of India guideline. Add to this, village level information on groundwater level, culturable area, net area sown and irrigated, gross area irrigated from Major/Medium projects and minor schemes were also collected. The work although commenced briskly from 15th Nov'95 gained momentum during Jan'96 to April'96 and was finally completed in all respects (including cent percent enumeration check in 5% villages by higher level supervisors) by 15th May'96. Private Computer houses were hired for mass scale data entry work. Thereafter data were validated in NIC (ER), Bhubaneswar and catridges loaded with validated data (villagewise and schemewise) were sent to NIC (Headquarters), New Delhi in the 1st week of Feb'97. They in turn processed the data and supplied the required tables through the Ministry of Water Resources, Govt. of India first to the State of Orissa in the month of April'97 and subsequently with some revision in last week of June'97.

### Brief Account of 1st M.I. Census :

1.4. The M.I. Census, was conducted in Orissa during 1987-88 through the Directorate of

Economics and Statistics, Orissa, enumerating 2,27,240 dugwells, 6,978 Shallow tubewells, 2325 deep tube wells, 13,590 Surface flow schemes and 8,161 Surface Lift Schemes by end of March'87, out of which 29,882, 1130, 445, 1196 & 982 schemes were not in use respectively. C.C.A of all these schemes came to be 6,37802 ha. Gross irrigation potential created was 8,26,712 ha., of which potential actually utilised during 1986-87 was 4,74,654 ha. (57.41%).

### Results and 2nd Minor Irrigation Census 1993-94 in brief.

#### 2. Dugwell

2.1. There are 3,23,097 dugwells in the State by the end of March'94 out of which 2,66,403 (82.45%) are in use and 48,864 (15.13%) are temporarily not in use and rest 7830 (2.42%) are dead i.e. permanently out of use. Higher percentage of dead schemes is found in Balasore and Gajapati districts. Although percentage of dugwells not in use was 13.13 in 1st M.I. Census, it has increased to 17.55 during 2nd M.I. Census. Dugwells are located in 28,765 (57.53%) villages in the State.

2.2. Share of dugwells to the State total is the highest with 16.46% in Bolangir and the lowest with 0.09% in Kendrapara. The average number of dugwells per village ranges between 2.13 in Kendrapara to 30.14 in Bolangir.

2.3. Nearly 12.59% dugwells are owned by S.C. farmers, 31.55% by S.T. farmers and 55.86% by other category of farmers. Similarly, 33.17% dugwells belong to Marginal farmers, 39.50% to Small farmers, 24.94% to Medium farmers and only 2.39% to Big farmers.

2.4. Culturable Command Area (net), gross irrigation potential created and gross irrigation potential utilised during 1993-94 by the dugwells come to 1.38 lakh ha., 2.06 lakh ha. & 0.92 lakh ha. respectively. Only 44.5% of the potential created has actually been utilised during the reference year. Average area under C.C.A., IPC (gross), IPU (gross) per dugwell comes to 0.43 ha., 0.64 ha. and 0.34 ha. respectively. This indicates fairly a good position.

2.5. Number of dugwells found in existence as per current census is 323 thousand as against P.R. Department reporting of 645 thousand indicating

that almost half of the reported figures actually exist in the field. The Departmental reporting reflects cumulative figures over long years which include age-old, non-existent and even some actually non-commissioned dugwells. Such schemes have neither been omitted from Government records nor effective number reported. This necessitates actual inventorisation of the dugwells on the basis of latest census findings done by Director of Economics and Statistics through the census.

#### 3. Shallow Tube Well :

3.1. Shallow Tube Wells do not exist in 6 (six) districts viz, Dhenkanal, Deogarh, Kandhamal, Boudh, Malkangiri and Nawarangpur. Their number is negligible in 9 (nine) districts viz, Angul, Sambalpur, Jharsuguda, Sundergarh, Bolangir, Sonepur, Koraput, Kalahandi and Nawapara. Such schemes are located only in 4,840 (9.68%) revenue villages of the State.

3.2. Out of 18,095 S.T. Ws. found in existence by the end of March'94 15,284 (84.46%) are in use, 2,173 (12.01%) are temporarily not in use and rest 638 (3.53%) are permanently out of use. Higher percentage of dead schemes is found in Mayurbhanj, Jagatsinghpur and Ganjam districts. Although in the 1st M.I. Census 16.19% S.T.Ws. were not in use, it has marginally decreased to 15.54% during the current census.

3.3. Share of S.T.Ws. to state total is the highest with 38.07% in Balasore and lowest with 0.01% in Angul, Sambalpur, Sonepur and Koraput districts.

3.4. Nearly 19.06% S.T.Ws. are owned by S.C. farmers, only 1.72% by S.T. farmers and rest 79.22% by other farmers. Similarly, 26.87% S.T.Ws. belong to Marginal farmers, 39.59% to Small farmers, 31.17% to medium farmers and only 2.37% to Big farmers. This indicates that mostly S.C., S.T. and smaller group of farmers are using it.

3.5. Culturable Command Area (net), gross irrigation potential created and gross irrigation potential utilised during 1993-94 by the S.T.Ws. come to 0.71 lakh ha., 1.31 lakh ha. and 0.54 lakh ha. respectively. Only 41.32% potential created has actually been utilised during the reference year 1993-94. Average area under C.C.A, IPC (gross),

IPU (gross) per S.T.W. comes to 3.93 ha., 7.25 and 3.55 ha. respectively per S.T.W.

3.6. Although number of S.T.Ws. both in private and public sector is found to be 18,095, those owned by Govt. are 1583 (8.25%) and those by individual farmers, group of farmers, cooperative and others come to 16,512 (91.25%) as against P.R. Department reporting of 17,803 in Private Sector. This small difference of about 1300 in the private sector may be due to (i) age-old non-existence schemes and (ii) conceptual differences in departmental reporting and census guideline so far as depth of shallow tubewell is concerned. Hence as indicated above inventorisation of these type of S.T.Ws are also necessary to know the actual position.

#### 4. Deep Tube Well :

4.1. No D.T.Ws. exist in as many as 9 (nine) districts viz. Angul, Sambalpur, Deogarh, Sundergarh, Sonepur, Kandhamal, Koraput, Malkangiri and Nawarangpur as per census guideline. Except the districts of central division and few districts of Northern division, their number is too negligible. Only 1975 (3.95%) revenue villages have these schemes.

4.2. There are 2911 D.T.Ws. in the State by end of March'94 (as against 2325 in 1st M.I. Census) out of which 1866 (64.10%) are in use and 618 (21.23%) are temporarily not in use and rest 427 (14.67%) are dead i.e. permanently out of use. Districts of Kendrapara, Balasore, Mayurbhanj and Bhadrak record higher percentage of dead schemes. Since the D.T.Ws are mostly executed in public sector by the OLIC, this high percentage of permanently not in use (dead) schemes is a matter of concern. Although the 1st M.I. census reported the existence of 19.14% D.T.Ws. in defunct condition, it has alarmingly increased to 35.90% during the current census. This needs probing by OLIC and others.

4.3. Share of D.T.Ws to the State total is the highest with 50.60% in Balasore and the lowest with 0.03% in Dhenkanal, Boudh, Rayagada and Nawapada districts.

4.4. D.T.Ws numbering 2803 (96.29%) are owned by Govt./PSU and only 12 (0.41%) belong to group of farmers of general caste. No. D.T.W. is owned by S.C. and S.T. farmer. Out of this, 4 D.T.Ws. (33.33%) belong to Small farmers, 1

(8.33%) to Medium farmers and 7 (58.34%) to Big farmers.

4.5. 'Culturable Command Area (net), gross irrigation potential created and gross irrigation potential utilised during 1993-94 by these D.T.Ws come to 0.52 lakh ha., 0.82 lakh ha. and 0.14 lakh ha. respectively. Percentage of potential actually utilised out of the created potential comes to only 17.21 during the reference year 1993-94. Average area under C.C.A., I.P.C. (gross), I.P.U. (gross) per D.T.W comes to 17.76 ha., 28.22 ha. and 7.58 ha. respectively.

4.6. Departmental reporting by OLIC of 5047 D.T.Ws (having depth 45 metres and above) is reflected in census with only 2803 whose depth as per census guideline is not less than 70 Metres. The difference of 2244 schemes may be accounted as 1583 Govt. owned S.T.Ws of below 70 Metres depth. The rest 661 schemes need to be further verified either for deletion or otherwise from departmental records, on the basis of latest census findings. Difference of 661 schemes is mostly found in Balasore, Bhadrak, Jajpur, Keonjhar, Ganjam, Gajapati and Rayagada.

#### 5. Surface Flow Schemes :

5.1. There are 24,103 Surface Flow Schemes in the State by end of March'94 out of which 12,139 (50.36%) are Govt. owned. Of the total schemes, 21,807 (90.47%) are in use, 2065 (8.57%) are not in use temporarily and rest 231 (0.96%) are permanently out of use. Higher percentage of dead schemes are found in Balasore and Gajapati districts. Although 8.80% such schemes were not in use in 1st M.I. Census, it has increased to 9.53% during current census.

5.2. Share of S.F. schemes to the State total is the highest with 16.56% in Ganjam followed by Bargarh (10.40%), Rayagada (10.31%), the lowest with 0.02% in Jagatsinghpur. The headworks of such schemes are located in 11,710 (23.44%) revenue villages of the State.

5.3. Out of the schemes owned by farmers, 7.58% belong to Scheduled Caste, 24.19% to Scheduled Tribe and rest 68.23% to General Caste farmers. Similarly, 21.54% schemes belong to Marginal farmers, 24.72% to small farmers, 38.87% to Medium farmers and 14.87% to Big farmers.

**5.4.** Culturable Command Area (net), Irrigation potential created (gross) and Irrigation Potential utilised (gross) by these S.F. Schemes come to 5.69 lakh ha., 6.99 lakh ha. and 4.31 lakh ha. respectively. Average area under CCA, IPC and IPU per scheme comes to 23.60 ha, 28.97 ha and 19.78 ha respectively. Only 61.75% created potential has actually been utilised by these schemes during 1993-94.

**5.5.** Departmental reporting of Flow Schemes (CCA above 24 ha.) by Chief Engineer, Minor Irrigation, Orissa by end of March'94 comes to 4,792 as against 12,139 Govt. owned schemes with CCA below and above 24 ha. It is a fact that flow schemes like Tank/Pond, Canal etc. having CCA below 24 ha. are not reported by P.R. Deptt. and as such comparison of two sets of data is not possible. If P.R. Deptt. improves its reporting system and makes data available quarterly, comparative analysis in future will be easier and actual position can be known.

#### **6. Surface Lift Schemes :**

**6.1.** Census finds the existence of 20,602 Surface Lift Schemes in the State by the end of March'94. Out of which 7,702 (37.38%) are Govt. owned. Of the total Schemes, 18,197 (88.32%) are in use, 2036 (9.88%) are temporarily not in use and rest 371 (1.80%) are permanently out of use. Higher percentage of dead schemes is in Jagatsinghpur and Gajapati districts. Although 12.03% S.L. Schemes were not in use as per 1st M.I. Census. It has marginally decreased to 11.68% in current census.

**6.2.** Share of S.L. Schemes to the State total is the highest with 18.49% in Puri followed by 9.54% in Kendrapara and the lowest with 0.15% in Malkangiri. Only 7,781 (15.56%) revenue villages of the State have located these schemes.

**6.3.** Out of 12,363 Surface Lift Schemes owned by farmers, 1042 (8.43%) belong to Scheduled Caste, 2277 (18.42%) to Scheduled Tribe and rest 9044 (73.15%) to General Caste farmers. Similarly 23.47% schemes belong to Marginal farmers, 31.47% to Small farmers, 36.09% to Medium farmers and only 8.97% to Big farmers.

**6.4.** Culturable Command Area (net), Irrigation potential created (gross) and Irrigation Potential utilised (gross) by these Schemes come to 1.94

lakh ha., 2.83 lakh ha. and 1.13 lakh ha. respectively. Average area under CCA, IPC and IPU per scheme comes to 9.44 ha, 13.75 ha and 6.19 ha respectively. Only 39.74% out of the created potential has actually been utilised during 1993-94.

**6.5.** The Departmental reporting by OLIC OF 8142 river lift schemes by the end of March'94 is actually found to be 7702 in the current census, showing deviation of about 5.71%. The difference of about 440 Surface Lift Schemes need to be verified in the field so as to facilitate their deletion from Govt. records alongwith the relevant data on CCA and IPC. This in effect will throw realistic data base and reduce public expenditure.

#### **7. Village Level Information :**

**7.1.** The total geographical area in the State covering 50 thousand revenue villages comes to 116.85 lakh ha. Out of this, culturable area and net area sown stand at 61.31 lakh ha. and 53.11 lakh ha. respectively. Thus the current fallow for 1993-94 comes to 8.20 lakh ha. current fallow as well as net area sown is 13.4% and 86.6% of the culturable area. Major/Medium projects have provided irrigation (net) to 6.17 lakh ha. (50.47%) and Minor schemes to rest 6.05 lakh ha. (49.53%) during the reference year.

**7.2.** Of the minor irrigation sources, Ground Water (i.e. Dugwell, S.T.W. and D.T.W.) has contributed net 1.47 lakh ha. (24.23%) and Surface Water 4.58 lakh ha. (75.77%). Percentage of gross irrigated area to gross cropped area as per census comes to 23.95 (24%) as against 25.75 (26%) reported by Director, Agriculture and Food Production, Orissa. Similarly, percentage of net area irrigated to net area sown comes to 23.01 as per census against D.A.F.P. reporting of 33.16. However, irrigation intensity as per current census is 124.12% as against D.A.F.P. reporting of 120.10%. This reveals that net area sown and net area irrigated figures as per D.A.F.P. are much on higher side than the ground reality.

**7.3.** It is assessed that 78.28% villages have ground water level of below 10 metres, 18.31% between 10-20 metres, 2.20% between 20-30 metres and only 1.21% villages with 30 metres and above. This shows that Orissa possesses vast ground water potential near at hand which can be effectively harnessed/tapped at least through

dugwells with minimum resources investment to boost up minor irrigation facilities for the farmers. The Panchayati Raj institutions at the grass root level can be associated for successful implementation of the ground water schemes (D.Ws., S.T.Ws. and D.T.Ws.).

7.4. The State figures on 2nd M.I. Census Via-a-Vis 1st M.I. Census in respect of different ground water and surface water minor irrigation schemes pertaining to actual number, percentage of schemes in use and not in use, C.C.A., I.P.C. and I.P.U. are indicated below to have a glance for appreciation of the results.

Minor Irrigation schemes	M.I. Census (2nd - 93-94) (1st - (86-87))	No. of Schemes	In Use (%)	Net in use		C.C.A (lakh Ha)	Gross Irrigation Potential		
				Temp. Dead			Created (Lakh Ha)	Utilised during ref. year (Lakh Ha)	% of Utili-sation
				05	06	07	08	09	10
<b>(A) Ground Water</b>									
(i) Dugwell	2nd	3,23,097	82.45	15.13	2.42	1.38	2.06	0.92	44.50
	1st	2,27,240	86.87		13.13	0.85	1.07	0.63	59.20
(ii) Shallow	2nd	18,095	84.46	12.01	3.53	0.71	1.31	0.54	41.32
Tube Well	1st	6,978	83.81		16.19	0.38	0.58	0.25	43.52
(iii) Deep	2nd	2,911	64.10	21.23	14.67	0.52	0.82	0.14	17.21
Tube Well	1st	2,325	80.86		19.14	0.42	0.69	0.24	34.52
<b>(B) Surface Water</b>									
(iv) Flow	2nd	24,103	90.47	8.57	0.96	5.69	6.99	4.31	61.75
	1st	13,590	91.20		8.80	3.52	4.14	2.91	70.08
(v) Lift	2nd	20,604	88.32	9.88	1.80	1.94	2.83	1.13	39.74
	1st	8,161	87.97		12.03	1.21	1.79	0.72	40.32
Total (A+B)	2nd	3,88,810	83.22	14.34	2.44	10.24	14.01	7.04	50.24
	1st	2,58,294	87.00		13.00	6.38	8.27	4.75	57.41

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# ANNUAL PLAN PERSPECTIVE 1997-98 FOR KORAPUT DISTRICT

*Akhil Kumar Sahoo*

The Koraput district planning and development Office has brought out a publication giving details of the developmental areas under planning schedules of the district. Ninth five year plan (1997-2002) alongside Annual Plan (1997-98) have been tiringly given place to locate the developing map of the district in the State.

A vis-a-vis development picture of the district with the State is academically absent in the present publication making it arithmetically difficult for the user-students in defining the objectivity and strategy of the 9th Five Year Plan and its applicability to a underdeveloped tribal district of the country.

In a district, where major industrial Players of the country have firmly rooted in - NALCO, HAL, Bellarpur, Utkal Oil, etc. with another 1525 SSI and 37 KVI units, it is to be seen, whether the last defined objectivity of the 9th five year plan—people's participation in the process of development—has pictorially gained momentum with our present plan module's share in public interest programmes.

In agriculture sector, the target has been fixed to produce 4000 quintals of rice in the district. The annual plan says that 3000 fertilizer kits will be supplied to the farmers and 560 ha. are to be covered under fruit plantation with 50 ha. under drip irrigation.

In Soil Conservation Sector, 175 lakhs is to be spent during 97-98 as against 157 lakhs during 1996-97.

The annual plan of the district targets for a production of 16,300 tonnes of milk and 16.20 million eggs during 97-98.

The major share holder in annual plan falls under rural development programmes. There is a sharp increase of three crores during 97-98 as against 96-97, where 30 crores were spent under

different anti-poverty programmes. The annual plan envisages to reach 6600 beneficiaries and the SC/ST beneficiaries have been targetted at 2794 numbers. The annual plan in RD Sector targets to cover 924 youths under TRYSEM, 55 groups under DWCRA. The JRY and EAS programmes for generation of 1939 and 3619 man days respectively and IAY targets to reach 3676 beneficiaries.

The 9th plan for the district aims at 17 nos of new MIP and out of it, 5 nos. will be covered during the current financial year by spending more than 32 crores.

Similarly, in Industry Sector, 102 nos. of new SSI units will come up in the district. Out of 3320 targetted beneficiaries during 9th plan, 578 will be covered during 97-98.

During 9th plan, 15 crores will be spent under road construction and repair. Out of which, more than 2 crores will be spent during this year. While Koraput R & B Division targets for 8 Kms, Jeypore Division targets for 3 Kms road construction this year with one number of bridge falling under each division.

1997-98 will see 114 numbers of new schools in the district with 60 numbers of new buildings in the place of old ones.

4 Nos. of PHC are proposed to be taken up during 9th plan and only one PHC will be opened during 97-98.

The annual plan 97-98 for drinking water supply in the district under state plan as well as under ARWSP, targets for 100 and 150 numbers of sinking of tubewells and also 36 numbers and 100 numbers of sanitary wells respectively.

The Education Department schools and Welfare Department schools together will help 20,400 students under PMS Programme.

Under Sandal wood, B. Economics and Eco-restoration Plantation Programme, it has been proposed to cover more than five Sq. Kms. in the district during 97-98. 1.46 crore has been earmarked for plantation activities during 97-98.

50 ACS of ceiling surplus land and 500 housesites will be distributed among various beneficiaries in the district during this financial year.

Similarly, the two ITDAs operating in the district will spend more than 3 crore rupees during 97-98 under various welfare programmes, the annual plan says.

The other way of looking at this annual plan for the district indicates some outrageous developmental parameters which we may not agree to accept them as indicators of economic health of the district. Without having such indicators at the State level at present, we may exercise a restraint, because we do not have tools to measure how much of the emerging indicators are influenced or neutralised by the annual growth rate of population of the district. And the equitable and adjustable funding systems through budgetary support to face and control the changeable nature of the developmental parameters without anticipating any natural hazards may land us nowhere if underhand economy does not leave us to deliver good things to others. Per village and per Sq. Km outlays stands at Rs. 3,74 lakhs and 84,604 rupees respectively.

Similarly, per head per day milk consumption comes to be 38 gms. per head per year egg consumption becomes 14 and individual per day fish consumption stands at 3.78 gms; per hectare fruit plantation come to be rupees 6246, whereas per hectare soil conservation outlays stands at rupees 60,656. Per school and per health care centre expenses come to be rupees 10,639 and 1,10,293 respectively. Per village drinking water supply and ITDA's per head expenditure comes to rupees 20,623 and rupees 59 respectively. The per beneficiary annual plan outlay under anti-poverty programmes comes to rupees 16,962.

The annual plan in agriculture sector similarly, has per acre target at 16.82 kgs. of rice at an expense of rupees 103 only. The district has a total length of 7593.9 Kms. of road and per Km. road expenditure from the annual plan outlays comes to be rupees 3608.

The district annual plan outlays says that there are 0.03 beds and 0.15 doctors per thousand

population in the district and per head expenditure in health component per day comes to be 9 paise only.

The proposed 9th five year plan of the district exceeds the 8th five year plan by 51.62 percent. The irrigation sector gets three thousand times more funds whereas the welfare sector bags only 12.58 percent. Agriculture 73.34; RD 42.10, H&FW 19.92 and Drinking water supply 50.79% more funds than the 8th five year plan. The total plan outlay for the 9th plan stands at 291 crores for the district as against 192 crores for the 8th plan, as regards the priority sectors are concerned.

Similarly, in case of annual plans the outlay for 97-98 exceeds 96-97 by 15.25 percent, where as 96-97 exceeded 95-96 by 23.91 percent. There is a seeable shift in percentage of fund allocation over the previous year in major plan components like industry and social and welfare sector, where percentage of allocation has gone below the previous year, by 30 percent and 28 percent respectively.

The job seekers in the district are registered at 25863 and 20 percent of them are below matric. Specific programmes are needed for diffusion of their alarming numbers in different economic sectors of the annual plan, as there are round about 15 unemployed youths per village or four unemployed youths per Sq. Km of the District.

Without a word on the district income estimates and savings of the people, any plan module for the district may not fulfill the ambitions of the planners, not only in this tribal district but also elsewhere in the state. District income estimation is a must to provide and gauge the per capita differential income of the district vis-a-vis the state income.

We have till yet, failed to actualise the number of people of living below the poverty line in the state and its share in different districts of the state. In order to broaden the base of planning for co-sharing the resources at village as well as national level, the allocation of funds at irregular hypothetical ends may not seize our dreams, we are dreaming for. It is an exercise for intellectually parachutting the developmental indices without foddering the ground realities with elementary human values.

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# PRODUCTION PROBLEMS: LOW USE OF FERTILISER IN AGRICULTURE IN ORISSA

*Akhil Kumar Mishra*

**Introduction & Analysis :** In an under-developed country like India (Orissa in particular) agriculture influences the varieties of life. Now, agriculture has been given the status of an industry and it has its allied activities and components. In the post-green revolution India's emphasis has been on modern agricultural practices using new technologies, application of chemical fertilizers, insecticides and pesticides, use of high yielding varieties of seeds (HYV). But to the dismay of all, our state has failed in green revolution. Regarding fertiliser consumption, Orissa has recorded the second lowest average annual growth rate at all India level. It can be seen from the table that fertilizer as a powerful productivity boosting agricultural input is not only very low in the state but also the average annual growth rate is negligible.

**Reasons for failing :** The following reasons maybe responsible for low consumption of fertilisers in the state. A1) Mass illiteracy of farmers A2) Low per capita income and majority of the state rural population living under poverty line. A3) lack of sense of involvement on the part of the officials. A4) Restricted use of HYV seeds and inadequacy of irrigational facilities. A5) Acute shortage of fertilisers at peak season and black marketing by the distributing intermediaries. A6) Local practices and variations.

**The Prevailing Context:** As a result the fertilisers used have not given more production and also at times the rise of fertiliser price has put

the poor farmers in a great dilemma. Low use of fertiliser resulting in low agricultural production is making the consumption requirements of majority of the population very difficult.

**Some Approaches:** The use of both organic and inorganic fertilisers is to be done after the test of soil and crop response. Methods of fertiliser application are to be made accordingly. It is seen cowdung, crop wastes, goat, pig and poultry droppings etc. when applied to fields crops increase productivity. In a state like Orissa where the financial status of the farmers is absolutely low, there remains no way but to use fertilisers at low cost. In Orissa, use of fertiliser gets concentrated on "Kharif" crops and also the NPK (Nitrogen, Phosphorous, Potassium) ratio instead of being 4:1:2 is 9:3:1. There should be proper NPK ratio and crop-wise application of fertiliser. Vermicomposting (growing earthworm in wastes to get NPK) can also be done in this context.

**Other Measures:** Though organic farming is the only way for sustainable agriculture, in Orissa it may not be possible at first owing to the average living standard of farming community and the peculiarity attached to the use of fertilisers.

Scientific application of organic and mineral fertilisers after knowing the chemical composition of the soil will go a long way towards solving the current low use of fertilisers.

The state govt. in its "Agriculture policy" has aimed at devolution of power to the co-

operative bodies and other private bodies for supply of fertilisers. Involvement of "Mahila Samiti", "Youth Club", "private organisations" and interested persons for the extension of organic fertilisers will be very much encouraging. Use of "Dhanicha" (sesbania) as a green manure is a most welcome step. Above all judicious mixture and distribution of technology and materials are pre-conditions for the said purpose.

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**TABLE - I**  
Consumption of fertilisers in Selected States of India (Kg/Ha)

Sl. State No.	1980-81	1985-86	1993-94	Average Annual growth rate(%)
01.A.P.	45.9	66.3	117.1	5.47
02.Bihar	17.8	48.8	58.8	2.92
03.Gujrat	34.4	40.6	64.6	2.32
04.Haryana	42.5	65.5	113.5	5.56
05.Karnatak	31.3	48.4	68.5	2.87
06.Kerala	33.4	49.8	58.6	1.93
07.M.P.	9.2	19.1	33.1	1.83
08.Maharashtra	21.2	31.7	54.6	2.56
09.Orissa	9.6	14.7	21.6	0.92
10.Punjab	117.9	157.4	159.9	3.23
11.T.N.	63.2	96.2	114.5	3.94
12.U.P.	49.4	78.7	90.0	3.12
13.W.B.	35.9	52.2	86.1	3.86
14.Rajasthan	8.0	11.6	25.9	1.37
15.Assam	2.8	4.6	8.8	0.46
All INDIA	31.9	48.4	66.4	2.65

Source : 1. Economic survey 1993-94  
Government of Orissa.  
2. Fertilizer Marketing News, Sept. 1994. Vol.9 P.22.

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# VEGETATIVE PROPAGATION OF TAMARIND

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## ABSTRACT :

*Tamarind is emerging as a significantly commercial crop for its various uses in home and export abroad. A full grown tree yields about 200-300 Kgs. of pods per annum. It serves as an insurance tree for marginal and poor farmers in dry tracts. No standard cultivators are yet available and it has not assumed horticultural status. Since it is propagated through seeds, a lot of variation is noticed in quality and quantity of pod yield and bearing habit. Vegetative propagation of Tamarind through air-layering can obviate some of these impediments and accrue economic return to farmers at a short time with less investment.*

## INTRODUCTION :

Tamarind (*Tamarindus indica*), a member of sub-family *Caesalpineae* of family *Leguminosae*, is widely distributed in a semiwild condition in the forest regions throughout India. It occupies about 50,000 hectares of land in India, although exact statistics on its cultivation in different States is not available. It is reported that, about 10,000 tonnes of Tamarind are exported from Orissa alone to the middle east Countries per annum. Tamarind is also exported to Europe and America from India. It is an excellent delicacy in the diet of South-Indians. It has also various uses as timber fuel, fodder, medicine and in Industries besides as food. Its pulp and seeds are rich in carbohydrate and protein. Yet it has not assumed horticultural status as fruit crop.

Its various uses may be enumerated as follows;

### 1. Food :

Leaf, flower and fruit of Tamarind are used as vegetable. Its fruits are used as astringent and aperient and for making condiments in general

cooking. Acid pulp of the fruit is used for seasoning other foods and in curries, preserves, chutneys and sauces. A refreshing acid drink and syrup are also made out of it. Seeds are rich in starch and protein and are eaten roasted and boiled.

### 2. Timber and fuel :

The timber is hard, close grained and durable and is used for bullock cart, rice pounder, oil and sugar mills, tools, furniture, turnery and house building etc. It is a good fire wood and yields charcoal of excellent quality.

### 3. Fodder and feed :

Its leaves are used as fodder for goats. Seed contains 15% crude protein and 71% soluble carbohydrate and used as an ingredient in cattle-feed.

### 4. Medicine :

Its leaves, flowers and bark are used as medicine. It is believed that continuous use of Tamarind in daily food reduces the chances of stone formation in urinary system.

### 5. Industrial use :

Starch from its seeds is used for sizing cloth, paper and jute products. Bark is used in tanning. Leaves extract is used as dye to give green colour to silk cloth. The pulp contains tartaric acid and is used for cleaning brass, silver and gold ornaments. Tartaric acid is used as an acidulent for soft drinks and fruit jellies. It is also used to clean metals for plating, as a mordant for dyeing and in calico printing. Salt of tartaric acid provides the principal raw material of the tartrate industry. It has 3 nos. of salts namely : (a) Cream of tartar used in baking powder, (b) Rochelle salt, used in electroplating and medicinally as a mild lime cathartic preparation and (c) tartar emetic used in

low dose as an expectorant in cough syrups and in large dose as an emetic.

#### 6. Other uses :

It is largely planted as an excellent avenue tree for its longevity (about 300 years) evergreenness, deep shade and survival in dry condition.

It also serves as wind break when planted around villages.

Tamarinds is invariably propagated by seed and comes to bearing in about ten to twelve years. Pure plantations of Tamarind are rarely seen. It is mostly taken as mixed plantation. Rarely, it has been taken up as backyard planting by the poor tribals in the hilly regions of Orissa State. However, a large mass of tribal population are engaged in its harvesting from local forest and insitu marketing.

Tamarinds raised from seeds have lots of variations in shape, size, seed and pulp content, quality and quantity of pod yield and in its bearing habit and resistance to pests and diseases etc. To obviate some of these impediments and for commercial cultivation, it is necessary to improve its propagation by vegetative method, which is an important horticultural practice in fruit plants.

#### Material and Methods :

2-3 years old branches of pencil thickness of adult bearing tamarind trees were selected for air-layering. A ring of bark of 2-3 cms. width was removed from the branch and cambium cells scraped to prevent union through callus formation. Wet saw dust/coir fibre was used to cover the ringed area after squeezing excess water in it. Then a polythene paper was wrapped around the etiolation medium and tied on both ends by a string. The air-layering was done in every 30 days interval beginning from 15th of June to 15th of October in four phases to study the response of rooting of tamarind under different ranges of weather parameters in Bhubaneswar condition.

The airlayers were severed from the mother plant on 30th day of air-layering in two phases. First a triangular half cut was made at the base of the layer on 21st day of air-layering and on 30th day, the second and final cut was given and separated from mother tree and then its side branches were removed to prevent desiccation.

The severed airlayers were transferred to polythene containers filled with soil mixture of equal proportion of sand, soil and compost. The polythene potted air layers were then kept under light shade for a week for hardening before planting in the field.

#### Result and discussion :

Observation on growth and development of roots of five nos. of airlayers of each phase were recorded (Table-1) and effect of weather parameters of each phase (Table-II) was correlated. It was observed that the adventitious roots developed within a week's time and they could be visible through polythene covering between 12-15 days from the date of air layering.

It was also observed that cent percent of the branches air layered produced normal roots without any special treatment like application of hormones or root promoting substances. As regards etiolation medium saw dust proved superior to coir fibre since the roots could not put up proper growth in the latter. Rooting response as to the average number of roots and length was the highest (14 nos. and 10.3 Cms. ) in the beginning of the rainy season (mid June to mid July), whereas it was lowest (5 nos. and 5.8 Cms.) towards the end of the rainy season (i.e. mid September to mid October). This may be due to the influence of rainfall and temperature on the rooting percentage and other rooting attributes of Tamarind.

Two nos. of layers from each of the phase were planted directly in the field with dressing of side branches to a height of 20-25 cms. from top of the layer and it was observed that air layers of first phase established satisfactorily. Besides, 60 days potted airlayers of first phase produced profuse roots which pierced out the polypot containing about 2 Kgs. soil mixture. This indicates that airlayers prepared during mid June to mid July could be planted directly in the field in the same season with advantage of monsoon. This could save both time and money from rearing the potted layers in the nursery for next season planting.

Air-layering of Tamarind may be preferred to cuttings for its better results and to grafting since no identified stains of Tamarind for both root stock and scion are available. Besides, after care as essential for success of cutting and grafting is not required for air-layering.

### Orcharding of Tamarind with Air-layers :

Tamarind, and indigenous, evergreen tree with longevity of about 300 years, yields about 200-300 Kgs. of fruit per annum. It is highly resistant to drought and comes up through natural regeneration in forest and waste land. Every part of it has some use, either food, fodder, fuel, medicine, timber and in industries and even considered economical to mango cultivation as it requires least care and investment.

All these good qualities of Tamarind should be harnessed for economic upliftment of tribals and farmers of vast rainfed tracts of the Country through its vegetative propagation specially by airdlayering, as air-layering is one of the popular, reliable and easy means of propagation which the farmers can follow of their own.

The best advantages likely to accrue from airdlayered plantation over seed propagated ones are precocity in fruiting (atleast by 5-6 years of planting), higher yield per unit area for more plant population due to close spacing, restoration of mother quality, ease and economic in harvesting and maintenance of Orchard for its dwarf and sprawling stature, eminent suitability for effective clothing of waste land and degraded land in watershed management programme for soil conservation for its fibrous root growth, sprawling and dense canopy. Moreover, farmers need not have to await for a decade to harvest the crop.

In view of this, efforts; both at Government and as well in private sectors should be made for its orcharding in vast tract of waste land and rainfed areas and inclusion in watershed treatment programme for economic upliftment of rural mass.

### Research Need :

Tamarind is emerging as a significantly commercial fruit crop now-a-days for its export to foreign countries. At this hour, it warrants attention of Scientists/Horticulturists for its genetical improvement, standardization of package of practices and propagation methods for its orcharding and commercial cultivation in order to

swell the hard cash account of the farmers and the Nation as well.

TABLE - I

Rooting response of *Tamarindus indica* to airdlayering : \*\*

Sl. No. of Phase	Phase	Period	No. of roots.	Average length Cms	Length of the largest root (cms)	Average diameter	Remarks
1	2	3	4	5	6	7	
1	15th June to 15th July	14	7.5	10.3	0.6		Long, Slender Pale white
2.	16th July to 15th August	13	7.1	9.4	0.5		Long and pale white
3.	16th Aug. to 15th Sept.	8	6.2	9.1	0.45		Slender and pale white
4.	16th Sept. to 15th Oct.	5	4.6	5.8	0.35		Short stout and white

\*\* Observation (average) of 1992, 1993 and 1994 taken together.

TABLE - II

Whether parameteres during rooting phases.

Sl. No. of Phase.	Phase	Period in days	No. of rainy days.	Amount of rainy fall received (m.m)	Average Temp (OC) maxi- mini- mum mum	Average Sunshine hours	Average relative humidity %	
1	2	3	4	5	6	7	8	9
1.	15th June to 15th July	31	24	210.2	31.18	25.10	2.52	85.5
2.	16th July to 15th Aug.	31	22	248.5	31.50	25.00	4.52	83.0
3.	16th Aug. to 15th Sept.	31	22	436.3	30.7	24.8	3.73	87.25
4.	16th Sept. to 15th Oct.	30	12	295.6	31.1	23.9	6.77	80.20

Source : - Crop weather observatory of O.U.A.T. Bhubaneswar.

Soil Conservation Officer,  
Hirakud Division, Burla  
Dist - Sambalpur

# NICs IN ORISSA

*J.K. Tripathy*

National Informatics Centre (NIC) is the premier Government of India organization in the field of Information Technology (IT) in India. NIC has set up a Satellite-based nation-wide Computer-Communication network called NICNET with over 650 nodes connecting the national capital—the State Capital and district headquarters to one another.

The Eastern Regional Centre of the National Informatics Centre was set up at Bhubaneswar in early 1986 and it started its activities from September 1986 onwards. The Eastern Region comprises the States of Orissa, West Bengal, Bihar and the seven North-Eastern States. All the State Capitals have NIC State Centres, mostly located in the State Secretariat Campus. However, in the case of the three Regional Centres, these are located at Bhubaneswar, Hyderabad and Pune. NIC functions from its own building. The Eastern Regional Centre of NIC at Bhubaneswar is situated in the Secretariat road and caters to all the computerisation and computer-network requirements of all the State Government Offices located in Bhubaneswar and Cuttack and in all districts in Orissa. With a strength of over 85 computer professionals spread throughout Orissa, the Regional Centre is directly associated with almost all the State Government Departments and 22 districts through DISNIC Centres. For day-to-day interaction and closer coordination, NIC Officers at the senior and working level have been earmarked for different departments and most of the departments also have, in turn, named liaisoning officers at the senior level for computerisation.

NIC has been able to provide its Personal Computers to 18 State Government offices. A number of Departments have also purchased Personal Computers for use in their Departments and quite a few State Government Offices have provided a telephone attached to the computer and using a Modem are in a position to use directly the NICNET facility through dial-up connection method. 20 Government Departments/ Establishments and 14 Central Government Organisation in Orissa are provided with VSAT or dial-up connection to link NICNET.

In order to further strengthen the system of availability of NIC's services to all the State

Government Departments from closer quarters, the Government of Orissa have provided a space of 800 sqft. to NIC. For establishing a NIC State Centre which has been provided with a powerful Pentium Server to which sufficient number of Client Machines and Dumb Terminals have been connected. This NIC's computing facility in the Secretariat complex thus provides full-fledged computer lab which is now being used both for training purpose and also for regular use of the Officers of the different Departments located in the Secretariat. For liaisoning with Officers from different Departments and for providing necessary help in use of the lab, adequate number of officers of NIC are available on a regular basis in this Centre. A powerful 164 KBP Micro Earth Station has been provided to make available the services of NIC directly. INTERNET facilities were provided to the State Centre in May 1997. It is planned to give INTERNET access to all major Departments, Office of Chief Minister, Chief Secretary, Additional Chief Secretary through cable connections from the State Centre.

NIC State Centre located in the Secretariat Central Computing Facility (SCCF) of S&T Department is provided with a powerful Pentium Pro Server and a number of low-end Pentium systems as clients. With a number of GIST Terminals with capability to operate in Oriya language, alongwith the NICNET networking facility. This Centre in the Secretariat will be self-sufficient in all respects in providing every computer-related service. Consequently all those Departments which do not have in-house computers can immediately take advantage of this Centre. A series of training programmes are being organized at this Centre for different levels of Officers of the State Government tailor-made for their requirements. It is envisaged that NIC State Centre will grow into a Central-Hub of activity serving all officers and staff of all the Government Departments located in the Secretariat. There is already a close collaboration between the State Science & Technology Department and NIC (ER).

*Spl. Correspondent*  
NAV BHARAT & M.P. CHRONICLE  
Qrs. No. VR, 4/1, Unit-3  
Bhubaneswar - 1

# STATUS AND IMAGE OF JUANG WOMEN IN ORISSA

Manasi Satpathy

Theoretically speaking, the concept of status of women has involved more contradiction than consensus. Pandit Jawaharlal Nehru had rightly stated, "The status of women indicates the character of the country". In India the status of women has many ups and downs since the ancient Vedic times to the present day. Juang women belonging to one of the primitive tribes of the state, are no exception to it. Though brought up in a specific tribal culture, they take up multifarious responsibilities of the society and achieve very little.

## Study Area:

This paper on the Juang women is based on the study conducted in Bhaghanpur, Kathagada and Behertakateni village near Dhenkanal town, the details of which are given in the appendix. These villages are mostly Juang dominated villages. The Juangs are very honest and truthful. They are very poor and live from hand to mouth. There is no stratification of rich and poor classes among them. The Juangs struggle hard to earn their livelihood. The Juang villages particularly in our study areas are surrounded by forest, which provides them scope to get enough forest wealth. Forest is intimately connected with Juang's life and economy. To a vast majority of the Juang people, the forest is their well loved home, their livelihood, and their very existence depends on forest.

## Cultural Image of Juang Women:

The cultural image of Juang women here is estimated from their approach, appearance, dress pattern and ornaments.

**Dress:** It is evident that Juang Women spend a less amount of cash on their clothes. But they are very much conscious of their dress and decoration.

Due to poor condition they have no money to buy the things they need. They are used to wear utmost coarse clothes as sarees with blouses. But in their festivals, they put on the best clothes and they adorn themselves with ornaments and colourful sarees with colourful flowers on their head. After that they dance in their festival. Juangs do not have any special dress for dancing.

**Ornaments:** Juang women take pleasure and make themselves beautiful by adorning various artistic ornaments consisting of bangles, armlets, earrings, nose and toe rings, wrist chain made up of brass and aluminium and necklaces made up of beads coin. Juang women use these ornaments on special occasions.

Now-a-days changes are marked in their dresses and ornaments. They are preferring to wear modern dresses, and traditional brass and aluminium ornaments are being replaced by plastic and imitations and also gold ornaments to some extent.

While dressing themselves they are particular about keeping always a comb to arrange their hair very often. They are so much prone to modern fashion that, they do not go without applying 'Kajal', but they apply attractive *bindi* on their foreheads. They wear aluminium chains around their necks and brass rings in the fingers. With such ornaments they do not forget to apply powder which marks their modernised trend. Plastic chappals and sandals are now often used by them particularly when they visit fairs and markets.

## Socialization of Female Child:

The social, economic and political roles of women in the society are essentially structured

by age-old traditions, beliefs, values, customs and by the process of specialization. In child rearing practices, the discrimination between sexes is not found among the Juangs. From the Juang women point of view the position of their men and women is the same which is understood in the sense, that, both are earning members of the family. But in another sense, males and females are also differentiated. Usually, after their marriage females do not contribute their earnings to their in-laws of the family. Another reason is that the dowry system is not found among the Juang community. Rather the groom has to search for a bride and pay the bride price to her father. On the otherhand according to them the birth of a female child brings happiness to them. Girls help their mothers in the household work and also they become the earning members of the family.

#### Training of Juang Female Child:

Normally the Juang women train their female child from the very early age. According to them a female after marriage has to do all types of work in husband's or father in law's house. So if they do not learn how to work, they cannot manage household work in future. Failing to manage the household activities in the father in law's house may not only earn her a bad name, but also some severe punishment like divorce. Therefore, from very early period they train their female child about the household activities. Besides domestic activities, they are also taught about the household cultivation (except ploughing), wage labour and collection of firewood from jungle. This is also supported by the fact that they maintain a hand to mouth existence and if they do not work, they will not be able to manage daily expenditure of the family. The training is mainly aimed at making her a good daughter-in-law, and an obedient as well as economically skillful housewife.

Parents do not give much importance to children's education. On the otherhand, due to poverty they are not conscious about the education of a girl child. Now after motivation by some people, Parents are interested to send their children to school. In rare cases, only the children go to school in their self interest. Therefore, dropouts of the

Juang children are mostly found in school. But their common opinion is that, females are born to marry and go to in-law's house. So it is unnecessary for them to go to school and waste their time and money.

At the age of 8 to 10 years, they remain busy in taking care of sibling and helping their mothers in most of the household works. When they approach 11/12 years of age, they do all type of household work. Sometimes they also take the entire responsibilities of the house during the occasional absence of their parents, if they avoid to do the work they get rebuke from their parents. In the Juang society, unmarried boys and girls are to stay in their respective dormitories during the night. There they learn songs and group dances. Through such group dances in which boys from other villages or clans join, both the boys and girls get the scope to know each other.

The Juang women are very little concerned about statistical details of the village area, as well as the outside area. This may be partially due to illiteracy among them. In the past, for the females, the knowledge and idea of work were only limited to the family within the village. To go outside the boundary of the village, to attend any festival or to visit any place, they were not permitted. But now due to the impact of modernisation some relaxation has been possible in this matter. At present due to working as wage labourer in their own and neighbouring villages and their interaction with the outside world has widened their perception.

Most of the Juangs are landless and work as wage labourer for earning bread. They also collect firewood, fuel, potato, tuber, *sal*, *siali* leaves etc. and sell in the market for earning cash. Thus, through wage labour and market transactions though they maintain some sort of contact with the outside world, they are least interested about most of the events of the outside world. They do not know the political leaders, who are elected from the local constituency by their vote (particularly women). Though a few of them are found to know the name of one or two political leaders, they are also not aware of their positions.



### Contact with Outsiders:

Sometimes, they visit the nearby town, they do not like its environment. As they feel, the road is overcrowded and they feel stuffy and irritated with the sounds of the vehicles. Always unknown fear prohibits them to be away from the town. But only when there is any pressing need like shopping or meeting any official, they are interested to go outside. However they like to live nearer to the jungle. They are familiar to jungle life and their opinion is that they get more facilities from the jungle. They collect fire wood, fuel, *sal* and *siali* leaves and sell them for cash. This work suits them well. However, Juang women keep a good contact with outsiders who live nearer to their villages and visit them after in connection with marketing and all kinds of contacts or transactions with outsiders.

### Role in Decision Making:

In Juang families all men and women are having equal power of making their decision. Usually, aged women are regarded as respectable persons in family as well as community, though not like the aged males. Family members give importance to their decision only when any problem or crisis arises. Among the Juangs, the females are deeply concerned with all kinds of domestic activities. In the field of household management, though women suggest their choices, preferences, the final decision is always taken by the head of the family, who is a male because of the patrilineal order. But like most other tribal girls, the Juang girls also exercise their independent choices in the field of selecting a life partner for marriage. Though the father and other family members initiate the proposal, the final decision is taken by girl. If she does not feel, she may also reject the boy. Similar rights are exercised by her in case of divorce. In this field also, her position is found to be elevated mainly because of the payment of bride price.

But in household income and expenditure, both male and female (as husband and wife) usually take decisions jointly. Education of their child, dress, treatment of their sick child, repairing of their house and so on, Juang women play a greater role in their family. Important discussion

regarding the village matters, decision is usually taken by males. As per the norm of the society, women cannot take part in decision making process of the village. They do not have also right to occupy any position in the village council, which is the highest decision making body with judicial power within the village. But in some cases, though old women do take part in village Councils, meetings, it is not traditionally permissible. From the view point of the family economy, the Juang women work very hard and contribute much more than a male. Whereas most of the males work, drink and take rest whenever they like, females work restlessly for the family, and taking rest during the working hour even due to her sickness is least tolerated. Therefore, it is needless to mention that a Juang woman maintains more responsibility and sincerity than a Juang man in all walks of life.

### APPENDIX

TABLE - 1

#### AGE GROUPWISE DISTRIBUTION OF JUANG FEMALES OF BHAGABANPUR VILLAGE IN DHENKANAL DISTRICT.

Age Group	No. of Females	Percentage of the no. of females
0-4	6	9.23
5-9	9	13.84
10-14	6	9.23
15-19	7	10.76
20-24	7	10.76
25-29	8	12.30
30-34	7	10.76
35-39	5	7.69
40-44	-	-
45-49	5	7.69
50-54	1	1.53
55-59	3	4.61
60-64	1	1.53
65-69	-	-
Above 70	-	-
Total	65	100

Analysis : Total female population is 65. Out of 65 population, the age group of 5-9 and 25-29 occupy the highest female population and in the age group of 50-64 the percentage of population is the lowest.

TABLE-2

## POPULATION OF KATHAGADA VILLAGE

Age Group	No. of Females	Percentage of the no. of females
0-4	-	-
5-9	2	4.65
10-14	5	1.62
15-19	2	4.65
20-24	3	6.97
25-29	8	18.60
30-34	5	1.62
35-39	-	-
40-44	6	13.95
45-49	1	2.32
50-54	2	4.65
55-59	4	9.30
60-64	2	4.65
65-69	3	6.97
above-70	-	-
Total	43	100

Analysis: Total female population of the village is 43. Under the age group of 25-29 the percentage of female population is higher than the other age group and in the age group of 70 the percentage of female population is nil.

TABLE-3

## BEBERTAKATENI VILLAGE

Age Group	No. of Females	Percentage of the no. of females
0-4	11	10.57
5-9	9	8.65
10-14	6	5.76
15-19	12	11.53
20-24	6	5.76
25-29	19	18.26
30-34	3	2.88
35-39	11	10.57
40-44	5	4.80
45-49	9	8.65
50-54	3	2.88
55-59	6	5.76
60-64	2	1.92
65-69	1	0.96
above-70	1	0.96
Total	104	100

Analysis: Total female population is 104. In the age group of 25 to 29 the percentage of female population is higher than the other age group and in the age group of 65 to 70 the percentage of female population is minimal.

*Research Scholar in Anthropology,  
At/Po. Bangriposi, Mayurbhanj.*

### C.M.I.E. RATES ORISSA THE FOREMOST STATE IN INDIA IN CAPITAL INVESTMENT

Centre for Monitoring Indian Economy in their latest quarterly report have pointed out that Orissa (130078 Cr) has exceeded the States like Maharashtra (128739 Cr), Gujrat (127318 Cr) and Tamilnadu (12564 Cr) in capital investment. The ambitious projects in Orissa are mainly based on mineral and other natural resources. Major Aluminium industries, fertiliser factories and power generation projects which are private undertakings have made huge investments of which the share of the State Government is only 6%.

The Cooperative Movement in the State is a blessing for all categories of people. This movement has assumed greater importance in Punjab, Maharashtra and Gujrat. Rural economy receives a boost from a well-thought-out cooperative network. We have already implemented the New Agriculture Policy for improving our agricultural production. A strategy has been augmented to double the production within two years by mobilising the farmers and by providing them improved seeds, adequate fertilisers and modernised implements. For setting up lift irrigation points, the State Government is also liberally advancing a loan of Rs.50,000/-. These are the positive steps towards the growth of rural economy.

The Cooperative Movement should enlist more participation of women. The cooperative societies can finance and monitor pisciculture, weaving and other cottage industries, said the Chief Minister. Shri Bhagabat Prasad Mohanty, Minister, Planning & Coordination and Higher Education in his speech referred to poverty, unemployment and ignorance as the foes of the people. These could be combated, he said, through the Cooperative Movement. He also expressed his concern that the movement was beset with problems of recovery and waiving of loans.

The meeting which was organised by the Orissa Cooperative Union on the occasion of the 44th All India Cooperative Week was also addressed by Sri Rabindra Kumar Sethi, Minister of State, Cooperation; Shri Jogesh Chandra Rout, a leading member of the Cooperative Movement, President of the State Union Shri Gurupada Nanda, Secretary Cooperation Shri Dillip Rath, Registrar, Cooperative Societies Shri Makardhwaj Hota and Shri Sura Patnaik, President, Orissa State Cooperative Bank.

# ORISSA STATE MUSEUM – A PROFILE

B. Samal

The inception of the Orissa State Museum goes back to 1932, when it was housed in a small room within the premises of the Ravenshaw College at Cuttack, with some archaeological treasures from various parts of Orissa. Subsequently, it was named as provincial



*Orissa State Museum Building*

Museum of Orissa in those days of pre-independence era. Initially, it was only an archaeological museum with a collection of sculptures, terracottas, coins, copper plates and specimens of fine arts. During 1947-48, with the shifting of the state capital from Cuttack to Bhubaneswar the provincial Museum was also shifted there. The collection of antiquities and specimens of the Museum gradually became manifold and the necessity of having a special building for the preservation of such treasures was felt. Thus, the foundation stone of the present building of the museum was laid on 29th December, 1957 by Dr. Rajendra Prasad, the then President of India. In 1960, the museum was shifted to the new building which was renamed as the Orissa State Museum.

Over a period of about four decades the prestigious institution has continued to grow in many directions, with a rich collection of multifarious exhibits, including sculptures, bronzes, coins, epigraphic records, armoury objects, anthropological objects and specimens, palm-leaf

manuscripts, traditional art objects, mining and geological treasures, folk and tribal musical instruments and varieties of handicrafts, natural history specimens and so on and so forth.

The State Museum with its multipurpose nature, consists of such sections as:-

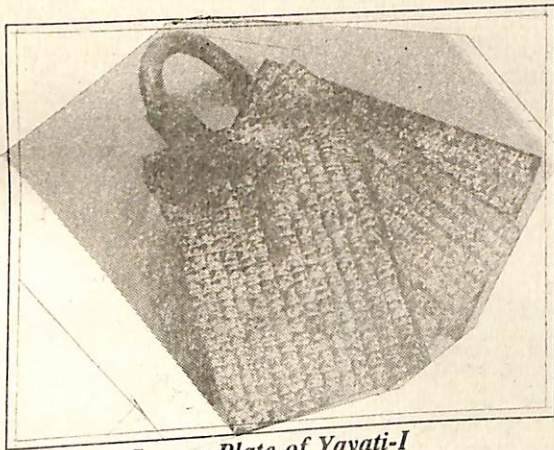
1. Sculpture (stone)
2. Epigraphy
3. Numismatics
4. Armoury
5. Mining & Geology
6. Natural History
7. Art & Craft
8. Bronzes
9. Contemporary Art
10. Anthropology
11. Palmleaf Manuscripts

In addition, a Micro-filming unit, a conservation laboratory, a well-equipped reference library (the collection of books at present exceeds 50,000 in number), modelling and taxidermy sections are added. Besides, the Orissa State Museum has brought out a series of monographs, edited works and a quarterly research journal entitled Orissa Historical Research Journal, guide books, pamphlets, during the post-independence period, disseminating knowledge about the cultural exhibits and the activities of the Museum.

Moreover, to popularise the Museum as a centre of culture and education and its multifarious activities, seminars and symposia, workshops, exhibitions are organized from time to time.

### Collections :

The Orissa State Museum has the richest and unique sculptural treasures, covering a long span of time between C. 3rd. century B.C. and at least 14th century A.D. The sculptures covering the Buddhist, Jain and Brahmanical pantheons, are living embodiments of Orissa's rich cultural heritage. The Buddha and Bodhisattva images, the Jain Tirthankaras, the Saptamatrukas, the Dikpala images in the collection of the Museum exhibit exquisite workmanship in needle-work fineness and represent masterpieces of Orissan sculptural art.

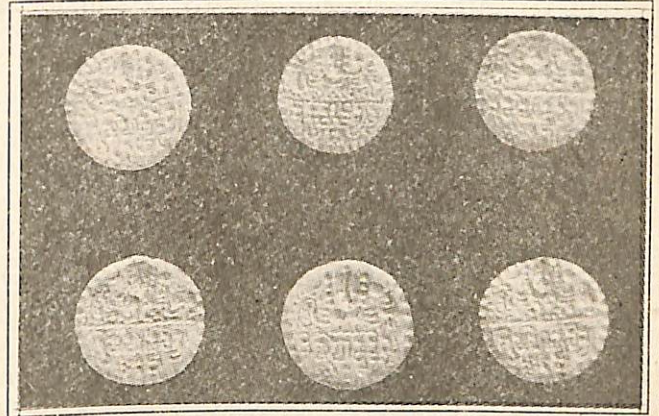


*Copper Plate of Yayati-I*

The Museum is extremely rich in its collection of epigraphic records, rather far exceed in number than found elsewhere, especially those found in northern parts of India. The collection containing more than 112 copper plate charters and at least 25 important stone inscriptions in original have the distinction of contribution towards the reconstruction of Orissa's glorious past. Besides, the collection includes innumerable replica in plaster cast from different historical sites of Orissa. The recent collections of the Museum, particularly several sets of copper plate charters constitute an epoch-making event in the historiography of royal families, like the Sailodbhavas, the Bhuma-karas, the Somavamsis, the Bhanjas and several others, who contributed so much to the shaping of the Oriya culture. These

records have solved certain problems that have been puzzling historians for long.

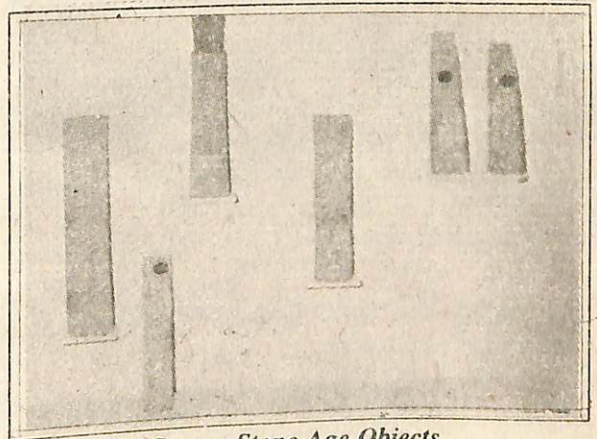
The numismatic treasures of the Museum consist of the earliest metallic currency of the



*Nuapara Gold Coins*

Indian sub-continent in the form of silver punch-marked coins of both the local and universal types, several hoards of which have been collected from different parts of Orissa over the years. Apart from the enigmatic indigenous copper currency, well-known as the Puri-Kushan coins, the gold coins of the Kushana as well as that of the Gupta emperors, copper coins with the legend Sri-Nanda, gold coins of the Kalachuris, of Dahala and Ratanpur, the indigenous gold *panams* of the Ganga dynasty of Orissa, the gold *muhrs* and silver and copper currency of the great Mughals throw considerable light on the dynasties that issued them as well as on the general numismatic history of Orissa.

The collection of ancient weapons like the swords, shields, battle-axes, guns and cannons



*Copper Stone Age Objects*

mark an important milestone on the march of civilisation, particularly in this part of Indian sub-continent.

The Mining & Geology gallery, opened with the assistance of the Directorate of Mines, contains samples of minerals and models of mining operations. It represents Orissa's rich mines with the treasures of iron ore, chromite, lime, lead, coal, bauxite, tin and precious and semi-precious stones, are the envy of outsiders and have made a significant contribution to the state.

The Natural History section mainly covers the fauna of the State. Birds and animals, vertebrates and invertebrates with their colourful display, attract the instant attention of visitors. The dioramas depicting the Royal Bengal tiger family, the leopards, variety of bisons, Nilgais, blackbucks, pangolin, a family of mouse-deer amidst their natural habitat and birds of different species give a glimpse of the large variety of animals found in the local environs.

The Art & Craft section is a vast repository of exquisite pieces of large free standing sculptures in sandstone prepared by traditional artisans, the varieties of wood-carvings that once adorned royal courts, terracotta figures, silver *howda*, *tamzan* and thrones from different Orissan royal houses, applique and laquer works, *Kalamkari* paintings, the *patta*-paintings are but a few samples of the



*Patta Painting*

bewildering varieties of Orissan handicrafts and their artistic excellence.

The Anthropology section comprises collections of pre-historic, folk & tribal culture and

musical instruments, lithic and bronze-age tools in original, the life of prehistoric people in paintings, rock-shelter paintings and engravings remind visitors of the cultures and civilisations of earliest times. The collection of tribal as well as folk ornaments, dresses, musical instruments attuned to musical sounds keep visitors spell-bound.

The palm-leaf manuscript sections with a large collection of rare manuscripts including more than 35000 in number, is a unique treasure of the State Museum. The manuscripts are grouped into as many as 32 subjects which provide source materials to researchers and scholars. There are also collections of writings in bamboo leaf, birch-bark, *kumbhi*-bark, the unique incised leaf made of ivory, and on hand-made paper. The earliest palmleaf manuscripts containing *Gita-Govinda*, dedicated in the name of Gajapati Purusottamadeva, *Paippalada Samhita* of the Atharva Veda, *Jnanavali Tantra*, *Angirasa-kalpa* and *Sangeeta-Narayana* are some of the rare collections available in this section. Illustrated palm-leaf manuscripts with typical Orissan style of paintings, *Ganjapas*, beautiful calligraphies and mediaeval miniatures and *Gopalila* paintings with writings provide a useful record of ancient Orissan painting tradition.



*Palm-leaf Garland containing excerpts of Gitagovinda*

The collection of the unique hoard of bronze images from Achyutarajpur in Puri district is the largest find of its kind highlighting certain little known facets of Buddhist bronze icons datable from c. 8th to 12th century A.D. This hoard of bronze icons has placed Orissa for the first time in the map of Eastern Indian bronzes. More than

130 icons of this huge hoard of bronzes occupy a prominent place for their exquisite details and graceful mouldings. These bronze statues of the Buddhist, Jain and Brahmanical pantheon bespeak the heyday of Orissan



*Tara*

plastic art. The representative specimens of this group are Avalokitesvara, Tara, Vajrasattva, Manjusree, Camunda, Amba, Mahisasamardini and fine specimens of Buddhist stupas, with riches within which are carved pictures of events of the life of the Buddha. There are other collections such as colossal Ganesa, Bull, tree-lamp, Radha-Krishna, Kamadhenu,



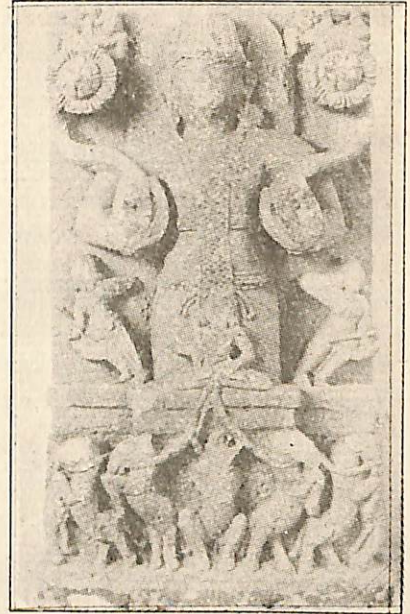
*Avalokitesvara (Buddha) Bronze*

collected from different parts of Orissa.

Orissa State Museum has celebrated its Golden Jubilee during 1984 and a special exhibition styled "The Heritage of Orissa" was organised on this occasion.

It was our unique privilege that the inauguration of the Golden Jubilee was done at the hands of the then Hon'ble Prime Minister Smt. Indira Gandhi.

During the 50th year of our Independence Orissa State Museum has chalked out the plans and programmes to celebrate the function round the year in a befitting manner. During the year at least 2 new galleries will be inaugurated namely Numismatic and Armoury. At the sametime 3 sculpture galleries will be re-organised in a scientific method and according to religious pantheon. In addition, exhibitions on collection of antiquities of the museum, photographics, seminar and workshop will be undertaken throughout the year.



*Surya*

*Superintendent,  
Orissa State Museum,  
Bhubaneswar*

# LANGURI VIHAR

Akshaya Kumar Jena

A part of the Assia range of discrete hills in undivided Cuttack District, the Languri hill once upon a time had grown into a flourishing centre of Buddhist art and learning. The Languri Hill with its Buddhist remains is situated in village Salepur under Dharmasala P.S. of Jajpur district and has been in news recently for the excavation carried on. This write-up is but a small attempt to reflect on the glorious past of the said hill and its proximity.

## Buddhist Vihar

The famed Bhaumakar dynasty with Jajpur as the State Capital was remarkable for its penchant for Buddhism particularly in the first half of its long rule (736-1110). It is historically evident that Monastery-building activities had started in the area much before the Bhaumakar rule. A good number of monasteries were nestled in the lush green tiny hills of the Assia range suffixing with 'Giri', such as : Ratnagiri, Lalitgiri, Almagiri, Kolhangiri, Udaygiri, Bajragiri and Langudgiri (Languri). Besides a hill, 'giri' also means hermit which is self-explaining of the-then characteristic activities associated with these hills. For its shape as a *Languda* (tail) Langudgiri might have been so called. Languri is a latter derivation. From among the afore-mentioned hills, both Bajragiri and Languri are placed side by side with a distance of about 2 Kms. in between. Some exquisite Buddhist images have been deported to the State Museum at Bhubaneswar from these sites. All the local village deities which are Buddhist icons but passed for Hindu goddesses, no doubt owe their origin to these two forlorn Vihars.

Now the Languri Vihar is a thing of past and its physical remains are but a quiet burial. In the nearby villages, some images of meditating Buddha, mutilated limbs, flowers, creepers etc. are converted into objects of Hindu worship. Among them, an image of the Fifth meditating Buddha

'Amoghsiddhi' with a seven-hooded snake posed as umbrella above his head draws as much attention for its rarity as the grave-stone of a female mendicant as the main deity at village - Arangabad. Besides, a gigantic but polished chopped off head of mediating Buddha icon is placed inside the renowned temple complex of Lord Shyamsundar Jew in the same village. The village deities like "Tumudasuni" and "Kochila Khai" at Arangabad, "Anant Kumari" and "Jagulai" at Mirzapur, "Duarsuni" at Salepur, "Chandi" at Patapur, "Barehisuni" at Derabar are Buddhist in origin. The village-deities of Sundarpur and Mundamal are Buddhist in origin too. All these images were no doubt brought from the ravished and abandoned Buddhist Vihars at these two sites—Languri and Bajragiri and placed and worshiped as Hindu goddesses. In a way, these places of worship have been serving as rural museums though poorly maintained.

The spot identified with the 'Languri Vihar' is a patch of nearly two acres of land. A part of it is known locally as 'Panchpandav' which refers to a wall like stone having carved out images of votive stupas. The largest one among the stupas is flanked by two flying figurines with garlands in hands. Large sized *stupas* number not less than five. The local people fondly identify these images with five Pandav brothers. Rock-cut figures of Buddha in various sitting postures are found here. In 1997, the State Archaeological Department has undertaken excavation of the site. Though it is a low-key starting, result shown is much impressive. Things unearthed comprise a number of monolithic images of Buddha and others, Buddha images sculpted inside portable votive stupas, lotus carved out on stone plates resembling *yantras*, earthen pots of very ancient time etc. The most promising aspect is the unearthing of as many as twelve numbers of stone inscriptions in 'Pali' script. A

stupa built with brunt bricks has been excavated besides some vestige of buildings. The 2nd phase of excavation is yet to be launched. Out of the visible ones, a big mound atop the hill is yet to be unearthed which most probably is the remaining portion of the "Aurangabad Fort". Effaced and livid, these rock-cut Buddhist figures lie. They, for centuries, for their immobility could escape the snatching hands of the covetous villagers around, but could seldom evade the exposure to the eroding process of the climate. They badly need protection.

The finding of rock-cut Buddhist images here is the first of its kind in Orissa and thus it may be the first monastery in Orissa dating back to a period before Christ. The earthen pots and inscriptions will definitely throw light on its time as well as untold phase of Orissan history. But for further findings and reading of the inscriptions, it may not be historically accurate to say when exactly the activities have commenced and when that ended. Patronage lacking and penchant dwindled, activities here must have slowed down to a dead stop. Men and nature most have accelerated the process of destruction. Except the oblique reference to the religious greatness of the place by Achyutananda, the 16th century metaphysical poet of the 'Five Mates' famed in his mystic poetry 'Garuda Gita', nothing is known about Languri hill of that period. Thomas Motte's diary in the 18th Century is the first authentic historical account on the Languri hill. It is well within the guess that the architecture and the religious activities of the Languri Vihar had been prelude to the similar activities at other low-lying hills of Assia range. Only rock-cut activities were not favoured elsewhere. The nearby Bajragiri hill has a few caves and spacious sites with heaps suggesting hidden structures. A dig here and there by villagers has exposed many a Buddhist stone icon. The name Bajragiri and nearby village named 'Mundamal' are indicative of trantric Buddhism once practised here. To the north of Languri are situated 'Gogal' hill of Kaima and Jaraka hill. 'Sinduria' hill is situated to the west of Languri. All these hills are credited to have a few caves each and heaps of Buddhist remains. Now since the haunt to locate the "Puspagiri Varsity" in the three known hills of Assia range suffixing with 'giri' - Ratnagiri, Lalitgiri, Udayagiri, Udayagiri ended in a fiasco, a fresh trial at the Vajragiri and Languri may be worth it. Furthermore, the vast tourism potential of the

Assia range of hills as a whole should be exploited keeping in view the Buddhist tourists of China, Srilanka and South-East Asia. A cluster approach with a neatly scripted Master Plan will deliver goods.

### FORT OF AURANGABAD

Enroute Sambalpur from Calcutta in 1766, T. Motte camped on the bank of the river Kelua (Kimbhira) on the 3rd May. The next day, with his entourage he came across a fort on a hill in the Aurangabad Zamindary. He has mentioned it as the Fort of Aurangabad. Although he has not mentioned the name of the hill, it was no doubt the Languri hill as his route chart, direction and other descriptions suggest. Motte had not visited the fort, nor has he given accounts of its physical features and other assets. From his narration and the accounts of other historians it is known that, the Fort was under the occupation of the Marathas with a Faujdar at the head of the fort. The garrison comprising defiant and belligerent Oriya Paiks and Khandayats necessiated a strong vigil by the Maratha Forces who had to station here. The Oriya-Militia could not be cowed down, but, the Fort was well defended which was strategically located proving formidable to the foes. The road which Motte moved along was used by the pilgrims to Jagannath Puri. That road was known as "Badshahi" road then. Latter it was rechristened as 'Jagannath Road'. As per Motte's diary, there was a revenue court sitting here. So the Fort was grossly utilised for three purposes (i) war and peace (ii) Collection of revenue and (iii) trial of revenue cases.

Nothing is definitely known as regards the name of the builder and the time of the construction of the fort. For the political turmoil that the Marathas were undergoing since inception of their rule in Orissa, they had hardly entertained any idea to invest time and money in erection of new buildings. Besides, Orissa was dotted with forts all over and luckily they were still strong. Hence Marathas duly considered it un-necessary to further fortification. They had to, on the otherhand be content with the existing structures. So the fort of Aurangabad is deemed to have been already there before the advent of the Marathas. The Afgans and the Moghuls in Orissa were not known to be great fort-builders either. Their contribution was largely confined to occasional repair works. From the *Ain-i-Akbari* (1594) of Abul Fazl it is



known that each Mahal of Orissa was credited with a fort or two. He had given an account of 129 Forts in Orissa. However the list was not exhaustive and unfortunately the forts of Jajpur region as a whole were conspicuous by their absence in the list itself. So most possibly the fort of Aurangabad existed prior to the 17th Century and was a Hindu fort built by some Gajapati King.

Now a towering mound on the hill top in close proximity to the Buddhist remains is overlooking from a distance. Antiquated broken pieces of bricks constitute the mound. On the foot of it is marked a floor structure plastered with the mortar of lime and sand. Besides, stone slabs dressed as building material are lying buried. Both bricks and stone are indiscriminately and unscrupulously exploited by the locale. All these account for the vestige of the proud fort that was. From the bricks used in the building of the Fort, it is well apparent that the bricks of the Buddhist remains were in fact used in the Fort.

In 1803 Orissa passed into the hands of the East India Company and the up-country forts were of no use to them. First of all, the developed technique of modern warfare had virtually rendered these forts dysfunctional. Hence-forth the idea of investment of money on the ancient forts by the 'Nation-of Shopkeepers' was best forgotten. Secondly, Orissa was a mid-way house between two Presidencies-Bengal and Madras. Thus the control and safeguard of the communication was their vital interest. With both the Presidencies at both the ends of Orissa, there existed no external threat territorially. The British was too eager to mortify the Orissan Militia as that way no threat to internal security was anymore possible. They had already formed bad opinion about the Orissa Militia by observing that the Khandait Paik Forces were allergic to alien rule as much as to Muslims and Marathas. The British got a taste of the xenophobia and seditious attitude of the Orissan militia, during the Paik rebellion of 1817. Besides, the peasant militia was little trained in modern warfare. The Britishers had a hint of the valour, determination and stubbornness of the Khandiat-Paik militia both as a class and caste and could easily utilize them in army which could possibly turn into a fine regiment. But the Britishers could not repose faith in the loyalty of Oriyas. As a follow-up action of the Paik rebellion (1817) which was the fore-runner of the 'Sepoy Mutiny' (1857), the new ruling elite distanced the Orissan Militia and

prescribed recruits to army from that class and caste. All these tore into the very fabric of the military aristocracy and peasant-militia alike. Without job and patronage the Khandaits and Paiks started shunning the Fort here and elsewhere. The Britishers abandoned it. When men withdrew the nature was at work at once. Consequent upon the military policy adopted by the British, not only the medieval forts like the Aurangabad's were affected to the point of annihilation, but also the glorious military tradition of Orissa rapidly passed through a phase of decadence to the point of total extinction.

### THE SAGADIA BRIDGE AND INSCRIPTION

The Old 'Badsahi' road fell into disuse during the British rule. So the bridges on various channels and rivulets were not used too. Abandoned, one such bridge on the "Sagadia" channel near the Languri hill stands in all its splendour and majesty. The huge stone structure with arched siphons is yet so formidable and workable. A number of figures and symbols are carved out in the interior. Motte described it to be a very strong bridge. Now stone-slabs making the roof of the bridge look heavily dug up and eroded by way of friction with cart-wheels. This indicates not only the large number of carts crossing it over the years but the long time use of the bridge. From the diary of Motte, it is known that Suja Khan generously caused the construction of such bridges on all the small channels from Cuttack to Nandajal (Medinapore). Suja Khan's time was 1724-39. In between, the said Sagadia bridge was built. Then the bridge is well over 250 years old. The most significant object that singularly stands out here is a six-lined inscription in a rectangular piece of stone fixed to the outer wall of the bridge. The script is proto-Oriya by appearance. If it is so, then the inscription is likely to be older than the bridge and brought from elsewhere, Why? When? Wherefrom? What does it contain? And what will be its contribution towards unfolding the mystery of history. The inscription is largely unprotected against the vagaries of monsoon and before the letters are effaced beyond decipher the culture-conscious intelligentsia and the authority should come to its rescue.

Revenue Officer,  
Collectorate,  
Cuttack.

# DEVELOPMENTAL WORK OF SCHOOL AND MASS EDUCATION DEPARTMENT DURING THE LAST FIFTY YEARS

## 1. Elementary Education

There are 41,604 Primary Schools in the State imparting Elementary Education from Class-I to V. Besides, a scheme of Sikhyakarmis was introduced in the State since August, 1989. These Sikhyakarmis were primarily required to motivate the children below 14 years for admission. In different Education District 18,937 Sikhyakarmis have since been appointed as regular primary school teachers. Now, this scheme has been abolished.

## 2. Upper Primary Schools

There are 10,298 Upper Primary Schools in the State. Out of this, 344 are Govt. U.P. Schools, 4111 U.G. U.P. Schools, 5019 Taken over U.P. Schools and 824 are aided U.P. Schools.

## 3. Madrasa

There are 73 Aided Madrasa Schools functioning in the State.

## 4. DPEP

This DPEP has been introduced in 5(five) Districts such as Bolangir, Dhenkanal, Gajapati, Kalahandi and Rayagada.

## 5. Scholarship

This scheme has been introduced as Poverty-cum-Merit Scholarship for Lower Primary (III) and Primary Schools (Class-V). Two thousand such scholarships will be awarded, 1000 each for the students among successful students (Class-III) and (Class-V) @ Rs.20 and Rs.40/- P.M. respectively.

## 6. Text Book Press

This Department is maintaining a Text Book Press, which prints and supplies 1.42 crores of N.T. books from Class-I to Class-VII with its new edition.

## 7. Secondary Education

There are 566 Govt. High Schools and 4666 Non-Govt. recognised High Schools functioning in the State. Besides, there are some schools running in the State without getting Permission/Recognition from the State Government. Out of 3012 fully-aided Non-Govt. High Schools as on 7.6.94, 2781 High Schools have already been taken over and 143 fully aided Non-Govt. High Schools are being taken over by the Government. More than, 33,000 teaching and non-teaching staff have therefore been benefited by coming over to Govt. fold. There are schools for the blind, deaf and dumb in the State.

## 8. Sanskrit Education

There are 215 Prathama and Madhyama Tols in the State out of which 10 are Govt. and 205 are non-Govt. fully aided institutions.

## 9. Teachers Education

There are 4 Training Colleges, 51 Secondary Training Schools, 13 District Institutes of Education and Training, 6 Colleges of Teachers' Education and 3 Institutions of Advanced study in Education in the State under this Department.

## 10. Non-Formal Education

There are 15,448 N.F.E. Centres continuing in the State. Out of these 8168 Centres are for boys, 6384 are for Girls at the primary level. At Upper Primary level there are 662 Centres for boys and 234 for girls.

## 11. Total Literacy Campaign

This programme has been taken up in 20 Districts and Rourkela area from the year 1990-91. It has been decided by the State Government to take-up other districts of the State under the T.L.C. programme in a phased manner during 8th plan period.

# FOOD SUPPLIES AND CONSUMER WELFARE DEPARTMENT

## A BRIEF NOTE ON DEVELOPMENTAL ACTIVITIES

### INTRODUCTION :

Prior to independence food grains and other essential commodities were diverted to the war-front causing shortage to the general public. With a view to ensuring supply of commodities essential to the community, rationing was introduced and thus the Civil Supply System through Government agency came to existence. The post-independence era experienced massive developmental activities which also needed streamlining and strengthening the supply of essential commodities to reach the people living in the remote corners of the state.

### EC ACT/CONTROL ORDERS :

2. Food Supplies and Consumer Welfare Department plays a pivotal role in distribution of essential commodities. It has got different branches to deal with supply of essential commodities like rice, wheat, sugar, edible oil, Kerosine Oil etc. These commodities have been declared as essential to the community under the Essential Commodities Act, 1955. To maintain supply, regulate prices and ensure equitable distribution of these commodities, the State Govt. have issued various control orders under Sec. 3 of the said Act. Enforcement of the provisions of the Act and the control orders issued thereunder from time to time is done through the enforcement agencies working at the State, district, and Sub-divisional levels.

### PROCUREMENT :

3. Orissa is mostly a paddy growing State. To ensure reasonable prices to the farmers, to guard against distress sale and to build up a buffer stock of rice, for public distribution system, the State Govt. is undertaking procurement of paddy at support prices fixed by Govt. of India.

Purchase of paddy below the support price has been made a cognizable offence under the E.C. Act.

### CONSUMER CARDS :

4. Distribution of essential commodities through Consumer cards both in urban and rural areas is in vogue in the State for last several years. Its objective is to make available important essential commodities of standard qualities at reasonable prices to the consumers.

### FAIR PRICE SHOP :

5. The policy of Govt. is to have one Fair Price Shop for every 1000 population in inaccessible hilly and tribal areas and one in every 2000 population in plain areas. Preference is given to appoint dealers out of preferential groups i.e. Gram Panchayats, Cooperative Societies, S.C./S.T. candidates, women and their organisation, ex-servicemen, voluntary organisations and persons having green cards (Two child norm).

### MOBILE VANS SCHEME :

6. The scheme for mobile sale of essential commodities through a fleet of mobile vans in weekly and bi-weekly *hats* in I.T.D.P./D.P.A.P. areas of the State has been under implementation since long. Essential Commodities like rice, wheat, sugar, K.Oil are sold under the above scheme in remote and inaccessible areas of the State.

### GODOWNS :

7. State Govt. have a programme to provide scientifically designed storage godowns of 250 MT capacity to each of 314 blocks out of which 143 RPDS blocks have been placed under first phase of priority.

**CONSUMER PROTECTION MOVEMENT :**

8. To provide for better protection of the interest of consumers, Govt. of India have enacted the Consumers' Protection Act, 1986 which came into force in the year 1987. The State Govt. in persuance of this Act have formulated the Consumer Protection Rules 1988 which came into force on 15.3.88. As per the provisions of the Act, the State Consumer Protection Council, the State Consumer Dispute Redressal Commission and 31 District Consumer Dispute Redressal Forums have been constituted by the State Govt. Financial assistance is being provided to voluntary organisations associated with consumers' movement.

**SCHEMES FOR SUPPLY OF SUBSIDISED FOOD GRAINS :**

9.(a) The State Government have launched 'liberation from hunger programme' scheme for supply of subsidised rice at Rs. 2/- a kg. to all the families in 143 I.T.D.P./D.P.A.P. blocks, introduced with effect from 1.4.95. Consequent upon introduction of T.P.D.S. from 1.6.97 supply of subsidised rice at Rs. 2/- a kg. in the above areas has been limited to the BPL families whose annual income does not exceed Rs. 11,000/-

(b) Under the T.P.D.S. with effect from 1.6.97 subsidised foodgrains are being supplied

to the BPO families in the State. Accordingly, all rural families below poverty line having annual income not exceeding Rs. 11,000/- in 143 I.T.D.P./D.P.A.P. blocks are getting rice at Rs. 2/- a kg., families remaining above poverty line in the above areas and all rural families below poverty line having annual income not exceeding Rs. 6000/- in 171 PDS blocks and urban areas are getting rice at Rs. 4/- a kg.

(c) National programme for nutritional support to primary education has been launched and the central Government is supplying rice free of cost for mid-day meals in all the Blocks in the State.

(d) State Government have introduced a scheme for supply of rice to the inmates of SC/ST Hostels and residential schools with effect from 1st July, 1995.

(e) With a View to overseeing smooth functioning of PDS, various committees right from the retailer level to district level have been formed. Official, non-officials and consumers have been associated with these committees.

**ESTABLISHMENT OF O.S.C.S.C. LTD.**

10. O.S.C.S.C. Ltd. has been set up in the year 1980 with the objectives of procurement of essential commodities, creating buffer stock and distribution of essential commodities at the retail level to meet the above objectives.

## PROPOSED PIPALPANKA DAM FOR PROJECT GOPALPUR

The reservoir at Pipalpanka (situated at a distance of 110 km from Gopalpur in Sorada Block) is planned to impound water from a catchment area of 512 Sq. Km., out of the total catchment area of 8900 Sq.Km. of the river Rushikulya during the rainy season. The earth dam, nearly 1.46 km. long will have a live storage capacity of 15927 Ha. M. (1 Ha.m = 10,000 m<sup>3</sup>) with a water spread of 1086 Ha. Maximum height from deepest point is 43.56 m. Estimated cost of dam excluding pipeline is about Rs. 138.10 Cr. The dam offers the greatest advantage for minimum submergence (as against Hirakud dam which is 73 times more). Its catchment area is 160 times less than that of Hirakud. The Pipalpanka dam is essential for setting up of the Integrated Steel Plant near Gopalpur which is expected to trigger a chain of economic development activities in the State.

### Negative Impacts Apprehended :

1. Loss of forest area (nearly 1178 Ha) due to submergence which may lead to ecological imbalance.
2. Short supply of drinking water to Berhampur Town.
3. Existing Irrigation systems may be affected.

Mitigating measures and measures for environment enhancement and wild life conservation (as suggested by National Environment Engineering Research Institute (NEERI) planned :

- \* Compensatory afforestation is being carried out on 1180 Ha. of non-forest land in Parlakhemundi forest division, contiguous to the existing forest ranges.
- \* As a part of the catchment area treatment, 4500 Ha. of open and degraded forest area is being planted with special species of local variety of trees.
- \* 1500 Ha. of area is being planted with special species of plants which will make a conducive habitat for the wild life.
- \* More than 35% of catchment area is being treated which will protect the proposed reservoir from erosion and deposit of cany-over silt.
- \* Due to extensive catchment treatment, the land fertility in the upstream area will improve considerably.
- \* Only less than 4% of the forest area in the contiguous forest range of Saroda is being affected which has a negligible impact on hydrological cycle, soil erosion and micro climate in the region.

### 1. Other Benefits :

- \* Generation of Employment during dam construction.
- \* Flood & drought control.
- \* Stabilize Rushikulya irrigation basis.
- \* Improve underground water re-charge.
- \* Opportunities for pisciculture.
- \* Tourism opportunities.
- \* Wildlife sanctuary.

### 2. About Availability of Drinking Water to Berhampur Town :

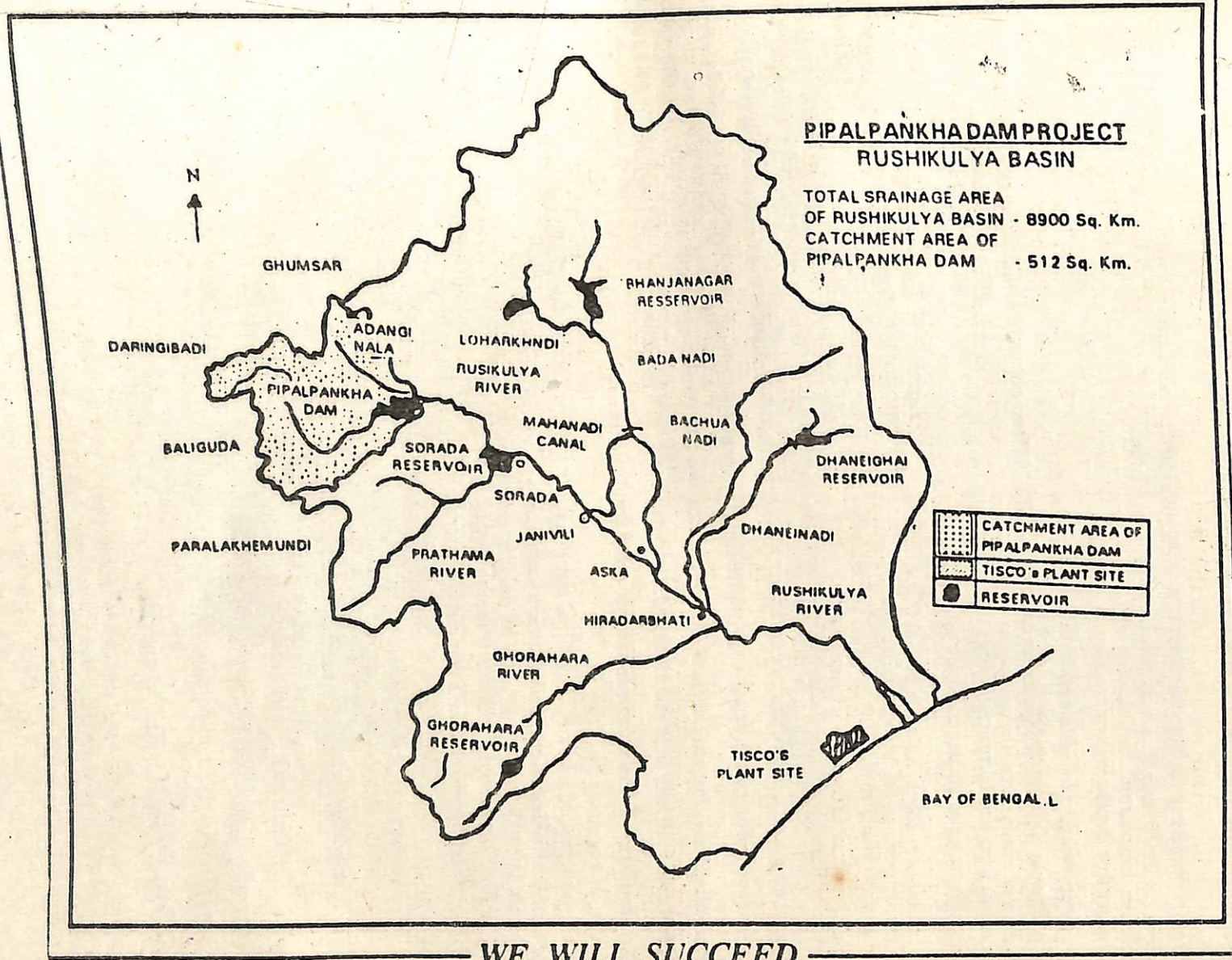
Berhampur town receives 5-MGD (Million Gallons per Day) water from two sources, viz. Saroda reservoir and from Collector wells at Muncipenth.

These two sources are not going to be affected by the construction of the proposed dam. Besides, WRD has drawn up various schemes for supply of drinking water to Berhampur town.

### 3. Existing Rushikulya Irrigation System :

Its headworks originates from Janivili located 40 Kms. downstream of the proposed dam. The dam is designed to impound only less than 6% of 60% surplus water during the monsoon.

During non-monsoon seasons the dam will make suitable discharges to keep the existing waterflow in the river intact. As such the irrigation system is not being affected.



**PIPALPANKHA DAM PROJECT  
RUSHIKULYA BASIN**

TOTAL STRAINAGE AREA  
OF RUSHIKULYA BASIN - 8900 Sq. Km.  
CATCHMENT AREA OF  
PIPALPANKHA DAM - 512 Sq. Km.

	CATCHMENT AREA OF PIPALPANKHA DAM
	TISCO'S PLANT SITE
	RESERVOIR

**WE WILL SUCCEED**

## KĀLIDAS SAMAROHA IN UJJAIN

**Poet-laureate Kalidas was the soul of India's nationalism. – Chief Minister Shri J.B. Patnaik**

Addressing the valedictory function of **Kalidas Samaroha** jointly organised by the Kalidas Academy and Vikram University at the Vikram Kirtti Mandir in Ujjain on 16.11.97 Chief Minister, Shri Janaki Ballav Patnaik in his address as Chief Guest paid rich and glowing tributes to Kalidas, the poet-laureate of India. "Kalidas was the soul of India and Indian nationalism. All his works breathe the excellence of Indian unity and heritage. In *Kumarsambhav* and *Raghuvamsa* he has treated the Himalayas and the sea quite exquisitely and has given a graphic portrayal of cities, habitations, streams, rivers, hill ranges flora and fauna and the whole landscape of India to the best perception of a seasoned artist. The treatment is indeed unique in the whole range of Indian literature"—the Chief Minister said.

"It is significant to note how he has depicted women in his works. Woman is the pathfinder and without her, man can't reach his goal. But the poet has given greater weightage to woman's inner dispositions and excellences than her physical beauty. In *Kumarasambhav* Parvati could win the love of lord Siva, not by her exotic glamour but only by her austere meditation. Similarly, Shakuntala was a bridge linking the Earth and the Heaven. German poet Goethe has also confessed this", opined Shri Patnaik.

"Kalidas is the incarnation of humility", the Chief Minister said while quoting various verses from *Raghuvamsa*. Shri Patnaik referred to various excerpts from Kalidas's works to show how he excelled in delineating the nature and beautiful landscape. He is indeed no less in comparison to Homer, Dante, Shakespeare and Goethe and is indeed the foremost poet in Sanskrit literature.

The function was presided by Dr. Sivmangal Singh Suman, former vice-Chancellor of Vikram University who is a major voice in Hindi literature.

Shri Patnaik's valedictory speech which was presented first in Sanskrit and then in Hindi was highly applauded by Dr. Suman, Sri Pyarelal Kuanar, Deputy Chief Minister, Madhya Pradesh, Dr. Chauhan, Vice-Chancellor and others.

The Chief Minister lit the candle and garlanded the portrait of Padmabhusan Pandit Suryanarayan Vyas. He also gave away prizes to successful winners and moved round the exhibits of painting and sculptures organised by the Kalidas Academy.



Chief Minister Shri J.B. Patnaik felicitating eminent novelist and litterateur Shri Chandra Sekhar Rath in the 16th annual function of Shri Jagannath Research Institute, Bhubaneswar at Soochana Bhavan on 15.12.1997.

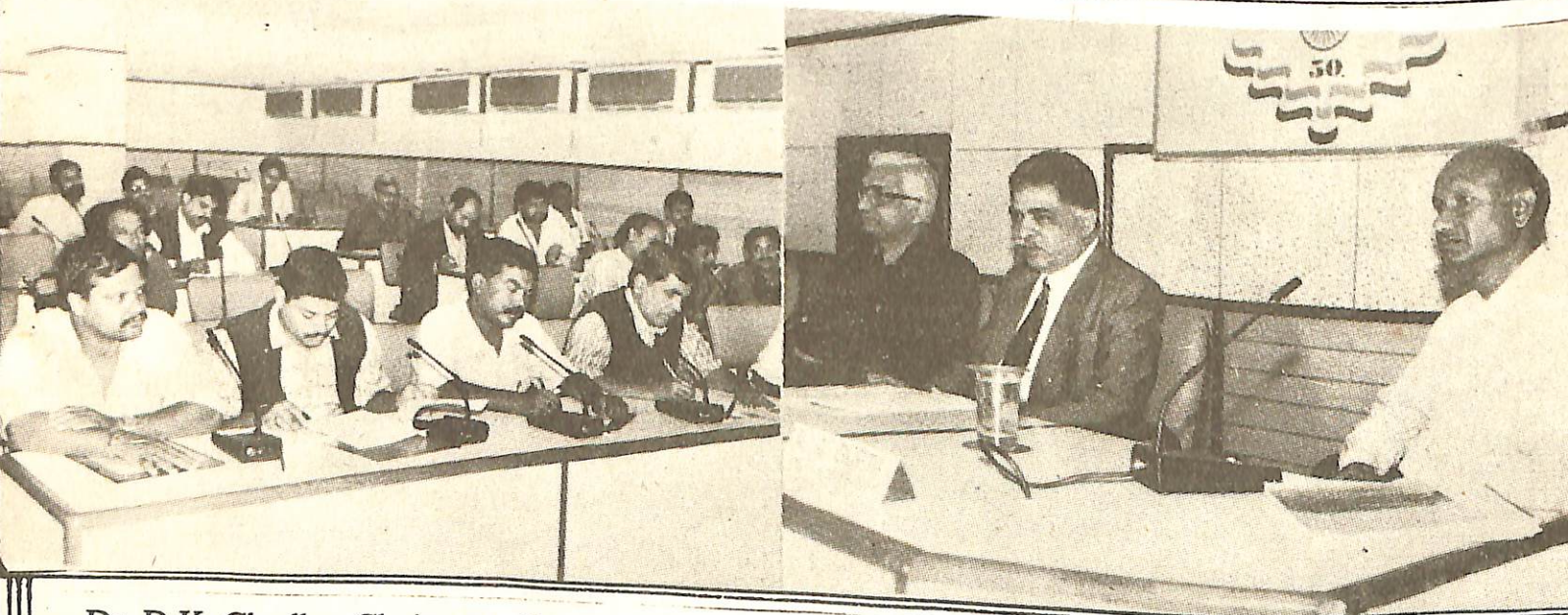


Shri S.M. Patnaik, Chairman, Orissa Mining Corporation presenting a cheque of Rs.3 crores to Chief Minister Shri J.B. Patnaik towards Chief Minister's Relief Fund on 19.12.1997.





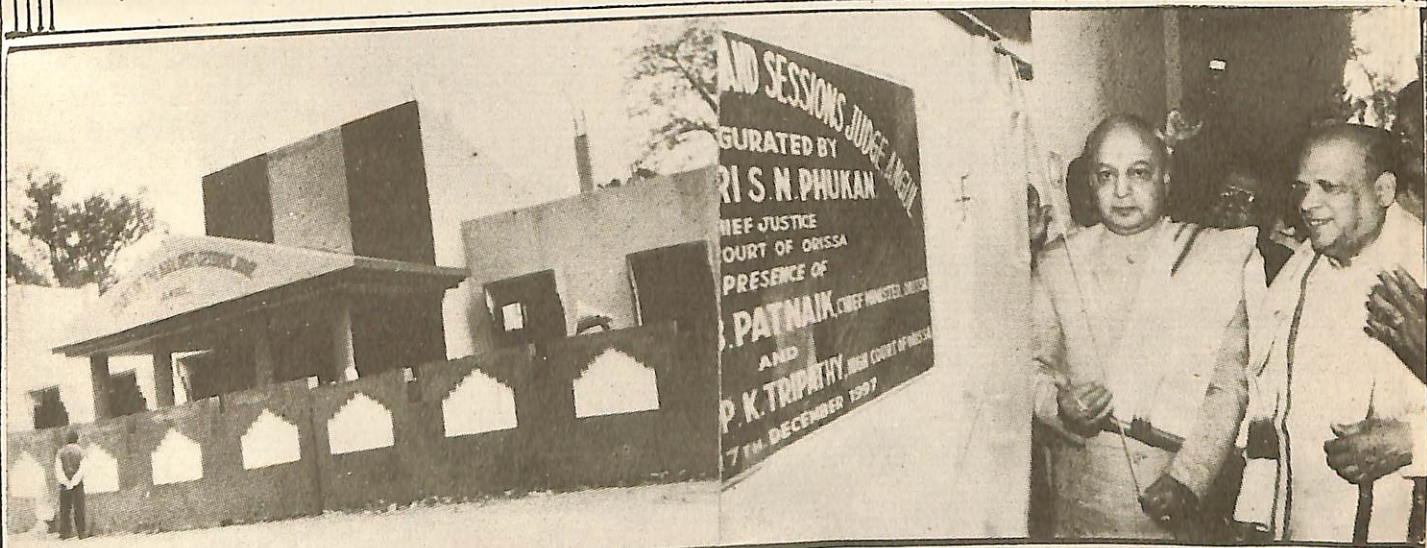
Chief Secretary Shri Sudhansu Bhusan Mishra administering oral Pulse Polio drop to a child in a Pulse Polio Centre, Ganganagar near Bhubaneswar on 7.12.1997.



Dr. D.K. Chadha, Chairman, Central Ground Water Board, Ministry of Water Resources, Government of India addressing the Press Conference on 13.12.1997 held at I. & P.R. Department Conference Hall, Bhubaneswar.



Hon'ble Shri S.N.Phukan, Chief Justice of Orissa High Court inaugurating the Additional District Judge Court at Nayagarh in the presence of Chief Minister Shri J.B. Patnaik on 17.12.1997.



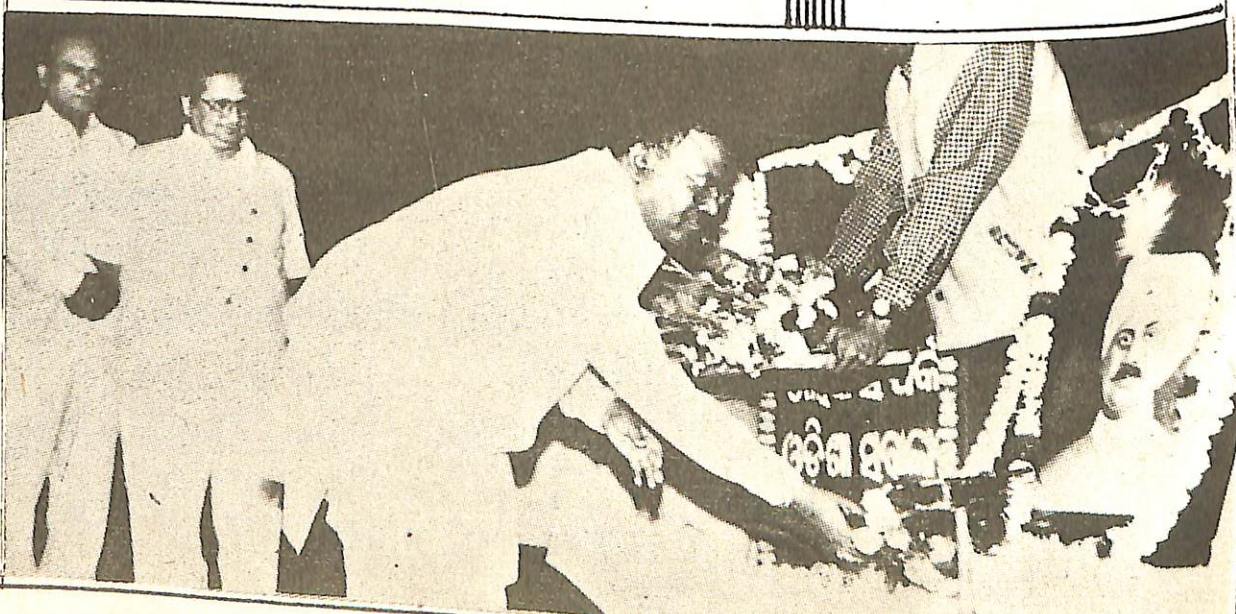
Hon'ble Shri S.N.Phukan, Chief Justice of Orissa High Court inaugurating the Additional District Judge Court at Angul in the presence of Chief Minister Shri J.B. Patnaik on 17.12.1997.

After releasing the book entitled 'Brukshalatara Ausadhi Guna' authored by **Dr. Kamala Kumari Patnaik** at the 'Universe', Cuttack on **26.12.1997** Chief Minister **Shri J.B. Patnaik** is laying stress on enrichment of Oriya language.



Hon'ble Shri S.N. Phukan, Chief Justice of Orissa High Court inaugurating the Additional District Judge Court at Jagatsinghpur in the presence of Deputy Chief Minister Shri B.K. Biswal on 19.12.1997.

Shri Netrananda Mallick, Minister of State, I.& P.R. offering floral tributes to the portrait of Maharaja Shriram Chandra Bhanja Deo at Soochana Bhavan in the State-level Jayanti Celebration organised jointly by I.&P.R. Department and Mayurbhanj Sanskrutika Samsad on 17.12.1997.





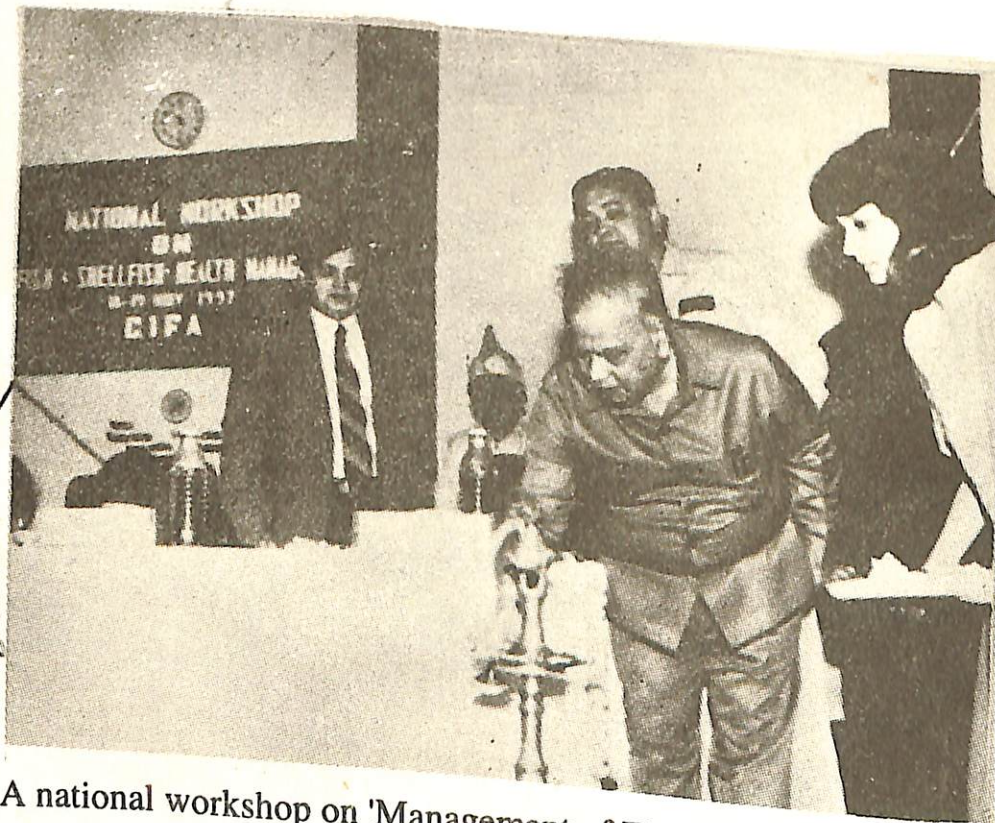
Chief Minister Shri J.B. Patnaik presiding over a meeting of Chilika Development Authority at the Secretariat Conference Hall on 30.12.1997.



Deputy Chief Minister Shri B.K. Biswal reviewing the state of affairs of Lower Suk Tel and Lower Indra Irrigation Projects at the State Secretariat on 10.12.1997.



Deputy Chief Minister Shri B.K. Biswal inaugurating a new building of Council of Higher Secondary Education (CHSE) on 12.12.1997. Shri B.P. Mohanty, Minister, Higher Education is present in the function.



A national workshop on 'Management of Fish and Shell health' is being inaugurated by Deputy Chief Minister Shri B.K. Biswal at Kaushalyaganga organised by CIFA on 18.1.1997.



Profound tributes are being paid to martyr Laxman Naik in a State-level Jayanti Celebration at Rabindra Mandap, Bhubaneswar on 22.11.1997.



Hon'ble Speaker, O.L.A. Shri Chintamani Dyansamantara inaugurating the State-level Dr.H.K. Mahatab Jayanti celebration at Soochana Bhavan on 21.11.1997.



Chief Minister Shri J.B. Patnaik releasing a book entitled 'Ama Panchayat' at Bhanjakala Mandap, Bhubaneswar while inaugurating the 2-day All Orissa Panchayat Parishad Conference on 14.12.1997.



Deputy Chief Minister Shri B.K. Biswal lighting the lamp in the inaugural function of B.J.B. College Students' Union on 6.12.1997.

# Alphabetical Subject Index to 1997 Publications of "Orissa Review"

P.K. Jena

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D. Lenka - 2/97  
Strategy  
R.K. Panda - 9/97  
Tamarind : Orissa  
K. Pradhan - 12/97

**Awards**

Samanta Chandra Sekhar  
Award (94-95)  
3/97

**Biography (Patriots/Martyrs/Authors etc)**

Bagha Jatin & Terrorist Movement  
J.N. Patnaik - 8/97  
Birakishore Das  
(Shri) B.N. Pande - 9/97  
B.R. Ambedkar  
S. Rout - 4/97  
Fakir Mohan Senapati  
G. Mishra - 1/97  
Jayi Rajguru  
M.L. Jena - 8/97  
(Maharaja Shri) Krushna Chandra  
Gajapati  
B. Ghadai - 4/97  
Lakshman Naik  
N.R. Patnaik - 8/97  
Mahatma Gandhi  
B.B. Das - 8/97  
Narayan Birabar Samanta  
- a Gallant Fighter  
B. Mohanty - 11/97  
Netaji : Azad Hind Fauj  
J. Mohanty - 1/97  
Niranjan Patnaik  
B.C. Rath - 8/97  
(Raj Bahadur) Rama Chandra  
Mardaraj Dev  
P.C. Mishra - 4/97  
Sachi Routray  
B. Paricha - 1/97

Samanta Chandra Sekhar  
T. Pradhan - 1/97  
Subhas Chandra Bose  
D.C. Das - 1/97  
Subhas Chandra Bose  
S.C. Jena - 8/97  
(Saint) Vallabhacharya : Orissa  
S.P. Nayak - 5-6/97

**Dance & Audio-Visual**

Chhau Dance : Tusu songs  
B.N. Das - 5-6/97  
Odissi - Temple Dance  
B. Parichha - 5-6/97  
Oriya Cinema during post-Independence  
period  
R.Das - 11/97  
Electronic Media in Orissa  
U.C. Mohapatra - 8/97

**Departments (Govt.): Budget : Plan : 1997-98**

Agriculture  
- 3/97  
Commerce  
- 3/97  
Cooperation  
- 3/97  
Cooperative Activities  
-11/97  
Finance  
- 3/97  
Fisheries & Animal Resources  
- 3/97  
Food Supplies & Consumer Welfare  
- 3/97 & 12/97  
Forest & Environment  
- 3/97  
General Administration  
- 3/97  
Health : Medical Education  
- 3/97  
Higher Education  
- 3/97  
Industry  
- 3/97  
Information & P.R.  
- 3/97



- Panchayatiraj  
- 3/97
- Public Grievances & Pension  
- 3/97
- Revenue  
- 3/97
- Rural Development  
- 3/97
- School & Mass Education  
- 3/97 & 12/97
- Science and Tech.  
- 3/97
- Sports & Youth Services  
- 3/97
- Textiles and Handloom  
- 11/97
- Tourism  
- 3/97
- Transport  
- 3/97
- Urban Development  
- 3/97
- Water Resources  
- 3/97
- Welfare  
- 3/97
- Women and Child Development  
- 3/97
- Works  
- 3/97
- Developments : Socio-Economic**
- Activities undertaken by  
G.A. Deptt. in last 50 Years.  
- 10/97
- Insurance Investment  
B.N. Biswal - 9/97
- Pre & Post-Independence Period  
K.K. Bal - 9/97
- Progress  
(Shri) J.B. Patnaik - 3/97
- Steel Plants Progress  
- 3/97
- Education**
- Development in Orissa  
J.N. Mohanty - 8/97
- Education Since Independence  
R.K. Rout - 11/97
- Mass Education during last 50 yrs.  
- 12/97
- Strategies : Ninth Five Year Plan  
R. Rout - 2/97
- Teaching : Learning : Human Brain  
M.R. Khuntia - 1/97
- Employment**
- Common People (Empowerment)  
S.Barik & C.Pasayat - 2/97
- Economic Policy  
B. Mohanty - 4/97
- Rural Unemployment  
D.Mishra & R.C.Parida - 2/97
- Exploration**
- Minerals : Rural Development  
B.N. Biswal - 5-6/97
- Fauna**
- Blackbuck Antelope  
S.Kar & R.Panda - 5-6/97
- Crocodiles  
B.K. Choudhury - 5-6/97
- Foreign Relation**
- Delegation to Thailand & Indonesia, 1997  
- 11/97
- Foreign Aid  
L.N. Dash - 10/97
- Visit of Chief Minister to U.K.  
- 9/97
- Freedom Struggle**
- Agitation for Betel-leaf  
A.K. Behera - 9/97
- August Revolution  
B.C. Rath - 9/97
- Darkest was the Night  
P.M. Nayak - 9/97
- (The) First Oriya in N.A.  
D.C. Das - 11/97
- Gandhi  
B.K. Sharma - 10/97
- Gandhiji's Harijan tour in Angul  
P.K. Mishra - 10/97
- Highlights: Freedom Movement in Orissa  
K.S. Behera - 8/97
- Jallianawallabag in Miniature (Eram)  
A. Sutar - 11/97
- Kendrapara  
U. Mohapatra - 9/97
- The Logo (50th Anniversary of  
Independence)  
- 8/97
- Narasingh Charan Mohanty :  
We shall meet in Free India  
- 8/97
- National Consciousness  
S. Kanungo - 12/97
- National Days  
L. Rath - 8/97
- (A) Nine-Decade Tryst  
- 8/97
- Parsuram Padatikaray  
Tri-colour Flag and the Bull - 8/97
- Peasants, Tribals (1921-39)  
M.N. Das, C.P. Nanda - 8/97
- Prajamandalal Movement :  
Nayagarh District  
B.D. Patra - 10/97
- Princely States (Orissa)  
A.C. Pradhan - 9/97

- Retrospective Highlights  
(Freedom Movement in Orissa)  
- 8/97
- Saliha Firing: 30th Sept. 1930  
J.P. Singhdeo - 8/97
- Salutations to Patriot-prisoners of Sambalpur  
(1919-47)  
- 11/97
- Second Congress Ministry(Orissa) (1946-50)  
H.K. Mohapatra - 9/97
- Social Movement(Orissa) (1923-26)  
P.K. Mishra - 8/97
- Swadeshi Movement (Orissa)  
K.B. Pradhan - 8/97
- (Role of) Women patriots in Berhampur  
D.P. Behera - 8/97

### Gitagovinda

- The Essence of Orissan Culture  
S.Pani - 5-6/97
- (and Temple of) Jagannath  
K.C. Dash - 5-6/97
- Mangalacharan (Gitagovinda)  
B.Panda - 5-6/97

### Handicraft

- Ganjam District  
U.C. Sahoo - 1/97

### Health-Care

- Eighth Plan in Orissa  
B.N. Panigrahi - 5-6/97

### History

- Rastrakutas of Orissa  
S. Agrawal - 4/97

### Industries

- (on the eve of) 50th year of Independence  
B.K. Tripathy - 11/97
- Industries Development : Orissa  
B. Mohanty - 8/97
- Mineral based Industries  
- 9/97
- Software Industry : Orissa  
S.N. Jena - 5-6/97

### Institutions

- Orissa Rural Housing Development Copn.  
- 3/97
- Orissa State Museum  
B. Samal - 12/97
- (Orissa) State Financial Corporation  
- 2/97
- Water User's Association : Orissa  
C.D. Dash - 5-6/97

### Irrigation

- 50 years of Irrigation  
A.K. Dalua - 9/97
- Irrigation Census (1993-94)  
B.K. Tripathy - 12/97

### Jagannath Cult

- Antiquity of the Chariot  
B.L. Ray - 7/97
- (The) Apostolic Monument of  
Universal Consciousness  
B.M. Samantray - 7/97
- Bhaktas  
B. Sahu - 4/97
- (in the reign of) Bhaumakaras  
G. Devi - 7/97
- Brahmavada  
Y. Sarangi - 7/97
- Car Festival : (An) Administrative Profile  
S.C. Mohapatra - 7/97
- Car Festival  
K.S. Behera - 7/97
- Chariots  
- 7/97
- Devadasi Services  
P.K. Mallick - 7/97
- Ganapati Bhatta  
R.N. Patra - 7/97
- Hymns : Banamali  
Subas Pani - 7/97
- Madalapanji  
S.N. Rajguru - 7/97
- Mahalaxmi Puran  
D.K. Mishra - 7/97
- Mother Tells a Story  
L.N. Mishra - 7/97
- Oriya Response  
R.K. Mishra - 7/97
- Pilgrims  
K.C. Dash - 7/97
- (Role of) Ramachandra Dev  
J. Choudhury - 7/97
- Raths : Annual indent of Woolen cloths  
P.K. Mishra - 7/97
- Rituals of other temples  
M.M. Tripathy - 7/97
- Salbeg  
B.K. Sahu - 7/97
- Socio-religious life  
D.K. Samantaray - 7/97
- (The) Supreme Saviour  
P.K. Nanda - 7/97
- Tibetan Source : Late Eighteenth Century  
S.K. Panda - 7/97
- Uniqueness of the cult  
S. Kanungo - 7/97
- Universal Culture & the Lord of democracy  
J.N. Mohanty - 7/97
- Yogashastra  
R.K. Kar - 7/97

### Journalism

- Ethics  
S.C. Bindhani - 1/97

### Labour

- Child Labour : Orissa  
H.K. Mishra 5-6/97

- Migrant Labour  
J.K. Tripathy - 11/97  
Migrant Labour : Orissa  
B.K. Tripathy - 5-6/97
- Manuscripts**  
Palm-leaf : Orissa  
C.B. Patel - 4/97
- Mining**  
Mining in Similipal  
J.B. Dash - 5-6/97  
Major Minerals in Orissa  
- 4/97
- NIC**  
National Informatic Centre in Orissa  
J.K. Tripathy - 12/97
- Numismatics**  
Orissa History - a Source  
S. Tripathy - 5-6/97
- Octroi**  
Octroi : Sambalpur Municipality  
C. Pasayat - 5-6/97
- Orissa Review**  
Subject Index, 1997  
P.K. Jena - 12/97
- Plan**  
Finance Commission : 10th  
B.K. Tripathy - 1/97  
Ninth Plan : Orissa  
A.K. Tripathy - 1/97  
Perspective : Koraput District 1997-98  
A.K. Sahoo - 12/97
- Pollution Control**  
Dangers of Noise Pollution  
G.K. Das - 5-6/97  
Urban Garbage  
M. Patnaik - 1/97
- Ports (Orissa)**  
Geographical Consideration  
L.D. Mohapatra - 11/97  
Gopalpur  
D. Behera - 4/97  
Maritime Traditions  
B.D. Patra - 7/97  
Tamralipti  
B. Patra - 11/97  
Tax (Paradip Port)  
M.N. Ray - 5-6/97
- Production**  
Production Problems : Fertilizer  
A.K. Mishra - 12/97
- Project**  
Gopalpur : Steel  
- 1/97  
Industrial Park at Paradip  
- 5-6/97  
Pipalpanka Dam : Gopalpur Project  
- 12/97
- Religion**  
Hanuman Worship : Orissa  
B.K. Tripathy - 4/97
- Kartika Purnima  
B. Ghadai - 11/97
- Rural Development**  
(A) Changing Village  
S. Barik - 5-6/97  
(A) Sustainable approach  
J. Pati - 2/97
- Sanctuary**  
Konark-Balukhand  
A.K. Patnaik - 5-6/97
- Soil**  
Coastal salt affected soil : Orissa  
G.C. Sahu & K.N. Mishra - 2/97
- Speeches**  
(Shri) Gopal Ramanujam,  
Hon'ble Governor of Orissa :  
Assembly : 21/2/97  
(Shri) G. Ramanujam - 3/97  
(Shri) J.B. Patnaik on power at the  
Chief Minister's Conference,  
3.12.96, Delhi  
- 1/97
- Sports**  
Playfield : rural area  
-2/97
- Technology**  
Green House Technology : Orissa  
J.K. Tripathy - 5-6/97
- Tourism**  
Sustainable alternative  
S. Pathi - 10/97
- Travels/Places**  
Languri Vihar  
A.K. Jena - 12/97  
Orissa  
G. Mishra - 4/97  
Tourism potential  
S.R. Das - 4/97
- Tribals**  
Status of Juang Women  
M. Satpathy - 12/97  
Tribal Orissa (profile)  
K. Mohapatra - 8/97
- Tributes**  
(to) Biju Patnaik  
Hon'ble Governor - 5-6/97  
Chief Minister Shri J.B. Patnaik - 5-6/97  
Deputy Chief Minister Shri B.K. Biswal  
L. Mishra - 5-6/97  
(to) Gallant Patriots & Martyrs  
- 8/97
- Women**  
Economy : Slum Culture  
A. Dash - 5-6/97
- Zilla Parishadās (1997)**  
Presidents & Vice Presidents  
- 4/97

Librarian-III,  
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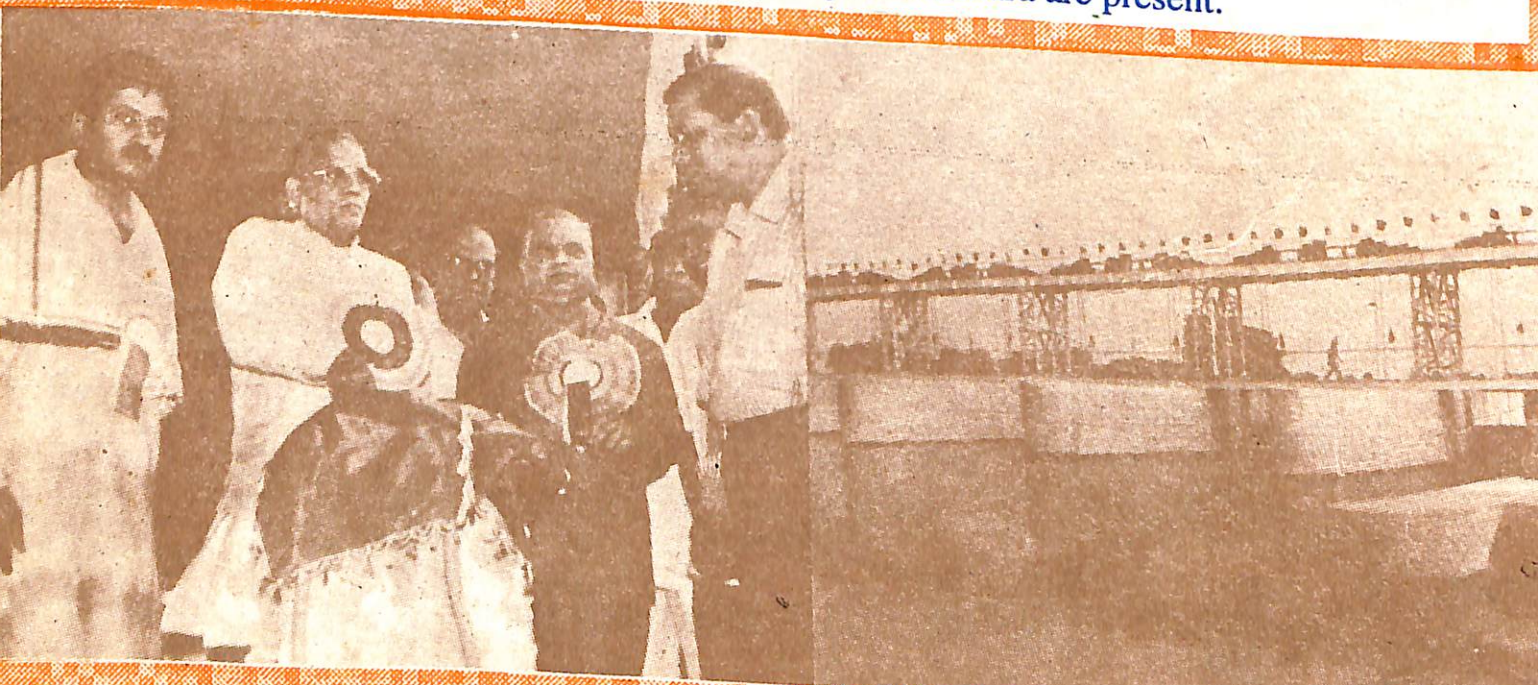
The 'Boita Vandana' function at Paradeep being inaugurated by Chief Minister Shri J.B. Patnaik.



Shri Netrananda Mallick, Minister of State, I.& P.R. inaugurating the Orissa Day at Pragati Maidan, New Delhi during India International Trade Fair on 20.11.1997.



Shri P.A. Sangma, Speaker, Lok Sabha addressing the Members of Orissa Legislative Assembly at a Special Session held on the occasion of the Golden Jubilee Celebration of India's Independence. Chief Minister Shri J.B. Patnaik and Speaker, OLA, Shri Chintamani Dyansamantara are present.



Chief Minister Shri J.B. Patnaik inaugurating the Gobardhanpur Barrage near Brahmagiri in Puri district. Deputy Chief Minister Shri B.K. Biswal and local MLA Shri Lalatendu B. Mohapatra are present.

