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Editorial

Over the years *Man in Society* has emerged as a principal outlet for empirical research-based scholarly articles on anthropology published by the PG Department of Anthropology, Utkal University. It provides the much needed platform to both budding and experienced scholars working in anthropology and other disciplines that focus on issues relating to human experiences. Though the journal gives emphasis to articles written by scholars and members of the Department, it equally urges people elsewhere to submit and publish their works. Rather, in future, *Man in Society* will have to accommodate more articles from outside in order for being more competitive and to maintain quality.

For *Man in Society* to become a respectable journal, it is essential that peer review process for each and every article should be given out-most importance. The process has been adopted for a quite some time but it needs to be more rigorous. It also needs to include book reviews, brief communication and review articles as regular features in each issue. When we will receive more articles in future, we shall have to arrange articles based on themes or devote special issues on a particular theme. That may also involve invited special issue editor or theme based editor to make the volume more focused and meaningful for its users.

This volume contains 13 research articles and a brief communication. The first article by Routray et.al is a discussion on how information technology has emerged as the driver of cultural change in different organizations. In order to demonstrate this aspect, the authors have used organizational ethnography as the research methodology to explain the linkages in “Treasury Management System”, and they have shown how an e-governance application being administered by Directorate of Treasuries & Inspection of Government of Odisha.

In the second article, D. Sahoo describes geo-archaeology of the rock art sites of lower Mahanadi valley, Odisha and interprets the lines on the stone-the rock art, and discusses the threats to them, and their salvage. In the next article on different intervention strategies for sickle cell disease in four states in India, P.K. Patra explores various perspectives and contestations over the ways in which disease, morbidity and management efforts are problematized and politicized by different players at different locales with differing social and political settings.

In her study on the patterns of population sub-structuring among the Chaudhari tribe of Southern Gujarat, P. Khurana reports considerable degree of correlation between the ethno-historic details of the tribe pertaining to its population dynamics with the molecular genetic results. In the next article, Behera and Dash discuss the socio-economic crisis that rickshaw-puller in Odisha face with the advent of mechanized auto-rickshaws. In the next article, Sasmal et. al have determined phenotypic and allelic frequencies of ABO & Rh (D) blood types; and also to ascertained the pattern of variation of ABO blood types across the sex and generation among the Santals of Purulia District, West Bengal, India.

In their article on Japanese multinational companies in India, Sahoo and Aparajita discuss some of the important cultural factors for achieving sustainability of the Japanese economic endeavour in India from an anthropological perspective. In his article based on an ethnographic study, Manojan K.P. discusses the process of drop-outs from an ethnographic study conducted among the

Paniyarsof Wayanad district of Kerala. In the next article, Kumar and Aparajita provide a discussion on photo ethnography and photo elicitation and show how both the methods can be useful in documenting cultural data of any community. In their paper on the conceptualization of flowers among the Dongaria Kondh, Pani and Dash discuss various uses of flowers like religious, economic, ethno-medicinal, as food, in personal naming and body ornamentation.

In the article on issues and challenges of migrant women labourers in India, Patra and Dhir throw light on underlining causes of migration especially with relation to the working condition, employment status, social security, health and hygiene of women migrant labourers engaged in construction sector. In her article on the socio-economic condition of the fishermen community of Jagatsinghpur district, Rashi Rekha Dash highlights the problems the community faces and tries to explore the reasons behind their poor socio-economical status. She also analyses the role of governmental measures taken for their development through various programmes and schemes. In his article on indigenous knowledge and food preservation among tribes of Nabarangpur, Siba Prasad Dash shows how tribal communities are preserving their locally available foods for more than a year by adopting their indigenous methods which are being used since generations.

Under a special category under Brief Communication, L.K.Sahoo explains about the department museum of the Department of Anthropology and Tribal studies department of North Orissa University, Baripada, Odisha. He also demonstrates how the Centre for Tribal Studies is contributing towards the archival work of North Orissa University to collect and preserve socio-cultural history of tribal communities and a lot of tribal literature books in the region.

Over all, this volume constitutes a good mixture of articles covering different aspects of human experiences documented and presented by young and experienced writers. It also contains articles based on empirical as well as review works. I am hopeful that the contributions made in this volume will be useful to its users especially to young researchers, practitioners of anthropology and people keeping interest in broader areas of social sciences

Prasanna Kumar Patra

Cultural Dimension of e-Governance Effectiveness for Public Service Delivery in Treasury Management System of Government of Odisha

Arabinda Routray¹, Upali Aparajita² and B. K. Mangaraj³

Abstract

The symbiotic relationship between of culture and technology has been widely found in anthropological literature, as culture creates a need for the development of technology and at the same time, technology brings about cultural change. With the development of information technology, this area of study not only fascinated anthropologists, but also to information technologists, & management experts as well as development scientists. Traditionally, when this branch of knowledge was limited only to societal development, more and more studies are now becoming relevant in organizational development. Although several anthropologists have contributed to define culture in broader sense, this concept is becoming instrumental in explaining organizational culture as the basis for organizational development. In this context, e-governance effectiveness in cultural perspective is very much relevant in identifying information technology as the driver of cultural change in organizations. In order to demonstrate this aspect, we have used organizational ethnography as the research methodology to explain this linkage in “Treasury Management System”, an e-governance application being administered by Directorate of Treasuries & Inspection of Government of Odisha.

Key Words : *Organizational culture, Organizational ethnography, Information technology, e-governance, Government of Odisha.*

Introduction

Studies of contemporary cultural change are often concerned with industrialisation & Globalisation as a part of Modernisation and a form of cultural change, in which the activities of a more traditional culture are aligned with the activities, institutions and tools of industrialized culture/countries. One important aspect of modernisation is the adoption of various forms of new technology. Indeed, according to historical and sociological analysis, technology particularly is a powerful driver of cultural change. The development of e-Government started in USA with the core program “for a government who works better and cost less” being followed on international scale by the adoption of the “Government on-line” by G7 in 1995 and of e-Europe in 2000. Ever since, the journey of transforming the ideal and expected form of governance into its electronic equivalent with all the associated process re-engineering, have

been discussed, talked about, debated, analysed, effectiveness as well as efficiency measured, and the differences in the desired outcome is greatly attributed to different causes including that of the culture. Hence, an understanding of organizational culture is important in the study of different information technology driven applications at various levels of governance related activities as culture can influence the successful implementation and use of information technology at various levels, including group, organizational and national.

e-Government is all about making the full range of government activities-internal processes, the development of policy and services to citizens, businesses and other governmental department/agencies (G2C, C2G, G2B, G2G & B2G) - available electronically. In India the same is also being witnessed for the last ten-fifteen years coupled with the spectacular growth in its export oriented

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software with the declaration of zero import of computer hardware/ networking in the Digital India Campaign along with information & communication technology (ICT) based service sector. However, culture also plays a role in governance processes that may directly, or indirectly, influence IT applications. It is a major component as well a critical dimension, partly because of the multiple and divergent definitions and measures of organizational culture and partly due to its influences in the adoption of the ICT for realising the fullest potential in ensuring effective and efficient governance.

The use of the ICT in the State Institutions in general and Government in particular started practically with the appearance of the industrial electronic digital computer. This adoption of electronic government initiatives is no different from commercial information systems. As adoption of technology has certainly linked with organizational culture and at the same time, implementation of technology brings out a culture change in the organization, this interaction has of paramount importance in organizational effectiveness and hence, requires to be addressed for better appreciation and acceptance from the stakeholders. This paper looks at the influence of the ICT in the successful implementation of e-Governance initiatives in India with special emphasis on the State of Odisha. We, thus recognise this important area for discussion in the context of e-government implementation that results in a significant culture change in organizational level for effective governance. An ethnographic approach has been used for the study taking a case study of “Odisha Treasury Management System”.

Cultural Dimension of Information Technology Applications:

The number of definitions of culture expounded by learned researchers are too numerous to count, each one of it having its relevant claim to a meaningful understanding of this term. These definitions vary from the very inclusive seeing it as the human made part of the environment (Herskovits, 1955) to the highly focused definition of it as a shared meaning system (Shweder and LeVine, 1984). As pointed out by Groeschl and Doherty (2000), culture is complex and very difficult to define: “Culture consists of several elements of which some are implicit and

others are explicit. Most often these elements are explained by terms such as behaviour, values, norms and basic assumptions”. Some researchers proposed culture as tacit or implicit artefacts such as ideologies, coherent sets of beliefs, basic assumptions, shared sets of core values, important understandings and the collective will (Jermier et al., 1991). Others suggest that culture includes more explicit observable artefacts such as norms & practices, symbols as well as language, ideology, rituals, myths & ceremony.

Alvin Toffler, the American writer & futurist observed in his seminal book “Third Wave” that much of the world has transitioned to the information era. In his book, he theorized that the “First Wave”, encompassed the agrarian societies in which people were predominantly occupied with agricultural produce, while the “Second Wave” saw the rise of industrialisation, characterized by mass production, distribution and consumption. The “Third Wave” is really a post-industrialist society and an age in which economies are driven by information, and consequently by ICT. The Indian success story as a prominent rider of the “Third Wave” in the information age has brought out remarkable organizational effectiveness due to IT induced cultural change in organizations in almost all the sectors. At the moment, India is the world's second largest software exporting country and at the same time, this technology is instrumental in changing organizational cultures for higher effectiveness.

Various studies in the context of adoption of technology and its benefits for organizational effectiveness, both at the organisational and at the users' levels, has mainly focused on technological issues (Dewett and Jones, 2001). Some studies have also considered non-technical factors, such as organisational culture and culture of individual users both within and outside the organisation (Cabrera et al., 2001). The absence of considering cultural consequences in the adoption of technology at organisational level has led to the failure of the adoption as well as effective organizational functioning. On the other hand, the adoption of technology in general & IT in particular has changed the organizational culture in a significant way and anthropological definition of culture has a great contribution in this regard.

Anthropology is the “Science” of the human beings and it constitutes one of the fundamental pillars of Philosophy. From the beginning of Philosophy in ancient Greece till today, Anthropology has always had close connections to culture. On the other hand, an information system is defined as “ a system which assembles, stores, processes and delivers information relevant to an organisation (or to society) in such a way that the information is accessible and useful to those who wish to use it, including managers, staff, clients and citizens (Buckingham et al., 1987). This definition encompasses a wide range of areas, i.e., information theory (information), semiology (delivers information), organisation theory and sociology (organisation & society) and computer science & engineering (computer systems). Hence, the potential role of Anthropology as a source discipline for information systems (IS) development and applications can be appreciated by adopting an anthropological perspective on Information systems. The literature has already illustrated it by looking at the relationship between IT and organisational culture. The very nature of IT/IS as an interdisciplinary one, and is essentially pluralistic, and thus warrants to be looked at with the variety of approaches.

An understanding of culture is important to the study of information technology applications in various levels including national, organisational and group, as culture can influence the successful implementation and use of information technology. At the same time culture also plays a role in managerial processes that may directly or indirectly influence IT. Hence, culture is an important as well as a complex variable in this area of research. A wide range of literature has emerged in this perspective that sheds light on the relationship of IT and culture starting from conceptualising culture and laying the groundwork for a value-based approach in the usage of IT. In this paper, we highlight on the influence of organizational culture, more particularly culture change in the governance process of an organization in order to make it more effective.

Some e-Government researches concern on cultural factors that affects on e-government readiness and its subsequent acceptance as most of them pay attention to the success factors of e-Government systems implementation. In this regard, the

dimensionalization approach of Hofstede (1980) are the most studied one considering ICT adoption at a national level. For example, Kovacic (2005) explores the potential factors of culture that influence the adoption of ICT and readiness to accept e-Government, leading to a successful implementation of e-Governance. Hofstede (1991) presented five dimensions of culture, viz., Power Distance, Uncertainty Avoidance, Individualism, Masculinity and Long term Orientation, as unique to any national culture. These dimensions have been used and applied widely to understand business systems and practices across most of the behavioural science disciplines. In this context, cultural values are the people's values and reported preferred practices that represent the people's perceptions of how things are done in their countries (Javidan and House, 2002) based on project GLOBE (Global Leadership and Organizational Behaviour Effectiveness), which was a major long-term multi-phase, multi-period research project to study cross-cultural leadership differences and similarities among countries. They identified nine cultural dimensions, viz., Future focus, Uncertainty circumventions, Power distance, Humane orientation, Performance orientation, Collectivism-I, Collectivism-II, Assertiveness and Gender fairness.

Based on these dimensions, Leinder&Kayworth (2006) have reviewed as many as 82 articles, out of which, 51 examined culture at the national level (Cross-cultural studies of IT) and 31 examined culture at the organisational or sub-unit level. Among the national culture studies of IT, over 60% utilised one or more of Hofstede's dimensions. Of the organisational culture & IT studies, 85% considered culture at the organisational level where as 15% considered culture at the sub unit or group level. The following themes were observed for the IT and culture research area.

- ! Culture & Information Systems development
- ! Culture, IT adoption & diffusion
- ! Culture, IT use & outcomes
- ! Culture, IT management & strategy
- ! IT's influence on Culture &
- ! IT culture

Mangaraj and Upali (2009) in their work highlight technological growth as a cultural activity and suggests for a cultural approach for its sustenance. In the next section, we discuss the IT applications in governance by the Government of Odisha through its various e-governance initiatives and some of our observations regarding the pervasive and stimulating power of organizational culture for effective e-governance.

E-governance Initiatives of Government of Odisha

There are several existing e-governance initiatives of Government of Odisha being operated, maintained and monitored by different Government Departments. These initiatives include PRERANA, E-PROCUREMENT, E-PRAMAN, E-AUCTION, E-Valuation, E-Dharani, CCTNS, E-Sishu, SAMS, Sarathi-Vahana, E-HAAT, E-Bloodbank, E-Bitarana, E-Municipality, i-OTMS & IFMS-Odisha etc. All these initiatives are designated to be SMART, in the line of the ORTPS Act'2012 for ensuring timely provision of information and services to the citizens and are operated by different government departments. The assessment of these applications is virtually left with those agencies only. As some of the applications are being treated as Mission Mode Projects (MMPs) and are hoisted in the State Data Centre, their effectiveness and efficiency in terms of the actual reduction of cost and time need to be investigated. The Government of Odisha, way back in 2016, decided to launch Common Application Portal (CAP) for electronics delivery of G2C and G2B services under Odisha Right to Public Services Act. It has also developed the Odia script for better understanding of the people who use it. A Centre for Modernising (CMGI) has developed the (CAP) for electronics delivery of G2C and G2B services under Odisha Right to PublicServiceDelivery(ORTPS)Act'2012. In the first phase, 18 public services of five departments were integrated with CAP. The services like issue of birth certificate, death certificate, national family benefit scheme, disabled pension, widow pension, old age pension, CM's relief fund, conversion order of lease hold plots, mutation order of lease hold plots, migration certificate, duplicate diploma certificate, transcript verification certificate, photocopy of the answer sheets of examinations, semester mark sheet, FIR registration were integrated with CAP. It was decided that all 333

public services would be integrated with these applications and the portal would be linked to common services centres. These centres can deliver the services integrated with online portal with user fees of Rs 10 for each application. Necessary suggestions were also given to bring about amendments in the existing regulations whenever necessary to make the Human Resource Management System (HRMS) applications system more useful and effective in management of human resources of the state administration. The HRMS software has been successfully linked to Litigation Management System (LMS) software which would capture the latest position of various government cases being tried in the High Court and administrative tribunals. The salary bills and other financial transactions are being made through this automated system. The annual increment, GPF, other advances and leave matters would also be put to auto mode through this software.

The cultural dimension of an organization is related to both external adaptation and internal integration (Schein, 1990). In studying this dimension and identifying their sub-dimensions, it has been seen that adaptability and mission appear to be related to the dynamics of external adaptation (Denison et al., 1995). The cultural dimensions of external orientation encourage organizations to develop their capacity to change in response to external conditions and expectations. External demands, such as global pressure on the prevention of corruption and public management reform (Wong and Welch, 2004) require government organizations to change and adapt by implementing new technology. In another example, the UK citizens' demands to interact with government agencies through electronic devices have led to local government implementing e-government initiatives (Baynon-Davis, 2005). High level of involvement by internal stakeholder in an organization results in positive integration between the people and the organization's interest. In addition, a bureaucratic culture creates a strong, well ordered, regulated, structured, and cautious organization. This means government organizations are well governed and achieve better internal integration through implementing clear rules, regulations, hierarchies and structures.

A government organization's capacity to practice change and flexibility are determined by its culture of adaptability and involvement (Denison et al.

1995). Meanwhile, the stability and direction of government organizations are determined by their mission and bureaucratic cultural dimensions because government organizations are relatively rigid structures being governed by clear rules, regulations, hierarchies, structures and clear organizational directions which are guided by clear mission statements (Wallach, 1983; Denison et al., 1995). We have analysed the linkage between culture and IT adoption and diffusion for sustainable e-governance in the state of Odisha. For example,

a. Uncertainty avoidance plays a significant role in determining how groups will potentially adopt and diffuse ICT for effective e-governance. Although, the adoption of a new technology in a relatively rigid structure of governance is quite risky, those less comfortable with uncertainty will be less likely to adopt and use new technologies. Thus lesser uncertainty avoidance will be associated with higher adoption and diffusion of IT through e-governance.

b. The organizational group is more likely to adopt a technology for e-governance, when the organizational culture matches or fits with the values embedded within the technology or those associated with its development and use.

c. As per the study of Hill et al (1998) on five Arab countries, certain cultural values in culture tend to either facilitate or impede technology transfer to the host countries. In this regard, the existing values in the organizational culture of an organization greatly affect in the adoption and diffusion ICT through e-governance process

d. In a study of internet diffusion, Loch et al. (2003) found that the degree of similarity in values with respect to technology between adopting and host countries influences the level of adoption of IT. They observed that acceptability of computers (a value) in Arab countries was positively related to the level of Internet usage. In a similar study at the organisational level, Cabrera et al (2001) concluded that successful technology assimilation requires either the technology to fit the organisation culture or the culture to be shaped to fit the behavioural requirements of the technology. Hence, the success story of e-governance in Odisha is largely attributed to the compatibility of e-governance culture with the organizational culture of institutions under Government of Odisha. Hence, the embedded

values in IT culture that inculcates in the organizational culture do not conflict significantly with the values in the underlying work practices.

e. While analysing the influence of culture towards IT adoption & diffusion, Hoffman and Klepper (2000) found that internet adoption is much more likely to succeed in development (Values emphasizing flexibility and innovation) type cultures. Hence, the effectiveness of e-governance in Odisha justifies the developmental nature of its organizational culture.

f. Von Meier (1999) examined work-group subcultures' interpretations of proposed technological innovations. She found that two different occupational subcultures (engineers and operators) had entirely different cultural interpretations of proposed technologies and, as a result, experienced conflict and resistance to in the adoption process of a new technology. These findings highlight the potential contradictory consequences of IT implementations due to potentially competing sets of values within the same organizations (Robey and Azevedo 1994; Robey and Boudreau 1999). The study by Huang et al (2003) also investigated the relationship between organisation sub- culture inconsistencies and the adoption of component based software development methods. They found that clashing values among organisational sub-cultures hindered the information sharing and collaboration needed to effectively integrate a technology. Hence, the adoption, integration and diffusion process of e-governance in Odisha has taken care of this conflict across different occupational sub-culture irrespective of the hierarchical organisational structure. However, the effectiveness measurement of such a system is very much necessary either to improve its performance level by re-aligning its organizational culture or by providing necessary inputs for re-designing the system in order to make it more effective (Mangaraj & Upali, 2013).

In the next section we consider an organizational ethnographic approach to study culture change in Odisha Treasury management System (OTMS) for more effectiveness due to its transformation to e-governance mode. Although, the origins of ethnography in anthropology were closely linked to organizational endeavour, viz., the management of Western European colonial engagements, these

ethnographic origins were used in many directions through anthropology by thick description (Geertz, 1973); sociology for study of slums (Whyte, 1955) and youth culture (Cohen, 1970); science and technology studies (Latour and Woolgar, 1979); during the twentieth century. However, in twenty-first century, this approach has considerable focus in the understanding and use of technology (Miller and Slater, 2000); organizational change in the context of a global human resource consulting firm (Heracleous, 2001) etc.

Culture Change for Effectiveness: An Ethnographic Comparison of Governance Systems

1.1. OTMS: A Citizen-centric Financial Governance System

The key government processes of treasuries are payment, receipt, pension processing and accounting of expenditure and receipts. Over the period of time these processes have been evolved by various functional units on an ad-hoc basis to deliver services to various citizens. Each functional unit does its task as a part of the process activity. We will discuss here all the five basic processes to start with the understanding of the changes with respect to the technological intervention leading to substantial changes in the effect thereby appreciating the shift in the associated practices & culture.

(1) Payment Process:

Payment process is all about processing of claims (in the form of Government bills) that are received from drawing and disbursing officers (DDOs) who submit their bills to Treasury through DDO messenger along with the book of drawl. The bill receiving clerk receives the bills that were submitted in Treasury counter, allots one metal token against each bill except those bills whose net value is '0', hand over tokens to the DDO messenger. The bills received are then handed over to the respective bill passing clerk through Bill Transit Register for scrutiny if it is in order, pay ordered on that bill and at the same time recorded on the book of drawl. The bill passing clerk thereafter submits all those bills through the book of drawl to Treasury Accountant for further scrutiny. After scrutiny, the bills then are passed to Treasury Officer/Sub-Treasury Officer for final pass or objection. Those bills which are passed by Treasury Officer are again comes to advice clerk.

The advice clerk verifies all the bills passed with reference to book of drawl and enface it manually in advice register for onward transmission to Treasury Link Bank for payment. The advice bills along with copies of advice are sent to Link Bank in box with lock through authorized treasury messenger. The link bank opens the advice remittance box, verified all passed bills with reference to copies of advice and puts its official seal and signature on the advice in token of received bills. The bank official then returns one copy of advice through treasury messenger. The bank official then called for the DDO messenger to surrender treasury token and in exchange handed over those bills to the messenger to put his/her signature as token of received bills. The bills are then transferred to bank's cash counter for payment to the DDO messenger. The date wise paid bills are entered in the bank debit scroll and on the next working day returned to Treasury along with paid vouchers for accounting. The bank returns all paid vouchers, metal tokens with due recorded in a Pass Book. Then the accounting process starts at the Treasury. Here, all paid vouchers are verified with bank scroll, paid vouchers are shorted major head wise and entered in a Payment Subsidiary Register date-wise, which is maintained major Head wise. This becomes a continuous routine work.

In this process, bank credits the net bill amount in DDO's current account and then, the DDO issues cheques to beneficiaries. This allows the amount to be in DDO's account for some period of time and sometimes the DDO issues the cheques in his/her own discretion on a later period. In general, the amount gets credited to beneficiary account after 8-9 days. However, it was very much difficult to monitor cash balance with the DDOs. Also, as Treasury sorts the voucher and tags it with metal token and sends it to bank, physical movement of voucher and bills, increase the possibility of loss of vouchers. Hence, It involved lots of human efforts and was a time consuming affair both at the treasury and the bank end as the treasury needs to sort the bills along with the advice list, where bank needs to sort the bills again and to distribute the same among the users to manually enter the transaction to credit DDO's account. At the same time, the DDO needs to follow-up constantly with the bank and the treasuries to know about the payment status. After the successful payment, the DDO issues cheques to beneficiaries and, it was the responsibility of the beneficiaries to

get it en-cashed through bank. The whole process takes 8-9 days to get the beneficiary account credited with the amount. Apart from this, the concerned bank sends the hard copy of scrolls to the treasury, and the treasury needs to enter this information manually.

These shortcomings of the this system of disbursement were the delay in transmission of the funds to the Payee's account; parking of funds in DDO's "Current Account" beyond the permissible period; difficulty in monitoring of the cash balance with the DDO; risk of vouchers being missed in course of physical transmission of bills/ cheques to the treasury linked bank and delay in receipt of physical scroll from the banks as well as vouchers for accounting.

(2) Receipt Process: Receipt of Government Taxes and Dues

Receipt process is all about processing of credit scrolls (against challans deposited) received from the banks. The Government receipts or dues or other forms of moneys receivable at Government account are usually deposited by individual persons and the departmental officers through treasury challans. The Orissa Treasury Code provides a provision that any person can remit money into the treasury/ bank and shall present it with a memorandum or challan, which shows the clear information such as his nature of payment, amount paid, person or Government servant on whose account it is made and Head of Account to which the amount should be credited. The process envisages that the deposit of money by a tax payer into the Government Account shall require the physical presence of the depositor both in the treasury and in the Bank as well. Any person who intends to deposit money to Government has to proceed to the nearest Treasury or Government office, collect challan, and fill all the requisite information manually. Separate challans are used for money creditable to different Heads of Accounts. After filling the challan form in triplicate (pre-printed copy), the same is handed over to the Treasury counter to enface it for depositing in the Treasury Link Bank. After passing/verification of challan by the Treasury clerk in the Treasury counter, she/he proceeds to the Treasury Link Bank (165 counters) to deposit the Government money in Bank counter and in token of deposit, collects the original copy of the challan for his reference. All

such challans so deposited in Treasury Link Bank in a day gets reflected in the Bank Credit Scroll. The Treasury Link Bank returns all the challans along with the credit scroll on the next working day to the Treasury for accounting purpose. After receipt of the challans and the credit scroll, the Treasury verifies all the challans with that of the bank scrolls sorts the challans in major head-wise and do the accounting work date-wise in the Receipt Subsidiary Register maintained in major Head-wise. It is to be noted that, the day's account must be in agreement with the Bank's figures. The whole process happens in a continuous manner. According to this manual process, the Treasury does not maintain accounts in detailed for classifications. As a result of which, the reportings do not comprehensive.

When the depositor deposits the money in the shape of bank draft or cheque, the concerned office sends those instruments again to the bank for realization into the Government account in the approved mode of deposit. A total of sixteen Public and Private sector banks, which are mandated by RBI as per banking norms are authorized by the State Government to undertake such transactions. Hence, the actual receipt of the amount into the Government account takes 4-5 more days over and above the date of deposit of the instruments. Such being the case, the real-time receipt of the money gets delayed with the actual realization and the reporting of the Government receipt.

To remit government receipts or money, taxpayers and citizens had to visit treasury and bank for getting necessary information to fill the challan forms. In the process, significant man hours were lost. The receipt process was not sharing any information regarding status of the receipt with the beneficiaries. Taxpayer was also not able to ascertain whether the payment got duly accounted for him in the books of Treasury & Revenue Earning department. There was no facility of duplicate the challan copy. One had to enter challan details both at bank and at Treasury.

(3) Process of Budget Distribution

The budgetary provisions in the shape of allotments were distributed manually by the Administrative Department to the Budget Controlling Officers for subsequent distribution to the Drawing & Disbursing Officers across the state of that Department, after the budget was laid and passed in the State Legislative Assembly. The allotment

distribution among various offices took place through a lot of physical interventions. Due to manual process, there were intentional or unintentional errors of budget provisions, excess of expenditure, and expenditure in the areas where there were no legislative sanctions. There was delay in budgetary allocation process due to paper work from government administrative departments and controlling officers to DDOs, which also consumed a lot of resources. This led to delay in disbursement of Government payment which resulted in delay in implementation of various activities and projects. Also due to inaccurate accounting compilation, treasury suspense also got accumulated. To avoid budgetary provision lapses, in many instances, the Government offices used to draw funds from the treasury and park the same in the bank account for a long time period or spend the funds much later. Due to this idle parking of funds and delay in actual expenditure (disbursement to beneficiaries), not only Government could not make out how much funds actually used in implementing schemes, but also lost investment opportunities as well. Due to lag in the process of disbursement, the Government also faced difficulties in measuring the impact of various policy measures and at the same time, in the development of any new public policy.

(4) Pension Payment Process:

It is process of disbursement of pension to citizens who have retired from Government service. The pensioner needs to come to the treasury to submit his/her claim, which then gets processed in the treasury computer. After getting the bill, the pensioner receives the payment at the Bank counter. Hence, he had to come to the treasury every month to receive his/her monthly pension. In the process, he spends a considerable amount of time in the treasury as well as in the bank.

(5) Works Expenditure Process

The expenditure for public works, for example, Irrigation projects, which were incurred at the level of Cheque Drawing Divisions, were kept out of the purview of treasury drawl for the sake of flexibility and convenience. On the contrary, the process of allotment distribution and authorization for expenditure relating to Public Works Department was extremely complicated and comprised of multiple redundancies leading to significant delay

and dislocation in the disbursement process. There were two parallel processes, which guided the works expenditure. The allotment of budgetary provisions was made from the level of Administrative Department or grant controlling authorities and the Budget COs to the DDOs (Cheque Drawing Divisions). Secondly, for the letter of credit (LC) on requisition, DOs send LC entitlement requisitions to the Cos, who in turn send requisition to FD). Then an order gets issued from the Finance Department to the COs who then distribute it among the divisions and intimate the concerned link banks (with an LC Entitlement copy) based upon the LC. Then, DOs issue cheques to self or to third parties for encashment of cheques from the banks. Also, DOs submit the accounts to the AG (O)/DAG for information. The banks then allow the Divisions/Irrigation projects/third parties to draw their concerned expenditure amounts. Hence, the Bank prepares a debit scroll to the Treasury, who in turn submits monthly account to the AG (O)/DAG.

OTMS: A Migration from Manual to Electronic System

(1) Payment Process: E-Disbursement

E-disbursement of Government payments was the first implementation of Government payment online in India, as declared by the RBI. The DDOs submit their bills with beneficiary lists to i-OTMS portal and get a system generated reference number. The treasuries pass and approve these bills. The Treasury application collates the advice of all treasuries and generates a single ECS advice centrally through Central Electronic Payment Cell (CePC) of the Directorate of Treasuries and sendsto RBI electronically. The accounts of beneficiaries (bank neutral) are then get credited directly through Core Banking Solutions (CBS). The RBI, Bhubaneswar branch, after making payment, transmits a single debit scroll through the CePC to the iOTMS. The DDOs getSMS about the bill status on different stages.

After the implementation of e-disbursement, passed bills were not sent to Treasury Link Bank. The time period of crediting the beneficiary account drastically reduced to 2-3 days from 8-9 days. The system facilitates seamless accounting of all the treasuries at the same time. No agency commission was involved since the RBI manages the payment

itself. The returns/failed payments were credited to the Government account thereby avoiding any parking of fund outside the Government account. The necessity of monitoring of DDOs' cash balance got abolished since the beneficiary accounts were credited directly. The physical movement of scrolls and vouchers, from bank to treasury got abolished. Use of the RBI's platform is one significant feature of the process. The system minimized redundant preparation of beneficiary list and avoided the physical presence of the DDOs in treasury and bank. It replaced time consuming and manual cheque issue process by the DDOs to beneficiaries. The stakeholders like the RBI-Bhubaneswar highly appreciated the successful implementation and considered it as a model to automate the payment process in other states. The electronic payment by direct credit to the Bank account of the payees started from 1st August, 2012.

(2) Receipt Process: Electronic Receipt of Government Taxes and Dues

The integrated Odisha Treasury Management System (i-OTMS) project has made significant changes in the process of receiving the Government taxes and dues. The treasury portal provides a link for e-payment. Different Departments of the Government were integrated with Treasury i-OTMS platform for extending electronic payment facility to the taxpayers and citizens without intervention of Treasury. For departments without a portal, a department specific information entry page was provided in the DTI portal. Since February 2010, the e-receipt of commercial taxes, motor vehicle taxes, mining royalty, examination fees, electricity duty, Cess and RTI application fees were already operational. Keeping the users' requirements in mind, the treasury portal was integrated with many designated public and private sector banks. Any taxpayer having Net-banking account of any of these banks can make payment of taxes. After the payment, treasury portal generates an e-challan automatically for the tax-payer which can be printed and submitted to concerned authority by a tax-payer as a proof of his payment.

Besides online challan, off-line challans facility has also been extended for depositing examination fees conducted by OPSC/Staff Selection Commission/e-Registration/Excise/RTI and other deposits. After filling the challan available in Treasury portal, the

depositor may deposit government money in bank portal (those have net banking facility) or through over bank counter. Seven nationalized banks are integrated into the system and have extended facilities for such deposits. The accounting and reporting are made through Cyber Treasury. The system provides multiple options to the depositor's, viz. online payment / offline payment, and multiple challans in one transaction. Challan information flows from DTI to bank, payment information flows from bank to RBI, and RBI in turn transfers money from bank account to government account. The MIS report becomes available for the user departments who take the data of the payment made by the tax payer. The increasing use of the e-payment is evident from the fact that the Cyber Treasury of the State of Odisha virtually accounts for almost 80% of the State commercial taxes.

(3) Distribution of Budget Online (e-Budget)

The Finance department of Government of Odisha directly uploads the approved budget (e-Budget) into the system (DTI Central Location). The whole data is now available in the system and can be accessible by the various Departments for their respective portion of the budget. Subsequently through Internet, this Department distributes the budget provisions to the corresponding CO who in turn distribute allotments to corresponding DDOs. The CO and the DDO wise distribution and expenditure is now captured in the server of central location. Detail DDO wise allotments are communicated to the Treasuries through the system. The DDOs are now preparing the bills on the basis of allotments viewed directly by them from the treasury portal. With a single uploading process at a single point, the respective budget details are made available to the DDOs at respective treasury levels. The data are available at the CO, the DDO and at Treasury level on a real time basis. The processing time of allotment of distribution reduced from 5 days in 2009-10 (OTMS) to 1 day in 2010-2011 (i-OTMS). The possibility of excess expenditure also got eliminated.

The e-budget solution of i-OTMS has provided the facility for distribution of budget on Internet; the users of which include all the 42 ADs, 159 CO. These officers perform the budget allotment activities from any location connected to the central server at any point of time. Since the budget distributed, is now

available in the i-OTMS portal, the DDOs can submit their bills based on the printout of the budget report generated from the portal. Same reports are also available in the treasury system, hence there is no need of ink-signed copy of the budget order is required. The i-OTMS system helps in controlling over expenditure vis-a-vis the budget provision of the Government of Odisha. Since then, the system checks and approves expenditure as per availability of budget provision. In respect of budget allotments, the allotments at the CO level reach to the DDOs virtually almost on real-time. Also the distribution is evenly done by the COs throughout the year through e-Budget module, as a result bills are processed uniformly throughout the year and the rush at the end of the financial year at treasuries and sub-treasuries has been minimized to a great extent.

(4) Pension Payment

The Treasury maintains the pension records while pension payment is made through the bank account of the pensioner. As per mandate of 13th Finance Commission recommendation, centralized pension database and pension portal, exclusively for state pensioners has been created. Pensioners can draw their pension from the Treasury or the authorized Public Sector Banks. With a centralized pension database, i-OTMS is capable of generating consolidated category-wise monthly pension bills. It has been decided that the treasury after validating the consolidated category-wise bill along with the available records in the treasury, will send a consolidated advice to the Bank for crediting the monthly pension in the Bank account of the pensioner with an SMS alert to the pensioner's mobile telephone. The pension amount gets credited into the bank account of the pensioners through digitally signed National Electronic Fund Transfer (NEFT) (for other than link bank)/ Core Banking (CBS) (for link bank) under the Indian Financial System Code (IFSC). Then the Bank sends a debit scroll based on the payment made, to the corresponding treasury after making the payment. The pensioners are not required to come to the treasury or Bank for drawl of their pensions. Using pension's portal, the pensioners can now be able to view the status of his pension online and all pension related information. He can calculate the pension amount, lodge grievance for any deviation and seek redressal. The accounting of the pension payment in

their respective head is now very easy and correct as the bills are generated on the basis of the category in i-OTMS. The treasury stake relatively less time in accounting of the monthly pension payment.

(5) Works Expenditure Process

The allocation for works expenditure by the Grant Controlling authorities and the Budget COs to the Divisions/Irrigation projects is being made in the works expenditure module of the Treasury portal using their respective User IDs and Passwords. The Odisha Treasury Portal provides a link for the distribution of allotment through its Works Expenditure Module. When the Finance Department uploads the budget, the ADs distribute the allotments to COs as per cash management. Then the COs distribute the allotments to the Divisions as per cash management followed by Division Officers issuing cheques to self or third parties who in turn does the encashment of cheques at Banks. The Divisions log into the Odisha Treasury Portal through Internet and enter their cheque details and the amount of expenditure to be incurred with the available allotment which gets deducted in the system. Then the Divisions submit account to AG (O)/DAG. While honouring cheques issued by the Divisions, the Bank uses the Bank Interface of the Treasury Portal to verify the appropriateness of the claim. It enters the cheque no. in the window provided in the Treasury Portal to know whether the cheque has been processed through the works expenditure module and gets the information regarding the details of the issuing Divisions. This ensures that no payment is made by the Bank in excess of the allotment available for drawl for works expenditure. The banks send debit scroll to Treasury who in turn sends the monthly account to AG (O)/DAG. There are six ADs, 19 COs and 382 Divisions across the State who uses the above module for the purpose of expenditure on Public Works. Hence, i-OTMS captures all the expenditures made at the level of treasury or at the level of cheque drawing divisions. This helps the system to generate various kinds of expenditures and revenue receipt data for monitoring at the higher level of Government administration. In this process, Letter of Credit (LC) based control (manual system) was replaced by the online distribution of allotment, which is a paradigm shift in the "Treasury Management System", where the work expenditure gets recorded against proper

heads. It ensures payment remains within the budgetary provisions. This led the processing time reduction to 1 day in 2010-11 through the i-OTMS from 15 days in 2009-10.

Conclusions

Literatures on culture studies reveal that there is a cyclical relationship between culture and technology. In every society, culture develops technology as based on the needs of the people by creative influences. But, as technology develops and gets absorbed into peoples' lives, it affects their culture. The way of life also gets changed even if the technology is developed outside, but is introduced to the culture. The accelerated revolution of information technology development and its applications to various walks of life is a bright example of acceptance of technology in various cultures. The evolution of modern organization also follows the same relationship of culture and technology in organizational context. The principle of organizational management has also undergone a sea change due this interaction. In welfare economies, the governance structure and processes have not only accepted IT to be assimilated in their culture, IT has also changed the organizational cultures in those countries. In this context, India as a country in general and Odisha as a state are not exceptions.

In this paper, we intend to focus on the culture change in organization in order to accommodate new technologies for greater effectiveness. Particularly, when we talk about Government organizations, there is a need to change the organizational culture to accept the e-governance mechanisms and at the same time, this technology brings out an acceptable level of organizational culture in order to achieve higher efficiency and effectiveness. Organizational ethnographic methodology was used to study the treasury management system of Government before and after the implementation of the e-governance system. The study revealed that, there is a tremendous improvement in the effectiveness of payment process, receipt process budget distribution, pension payment and work expenditure processes. The study also observed significant change in the organizational culture that accommodated IT culture into it towards achieving a citizen centric e-governance by the Government in Odisha

This research also finds several new areas of research to be investigated taking cultural dimension of IT into account for the e-governance initiatives of Government of Odisha. As citizens are the important stakeholders of the system, other forms of culture of the citizens can also be considered along with the organizational culture for the purpose. For example, generation gap is an important attribute of IT use, as people across generations are exposed to varying exposure to this technology. As there are a lot of researches on the gender difference in technology use, this dimension can also be looked into for successful implementation of e-governance initiatives across all citizens. The effectiveness of all these initiatives should also be measured in a numerical scale in order to identify the lesser performing initiatives and the reasons thereby from a cultural point of view. The government resources can be optimally utilised for all these initiatives for better resource management at one end and consistent effectiveness across initiatives at the other.

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Lines on Stone, the Rock Art of the Lower Mahanadi Valley, Odisha

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Abstract

The present paper is based on the author's recurrent archaeological explorations for his doctoral work to locate prehistoric sites in the lower Mahanadi valley of Cuttack district in Odisha. In eastern Odisha, the district Cuttack covers a major portion of the Mahanadi delta. The surface survey in the area has discovered numerous prehistoric sites significantly associated with various lithic artefacts belonging to the lower Palaeolithic, Mesolithic, and Neolithic periods the sites are located around the delta head of the Mahanadi, which comes under Athagarh, Banki and Cuttack Sadar subdivisions of Cuttack. In addition to this, the survey has also documented total five rock shelter sites from five distinct places mostly located on the forest clad sandstone hills of the Athagarh Gondwana Basin around the delta head in the study area. Basing on absences and presence of rock art, the rock shelters sites recorded from the study area categorized in to two types such as (i) rock shelters without rock art and (ii) rock shelters with rock art evidences. Out of the five rock shelters there are only two rock shelters that reveal the evidence of rock art in form of typical petroglyphs. The discovered rock art sites are located at two different places: one of which is located at the foothills of the Siddheswar Mundia nearby the village Naraj on the south of the Mahanadi and another at a natural cave on the waist of the Haripuli hills in the Subasi Reserve Forest area on the north of the Mahanadi. Both the rock art sites have faced same fate due to and anthropogenic impacts on the ravages of time. However, in this paper, author describes geoarchaeology of the rock art sites, interprets the lines on the stone-the rock art, and discusses the threats to them, and their salvage.

Keywords : Prehistoric, Rock Shelter, Rock-art, Engravings, Petroglyphs, Anthropogenic

Introduction

Odisha has a rich repository of rock art heritage in the form of pictographs and petroglyphs of prehistoric to early historic periods compared to other states of peninsular India. These have mostly survived in the rock shelters found on the uplands and rugged hills of western Odisha. In early 1930s, K. P. Jayaswal documented one of the earliest testimonies of petroglyphs from the rock shelter of Vikramkhola in the district of Jharsuguda-earlier a subdivision of Sambalpur district (Jayaswal, 1933). Subsequently numerous scholars like N. P. Chakravarti (1936), Charles Fabri (1936), J. P. Singh Deo (1976), G. C. Mohapatra (1982), P.K.Behera (1991-92), E. Neumayer (1992; 1993) and S. Pradhan (1995-96 and 1997) have intensified their search on rock art in Odisha by interpreting the inscriptions of Vikramkhola as well as reporting new rock art sites. Besides, during the course of

exploration in the districts of western Odisha, the Department of Archaeology and Museums, Government of Odisha, located the painted rock-shelters at Ullaphgarh and Vikramkhola in District of Sambalpur, respectively 8km. north and 13km. south-west of Belpahar Railway Station, and at Ushakothi in District Sundargarh (Indian Archaeology 1969-70 A Review, pp.30). Similarly, the Director Cultural Affairs', Government of Odisha, reported the discovery of a prehistoric rock-shelter in the Hemagiri Reserve Forest (Indian Archaeology 1969-70- A Review, pp.61). Pradhan (2001:21-25), within one decade of intensive survey has brought to light a rich heritage of rock art in the sixty-six natural rock shelters mostly in and around the Bamra hills, Jharsuguda rolling uplands formed in the medium to coarse grained sandstones of the lower Gondwana formation and the granitic outcrops around the Bargarh uplands, Kalahandi

uplands in the state. These rock shelters are strategically painted and engraved on the walls, ceilings and various stone artifacts, ceramic remain, and metal objects found embedded on the floors of these rock shelters. Behera (2001:1-3) has also reported the distribution of more than hundred small and large natural rock shelters in and around the Deulga hills on west of Landimal Reserve Forest of Rairakhol subdivision in Sambalpur district. From the entire only fifteen rock shelters contain evidences about the dwellings of prehistoric man and their artistic activities, which show a wide arrangement of petroglyphs.

The depictions of Petroglyphs are mostly on the front walls and sparsely on the rocky floors of these rock shelters. Majority of cases the floor of the rock shelters bears evidences of microliths, heavy duty pebble tools, crudely made potsherds. The rock art

sites in western Odisha are reported as distributed in and around the four different geographic sub regions of the western uplands, namely, the Bamra hills, Jharsuguda rolling uplands, Bargarh uplands, and Kalahandi uplands. From the geoarchaeological points of view, it is inferred that the humankind during prehistoric Mesolithic to the early historic through the Neolithic-Chalcolithic periods could have occupied these rock art sites. (Pradhan, 2000:649; 2001:53-55; Behera, 2001:10).

Intensive survey in the delta head of the Mahanadi in three phases during 1996-2000, 2003-2005 and 2014-2015 has led to the discovery of a number of rock shelter complex in the cliffs and slopes of the sandstone hills of Upper Gondwana formations around Athagarh and Banki region in Cuttack district (Fig 1a&1b).

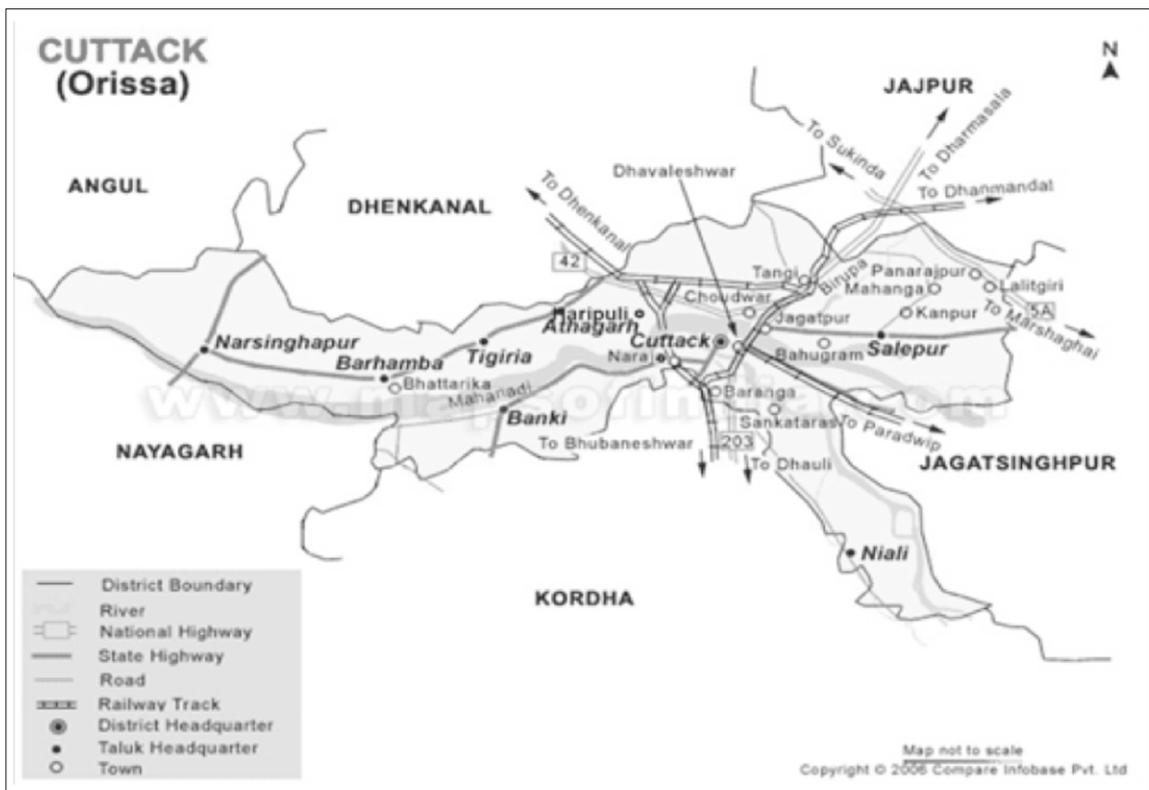


Fig 1a: Map shows the rock shelter sites on the Upper Gondwana Sandstone of Athagarh Formation in and around the delta head of the Lower Mahanadi Valley



Fig 1b: Satellite Image of the Lower Mahanadi Valley shows the location of the Rock Shelter sites with rock art evidences

Protracted field exploration has resulted in the discoveries of a good number of lithic arte facts belonging to the different cultures, and five rock shelter sites distinctly located in five different localities around the delta head of the Mahanadi (Sahoo and Naik, 2013: 56-80; Sahoo, 2015a&2015b). Out of the five rock-shelter sites, in two, which are on the verge of destruction, rock art-almost in forms of curious petroglyphs have discovered and documented. One of such rock art site is located on the face of a huge rock panel exposed at the foothills of the Siddheswar Mundianear the village Naraj on the southeast of the Mahanadi. Another is located in a natural cave formed on the waist of the Haripuli hills in the Subasi Reserve Forest area on the north of the Mahanadi. This paper deals with the content and context of these two rock art sites based on the findings of the survey conducted in these sites. A detailed description about the rock shelter sites with rock art as follows.

The Rock Shelters with Rock Art

Naraj (NRJ): 20°27'55"N. Latitude; 85°45'45"E. Longitude

Naraj is a place of great antiquity located on the right bank of the river Mahanadi near the bifurcation of Katjuri (Kathjodi) and the Mahanadi in Cuttack Sadar P.S of Cuttack. There is a hill called Siddheswar Mundia just on the right bank of the river Mahanadi. It extends from southwest to northeast direction on the southeast of the river Mahanadi with a high peak on the southwest with a low-lying narrow ridge extending up to the village area of Naraj - Marthapur on the northeast. The hill is found distributed with lateritic formations associated with sandstone knobs and outliers at places at its higher level up to the top. It is also distributed with tough sandstones of Upper Gondwana formation of Athagarh Basin. Such formation is exposed mostly around the low-lying slopes and cliffs formed in northeast, southwest, and northwest of the hill. The

landscape, all around hill is sparsely covered by jungle comprising bamboo and indigenous plants of various scrubs, shrubs and vines as well as thorny bushes of edible nuts and berries.

While the villages like Naraj and Marthapur are located in close proximity to the northeast of the Siddheswar Mundia, the village Talagarh is located on its southwestern foothills. The South Eastern Railway (East Coast Section) from Barang to Raj Athagarh crosses the river Mahanadi through Naraj-Marthapur Railway Station on the southeastern flank of the Siddheswar Mundia. Naraj is archaeologically famous for the cave temple of Lord Siddheswara - a *saivite* shrine atop hill of the Siddheswar Mundia, which has derived its name from the name of the shrine on it. Geologically, it is also famous for its valuable tough sandstones of Upper Gondwana formation and for precious mineral, which is fireclay. As local legend circulates, a huge rock panel engraved with “*Sadhe-tini-akshara*” (three and half letters), exposed at ground level below a natural cliff on the northwestern flank of the hill is mysterious. The local people believe that, close to this rock panel, seven gold loaded boats have drowned in the river Mahanadi in the long past, and one who can read the three and half letters can be fortunate to recover this submerged wealth in the river. Recently, a *math*- a kind of religious institution has established near the said rock panel, and the place has acquired the name “*Sadhe-tini-akshara*”. Some typical rim sherds of a vessel on red ware with red wash treatment yielded during the survey in this area.

Description of Rock Shelter and Interpretation of the Rock Art

The intensive survey on the northwestern flank of the Siddheswar Mundia around Naraj resulted in the discovery of a few archaic rock shelters facing the river Mahanadi. The rock shelters are on the verge of destruction due to prolonged quarrying of sandstones and fireclay from the exposed rifts. There is a huge rock panel of sandstone measuring in length 4.95m and in breadth 2.30m exposed below the archaic rock shelters at about 600m southeast of the Mahanadi (Fig II a & II b). The exposed rock panel could be a rock shelter having an overhang forming its roof, which was lost facing the same fate as all other rock shelters in the area.

Fig II a : Author showing the rock art on the rock panel below the rock shelters facing the river Mahanadi



Fig II b: Close up view of the engravings on the east facing rock panel at Naraj



The rock shelter in the site preserves a number of engravings without any pigmentation, which reveal a kind of human nexus with the rock shelter. The rock art site in this place is identified as “*Sadhe-tini-akshara*” (three and half letters) and some do call the site as “*Adhei-Akshara*” (two and half letters) due to some peculiar engravings executed on the back wall of the dilapidated rock shelter. However, there is no trace of any letter – the *akshara* or inscription.

Recent survey around the site of “*Sadhe-tini-akshara*”, during December 2014- January 2015, documented the willful vandalism happened to the rock shelter site in particular, and documented the remnants of the archaic rock shelters around the site. The rock shelter with rock art evidence has recently been decorated with irregular lines and floral designs with white pigmentation of lime (Fig III a). One of the remnants of rock shelter found to the left of the “*Sadhe-tini-akshara*” rock shelter is in a highly damaged condition because of quarrying of sandstone slabs and nodules by drilling (Fig III b).



Fig III a: Shows the willful vandalism to the rock art site by lime pigmentation



Fig III b: Shows heavy drilling for quarrying of sandstone slabs and nodules from the rock shelter

Repeated carving is also marked over the engravings of the “*Sadhe-tini-akshara*” rock shelter. During the exploration around the rock shelters, the author has discovered and documented seven numbers of peculiar petroglyphs (engravings) of naturalistic and thematic motifs on the above said huge sandstone rock panel. The petroglyphs found in the rock panel are chiefly anthropomorphic and zoomorphic motifs devoid of any pigmentation. The zoomorphic motifs in the petroglyphs include a fish, a bird, a mollusk



Fig IV a: Shows the arrangement of the petroglyphs from right to left

with dextral coiling and, an enigmatic engraving that looks like a spider. The anthropomorphic motif contains two atypical anthropomorphic figures performing certain activities. The geometric motif in

the rock art includes horizontally engraved two separate parallel lines. However, the arrangement of the petroglyphs in the rock panel is from right to left, and more or less in one level at the base of the shelter (Fig IV a).

If someone identifies the arrangement of the petroglyphs from west to east, the first figure is of a fish motif engraved with finer lines compared to all other motifs. The second figure on the left of the fish motif is of a short necked waterfowl, facing west in a meditative mood probably for a prey. The prey is the fish motif, engraved below at the beak of the waterfowl (Fig IV b). The third figure on the left of the waterfowl is of an anthropomorphic figure characterized by a short neck, two long hands with upward bending from the elbow (drawn in parallel lines); stocky body and inappropriate legs. It holds a stick associated with more or less curved five lines (probably fish hooks) in its left hand, while its right hand holds a circular-net (*Mundalijala*) fitted with a long handle. The head of the figure is not prominent but certainly possessed an elongated quiff at its posterior. Irregular marks of abrasion and a prominent curved line on the head from front to back suggest a headgear or a mask.

The legs are not properly drawn like hands. The legs are shown as two curved lines with apparent emphasis on the depiction of thigh crossed by a curved line, which indicates the pelvic part of the figure. The fourth figure is also of an anthropomorphic figure - smaller and narrower than the third one. The head of this figure is peculiarly designed with two to three short and upward lines, which form a triangular shape on it and possessed a round quiff - a bun. Behind the head there is an oblique line turned left up to the back, which is ambiguous. The two hands are executed in double lines more or less parallel to its shoulder. The right hand is curved downward from its elbow welded with a straight line. The straight line fitted to the right hand also welded with two lines on its left and right sides, appeared as a cross bar. Thus the fourth figure is holding a stick fitted with a cross bar in the right hand. The stick with cross bar in right hand is apparently a stick-net (*Kathijala*).

The left hand is straight and joined with a circle with bruising marks inside, which indicates the figure has possessed some kind of fodder for fishing. The chest portion of the figure is wide and heavy with a narrow

waist. The legs are bifurcated from its pelvic point. Its posture as such indicates that it is in a fishing action in a stream or some or other forms of water bodies. The fifth figure is a circular-net (*Mundalijala*) like engraving in a declined manner behind the fourth figure. Apart from these five engravings, another two separate enigmatic engravings are also documented at about 1.20m to 1.60m away to the left of the fourth figure in the same level of this rock shelter. Thus the sixth figure could be the engraving of a mollusk with dextral coiling (Fig IV c) and the seventh figure is an enigmatic engraving seems to be the motif of a spider (Fig IV d)executed with some indistinct lines and a circle enclosed by a series of curved lines. Keen observation of the engravings in this spot has



Fig IV b: Shows the motif of a short necked water fowl and a fish



Fig IV c:Shows the engraving of a mollusk with dextral coiling

identified that the motifs of the fish, short-necked waterfowl and the fourth anthropomorphic figure prominently executed in between the two parallel lines. It may be interpreted that the third figure is anthropomorphic one with long hands carrying

fishing equipment and the collection bag hanged from shoulder to thigh line standing above the upper line.

The fourth one is an anthropomorphic figure having heavy trunk with bifurcated legs in a fishing position standing in between the upper and lower lines. The significant position and gesture of the engravings suggest some or other form of fishing activity in a water body like river or stream. Thus, interpretations of petroglyphs (engravings) of *Sadhe-Tini-Akshara* at Naraj suggest a scene of the fishing activities in the hands of the early settlers of the area. Ethnographic queries on fishing activities of the people in general and fishing community in particular, living around the study area, reveal the contemporary use of Kathijala and Mundalijala among them. Eye observation of the grooved lines of rock art through magnifying glass suggest that the petroglyphs were engraved by means of quite a some kind of hard metal instruments most probably made either of copper or iron.



Fig IV d:Shows an enigmatic engraving seems to be the motif of a spider

Haripuli (HPL):20°32'05"N.Latitude, 85°44'15"E.Longitude.

The Haripuli hill is located near Radhashyampur village in the district of Cuttack. Standing adjacent to the west of the Subasi hill, the Haripuli hill forms the western part of the Subasi Reserve Forest (Fig V a)



Fig V a: Partial view of the Haripuli hill from the site of Bhagi Dehuri Khola and Belasahi Sahara Sahi

It is a block hill of 169m in height. It is covered with several indigenous plants such as trees, shrubs, scrubs and vines. Various plants of edible nuts and berries are also found in its different nook and corners. At places, it is found distributed with rifts, huge boulders, cobbles and angular nodules of sandstones and pebbles of quartz, quartzite and sandstone. It is about 8 km to the northwest of the river Mahanadi from the SiddheswarMundia at Naraj, and almost 1 km to the north of BelasahiSaharSahi- a hamlet of the Savara tribe. Natural water bodies are found all around the landscape in close proximity of the hill. Barajor on



Fig V b: Show the distribution of pebbles of various shapes and a Lower Palaeolithic scarpener on quartzite in front of the rock art site of Haripuli.

the southwest and Sankhajor on the south are the major perennial streams close to the hill.

The surface reconnaissance around the eastern flank of the Haripuli hill led to the discovery and documentation of the complex of the natural rock

shelters along with a peculiar rock art in the form of a petroglyph at one of the shelters on the south. The rock shelter complex with rock art site is located at about 70m to 80m contour elevation on the eastern flank of the Haripuli hill. Though difficult, rugged and narrow, there is an approachable foot track from Radhashyampur to the rock shelter site on the eastern slope of the hill. One can reach the site of the rock shelter through this foot track The open space around the hill slope in front of the rock art site was found to be littered with a number of prehistoric stone tools and river pebbles of quartz, quartzite materials (Fig V b).

However, the surface survey around the site has led to the finding of eight lithic antiquities- seven belonging to the artifacts of the Lower Palaeolithic period and the rest one is of the Neolithic period (Fig V c).

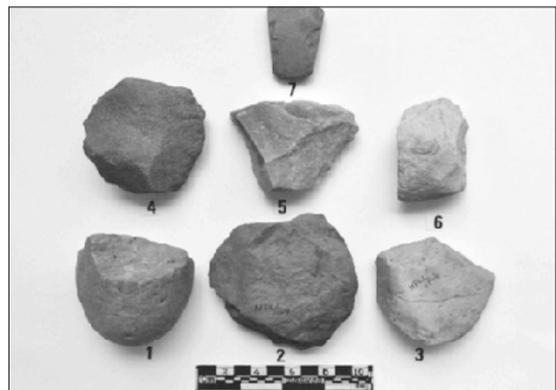


Fig V c: The Lower Palaeolithic and Neolithic artifacts collected from the hill slope in front of the Haripuli rock shelter complex

The Lower Palaeolithic artifacts in the collection include one chopper, one hand axe, three scrapers, and two worked pebbles made of quartzite and sandstone raw materials. The rest one is of the Neolithic period characterized by a complete and fully ground and polished Celt on dolerite and weathered to brown in colour. This was found at a place about 60 m contour height on the narrow and rugged foot track leading to the cave site (Fig VI a).



Fig VI a: In situ evidence of one Neolithic Celt-a small axe at a place on the foot track to the rock shelter complex of Haripuli hill

The surface survey in the area- around the Haripuli hill has also reported a number of prehistoric sites namely, BhagiDehuriKhola, Belasahi-Sahar-Sahai, Cherua, Ghantikhala, Nuasahi Khali Padia, Ramshyampur, Rampei, Sapei, Subarnamanjaripur, etc. (Sahoo and Naik 2013:56-80; Sahoo 2015: *The Tribal Tribune, Vol-7, Issue-2*) which are situated within 500m-2.0km radius around the hill. These sites were reportedly found associated with the artifacts assemblages belonging to the Palaeolithic, Mesolithic, and Neolithic periods. Author has collected a good number of Lower Paleolithic, Mesolithic and Neolithic artifacts from these sites earlier reported (Fig VI b & VI c)



Fig VI b: The Lower Palaeolithic artifacts collected from the prehistoric sites around the Haripuli hill.

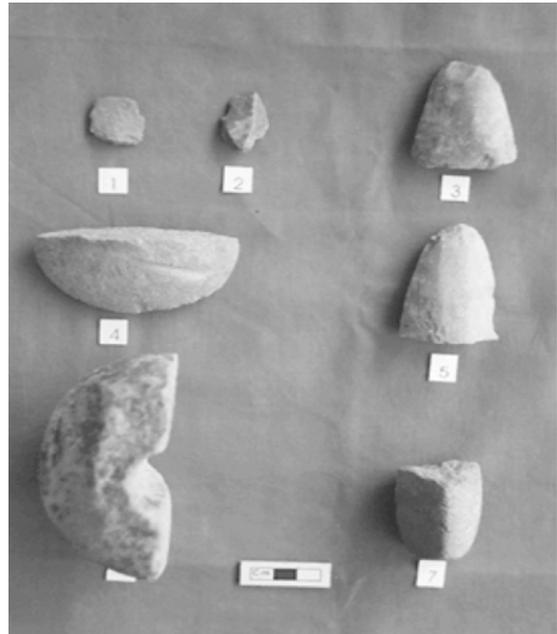


Fig VI c: The Neolithic artifacts from the prehistoric sites around the Haripuli hill

Besides, on the south of the Haripuli, the northern crest of the Chepetihuri or Chepeti Mundia: (20°31'30"N.Latitude, 85°43'55"E.Longitude) in the study area has yielded the evidences of an east facing rock shelter - a natural cave at its last legs on the exposed sandstone rifts, a microlithic industry site belonging to Mesolithic period, a fragment of the Neolithic tool and an early shrine at the site of BhagiDehuriKhola (Sahoo and Naik 2013:65; Sahoo 2015).

Description of Rock Shelter and Interpretation of the Rock Art

From the geological point of view, the rock shelter complex (Fig VII a, b, & c) at Haripuli is certainly a natural cavern with four compartments in one alignment on the sandstone formations of Athagarh Gondwana Basin. The length of the cavity is 34 meters. In height, it decreases from south to north. It is 3 meters at its south, 2.80 meters at its mid part and 1.50 meters at the north.

During the surface reconnaissance, the caves are named as H.P-1, H.P-2, H.P-3, and H.P-4 running from south to north. The cave H.P-1 located in extreme south has its back wall and the ceiling as highly uneven and marked with cracks and falls.

However, its floor is even and intact with slightly polished mark at places. The cave H.P-2 is more spacious than the H.P-1, but shorter. Its floor has a thick deposit of coarse sand possibly because of long weathering of the wall and roof falls. A thick wall of sandstone and huge termite hill stand between the caves H.P-1 and H.P-2. The H.P-3 is a dome shaped cave having a broad orifice and comparatively short and narrow curved inward passage. The inner space of the cave is very dark. The floor of the same has a deposit of soil and littered with some sandstone pebbles and cobbles of various shapes and sizes. It is reshaped latter by a pillar and wall like cement constructions on its front attached to the original wall, which acts as a separator between the H.P-2 and H.P-3 cavities. The H.P-4 adjacent to the H.P-3 is longer than others are, but shorter in height and having an intact rocky floor Fig VIII a).As mentioned earlier the cave H.P-1 preserves a peculiar rock art executed in form engravings of prehistoric nature. It is situated inside the extreme southern wall and close to the floor of the cave H.P-1. The engraving appears to be of a naturalistic and thematic representation with an anthropomorphic and more than two zoomorphic figures (Fig VIII b & 8c). It seems to be an animal with its kid taking rest beneath a tree or involved in grazing in the forest, and a man is about to catch the younger ones.

Fig VII a: One of the rock art shelter (HP-1) in the rock shelter complex



Fig VII a: One of the rock art shelter (HP-1) in the rock shelter complex

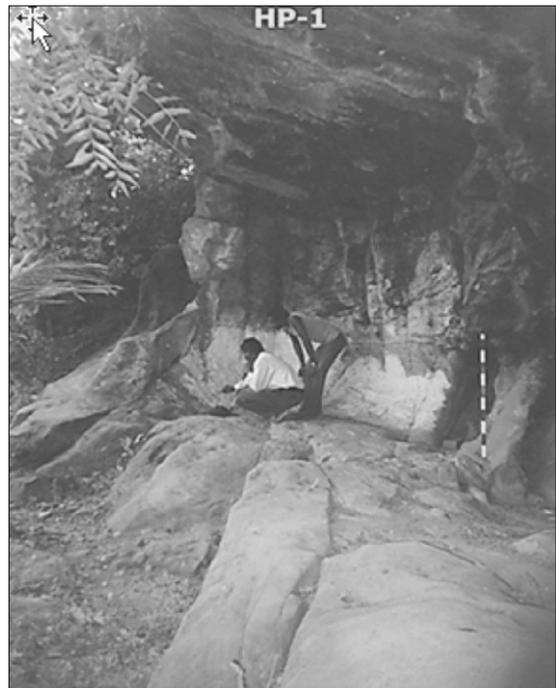


Fig VII b: Documenting the petroglyph at HP-1 on the extreme south of the rock shelter complex of the Haripuli hill.



Fig VII c: Location of the natural rock shelters like HP-2 and HP-3 to the north of the rock shelter HP-1; HP-3 shows the cement construction at its orifice



Fig VIII a: The natural rock shelter HP-4 at extreme north is longer but shorter than other shelters of Haripuli



Fig VIII b: Photograph of the petroglyph at HP-1 on the extreme south of the rock shelter complex of the Haripuli hill.



Fig VIII c: Trace-sketch of the petroglyph at HP-1 on the extreme south of the rock shelter complex of the Haripuli hill

It was made by scooping out of material substances of the sandstone canvas to leave deep visible marks. The lines of the engravings possibly were executed by continuous pecking, scratching and constant rubbing techniques with certain kinds of pointed and sharp implements made of hard rock or bone. The

engraved lines of the engraving chiefly possess 'V' or 'U' pattern cross-section and are without pigmentation. The maximum breadth and depth of the engraved lines of this rock art measures 0.5-3.0cm and 1.0-2.5cm respectively. The engraved lines are mostly irregular in forms, which indicate the rock art is either artistically less developed or weathered due to alternate hydration and dehydration, and oxidation of bonding materials of the rock canvas. The rock art in the rock shelter at Haripuli belongs to the Neolithic period and anyone of the pastoral herdsmen might have engraved these thematic petroglyphs at this place.

Threats to Rock Shelter and Rock Art

As far as the state of preservation is concerned the rock shelters discovered and documented on sandstone hills of Athagarh Gondwana Basin around the delta head are mostly on the verge of destruction and some are already destroyed. Obviously environmental factors like rise of mercury in hot summer, copious rains, thunders and storms, aridity and humidity in climate are the potential threats to the rock shelters, and the rock art within. The anthropogenic impact on such cultural heritage of humankind is also responsible for its destruction. It has been observed from the intensive survey in the study area that, the environmental factors such as hot summer causing dehydration and rains causing hydration have affected the rock shelters. Alternate hydration and dehydration of the rock shelters leads to the accumulation of smoke and dusts as well as oxidation of bonding material of the exposed rock surfaces in the rock shelters at Haripuli and Naraj. In fact, the engraved lines in some of the motifs in the rock art complex of Naraj become murky and are invisible due to accumulation of smoke and dust. Marks of roof falls and even mass falls from the ceilings, walls and facets also found at the rock shelters of Haripuli chiefly because of cracks due to summer heat. Roof falls are also due to growth of some thick rooted plants in the cracks in the roof. Anthropogenic factors such as making fireplaces inside the cave during forest feast, setting fire in dry leaves and twigs littered around the cave site have caused damage to the Haripuli rock shelters. Intense quarrying of sandstone slabs by drilling and by using dynamite are also noticed at the rock art site of Naraj. The rock shelters with rock art are also facing the same fate in other parts of the country. In this regard, the State Archaeology Departments, Archeological Survey of India, Indian

National Trust for Art and Cultural Heritage, National Research Laboratory for Conservation should take up the responsibility for timely conservation of the rock art and the rock shelters of this country before they damaged beyond repair.

Conclusion

Archaeological investigations of the author in and around the delta head of the Mahanadi reveal that there are two natural rock shelters having the evidences of typical rock art in the form of petroglyphs. The ancient rock shelters are naturally formed on the sandstone hills of Upper Gondwana formation in Athagarh Basin (Tiwari et al., 1987) in the district of Cuttack. As mentioned earlier out of these two; one is located on the Mahanadi at SiddheswarMundia near Naraj; whereas the second one is located on the Haripuli hill at about eight kilometres away towards the north of the SiddheswarMundia on the Mahanadi. The shelters are situated in different altitudes. Though both of the rock art sites have some enigmatic engravings, the presence of some zoomorphic and anthropomorphic figures reveals the early artistry in the rock shelters, which express the subsistence strategies of the early inhabitants in the study area. The petroglyphs on the rock panel at SiddheswarMundia were engraved probably by means of a kind of hard metal instrument most probably made of either copper or iron. Based on the styles of execution and the pottery remains obtained from the surroundings of the shelter, a relative date to the engravings may be assigned that could be between the proto-historic metal age and early historic period.

However, it can be inferred that the rock art in the rock shelter at Haripuli belongs to the Neolithic period and anyone of the pastoral herdsman could have engraved this thematic petroglyphs at this place. This presumption is strengthened by the recovery of a fully ground and polished Neolithic tool close to the site and the sites, which yielded the same cultural relic in close proximity around the hill. So far the early habitation of the cave is concerned the availability of the lower Palaeolithic artifacts at the rock shelter is the best evidence to substantiate the fact that the Palaeolithic people had occupied the area at a suitable time of the lower Pleistocene to the middle Pleistocene. Thus, the cave at the site might have occupied firstly by the Palaeolithic denizens and later by the Neolithic people in the Holocene. Geoarchaeological points of view, the rock art sites

at the natural rock shelters formed in the medium to coarse grained sandstones of the Upper Gondwana formation of Athagarh Basin and around the delta head of the Lower Mahanadi Valley could have been occupied by the mankind from the prehistoric Palaeolithic to the early historic through the Neolithic - protohistoric metal age periods. The hypothesis about the human occupation and cultural chronology is purely based on the spatial data whatever gathered from the intensive exploration of the rock art sites. Essentially the rock shelter sites with rock art require further study, planning to systematic excavations at the floor deposits of the same. In fact, excavations of the floor deposits may throw new light on the antiquity and chronology of the site.

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Bio-politics and Bio-citizenship in Health Care at Local Levels: The Story of Sickle Cell Anemia in India

Prasanna Kumar Patra

Abstract

High prevalence rate and poor provisions for health care services for sickle cell anemia among several marginalized communities in India lead some sufferers, community leaders, local health care providers to believe that "it's a poor man's disease" and they are being discriminated against at local and national level ((Balgir, 2000; Patra, 2009). Though the World Health Organization has recognized sickle cell anemia (SCA) as one of the major public health problems in India (Serjeant, 1997; Kamble & Chaturvedi 2000; WHO 2006), the Government of India seems not prepared to accept it. Small scale reporting, lack of documentation, low mortality rate in comparison to whole population size, burgeoning prevalence of communicable and life-style related diseases and lack of fund are advocated as the main factors why the state is not considering sickle cell anemia as a real health problem (Verma & Bijarnia 2002; Balgir, 2002). Several intervention attempts at public, private and individual levels have been at place to tackle the disease at local levels in various parts of the country. In this intervention strategies we see three major players; the people, the state and the intermediaries. In this paper we attempt to explore the 'biopolitics', in other words the various perspectives and contestations over the ways in which disease, morbidity and management efforts are problematized and politicized by different players at different locales with differing social and political settings. We also try to understand how various attempts are made by players in forming political, economic and social networks in order to support the genetic causes and management effort through 'citizenships'.

Key Words : Bio-politics, bio-citizenship, sickle cell anemia, India, Intervention

Introduction

In this section, a discussion on the spread of sickle cell anemia and why it is common (general perception) among the ST and SC has been made. Also it deals with the conception and misconception about it. Then a discussion on how and why intervention programmes are initiated at four different field sites describing social, political and medical contexts has been made.

Sickle cell anemia: the disease and the illness – who suffers the most and why?

The sickle cell anemia (SCA) is a genetically inherited, commonly encountered hematological disorder that causes high degree of morbidity, mortality and fetal wastage. It affects an estimated

60-70 million people all over the world and nearly 20 million in India. As per the reported figures, in India it is the scheduled tribe (ST) and schedule caste (SC) groups that suffer the most from this disease (Balgir, 2005). Out of India's 437 schedule tribe groups, the heterozygote rates for SCA ranging from 15% to 20% are found among 20 groups and it is even higher in certain groups. The reporting of these figures, though sporadic and unsystematic, has been primarily done by physical anthropologists and population geneticists in last several decades that have had academic interest of studying such populations for different reasons at different point of time. In comparison to the STs the prevalence of SCA is lower among the SCs and general caste groups, thanks to lack of documentation and late

interest in these groups by field scientists apart from other reasons such as the epidemiological link of the disease with high prevalence of malaria in the geographical locations.

Excepting the quantitative statistical data, very little is known about the overall health burden or morbidity posed by sickle cell (SS) disease, or for that matter any genetic disease, in India due to lack of proper documentation of the disease profile and also due to lack of political will. The word political will might sound a bit out of the place in what is considered as a 'pure' medical or health care arena. But for many of them who suffer from this common form of inherited disorder of hemoglobin, by matter of chance or destiny, they belong to marginalized sections of the society – the schedule tribe and the schedule caste. For them this is a story more of 'lack of political will' or political bargaining power than of the 'biological' of the problem. Here their biology has a different story to tell than what their social and economic life can tell us.

It is the result of intense selection due to heterozygote advantage against severe forms of malaria, they reach particularly high frequencies for this disease as it is with the Darwin's law of 'natural selection'. Their social and economic conditions makes one

to believe that it is not only their lack of access to basic health care and basic amenities in life but their political will and political power to decide what is good and what do they need.

Ethnography at four different field sites:

In this section, the four sites have been introduced with a detailed ethnographic accounts keeping in mind how two important questions of discussion; *bio-politics* and *bio-citizenship* are taking shape through the interaction between three major players; the people, the state and the intermediaries. Attempt has also been made to show various ethical and social issues involved in the intervention and non-intervention activities with respect to sickle cell anemia.

Here four diverse localities with different types of health care preparedness for sickle cell anemia with differing health care agendas and then analyze the kind of bio-political and bio-social issues they bring about.

(a) Bad blood, the living god and the charitable screening camp: the story from Maharashtra

We are the descendants of the Rajputs (a warrior caste) from Rajasthan, our blood is pure and strong, how can we have such a disease which is related to blood. I do not believe in this medical test (Mr. Mangle Singh, a member of Bhil tribe)

Dr. Kate is like a living God for us, he visits us in every two months, talks to us, gives us some medicine...if I am living today, its because of him (Mr. Manoj Pawara, a sickle cell patient from Dhadgaon).

I feel sad when I think about the future of these people who regularly visit our camp....if we close this programme, which is very likely due to lack of funding, where will they go. It's not about giving them medicine or providing them counseling, it's more about giving them hope (Dr. SL Kate, medical doctor who has been working in this area for last two decades).

I quote these three statements from three different people from my field areas in Dhadgaon *taluka*, which I believe represents the past, present and future situations for general health care delivery system in general and sickle cell anemia in particular. Dhadgaon taluka of Nandurbar district of Maharashtra state has one of the two sickle cell community control programme centers run by the Maharashtra Arogya Mandal (MAM), an NGO based in Pune, some 300 kilometers from here. Out of the estimated one million carrier and nearly 40,000 sufferers in the entire state of Maharashtra some 10,000 sufferers are found in Nandurbar district itself. This district is basically a tribal dominated district where nearly ...% of tribal belonging to Bhil and Pawara community live and an estimated 20-25% of these community members are carrier for SCA and about 0.5% are sufferers. Dr. S.L. Kate, a retired pediatrician from BJ Medical College in Pune has been working in this area for last two decades with a motive to educate tribal people about this disease and to prevent this disease from spreading. Dr Kate started working in this area after being influenced by a social reformer, late Mr. Gujjar who formed the MAM and then he got a project financed by the Indian Council of Medical Research (ICMR) as part of its preventive programme for SCA in high risk tribal populations of Maharashtra. The

main objective of the Community Control Programme is to provide diagnostic facilities, to do population genetic survey, provide health education and genetic and marriage counseling.

In the past, some twenty years back, when Dr Kate started his work among the Bhil and Pawara tribes of Dhadgaon and Dhule area, it was difficult for him to get peoples cooperation to his screening programme as to many it was a threat to their ethnic 'purity' and 'superiority'. A section of the tribe felt that their blood is pure and superior since they belong to the famous Rajaput clan and hence they cannot have any problem in their blood. They refuse to participate in the screening programme and refuse to accept the test result if it is positive. It was not only the feelings of ethnic 'superiority' or 'purity' issue, but taking the genetic risk for kin members and genetic responsibility for the entire community.

Along with inherent backwardness in educational attainment, socio-economic condition and political participation, tribals groups in Maharashtra also face inadequacy in health care infrastructure. There are public run primary health centers in certain tribal belts, where sickle cell anemia is a public health problem with over 30% population having carrier status for SCA, do not have a minimum diagnostics for carrier test, forget about medication, treatment and counseling. In the Dhadgaon Public Health Center (PHC), facilities for simple blood solubility test for SCA is not available. When asked, the Medical Officer in charge of the center denied that it's a real health problem of the area and even she did not acknowledge that the hospital do not have required medical equipments for carrier testing. Rather the officer claimed that only due to the absence of a pathologist they are unable to conduct this test. That is the reason why they refer all suspected sickle cell patient to charitable Sickle Cell camp run by MAM. With the lack of infrastructural facilities at the local public hospital people are dependent on the charitable sickle cell camp since Dr. S.L. Kate is regularly holding this camp and seeing patients in every two months. With the help of an Ayurvedic hospital run by MAM at Pune, Dr Kate and his group have developed an Ayurvedic medicine (*Bilwa*) that aims at improving the level of hemoglobin and give relief from joint pain. No one is sure about the efficacy of this medicine and neither this medicine has been approved by any drug control authority. But, the patients and the MAM team

members think that it really helps in giving some relief to the patients. Dr. Kate and his group provide genetic and pre-marriage counseling to potential carriers and sufferers. For many sufferers, Dr Kate is like a God, not because he has given them free medicine or free counseling but has given them hope to live and confidence to fight the misery. As Mr. Manoj, a sickle cell sufferer who has just been helped my MAM to have his hip replacement operation, puts it "more importantly Dr Kate has united all the sufferers and carriers and made them to feel as a community; a community based on the common denominator that they all share same disease, same pain, same suffering and same fate". Now they feel that this 'bad blood' or 'bad gene' has given them a new identity – the identity of a 'genetic community'.

It is amazing to see how public health care centers in the area pay very little attention to the need of the local people and lack of fund, infrastructure and manpower are cited as major factors for this. Dr. Kate feels that the state government need to have a comprehensive policy programme based on the local health care need. Since charitable trusts cannot afford the expenses and private medical practice may not be profitable in tribal areas as people cannot afford the expenses. Therefore the public health care hospitals need to extend the services. In the past the ICMR and later the state government had some kind of programmes which were makeshift or ad-hoc in nature. Now the MAM is thinking of bringing the programme to a close due to lack of funding. Then it will be a great set-back to the carriers and sufferers for whom this camp is only hope though it is inadequate in many respect.

(b) Screening is panacea, ethics is western and health right is birthright: the story from Chhattisgarh

Chhattisgarh is a state in the central part of India with Raipur as its capital. The population of the state is approximately 20 million with 32.4 % scheduled tribe and 12.2% scheduled caste. Sickle cell anemia is a scourge in Chhattisgarh since long past and approximately ten thousand people die in Chhattisgarh State every year with some or other complications related to Sickle cell disease. The incidence rate of carrier for SCA is 20% among the ST and 17% among the SC and notably the Sahu caste of the state has one of the highest incidence

rates which is 25.7% (Basu, 1994; Kamble and Chatruvedi, 2000, Patra, 2011)

Realizing the enormous disease burden for SCA in this tribal dominated state, the Chhattisgarh branch of Indian Red Cross Society (hereafter the Society) has organized various camps in rural areas and has identified four broad areas of activity in the state in order to control this disease. These activities intend to survey the carriers of the disease in affected castes, sub-castes and tribe through a door to door survey, to create public awareness, to provide treatment and rehabilitation facilities and to do research in areas like genetic engineering, molecular studies and bone marrow transplantation. For this project, the State Branches of Red Cross and the State Government have earmarked Indian rupees 13 lacs (approximately 32,500 USD) and 1.5 crore (approximately 3,75,000 USD) per annum respectively. In its statement paper, the project gives stress on political will from the government in order to tackle the disease in a long run, by citing examples from Fidel Castro's Cuba in dealing with thalassemia and special legislation made In USA for sickle cell anemia. It hopes that with a comprehensive plan of action, as it already has in place and strong political will the spread of this disease can be tackled (Patel et.a. 2000; Kate, 2002; WHO, 2006)

As the four broad areas of activity of the Society explain, it proposes to carry out population screening programme in a basis of door to door survey method. It was not clear if it plans to do the survey in every household in the state or some sampled or selected villages where incidence rate for SCA is reportedly high. The Society, in cooperation with the Government Hospital adopted a village, Chapridi, some 50 kilometers away from the state capital, for population mass screening after it was reported that the predominant caste group of the village, the Sahu, have higher incidence rate for SCA. It is not clear how the Society selected this village for population screening as both the village leaders and the Society members have different opinions. As per the villagers view, it was when they requested the Society to come to their village for mass screening after they found 2 or 3 patients from their village became seriously ill and referred to the District Hospital for blood transfusion and then diagnosed as sickle cell patients. Through the

doctors at the hospital they came to know that it's a genetic disease and it is not limited to the affected individuals only rather relatives and kin members can be carriers or sufferers who need to screened in order to save the whole community from the tentacle of this deadliest killer disease. That ring the bell in the minds of some villagers and they requested the Society to undertake the screening programme in their village to which the village leaders promised to provide all types of support. They did it out of fear for saving their community from this 'deadliest' disease. However, the Society has its own version. It adopted this village Chapridi as a normal part of its programme when it came to know from the hospital record that many referral cases are from that village. The society believes that population screening programme is the first and most important stage in the whole process of health care management for SCA. In practice, when screening programme is done in isolation without being followed-up with awareness, counseling, treatment and rehabilitation programmes as suggested by the Society, it creates more problem than it helps. As the case study from Chapridi village shows, the Society as part of its door-to-door population screening programme, screened around 2300 individuals from Chapridi and its neighboring villages in a three-day camp organized at the village with the help from village volunteers in February 2006. Samples were analyzed in the camp and test results were declared to the village committee four days after. There were 23 sufferers (homozygous) and around 400 carriers (heterozygote) detected from the whole sample. Color cards (different color cards were marked on the basis of genotypic profile) were given to village committee members with instructions to distribute it to identified individuals instead of the standard protocol of maintaining the privacy and giving it secretly to the affected and carrier individuals personally. In a close caste-based society, when the carrier status of the disease is revealed to 'others' that created a sense of stigma and discrimination which many wished to avoid. The Society promised to the village committee members that after the screening programme, identified sufferers will be registered with the Society and will go under regular health monitoring and will be provided with free medicine, health care and blood transfusion when necessary for 21 years. However, in practice when some identified patients suffered from crisis (severe pain)

the Society was approached to render the help that it promised but it failed to fulfill its promises. Rather the diseased individuals were asked to arrange their own travel cost and they were made to wait since morning till evening just for a test without any medicine or any care. For poor people it was wastage of their time, money and labor and more than that it was a great let down.

When I raised this incident with Dr. R Dalla, the Director of Sickle Cell Project Chhattisgarh and Head of the Red Cross Society, instead of being apologetic about their failure to fulfill the promises to the villagers of Chapridi, he said “if people are complaining then it gives me a sense of satisfaction that we have achieved half of our objectives, the objective of igniting the sense of urgency and willingness to fight for their own health right and dignity. People must fight for their 'health right' as part of their birth right”. He further said “I feel that, since people of this area are backward and have limited voice in the policy making their health needs are not reflected in the local health care policy. If they are complaining, then it's a good sign”. When I reminded him of ICMR's ethical guidelines on biomedical research and particular instruction about informed consent and maintaining of confidentiality, he fumed and termed the concept of informed consent as “a western idea” and “it is undesirable in India context”.

(c) Regional disparity and an effort to catch-up: the story from Orissa

Orissa, a state in the eastern part of India, is among one of the backward states in terms of performances on basic health indicators and health care infrastructure. It has nearly 28 % schedule tribe and 12% schedule caste population whose over all development parameters in areas like education, employment and health care is dismally low (Mehta, 2010; Dash, 2013) Sickle cell anemia is one of the major public health problems for many of the tribal groups live in this state. We have selected two population groups, namely the Kondh tribe of Phulbani district and the Agaria caste group of Sundargarh district as the prevalence rate for SCA is reportedly high among these two groups.

Though the prevalence rate of SCA among the Kondh tribe and Pana caste groups of Phulbani district is high, the District Hospital is not equipped

with necessary medical diagnostics to test the carrier and sufferer status of the disease leading to improper diagnosis and treatment for those visiting the public hospital. Since in this area and especially among the STs and SCs getting anemic is common due to lack of proper diet and poverty, people are misdiagnosed and treated for anemia rather than for sickle cell, without proper screening and testing facilities. People with suspected symptoms for SCA are sent to private laboratories for carrier detection test where they end up in spending hefty amount. Sometimes, there is an unhealthy coalition between private pathology laboratories and government medical practitioners who refer their samples and patients to these laboratories. Even in that case only blood solubility test can be done to know for sickling positive status only but not to be sure if it is a carrier (heterozygote) or a sufferer (homozygote sufferer) that can help in proper diagnosis and treatment. As both carrier (heterozygote, who are symptomless and lead a normal life) and sufferers are put together as 'sickling patient' in absence of proper diagnostics available to separate them, it unnecessarily put carriers under stigma and psychological agony.

By and large before reaching the hospital, the poor tribal patient would have to spend all his money and energy in visiting black magician, traditional healer, herbalist and many other quacks on the way in the process. More than the treatment it's the gospel at these places in the form of advice or counseling that the afflicted individual usually encounter. For him the languages of the gospel are different but the meanings are similar. The black magician link his misery to his bad *karma* or for non-propitiation of the local deity, but he mentions that it his evil kin members or relatives who are responsible for his misery and they have propelled some black or bad spirit into his body, into his blood and mind and that bad spirit is giving him pain and misery. The magician then charges some money and material donation as charge for his treatment. The story is similar here at the modern hospital. The doctor or the counselor tells him that it's a disease from family line and his parents and relatives are related with the disease. He can stop this disease from spreading only through avoiding marriage between somebody not having similar problem, problem of 'bad blood'. The misery of the sufferer is immense. A school going child finds it impossible to attend the class when he is under crisis as the pain is unbearable and a farmer

finds it difficult to work in the field if it is during the seasonal change, it not only hampers his social participation or economic production but dampens his sense of being a 'normal' self.

In the state of Orissa, as we already mentioned, we had two study sites, one is at the Kondh tribe and Pana caste dominated Phulbani district and the other at Agaria caste dominated Sundargarh district. These are the three communities (Kondh tribe and Pana and Agaria caste groups) from Orissa with reportedly high incidence rate of SCA. As the medical record of VSS Medical College, Burla shows, the Sickle Cell Clinic has screened 16369 patients for SCA of which 2900 and 1085 have been diagnosed as carriers and sufferers between a time period of eight years, 1998-2006. As per this report the Agaria caste group has incidence rate of 29.23 % for SCA which is one of the highest. The Agarias are once nomadic now settled caste groups inhabit the western part of Orissa and the bordering state of Chhattisgarh. They trace their history and origin to a place in northern India called Agra from where they have migrated to the present location some 300 years back in order to avoid the atrocities by Moghul rulers and possible conversion to Islam. Traditionally they were agriculturist but now they are engaged in various types of occupation. They are divided into 84 clan groups (*gotra*) and practice group endogamy but clan exogamy. Consanguineous marriage is not uncommon among them. They are economically well off community and have a strong socio-cultural network through their Agaria society called activity called 'gudi'. After it became commonly known fact that Agarias are more prone to SCA due to media reports, hospital outdoor records and high morbid conditions of people visible to others in the society, Agarias were concerned and appealed to fellow community members through their *gudi* to avoid marriage between close relatives and encourage inter-caste marriage. There is a common believe among Agarias in the area that they are susceptible to SCA because of their cultural practices like marriage between close kin members.

Dr. Dillip Patel is the Project Coordinator and Principal Investigator of Sickle Cell Research Project at VSS Medical, Burla which is sponsored by the Department of Biotechnology, Government of India who has been asked by the Secretary of Department of Health, Government of Orissa to visit

the neighboring state of Chhattisgarh to study the project plan and prepare a similar for Orissa state. In the past Dr. Patel had requested the state government to fund a comprehensive policy programme for management of SCA in western Orissa, however, the people sitting at the state HQs did not approve his plan because of regional bias as he is from a tribal dominated area and this project is about health of a poorer region to which people at the mainstream have no sympathy. He feels that a mass movement is required to impress the state government to rise up to the demands of the local people and to come out with a comprehensive programme to eradicate this menace.

Prabodh Patel is a 32 years old Agaria male and a practicing lawyer from Sundargarh. He is the only sufferer (homozygous SS) in the family with both parents as carriers and two other siblings normal. He had the first crisis (condition of sickle cell patient with severe pain) when he was four years old and had to take blood transfusion at eight at the Sundargarh District Hospital. When he had acute pain and recurrent crisis, he had to travel to the state capital which is around 500 kilometers from his home town to do the electrophoresis test which was unavailable at the district hospital even if this district has one of the highest concentrations of SCA patients. Even though his family was financially not in a good position, only to keep him alive his parents had to spend all their savings to take him to the state capital Bhubaneswar's Regional Medical Research Center for diagnosis where he was told to be a SCA patient with SS.

He says, "In my eyes I have seen many sufferer dying of this disease because or no or ill treatment. Of course there is no treatment for this disease but if people can be made aware how to change their life style and take some precautionary measures then many of them can live a relatively morbid-free life". He feels that spreading awareness among people is the key in his locality as many people do not know exactly what the disease is and how they can limit their susceptibility from falling under crisis more frequently. He was critical about the kind of information that are spread around this disease in the name of counseling. Many non-Agaria neighbors have the impression that Agarias are morally corrupt and they practice consanguineous marriage which is why incidence of SCA is high among them moreover the practice inter-caste marriage is the only way left

to prevent this disease from spreading. There is a fear, suspicion and distrust among the people about this disease and its management effort by the government.

Being a carrier or sufferer or a member of the family with such individual not necessarily bring stigma or discrimination in closely bounded tribal or caste community. For some people it is part of life and destiny in a natural way to which one should not interfere through any kind of intervention. To them it is partly because life, disease, sorrowness and happiness are effects of one's *karma* and one must accept it as it comes, and the other way of looking at it is our ability and influence to improve the situation. In the case of SCA, in a situation where no remedy or treatment is available for the underprivileged section of the society what is the reason for going for screening and inviting anxiety and misery to life. A similar case was encountered in the village Maheshdih in Sundargarh district. Kumari Patel is a 54 years old widow having four married daughters, out of which three are sickle cell patients with moderate to severe complication history. The youngest daughter Sabi just got married some two months back at the age of 21 years. The grooms family were not told about this status and Kumari also did not felt the need for letting them know about the sickle cell status of her daughter. That could have derailed the marriage negotiation. Her eldest son-in-law who lives with his family with her was a bit secretive in the beginning, but as the discussion went on, had the view that he was aware about the status of his wife's sickle cell anemia before marrying her. Since it was a 'love' marriage (a kind of marriage that is fixed by both girl and boy, opposed to 'arranged' marriage which is fixed by the family or relatives) he did not have any problem in accepting the girl with such background. But generally girls with known history of sickle cell disease status find it difficult to get married off. He does not want to get her daughter screened as he feels without any treatment available for the disease; he does not want to put her and others in family under stress if she is found to be a carrier.

Peoples perception about a matter can change with introduction of a new set of ideas or information. But in what way and form that change will take place depends on factors interwoven in the socio-cultural and economic life of the community to which these

people belong to. Kanak is a 21 years old twice-married-twice-divorced woman belonging to Pana caste (scheduled caste) from Dadki village of Phulbani district in Orissa. She and her younger sister Mamta both are sickle cell sufferer and both undergo severe crisis three to four times a year. They were diagnosed as sufferer at a private clinic in the district HQs by paying Rs.100 (app. 2 Euro) after turned down by the public hospital for not having the proper diagnostics.

(d) A model is how model? The story from Gujarat

Gujarat is arguably the first state in India to incorporate Sickle Cell Anemia Control Programme (hereafter the Programme) in its medical services. This programme which started in 2006 is supposed to be continued for five years and cover four districts; Surat, Navsari, Valsad and Dang which have highest concentrations of tribals in the state. It claims that there are 78 centers including one Medical College, three General Hospitals, 44 PHCs, 29 CHCs and one NGO where primary screening for SCA is available. Valsad Rakdan Kendra (VRK) is an NGO which is acting as the nodal agency and working with the Gujarat government on public-private partnership basis. As per the first year progress report prepared by the VRK, 28,965 individuals have been screened for SCA in the above four districts and 13.1% of them have been diagnosed as Sickle positive and 335 (1.2%) are diseased. It has detected 2,837 tribal people as sickle trait and has also screened 10,021 school children during school health programme and claims to have provided all detected individual and students with genetic counseling and pre-marital counseling. The report also highlights how this Programme will gain scientific and political mileage from the proposed international conference on sickle cell anemia that the state government is going to organized in Gujarat. The idea for which was germinated when the world famous sickle cell research specialist Dr. Graham Sergeant from Jamaica suggested to Dr Yezdi Italia, the Director of the Programme while inaugurating this Programme in Gujarat. Now Gujarat state Programme is regarded as the model programme on sickle cell control initiatives by other states where incidence rate is higher for sickle cell anemia.

One will certainly be impressed by looking at the infrastructure that the nodal centre for this Programme at the VRK in Valsad has. It has modern diagnostics like HPLC that can easily test various kinds of hemoglobin efficiently in minimum time. It is basically a charitable eye hospital and blood bank and one of the centers in the region where screening and counseling for sickle cell anemia is given for quite a long time, even before this Programme started. VRK has already finished another project sponsored by the Indian Council of Medical Research before this Programme. In an average four to five patients visit this center every day for sickle cell testing and counseling after being referred by rural and local hospitals of the district or neighboring areas. A homeopathic doctor cum counselor has been appointed to provide counseling to identified carriers or sufferers, especially those at marriageable age.

The VRK as a nodal agency for the Programme works on many aspects. It conducts screening programmes at its center and through special camps in schools and other centers during cultural festivals in a purpose to detect carriers and diseased individuals, provide genetic and pre-marital counseling and to create a data base on the disease. It provides diagnostic materials to local hospital centers and also conducts capacity building training programmes for medical doctors, pathologists and other paramedical staffs working at the local level.

We visited two local level hospitals, the Public Health Centers (PHC) in the interior areas of the district in order to have a feeling how successfully the Programme is in operation. In one of the PHCs, the diagnostic kits are in unpacked condition laying in the store room for more than four months waiting for the pathologist to be appointed and take charge of the testing or screening programme in the area which is considered to be incidence-rich for SCA. The medical in-charge had the view that, this Programme is not tenable because we have a common problem in the state which is like; "if you have the ear you have no ear-ring to put and if you have got the ear-ring you have no ear to put on". "Now we have got the kit, but the post of pathologist is vacant and no post is being created or filled by the bureaucracy for insufficient fund as the stated reason. By the time we get someone appointed, the diagnostic kit will be damage or the new appointee may not be familiar

with the kit to use". The second PHC did receive the diagnostic kit but the appointed pathologist could not attend the capacity building orientation class in order to make himself capable of doing the test, so the kit is laying unused. So, for sure the kits will be remaining there as show pieces that is of no use for the needy people.

As we mentioned the Programme has counseling as one of its main thrust in the control programme. At the VRK nodal center, counseling is a mandatory ritual that all carriers and diseased individuals are supposed to go through. The main issues that the counselor deals are about criteria of mate selections or rejection on the basis of genotypic profile known through screening, the life style related precautions that one need to take in order to avoid frequently falling from crisis and helping the counselor in mapping out a 'kin-chart' in order to trace who might be the other potential carriers or sufferer in the kin group of the informant on the basis of his or her understanding of the symptoms they are visibly susceptible. It is common to see how people go on charting the map of relatives and kin to whom they think might be possessing a similar genetic risk, so that they can be used as a benevolent intermediaries in introducing them to the 'new technology' and 'new information gateway'.

For the counselor, the job of counseling is sacred and benevolent. But it's not always free from moral dilemma and crisis. Usually it happens that girls and boys under marriage negotiation secretly ask the doctor-counselor to reveal the study result of the would be partner that can help them to take a decision. The doctor-counselor is always in moral dilemma whether to reveal the result that can affect the private life of someone.

Counseling provided by unqualified and unprofessional can sometimes create a major problem. (the story of how a girl in a school underwent depression and failed in the exam after knowing about the test result that she has SCA.)

Discussion on emerging issues

Here in this section, a discussion on the issues of bio-politics and bio-citizenship by taking the examples or ideas from ethnographic data has been made. Attempts have also been made to identify different areas or themes where two issues i.e. biopolitics and bio-citizenship can be drawn. Also, areas such as

disease, morbidity, framing, augmenting and implementation of intervention are also being discussed. In biocitizenship, attempts is being made to figure out how different 'forms' of citizenry are developing within diseased and morbid population, interventionist and state structures. The author would like to admit here that these 'forms' are in rudimentary/elementary stage only, but worth studying.

(1) The People: biopolitics of disease and biocitizenship

While doing fieldwork or discussing with people in the tribal areas especially those who are carrier or sufferer or member of the family with such a background, one is always made to hear statements like; *Sickle cell anemia is a disease of the poor and the tribal*. This statement has many stories behind it rather than the simplistic understanding of SCA as a hereditary blood disorder. In the first place one is overwhelmed to think, when it is an established fact in modern medical science that SCA is a hereditary disorder then why do people associate it exclusively with their living and social condition as poor and tribe. Though it is not factually correct to say that sickle cell anemia is a community or group specific disease, but, its coincidental link with high prevalence and increasing reporting among the STs and poor health care delivery system in areas where they are predominant gives rise to the believe that it is disease specific to this group. The large scale reporting has made a stereotype image that it is tribal disease, though recent studies (eg. Balgir 2006) shows that SCA is higher among the general caste groups than their ST and SC counterparts.

People are faced with constant tension due to the clash between their traditional world view about a disease and illness and the introduction of a new set of modern ideas. Through the process of genetic screening and intervention at the local level people made to believe that it is not in their food, culture or due to non-propitiation of the local deity but because of the 'bad blood' or 'bad gene' that they have in them or that they have inherited from their parents. It does not stop there at parents, the problem is traced further back to previous generations and many more relatives and kin groups are linked into it. People see this disease as something impure and the positive test results for the disorder is something like a threat to their ethnic 'purity' and 'superiority'. We talked

with Dr. Shirole from Pune, who was working as a volunteer at the Sickle Cell camp office at Dhadgaon district in Maharashtra, about the acceptance of screening programme by the local Bhil tribe. He told me that a section of the tribe feels that their blood is superior, they belong to the famous Rajaput clan and so they can not have any problem in their blood. They refuse to participate in the screening and accept the test result if it is positive. They do not believe it.

Being anemic is another indication or identification of being a tribal. It tells more about their health care delivery system as much as it tells about their health status and poor living condition. Most adolescent boys and girls are anemic and it is not considered as a serious matter but a normal condition. In order to encourage the poor tribal children to attend school and to check the increasing drop-out rates the central and local governments introduced many development measures and give free residential accommodation (Ashram Type School) and free mid-day meal. But what the children really get can best be judged from their anemic health condition. Anemia is a common symptom for SCA, however, only a proper test can ascertain if one is a carrier (heterozygote) or a sufferer (homozygote). Private doctors easily label someone as a sickle cell patient by looking at the anemic condition and start giving medications, because anemia is very common in this area and hospitals do not have diagnostic facilities to find out if the anemic condition is really sickle cell or not.

The spreading of 'new genetic knowledge', the hereditary basis of the disease through both directive and non-directive counseling mostly given by untrained and non-professional counselors, in the minds of tribal community, have created more fear and misgivings than anything else about the disease. We encountered a 19 year old *Harijan* (schedule caste) boy, Omkar Parmar in the Sickle Cell camp at Dhadgaon. He has been a regular visitor to this camp for one year and he visits in every two months for health check-up and medicine. He was full with anxiety and nervousness about his 'new' health status, new in a sense that the way he was made to believe about a disease in a novel way. Before we met him this time, he had been taking counseling or guidance from many people, especially the health care providers at the camp. He narrated his story like this.

“I am the eldest among two brothers and my parents put me in a residential school run by the government for poor people. There the food was free but it was unhygienic and sub-standard, so I had to skip my meals very often, then I developed anemic and told by a medical team that I am a sickle cell patient, when they screened the whole school for SCA some four years back. They told me that it's a deadliest disease and I should ask for my partners blood test and sickling status before I knot the nuptial tie. After knowing that I have a 'serious' health problem, I went under depression and did very badly in the class examinations. More to my misery, the girl with whom I was in love, she started avoiding me after knowing my health condition. I felt like committing suicide. But apart from just falling sick once or twice in a year I do not have any big problem. Now I come to this Sickle Cell Camp in every two months, it has given me a new hope. When I see many other people like me come here for regular check-ups I do not feel that I am alone. However, when other people from my village see me coming here and taking medicine, they think that I have some serious health problem. Even some of my neighbors do not allow their children to play with me thinking that they might get this disease from me. I feel very sad. Now I want to encourage more and more people to do their sickling test so that they can know their disease status and take precaution not to fall ill regularly”.

The state: apathy or inadequacy? The biopolitics of number

India's health care system is structurally multifaceted, consisting of various types of providers in different systems of medicine and facilities, and within different ownership structures. Under the Indian Constitution, individual states are given primary authority over most aspects of health care, including public health and hospital. An estimated 80% of public healthcare funding comes from the states. However, the central government formulates comprehensive health policies and plans under the direction of the Ministry of Health and Family Welfare. Items of national importance, including disease control, medical education, the medical profession, and state budgets, are the shared responsibility of the central government and individual states (Mehta, 2010; Dash, 2013)

Ideally the local level health care need should influence the way policy at state or central level are

made and it should be based on thorough investigation. Local level health care need is assessed on the basis of disease load usually measured by the number of death or rate of mortality taken place at a particular time of reference. In practice its not only the death rate that can influence the policy rather it is the card of sociopolitical factor that the local people can play into their advantage to influence the makers of the policy. Look at malaria, polio, HIV-AIDS and even thalassemia, Indian health care delivery system is better prepared to deal with these diseases than SCA. These diseases have created a sense of urgency and importance by virtue of their potential threat for death, high mortality rate and more importantly pressure by the diseased groups/communities. In this regard, SCA though is a public health problem of India, as recognized by the WHO, fails to influence the policy makers to be one of the thrust areas for intervention. Though some 20 million people are potentially carrier for this disease, but the overall mortality rate is relatively very low which might not attract the attention of the policy makers and the general public. But the enormous morbidity burden that each and every individual sufferer goes through in his or her life possesses moral and political questions if the State can continue ignoring it.

The intermediaries: biopolitics of citizenry, solidarity and prospect

If the state is interested in the biopolitics of *number*, the intermediaries are fascinated about the art of *managing* such numbers in giving them a sense of citizenry and manipulating it in the name of better hope through solidarity. For the state, the number is crucial, whether it is the number of death due to a disease or the size of morbid or diseased or potential member of such groupings that counts. The intermediaries give meanings to these numbers. Many medical doctors, project coordinators, interventionists and social activists think that they have to role to play in bringing about changes through their active plan where the people and the state can interact. The intermediaries as interventionist create a sense of power and citizenship in the minds of people by highlighting their health-right as an equal citizen of the state and then solidarity as social rights of the citizen. The case study of Dr. Dalla from the Raipur Red Cross Society shows that he does not care about what people

complain against his Society's false promise about health care but emphasizes that 'this complain' has positive impact in creating the sense that 'health right is birth right'. This is the kind of citizenry and solidarity that intermediaries want to use as tool for bioprospecting in getting state's attention for budgeting and health care.

The case study from Gujarat shows, how intermediaries (Dr. Italia from VRK) could generate support for their project and impress the administration in granting a project through the help of a tribal leader who had a sickle cell patient in his family. The sense of solidarity that a leader could feel as not only the member of the tribe with high incidence but having a diseased person in his family.

The biopolitics of solidarity transcends the local, regional and national political and social boundaries. The intermediaries based at different

locales under various structures and regulations have created a network through sense of solidarity. The intermediaries draw examples, inspirations and supports from each other and share factual and conjectural materials while generating and upholding citizenry and solidarity. For an example, the Gujarat State Sickle Cell Control Programme intends to exploit scientific and political mileage just by organizing the proposed international conference in January 2008 through highlighting its 'statistical' achievements. It aims at not just limiting its 'boundary of solidarity' as well as its 'biopolitics of prospects' up till a state level but to spread it to national and international levels. Intermediaries at other locales idealize the Gujarat Programme as a model and are trying to replicate it in their localities, which provide intermediaries in Gujarat scope for bioprospecting through solidarity.

Table I : Five locales in four states: Interventions and the notion of risk

<i>State</i>	<i>Chhattisgarh</i>	<i>Gujarat</i>	<i>Orissa</i>	<i>Maharashtra</i>
Location	Arang block of Raipur district	Valsad	Sundargarh and Phulbani districts	Dhadgaon tahsil of Nandurbar district
Type of communities covered in our study	Sahu Teli (schedule caste)	Dhodia tribe	Agaria caste and Kondh tribe	Bhil and Pawara tribes
Frequency of SCA (carrier and sufferer) with source	25.7 % (Indian Red Cross Society, 2006)	17.84 % (Feroze and Aravindan 2003)	29.0 % and 11.21% (Agaria News 2002) and (Feroze and Aravindan 2003)	20.0% and 25.0% (Kate and Lingojar 2002)
Organizations involved	Indian Red Cross Society and Government of Chhattisgarh	Valsad Raktadan Kendra	Burla Medical Hospital (BMC) and Sundargarh and Phulbani District Hospitals	Maharashtra Arogya Mandal
Intervention strategy (facilities available)	Door-to-door population screening	Screening and counseling	No strategy. At individual initiatives only.	Screening, and treatment
Laymen's perception of risk	- Social and community norms to participate in mandatory screening camps.	- Discrimination on the basis of carrier status - Therapeutic gap	- Clash of modern and traditional basis of illness understanding - Stigma and discrimination - Therapeutic gap	- Stigma and discrimination - Loosing dignity for community
Experts perception of risk	- The widespread carrier in the whole state needs to be prevented through peoples cooperation. - Regulating marriage patterns in a short time frame.	- Dissemination of risk perceptions among the community - Regulating marriage patterns Is the key	- No proper health care planning at local level leading to increase in disease load. - Lack of funding for basic and applied research - Dissemination of risks involved among the community	- Lack of funding - Need for counseling - State's inaction
Agency	- Village committee members and leaders are taking proactive steps to make the screening a compulsory in their village	- Tribal leaders taking initiatives in influencing the local administration	- Individuals who are aware about treatment efforts are taking proactive actions. - Community members (eg. Agaria) put moral pressure	- Individuals supporting the programme - Charitable trust and NGOs are involved, but, no state agency.
Category of risk (major challenges)	- Medical risk - Interpersonal risk and - Community management risk.	- Interpersonal and - Health management risk	- clash between tradition and modern - lack of basic health care services	- Providing proper counseling facility - Lack of state's support

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Patterns of Population Sub-structuring among the Chaudhari Tribe of Southern Gujarat

Priyanka Khurana

Abstract

The present study was undertaken to understand the extent of genetic differentiation among the four sub groups of Chaudhari tribe of Southern Gujarat using autosomal markers. As per the ethno historical account of the tribe, Chaudhari tribe is subdivided into four subgroups namely Nana, Mota, Pavagadhi and Valvi Chaudhari having complexity of interactions. The findings reveals considerable degree of correlation between the ethno-historic details of the tribe pertaining to its population dynamics with the molecular genetic results. However, the results still need more validation by screening the population with more number of molecular markers.

Keywords : *Tribe, Chaudhari, autosomal markers, Genetic affinity*

Introduction

India is a land of diversity. It is the second most populous country in the world (Census of India, 2011). The present day Indian populations consist of approximately 50-60 thousand essentially endogamous groups with isolated gene pools (Gadgil and Malhotra, 1983; Joshi et al., 1993). These groups not only exhibits similarities and disparities with respect to their socio-cultural attributes but also they are marked with discreet genetic architecture by virtue of following strict rule of endogamy. In addition trends of immigration and emigration have also contributed differentially to the overall genetic and socio-cultural structure of Indian populations. This diversity within Indian population provide immense scope for testing many hypotheses in order to gain meaningful insights about the origin and histories of its present day populations along with role of micro-evolutionary forces.

It is in this context, Chaudhari tribe residing in the Surat district of Southern Gujarat was taken up for studying pattern of genetic variation. Chaudhari is one of the indigenous tribal groups of Gujarat, which presents unique population structure. The tribe is subdivided into four major subgroups namely, Mota Chaudhari, Nana Chaudhari, Pavagadhi Chaudhari

and Valvi Chaudhari. Inter subgroups marriages are discouraged between these subgroups. Therefore, each subgroup can be considered as an independent Mendelian population. The present study is an attempt to understand the pattern of population differentiation and dynamics within the Chaudhari subtribes in the light of their ethno-historic and

Methods

A total of 193 samples were collected which include 50 blood samples from Mota Chaudhari, 52 from Nana Chaudhari, 41 from Pavagadhi Chaudhari and 50 from Valvi Chaudhari from 29 villages of 3 talukas namely Mahuva, Mandvi and Umarwada of Surat district Gujarat and 4 villages of Vyara taluka of Tapi district. Five milliliter intravenous blood samples were collected by a trained medical practitioner from randomly chosen unrelated individuals from the study populations with prior informed written consent.

After isolating DNA from the collected blood samples using the salting-out method (Miller et al. 1988), the samples were screened for seven autosomal loci. For statistical analysis Allele frequencies were calculated from the genotype data followed by testing Hardy-Weinberg equilibriums using the chi-square goodness-of-fit test. Average

heterozygosity, gene diversity measures, genetic distance and Neighbor joining tree was computed were computed following Nei (1973) using DISPAN Software.

Results

Table I presents the allele frequency data for seven loci screened for the study groups. In all the markers except CD4 the frequency of insertion allele is mentioned whereas in case on CD4 deletion allele frequency is mentioned.

Table I: Allele frequency distribution for seven autosomal loci along with number of chromosomes tested among the four Chaudhari subgroups.

Marker	pv92	2n	APO	2n	CD4	2n	FXIIIB	2n	D1	2n	ACE	2n	PLAT	2n
VC	0.43	100	0.65	100	0.92	100	0.55	100	0.459	98	0.55	100	0.64	100
NC	0.373	100	0.775	102	0.951	102	0.627	102	0.329	102	0.618	102	0.64	100
MC	0.3	100	0.7	100	0.9	100	0.22.0	100	0.31	100	0.58	100	0.56	100
PC	0.5	82	0.768	82	0.927	82	0.573	82	0.354	82	0.561	82	0.622	82

VC=ValviChaudhari; NC=Nana Chaudhari; MC=MotaChaudhari; PC=Pavagadhi Chaudhari

2n = no of chromosomes tested

The allele frequency estimates at the examined loci were subjected to chi-square goodness-of-fit test to check deviation from the Hardy-Weinberg proportions (Table II). The overall pattern of genotype distribution was found to be in accordance with the Hardy-Weinberg expectations except at FXIIIB locus in all the population, at D1 locus in Nana Chaudhari. Since multiple statistical tests were being performed simultaneously on each population, Bonferroni's correction, an adjustment made to p value, was applied to avoid false positive results

Table II: Chi square (χ^2) test for estimation of Hardy-Weinberg Equilibrium the four subdivisions of Chaudhari population

Locus	χ^2 Estimates			
	Valvi Chaudhari	Nana Chaudhari	Mota Chaudhari	Pavagadhi Chaudhari
PV92	0.189	0.002	1.021	0.024
FXIIIB	7.759*	12.582*	21.147*	12.464*
D1	7.211	17.675*	0.016	1.635
APO	0.489	0.226	2.834	2.490
ACE	4.902	0.104	1.601	1.769
CD4	1.707	0.135	0.617	0.255
PLAT	4.562	0.086	1.773	0.008

* χ^2 statistically significant at pcorrected < 0.007, df=1, after applying Bonferroni's correction

The heterozygosity analysis revealed overall moderate heterozygosity level in all the four groups, ranging from 0.439 in Valvi Chaudhari, followed by 0.419 in pavagadhi chaudhari and almost similar heterozygosity levels (0.399) among Nana chaudhari and Mota chaudhari.

Table 3 presents the gene diversity estimates based on examined loci in Chaudhari subgroups. Gene diversity analysis in the four subgroups revealed an overall high levels of heterozygosity ($H_T=0.421$). It was observed that on an average each subgroup harbored significant amount of heterozygosity ($H_S=0.409$). Estimate of inter population difference (G_{ST}) was found to be 2.60%. The four populations seemed to differ most at FXIIIB locus ($G_{ST}=10.20\%$) and least at ACE locus (0.20%).

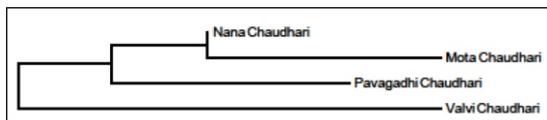
Table III: Gene diversity estimates at the studied loci among the four subdivisions of Chaudhari population

Locus	H_T	H_S	G_{ST}
PV92	0.480	0.469	0.023
FXIIIB	0.500	0.449	0.102
D1	0.471	0.465	0.0143
APO	0.400	0.395	0.013
ACE	0.488	0.487	0.003
CD4	0.140	0.139	0.005
PLAT	0.473	0.471	0.005
All loci	0.421	0.409	0.0260

Table III presents the gene diversity estimates based on examined loci in Chaudhari subgroups. Gene diversity analysis in the four subgroups revealed an overall high levels of heterozygosity ($H_T=0.421$). It was observed that on an average each subgroup harbored significant amount of heterozygosity ($H_S=0.409$). Estimate of inter population difference (G_{ST}) was found to be 2.60%. The four populations seemed to differ most at FXIIIB locus ($G_{ST}=10.20\%$) and least at ACE locus (0.20%).

To find out the genetic relation among the study groups, genetic distances were computed based on the observed allele frequencies. The dendrogram (Figure 1) generated using the data indicated the genetic proximity between Nana and Mota Chaudhari by clustering the two populations in one group.

Figure 1: Neighbor-Joining tree showing genetic relation between the Chaudhari subdivisions



Discussion

The Chaudhari tribal group of Southern Gujarat was taken up for studying their population dynamics from genetic variation perspective in the light of their ethno historical cultural history. Chaudhari tribal group, under current investigation residing in the Surat district of Southern Gujarat has interesting features of internal population sub-structuring into four endogamous groups with complex subgroups interactions. Extensive interviews with the elders of the Chaudhari community and information obtained from secondary sources suggest that the Chaudhari tribe is subdivided into four endogamous sub tribes namely, PavagadhiChaudhari, Nana Chaudhari, MotaChaudhari and ValviChaudhari in decreasing order of social class. PavagadhiChaudhari traces their descent from the immigrants of North Gujarat who fled from Pavagadhi region following Muslim invasion in 1484 (Bhatt, 1985; Singh, 2003). This founder population established a small colony in Mahuva district of Surat and married local Chaudhari women. On the other hand, Nana, Mota and Valvi Chaudhari are considered to be subdivisions of Chaudhari populations indigenous

to the area. In the present study, all the subgroups were observed to have many similarities in their way of living and customs, except certain death rituals practiced by Pavagadhi Chaudhari which indicates that their connection with Northern Gujarat Rajput communities is not so improbable. It was also noticed that Valvi Chaudhari has high influence of Christianity as compared to other groups. High incidences of marriages with other tribes were also noticed among them.

The molecular data analysis based on the screening of seven autosomal loci examined in the study populations provided useful insights into understanding the population structure and genetic micro differentiation among sub-structured local populations. Considerable amount of correlation between social/ethno-historical and genomic data was observed as reflected from their heterozygosity analysis where almost similar heterozygosity levels were observed among Mota and Nana Chaudhari population. Likewise the genetic distance and the Neighbour joining tree construed on the basis of the observed genetic values also suggest genetic proximity between Nana and Mota Chaudhari groups. Thus though, on social scale Chaudhari tribe is subdivided into four major sub tribes but at the genomic level three broad subdivisions were identified. Considerable genomic affinities were observed between Nana and Mota Chaudhari indicating towards their common gene pool whereas distinct genetic structure of Pavagadhi and Valvi Chaudhari was noticed. However, these results needs further validation by screening more number of autosomal markers as well as both mitochondrial and Y chromosomal markers to construct the population history and structure of Chaudhari tribe firmly.

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carrying out the work.

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The Problems of the Rickshaw-pullers in Odisha: An Analysis

Shiba Prasad Behera¹ and Jagannath Dash²

Abstract

Rickshaw-pulling was a well-coveted job for the illiterate poor in the past. At the advent of modern auto-rickshaws the poor rickshaw-pullers are facing a lot of socio-economic crises to-day. The present paper has discussed all such problems with specific reference to Odisha in all its western, eastern, southern northern and central zones empirically. The paper has also suggested few remedial measures basing on the ground realities of the rickshaw-pullers to-day.

Key Words : *Rickshaw-pullers, Socio-economic problems, Illiteracy Poverty.*

Introduction

Heterogeneous traffic streams that contain both motorized and non-motorized vehicles are becoming more common in urban areas of India. These streams contain motorized standard vehicle types such as private cars, buses and trucks, as well as nonstandard vehicles such as rickshaws, bicycles and other vehicular forms. These non-motorized vehicles play a major role in meeting the demand for door-to-door transport services in cities. In India for a long time, popular non-motorized transport includes mostly rickshaws. These modes performed an important role in moving people and goods safely, efficiently and cheaply. Rickshaws are mainly a mode of human-powered transport where a runner draws a three-wheeled cart, which accommodates one or two persons for seating (Carrin, Elinor and Almeida, 1998). Everyone will agree that the rickshaw is environmentally friendly as well as most convenient mode of transport in the urban and semi urban areas. In every town and city, there are rickshaws plying on the road from the dawn to midnight to carry passengers and in some cases to carry goods. Generally, they remain waiting for the passengers at the places kept reserved for their parking in town area. There are rickshaws plying on the roads all over the day and night. The pullers of this mode of transport are basically from poor family backgrounds who are uneducated or school dropouts (Venkataramiah, 2007). In India, specifically men

are engaged in this profession of pulling rickshaws but in some other foreign countries it is the profession engaged by women. Rickshaws are relatively cheap and very handy for short distance travel, where neither Auto rickshaws nor taxi drivers would agree to drop the passengers and goods.

Although the rickshaws are very essential for a small capital city like Bhubaneswar or other towns of Odisha but the policy makers as well as society are not very much concerned about the status of the pullers. The rickshaw pullers are unorganized and for this reason they have less bargaining power to get their genuine demands fulfilled. As a consequence, they are suffering a lot to earn their livelihood whatever they receive by carrying passengers and/or goods from one place to the other. There has been a constant decline in the number of rickshaws due to the advent of auto rickshaws. But the noise and dust created by these vehicles make the life of the city dwellers very troublesome and painstaking. Cycle rickshaws are seen in almost every nook and corner of the state as well as county. And when one looks at the rickshaws closely we see great variation in their design and look from region to region. Structurally some are narrow, some are wide, and a few have a covered top while at many places the top has been done away with as per the comfort of the passenger. Ornamentation and decoration of the rickshaws also varies from region to region. On three zones except costal or eastern zone and central zone, the impact of

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the neighbouring states are also marked on the design.

Most of these rickshaw pullers are very poor and have little education and few skills. Rickshaw pulling provides them with relatively easy access to the urban labour market, and an escape from extreme rural poverty. But the insecurity of the occupation which is related to the extreme competition due to modern motorized conveyance and in the context of poverty as well as malnutrition, which result in high vulnerability to health shocks in the long run (Begum, Sharifa, 1996).

This paper is based on data collected from among the current rickshaw pullers in different zones of the state of Odisha, India. In the study, we have collected the required data necessary to examine the current situation surrounding the persons engaged in the sector and their family members. The study is based on a sample of 500 current rickshaw pullers at the time of the survey (2015-17), who were all living and counting their occupation in five zones of Odisha (namely, Bhubaneswar in eastern zone Bargarh in western zone, Berhampur in southern zone, Koraput & Joypore in southern most zone, Balasore in northern zone and Dhenkanal in the central zone). A multistage stratified purposive sample was drawn from different points and all age & caste groups were included for study. Secondly, selected rickshaw pullers were interviewed using a more detailed structured schedule. For this purpose, we have divided Odisha to get a representative sample from all the zones of the state. In this research study, sample was chosen in such a way, that it could represent the whole study area.

Objectives of the Study

The study has been made to fulfil the following objectives:

- 1) To know the socio-economic background and caste status of the rickshaw pullers in different zones of Odisha.
- 2) To examine their income and expenditure pattern for the maintenance of rickshaw as well as family. Their literacy or educational status have been also enquired.
- 3) To assess the remedial measures taken up by the Government as well as the NGOs for minimizing their problems

Historical Background

The word "rickshaw" originates from the Japanese word *jinrikisha* (*jin* = human, *riki* = power or force, *sha* = vehicle), which literally means "human-powered vehicle".

The identity of the inventor (if there was one) remains uncertain. Some American sources give the American blacksmith Albert Tolman, who is said to have invented the rickshaw around 1848 in for a missionary; others claim that Jonathan Scobie (or W. Goble), an American missionary to Japan, invented rickshaws around 1869 to transport his invalid wife through the streets of Yokohama and the name is said to be derived these from the Japanese expression "*jinrikisha*", which means literally 'human-powered vehicle'.

Around 1880, rickshaws appeared in India, first in Simla and then 20 years later in Calcutta (now Kolkata). Here they were initially used by Chinese traders to transport goods; in 1914 the Chinese applied for permission to use rickshaws to transport passengers.

In India, the term rickshaw usually mean as to cycle rickshaws. In cities where both rickshaws and auto rickshaws are present, the term auto is often used to refer to the auto rickshaw to avoid confusion. The cycle rickshaws are famous for their weird looks and excellent customer satisfaction. Cycle rickshaws are still very much common in India as well as Odisha. Rickshaws are also today present in all parts of South, North, West and East India.

In Odisha, the term rickshaw usually refers only to cycle rickshaws. Because of modern amenities for conveyance, their number is decreasing day by day. The rickshaws are famous for their weird looks and good customer satisfaction and pollution free technology.

As a backdrop to the study, it is useful to have an idea of the place that cycle rickshaws occupy in the larger context of transport in cities. Our focus is on automobiles and cycle rickshaws, which are the predominant modes of transport.

Since the country was embarked on the policy of economic liberalisation in the early 1990s, cities have seen a phenomenal growth in the number of automobiles as means of public transport such as taxis, buses and auto rickshaws. Apparently, the city

has a demand for these modes of transport and there are people to meet the demand. These developments in the modern modes of transport have not, however displaced the traditional mode of cycle rickshaws.

Odisha's population at the time of the last census in 2011 was 4.2 Crores. Odisha is one of the large provinces of Indian union situated at the eastern cost of Indian peninsula. Bhubaneswar is its capital city and is a favourite tourist destination as well as a business centre. Traffic congestion has been a serious problem with all its cities. With the rapidly growing population and consequent vehicle increment, the problem is worsening day by day. A number of countermeasures have been undertaken in different times to alleviate the severity of traffic congestion.

At the present stage of Odisha's development, cycle rickshaws still remain as a prevalent mode of transport in the urban and semi-urban areas. The cycle rickshaw, which is a modified tricycle, is used extensively as a mode of transport for carrying passengers and luggage. The capital city, major business cities and tourist destinations are still served by rickshaw pullers, though in decreased number. Rickshaw pullers can be easily seen transporting people in residential colonies, railway stations, bus stands and also in its outskirts.

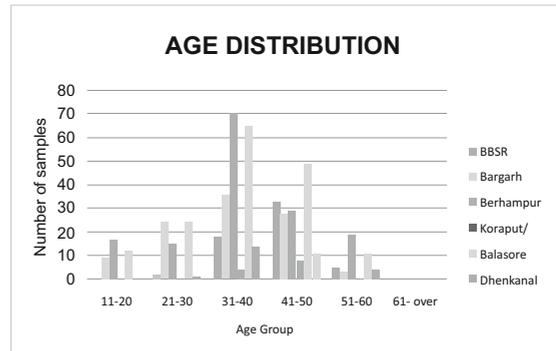
As suggested above, the occupation of rickshaw pulling in the major cities of Odisha has been viewed as a convenient and suitable occupation for the villagers who migrate to the city temporarily-or for a long-term settlement. Locality and caste bonds and bonds of kinship and friendship have been shown to operate here and thus help cementing a heterogeneous assemblage of rickshaw pullers into a neighbourhood in formal group.

For regulatory purposes, automobiles fall within the jurisdiction of the Transport Authority of the Odisha Government, cycle rickshaws fall within the jurisdiction of the local body, namely the Municipal Corporations.

Profile of the Rickshaw pullers in Odisha

The age distribution of the rickshaw pullers, which is a principal demographic feature of emigration and also have marked effect on the city itself. The population of the sample rickshaw pullers may be divided broadly into three groups, the young adolescent, the youth and the old.

There is a popular believe, rickshaw pulling is an occupation neither for the faint-hearted nor the elderly. The hard work called for physically strong men and preferably young when they are still in the prime of their life. Graph mentioned below gives a picture of the age wise distribution.



It is observed from the above graph that 18.6% of the rickshaw-pullers are quite young and between the age of 11 and 30 years. More than 91.6% of the samples are below 51 years of age, and only 42 (8.4 %) are above 51 years of age.

The age profile indicates that rickshaw pullers are primarily concentrated in the age group of 31-40 (41.4%), dropping sharply after age 51. Yet, about 8.4% of the sample rickshaw pullers is aged 51 years or above. The majority of the sample rickshaw pullers are young. As shown in graph above, 41.4% of them belong to the age group of 31-40 years. The average age is 14 years, the minimum is 14 and the maximum is 60. None of them are below 11 years of age. Thus, although the children and young adolescents are sometimes visible as rickshaw pullers, they may not actually make up a large proportion of total rickshaw pullers.

A substantial (7.6%) among 11-20 year old children of the sample rickshaw pullers work regularly or pull on irregular basis. From this figure it appears to be a strong attraction to cycle rickshaw plying among the young adolescents and other members of the families of the samples. The labour-force participation of adolescent children, particularly of sons, is quite satisfactory in the sense that almost all are employed regularly in some economic activity as occupational choice is poor. Given the educational background of the adolescent children, this is to be expected. Three major economic activities, employing more than 90 per cent of adult sons, are:

skilled and semi-skilled labour (e.g. masonry and carpentry); wage work in the agricultural and non-agricultural sectors; and occupations such as rickshaw pulling and van/pushcart driving. These occupations provide neither sufficient income nor livelihood security. The occupational profile of the rickshaw pullers' children indicates little likelihood of upward mobility.

On the other hand, it is also observed that very young adolescent and youth are being compelled to rickshaw pulling under desperate conditions, but not easy for them to productively engage in rickshaw pulling as a result most of them are engaged in other activities as well. According to the rickshaw pullers, a sizeable number of them had left rickshaw pulling.

Hence, policy interventions should focus on these pullers through programmes that, for example, provide credit, training and information, who are exiting from rickshaw pulling at a relatively early stage of involvement. It is those 'early-middle duration' rickshaw pullers(i.e. in the occupation for 5-10 years, aged between 18-40 years) have the best chance to succeed in finding alternative jobs that are more remunerative. But those rickshaw pullers who are involved in pulling for more than 15-20 years may not be interested in any other alternative livelihoods.

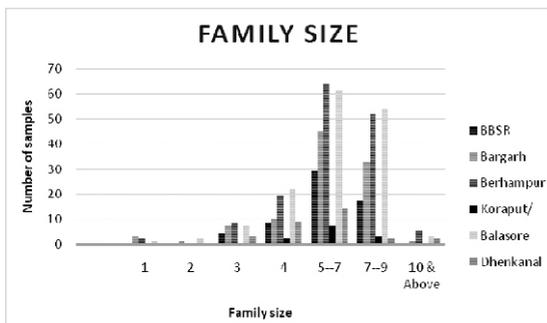
numbers of pullers (2.2 %) are having 10 & above family members, in the entire sample. There are 3 sample households with a nucleated structure with a married couple living in each, and again 99 nuclear household having 2-3 members excluding the head. The average rickshaw pullers supports seven persons, including him. Nearly 381 out of 500 sample rickshaw pullers have an average family size of 7 which means a huge people directly depend on the rickshaw industry for their survival.

To summarize when rickshaw pullers are asked regarding their number of dependent family members and I have observed that they are overburdened with the number family who are dependent upon them. Out of the sample respondents, only 6 (1.2%) rickshaw pullers are unmarried but they are to maintain their parents and siblings with their hard earned money. The married person are managing their micro or macro family and normally they need face much financial hardship and when any family member falls sick they suffer a lot because of higher medical expenditure.

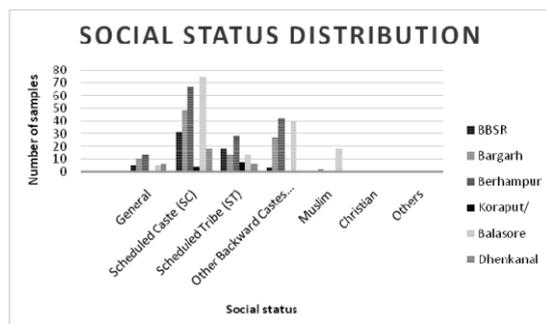
Social Status of the Rickshaw Pullers

In general, the rickshaw pullers come from very poor origins, both in terms of human capital assets and in terms of household physical capital assets. In both respects, rickshaw pullers belong to one of the most deprived social categories.

The chart mentioned below presents the social status of the sample rickshaw pullers. Our data on the socio-economic characteristics of rickshaw pullers indicate that they including the ones who are settled in the town as well as the migrants from the neighbouring rural & tribal areas, overwhelmingly belong to the scheduled castes and tribes and other backward castes.



The more common family size of the rickshaw pullers, both migrant and resident, has been found to range between 05-09 persons (76.2 %) including the members living at their original habitat for whom the respondent feels responsible. The difference between family size among the migrants and the residents is very small and statistically insignificant. When we see the above graph of the size of the family of the Rickshaw pullers, we find that most of the families have got either 5-7 or 7-9 members. 11

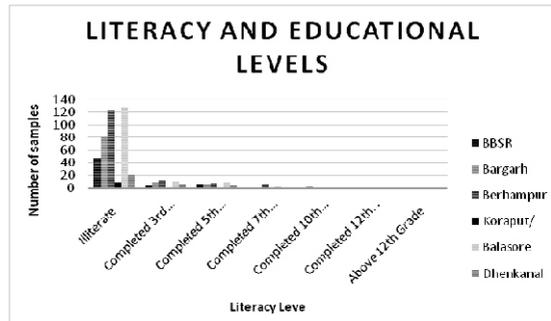


It appears from the above chart that a sizeable or most of the rickshaw pullers are drawn amongst from scheduled castes. Out of a total sample rickshaw pullers of 500, they comprise of as many as 242. Out of the total number of respondents, as many as 95.8% happen to be Hindus and only 4.2% belong to the Muslim community. There are no rickshaw pullers in our sample belonging to other communities such as Christians and any others. Among the Hindus, 48.4% belong to the lower castes, designated as Scheduled Castes, 17% belong to the Scheduled Tribes and another 22.4% belong to the Other Backward Castes. Thus, taken together, 95.8% of the total population of migrant and resident rickshaw pullers considered in this study belong to the lower rungs of the society with 8% presence of the general caste among them. Thus, we can surmise that rickshaw pulling as an economic pursuit or as an occupation is attacked only by the lower caste category of people.

In a society which is as Caste-ridden and as hierarchy conscious as that of Odisha, we find very few occupation's which is in a sense caste-free, that is open to choice by any caste. Agriculture has been one such caste-free occupation, even in ancient India. At this juncture Rickshaw pulling within the towns appear as a Caste free urban occupation, which is not too low in social estimation, and definitely higher above the unskilled labor of earth work domestic work or unskilled construction work etc. The able bodied or not not-so-very-able-bodied villagers, who migrated to the towns seasonally or for a period, find Rickshaw pulling occupation not derogatory to their caste status.

Indian government defines literacy as the ability to read and write, which is similar to UNICEF's definition. The National Literacy Mission defines literacy as acquiring the skills of reading, writing and arithmetic and the ability to apply them to one's day-to-day life. Any formal education or minimum educational standard is not necessary to be considered literate. But the below graph represent the educational status of the sample rickshawpullers as per numbers of year completed in school or not.

The literacy graph shows that out of a total population of 500 only 92 have attended schooling education. This means that the literacy rates among rickshaw pullers is only 18.4%, out of which 8.4 are



semi-educated, having never completed primary level education (i.e., about five years of schooling). This however shows a very low rate of literacy. Large sections of rickshaw pullers are mostly uneducated about 81.6%. Only 1.2 per cent reported having finished high school education.

Overwhelmingly rickshaw pullers belong to the scheduled castes and tribes, minorities and other backward castes. Given their low social standing, it is not surprising that their educational attainments are very low. Among the subcategories, the incidence of illiteracy is highest among ST and Muslim rickshaw pullers. In the areas of primary and middle education, the incidence of SC rickshaw pullers is higher compare to all other groups. Rickshaw pullers who have joined the occupation relatively recently (in the last five years) come from higher educational backgrounds than those who have been pulling rickshaws for 15 years or more.

Rickshaw pullers are mostly illiterate or school dropouts. After studying up to class III or V they could not study further because of poor economic condition and in some cases for lack of guidance from their parents and other well-wishers. Although some of them are literate but with their level of education they could not enter into other jobs and ultimately they joined this occupation. Easy availability makes rickshaw plying an easy and attractive option for such illiterate and semi educated poor who are in search of an opportunity for earning their livelihood. This activity does not require any particular type of skill nor does it call for any initial investment on the part of the pullers. In our sample size we have found six has passed HSLC examination. It appears that few of the rickshaw pullers are having some education so there is scope to train them up to make them more successful in this occupation.

There is some indirect evidence collected during the survey shows that the educational profile of the rickshaw pullers' children is also disappointing, and shows very little improvement over that of their fathers. At the time of the survey we found that children are required to work to supplement household income. In other words, the survival needs of the migrant or urban poor may relegate children's education to a secondary concern within the household. There may be several other factors underlying this low level of educational outcome among children.

Migration Status

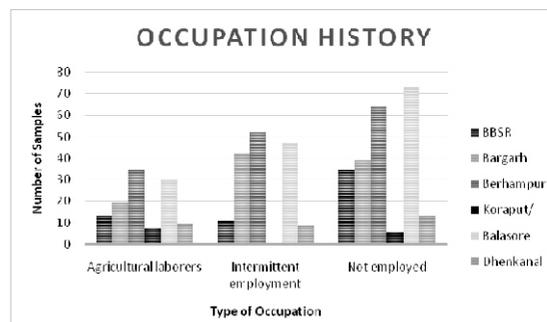
Size of population in a region at a point of time is the result of births over deaths and in migration over out migration. Migration of people from one region to another is caused by many factors such as economic, social, political, environmental etc. Migration during normal times is mainly influenced by the differentials in socio-economic considerations in different regions. In case of economic migration, a person migrates only if he/she is relatively benefited by Migration from one region to other. Relative benefit is expected to give not benefit rather than more relative gross benefit.

There are various types of factors, which are responsible for the migration of the rickshaw pullers to the city. The factors may be broadly categorized into two: push factors and pull factors. The factors or causes, which make or compel the rickshaw pullers to leave the villages and come to the city, are called as push factors and the factors or causes which make and attract the rickshaw pullers to come over to the city known as the pull factors.

The main causes which push the rickshaw pullers from their native village to the nearby city or town to ply rickshaws are the economic instability, low wage in the village, landlessness, the oppression of the landlords over tenants and above all due to non-availability of sufficient wage work. On the other hand, the pull factors which makes the rickshaw pullersto come over to city are mainly the persuasion of their relative and friends who ply rickshaw in the city and are better up than what they were in the village, to and more money, in some cases to search for a job, while still in some other cases they come over just to lead a "city life".

It would be worthwhile to analyse the pattern of the

previous occupation of the drivers with a view to finding out the type or class of persons who take the cycle Rickshaw plying, voluntarily or otherwise. Such an analysis of the Rickshaw pullers though limited utility is still informative.

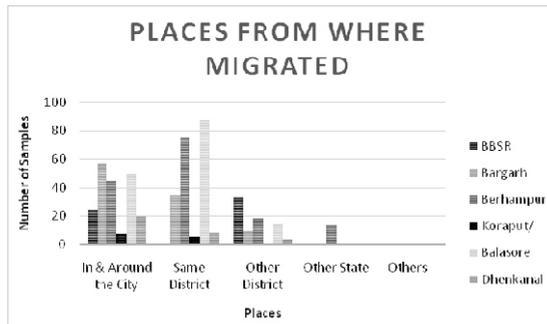


45.6% of the samples studied were previously not employed and have come out of the native village to pull Rickshaw. About 22.4 % of the samples were agricultural labourers, who have taken to this occupation, perhaps due to economic distress, and 32 % of the samples were in casual or intermittent employment such as domestic servants or hotel boys before taking to this occupation. It would be safe to assert that the very fact 54.4% of the sample who have opted for rickshaw pulling is in itself evidence that their earlier occupations had been less lucrative than their present occupation of rickshaw plying. The situations for the resident rickshaw pullers thus are similar to those for the migrant rickshaw pullers in the sense that all of them were unemployed or under-employed previously in non-lucrative jobs. The only difference is that major activities of the under-employed among the migrants are based on agriculture while those resident in cities were engaged in petty occupations in the urban areas.

From this, it might be said that this occupation has attracted persons, mainly unskilled, from driver's occupation and that the change of occupation was not, in many cases voluntarily but due to economic necessity. Even where the change was voluntary it must have been largely because of the conditions being worse or income being less in the previous occupations.

It appears probable that with the increase in the distance of migration from the place of normal residence, a migrant may expect higher net returns. He may not migrate to a distant place unless he gets

more benefits than what he would get by migrating to short distance. The distance of migration from normal place has, however, been studied. The details are given in the following graph.

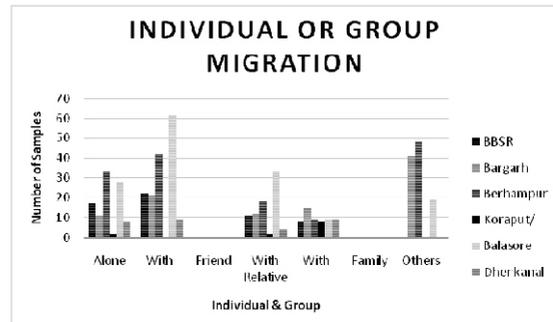


The above graph shows that out of a total of 500 Rickshaw pullers, 200 rickshaw pullers are from in around Bhubaneswar city, while 209 have migrated to sample cities from the same districts and 77 are from other districts of Odisha other than sample districts. Only 14 rickshaw pullers have migrated from outside Odisha state particularly from neighbouring state Andhra Pradesh. Thus it is clear from above chart that people have migrate more from nearby places than from distance places.

More than 90 per cent of the rickshaw pullers in different cities of Odisha came there straight from the villages. Substantial numbers of long-duration rickshaw pullers have lived in different city for significant periods, while recent rickshaw pullers tend to be recent migrants to the city and are likely to have made this move in search of a better livelihood.

Although few rickshaw pullers own a house in city slums, not all live in rented accommodation. Some rickshaw pullers also live in rent-free accommodation, generally provided by the rickshaw owners and located in the rickshaw garages. The rickshaw pullers who live in and around the cities with their families live in one-room houses, with an average of four persons living in that one room. Among those who live collectively, the average is 10 persons sleeping in a single room. Housing quality is very poor.

The paper also enquires to find out whether the rickshaw pullers came alone to the cities or with any other friend or relative.

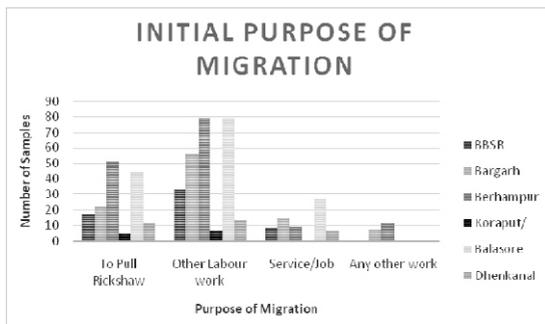


we also enquired as to whether the rickshaw pullers while migrating to the cities came alone or with friends & relatives. 19.8% came alone, 31% came with their friends, 16% came with their relatives whereas 11.6% came with their families. This shows that the rickshaw pullers mostly did not bring their families while migrating to the cities they first tried to establish themselves they think to bring their families. 21.6% others majorly includes those who prefers to up and down regularly on daily basis. They have not taken permanent residence in the city. These pullers come to town daily to pull rickshaw in order to earn for their families.

The above mentioned 21.6% is a very important characteristic of the migrant population, as they keep shifting between their village and the town daily or periodically depending upon their need to earn additional cash in the city and the work and family obligations they need to attend to in their villages. More generally in two cities (Behrampur & Balasore), I found that, rickshaw pullers from nearby villages are travelling on daily basis by using public transport. Also some of the migrants come to town for a week or two or during agricultural slack and/or the festive seasons when they need some additional cash to celebrate the occasion and go back to the villages with their accumulated earnings when the agricultural operations like sowing or harvesting, are in full swing.

Regarding the provision of job information to migrant rickshaw pullers in Odisha, almost 47% of migrant rickshaw pullers obtained information from people who lived in their home villages (31%), people who are their own relatives who previously migrated or resided in cities (16%).

It may be noted that migrants come to the city generally in search of employment or to work under contractors and not necessarily to take the cycle Rickshaw pulling straight-way. The below chart represent the initial purpose of migration.

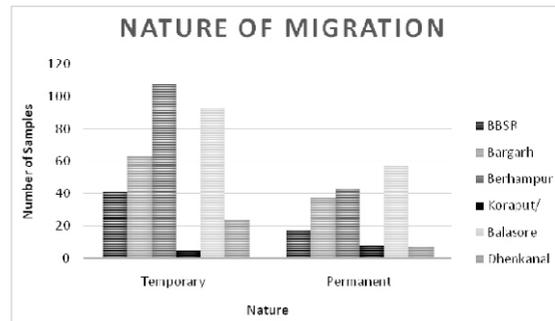


As regards the initial purpose of migration of the present rickshaw puller, it was revealed that only 30% individuals out of a total of 500 came with the initial purpose or motive to pull rickshaw, whereas 53.2% individuals came to work as a labourer. 13.2% of individuals came with the hope and also search of a job in any office or hotels, because they attached more importance and prestige to a job although it pays them quite less when compared with the earnings of a rickshaw pullers. The rest 3.6% individuals came just to see the city and move around either with a friend or with a relative and somehow or other got attracted to plying Rickshaw and engaged themselves in this occupation.

Cycle rickshaw drivers (also known as 'rickshaw puller' or 'rickshawwala') consist of poor migrant people who are unskilled, uneducated come to cities to opt for either pulling rickshaw every year during lean agriculture period or as a preferred full-time job over other available options such as daily wage labourer, construction/factory/hotel worker etc. It was revealed from the rickshaw pullers that prior to migration to cities, most of the rickshaw pullers worked as casual daily labourers mainly in the agricultural sector. We all known of the fact that incidence of extreme poverty is highest among agricultural wage labourers, so a large proportion of the sample rickshaw pullers appear to have come from the rural extreme poor. Few were engaged in farming or petty business. This pre-migration occupational profile suggests that the rickshaw pullers migrated to cities not only in search of employment as such, but also for more remunerative occupations. Rickshaw pulling thus seems to be the easiest available work option for rural migrants to cities.

There is a general perception that rickshaw pullers are men from the countryside, who come to town

temporarily during off-agricultural seasons in order to earn supplementary income for their families back home. During the investigation I also have tried to understand this perception. The below chart represent the nature of migration in detail.



The sampled rickshaw pullers in Odisha originally migrated from native villages. In the above graph, I classify their migration status by the use of only two criteria. First, 66.2% who are temporarily migrated, I consider those migrants to be temporary, seasonal migrants who do not become city residents. Second, 33.8% who holds local ration cards. Over time, some migrants become permanent residents of cities. Residency is proved by possession of a PDS ration card, an election commission ID card, etc. Provision of an election ID card is based on submission and acceptance of the following items as proof of residence: house rent receipts, electricity receipts, ration cards, or bank account passbooks. However some of them only possess ration card and do not possess election identity card which demonstrate that the rickshaw pullers' still cast their vote in their native villages.

Hence in most of the cases we found that it is seasonal in some other cases it is permanent. In case of permanent migration the people more or less permanently settled in one slum or the other. In case of the former type of migration, it is observed that these rickshaw pullers come to towns of during the off agricultural seasons to earn money and return back home with an appreciable amount of balance at hand to meet the contingent expenditure and the exigencies at home or to repay the loans incurred back at home in the day to day family requirements and expenses. Most of the rickshaw pullers do not send money with any regular periodicity. Rather, they carry their savings with them when they return to their native villages at the end of their stays in the

city. If we employ some more criteria for defining nature of migration, then we will find more of the sampled rickshaw pullers can be considered as temporary migrants. Rickshaw pullers live alone in the city. In some cases, one or two family members may join them. These characteristics show that these rickshaw pullers are not greatly involved in city life. They temporally come to work and earn additional income.

But this is very crucial to understand this particular migration tendency because this shuttle back from village stabilizes their economy and shapes the life of the people in the midst of increasing competition of life and prosperity. These seasonal migrants are basically depended upon the village source and Rickshaw pulling in towns merely adds to their economy, and their therefore I find among this category of migrant Rickshaw pullers, more and more number of young and able bodied people with their children and old parents left at home. But the family structure of the other type of Rickshaw pullers is different for they are of more heavily depended upon the town sources and with little connection with the village. Further, it is very important to note that the distant migrants could manage to have the minimum amount of earning thinking in terms of settling more of less permanently in towns with casual remittances to their native villages and to their parents and the decanted kith and kilns develop the tenacity of enduring the town life and living in it for larger time. Thus, distant migration is a factor which determines the stability of the rickshaw pullers in the towns. But these seasonal migrants are not the only ones, who do rickshaw pulling. There are also urban rickshaw pullers with or without their families, are resident citizens, legally recognized as such or having been resident of the city for five or more years. Thus, rickshaw pulling is an informal sector activity, which provides an income-earning opportunity for temporary, seasonal migrants from the countryside, as also to the urban poor.

Impact of Modernisation

Since the country embarked on the policy of economic liberalisation in the early 1990s, cities have seen a phenomenal growth in the number of private and personal automobiles, such as cars, jeeps, motorcycles and scooters. Automobiles as means of public transport such as taxis, buses and Auto

rickshaws have however lagged behind, as they had to face a transition problem to less-polluting forms of fossil fuel at the behest of the regulating authorities. These developments in the modern modes of transport have not, however, displaced the traditional mode of cycle rickshaws. Apparently, the city has a demand for this mode of transport and there are people to meet the demand.

They continue to grow in numbers despite the modernization of the city and the corresponding revolutionary changes in the transportation sector. The growth of this sector derives from the persistent niche demand for this mode of transportation. Cities' modern sophisticated transportation system cannot conveniently meet this demand. A cycle rickshaw is ideally suited for short distance travel through narrow congested areas. In addition, individuals can hire them with little difficulty. Therefore, the growth of this sector has been demand-driven. It exists on the margin of the main transportation sector (Kurosaki, 2012).

The Problems: Specific & General

Even though manual rickshaw pulling is sometimes said to be an inhuman occupation from the humanitarian ground, it has been the bread earning occupation for most of the poor people of the society. It has been a problem in the modernity today, mainly because of the use of auto-rickshaw and other automobiles for the sake of conveyance and transport. But in the past, during the pre-independence and early independence age, the cycle-rickshaws were the major means of transport in India. In spite of the Auto rickshaw pullers still, such Rickshaw pulling practice is going on in India and in the poor state like Odisha, where poverty stricken people are not able to afford the Auto rickshaws or any other automobile for the purpose.

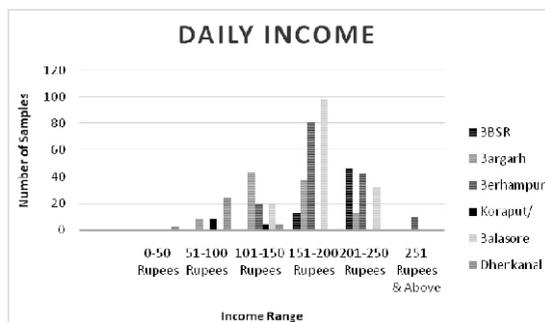
Since the rickshaws are slow moving vehicle runs manually it creates traffic congestions on road in rush hours especially in the morning and in the evening hours. The rickshaw pullers at that moment get rough behaviour from all sections of the society. The members of the society those who are not regular commuter of this type of vehicle feel that the rickshaws should be removed from the road then the traffic congestion will be reduced. The rickshaw pullers in some situation become the victims of physical torture from the members of the society. The police personnel also do some sorts of

harassment upon them not for any very serious causes. In some cases the police personnel torture them physically, seize their vehicles and try to take something from them as official fines and in some cases unofficial fines too. The rickshaw pullers say that most of the passengers they carry are very kind to them and try to compensate them by giving justified fares. But there are some passengers who unnecessarily argue for fares and they misbehave the rickshaw pullers. Public awareness about the hard labour made by the rickshaw pullers is very less as a result they are not getting proper behaviour from the member of the society.

Other indicators of well-being including household savings, assets, food security status, levels of indebtedness, an ability to generate surplus from income, etc. First, the aspiring rural poor who migrate to cities and take up rickshaw pulling achieve some upward economic mobility. Second, by opting for such an 'unsustainable livelihood' they remain vulnerable, as the initial benefits gradually taper off with duration of rickshaw pulling. The value for all these indicators declines over the duration of rickshaw pulling. The amount of savings held by the pullers in the long duration is not higher than that of the middle duration ones. Neither, the value of assets acquired by them is higher than that of other middle and recent rickshaw pullers. Thus, while rickshaw pulling helps the rural migrants to move out of poverty initially, it does not help them to graduate from the poverty in the long run and on durable basis.

In addition to being economically marginalised, the rickshaw puller has low human capital. Living hand to mouth, they are rarely able to save for the future. Moreover their earnings, made up of small and varying to collections at every trip, fluctuate sometimes significantly from day to day. Consequently, it is difficult for them to give precise and correct figures of their monthly income from memory. Hence, on the day of data collection the previous whole day earnings of the samples have been collected and compiled in below chart.

The gross daily income of the sample Rickshaw puller ranges from Rs. 25/- too little to over Rs 400. It is estimated from the above table that 89.8 per cent of sample rickshaw pullers earning Rs.101/- to Rs. 250/-. Those earning more than Rs. 200/- a day are



most likely to be “middle-duration” pullers. Differences in income among rickshaw pullers are more marked across other occupational features than duration. As might be expected, the average daily income of the rickshaw pullers who work for a full day is more than those who work for half-days, although nowhere near twice as much. Those who pull a rickshaw six or seven days a week earn more each day than those who work for five or fewer days a week. Those who work fewer days are also those who work less than eight hours a day. Presumably, whatever prevents them from working longer hours – poor health, for example – also prevents them from working every day of the week. The monthly earnings of the samples depend upon many factors, chief among which is the number of days they ply their vehicles. Taking the diversity in rickshaw hiring and the wide range in the earnings of the sample into consideration along with the complex forces bearing on them, it could be said that the hire generally is about 10-20 percent of the average gross daily earnings of the rickshaw driver.

If we will analyse more intricately, we will find that the average income of the rickshaw pullers is not below the appreciable standard when compared with the lower grade Clerks in the government Institutions so far as their pay range is concerned, what to speak of the standard of peons in the Government departments. The paradox is that the job of rickshaw pullers is the most manual one and that of the clerks approximates to a white coloured job. This way one can imagine the social stigma we usually attach to jobs based on hard labour.

A rickshaw fare is cheap. The fares for different locations in the city are set by the Rickshaw puller, but in actuality any distance set is negotiable in money terms. Bargaining went on between the

passenger and the puller, according to the distance, time of day, and weather. The small unexpected windfall usually came from generous foreigners, tourists who get attracted by the "city sight". But for the local inhabitants of city the fares are always subject to negotiation. Occasionally some rickshaws serve the tourists from the country sides. The rickshaws take them to nearby places of interest and attraction and even to far places. On such occasions, the drivers are generally paid well. Hence the earnings of the rickshaw puller which are not steady and vary considerably from trip to trip and from day to day, have no definite correlation to any factors or conditions. The new rickshaw and those in good conditions may, no doubt, attract the more discriminating class of passengers who could and do pay a little more than the others. Even then it cannot be said that the earnings of the drivers of new and good rickshaws would be the highest. It is possible for older vehicles to attract considerable goods traffic which pays well in view of this; it is more than likely that sometimes the earnings of the drivers of the old rickshaws may be as high as or even higher than the earnings of those who ply better rickshaws but do not ply for freight. In considering the earnings of the drivers, it should be borne in mind that they are not the choosers & that they cannot always be sure of getting paying traffic but must take whatever comes their way. This aspect of passenger and goods traffic needs detailed investigation. It would help to think over the possibilities of having a rickshaws built as to be easily convertible into a vehicle for goods transport. This would enable the drivers to take any traffic passenger or freight that comes their way and thus maximize their earnings.

It was not easy for the rickshaw pullers, despite his reputation for hard work and thrift, to become a bona fide owner of the rickshaw he pulled. Few of were able to obtain sufficient funds for the purchase of a rickshaw but most of rented their vehicles from rickshaw owners. The rickshaw was central to the work and life of pullers and ownership of rickshaw their ray of hope. But the investment and risk involved to become an owner remained beyond the means of most of the men.

On the other hand, looking at the need and psychological condition of the passengers it is surprisingly found that most of the people today prefer to save time by using Auto rickshaws and

other powered vehicles. In this context, the economic conditions of the rickshaw pullers are inheritably precarious and the daily income becomes quite meagre to maintain the livelihood. Despite all these, still the manual rickshaw pullers are still found on the roads mainly because these people have no other way out because of dent poverty.

In addition to all these, there are certain invited problems in the occupation like drinking and participating in gambling which make their livelihood system most pathetic and intolerable. For the dependent members in the family this is no less than a curse. Manual rickshaw pulling is mostly to be followed in the urban and sub-urban areas where the people can afford to pay for the transport. In rural areas, it has little scope so far. Following this, rickshaw pullers mostly migrate from the interior remote villages and try to continue such an occupation in the nearby urban or semi urban areas. In this context, the problem of shelter a great problem for such people, they occupy the Govt. land and live in the slum where the facilities of drinking water, electricity and toilet facilities are not there for the basic minimum living. Thus, in addition to poor economic condition, the unhygienic living makes their livelihood system worst forever. Under such prevailing situation, the education of the children their nutrition and personality development become a day dream for such rickshaw pullers, which results a generation after generation the continuity of suffering.

Remedial steps : Self & Induced

The rickshaw pullers are required to come forward to serve the society through their dedicated service. Both the people and the pullers must create a situation which helps both of them and the riding will also be comfortable and hassle free all the way. To make the service more comfortable the pullers have to fulfil certain standards of their services. Some of such things that will not cost the pullers are maintaining their dress code during their working hours, obeying traffic signals and other rules on the roads, maintaining cordial relationship with the passengers and the public in general and the administrative machinery. The members of the society should properly understand the dignity of labour of the rickshaw pullers and should encourage them. There are something more to be done by experts like redesigning the vehicle to make it more

not full time worker in this profession. This gives an indication that the entrepreneurial spirit of the rickshaw pullers have not yet been coming up. The existing pullers need some sort of training how to behave with the passengers, how to communicate with others so that they can remain in this profession and can maintain and improve their earning level.

With upgraded gears, hydraulic brakes, rear end differential, comfortable seats, halogen lights, the cycle rickshaw, which today covers a distance of 30 km per day on an average, can emerge as one of the most efficient non-motorised transport in the cities. The ban on rickshaw pulling has come as a setback for the rickshaw pullers who have been serving the commuters. But this is not the solution to the problems created by the rickshaws in urban areas. This is the only public mode of non-motorised transport facility available in the ever changing world. So it is high time to think and to retain the service rather improve it for the interest of the future generations of the human society. The rickshaw pullers are not having any common platform for their collective bargaining although most of them are dedicated to their profession. One rickshaw puller says that during summer when the mercury goes past 40C people hate to be anywhere near the sun. But despite the sweltering heat, they carry out their duties, providing comfort to fellow human beings. In spite of this sorts of dedication of the rickshaw pullers if the commuters cannot feel the problems and the working condition in paying fares to the rickshaw pullers then they will not be able to provide the required level of service. Now time has come to think collectively by all the rickshaw pullers to protect their interest and to take the challenges coming from the faster mood of travel and also changing mind set of the urban people towards this mood of transport. Few organisations of social activists and some urban dwellers argue that the rickshaws should be removed from the road as it creates lot of problems to the faster mood of transport and there has been frequent collision between car owners and the rickshaw pullers. But the question is: where will these needy members of the society go once they have been deprived of something they have been doing so efficiently for years ((Gallagher, 1992)

Some NGO who are really helping the rickshaw pullers in the form of a group style cooperative

(registered or unregistered) promoting the concept of self-financing. To attract tourist or visitors to enjoy rickshaw riding the pullers should be trained up regarding how to deal with the passengers so that both the pullers and the commuters can maximize their satisfaction. In this regard the pullers may be given a license along with a dress code to be used at the time of their duty period. For Example in Puri, Odisha the process is going on for the benefit of the tourist because Puri is a famous tourist place. To help the rickshaw pullers in Puri (Odisha) some NGOs has initiated some training programmes. One rickshaw pullers has given his observation about the said training programme. "I enjoy these training sessions. It is a different kind of experience for rickshaw pullers like us. I hope my standard of living will improve after this training," said Pramod Pattnaik, a rickshaw pullers. Another rickshaw pullers has said that "Lack of support had made our lives wretched. We are glad to receive guidance in making our lives better," another rickshaw pullers Loknath Reddy said. To attract the tourist a new concept may be taken up i.e. "Rickshaw Tourism" which is not yet coming up anywhere in the world. But this need a lot of home work on the part of the administration and other social organization. First thing we have to renovate the rickshaws plying on our roads to make it comfortable for the passengers and the pullers. New rickshaw designs are coming up in many countries. Some of such new designs can be operated by electric battery and some can be operated by solar power. Introducing these new designs in different towns, the neglected profession can be made more prestigious and challenging to the entrepreneurs. To make the rickshaw service more popular among the new generation now and then race can be arranged among the pullers and other public as well. This new idea may boost up the moral of the pullers. This profession needs some more entrepreneurial touch so that the service can be sold in the competitive market.

Conclusion

Cycle rickshaw provides an instant means of livelihood for poor rural migrants. Within a few hours of arriving in the city, a rickshaw puller is able to not only earn enough to buy food the day but also to save something for sending home. Savings from rickshaw pulling are sent home and help to sustain their families in the village. Farming would be even

more crisis ridden and more destitute people will flood the cities without these urban remittances. It provides doorstep service and is willing to take you from point to point at all odd hours. It is the most efficient vehicle for plying in the narrow lanes and by lanes of the old city.

We have seen that all the rickshaw pullers are not economically deprived. Their earning is more or less moderate. However, economic progress of the rickshaw pullers will be possible by giving them counselling on forming a group/ cooperative for their common benefits. If such a group can do the work with a clean mind then it can be expected that it will be a financial institution owned by a group for the benefit of the group members and gradually they will be able to help the other section of the society specially other entrepreneurs in some other field.

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Distribution of ABO and Rh (D) Blood Types among the Santal of Purulia, West Bengal, India

Tarpan Sasmal¹, Subir Biswas² and Biswanath Sarkar³

Abstract

The study was aimed to determine phenotypic and allelic frequencies of ABO & Rh (D) blood types; and also to ascertain the pattern of variation of ABO blood types across the sex and generation among the Santals of Purulia District, West Bengal, India. After proper ethical consideration blood samples were collected from randomly selected 260 participants (130 of each sex). The participants were divided into three generation, ≤ 20 years age group as generation-III, 21-44 years age group as generation-II and 45+ years age groups as generation-I. ABO and Rh(D) blood types were determined by the antigen antibody agglutination test of direct slide method. For statistical consideration chi square test was used at 0.05 significant level ($p < 0.05$). Out of 260 individuals 25% was 'A' blood type, 36.15% 'B' blood type, 25.38% 'O' blood type and 13.47% 'AB' blood type. The allele frequencies found were 0.21, 0.29, and 0.50 for A, B and O. In that population phenotypical and allelic frequency changed across the generation however statistically non significant at $p < 0.05$ level. However, in respect of Rh(D) blood type no such variation observed, as none of them found to be Rh(D) negative.

Key words : ABO and Rh(D) blood types, phenotypic and allele frequencies, Santals

Introduction

The discovery of ABO blood system by Karl Landsteiner in 1900 and Rhesus blood type by Landsteiner and Wiener in 1937 are two important landmarks not only in blood transfusion and treatment of haemolytic disease (in medicine) but also to use as important variables to understand ethnic and geographic differentiation because of its non-adaptive nature (in anthropology). It is well established that in human population ABO and Rh (D) blood group distribution widely varies among different geographical regions and ethnic groups (Jaff, 2010). The worldwide distribution of O, A, B and AB blood types are 47%, 41%, 9% 3% for caucasians in the United States, 46%, 27%, 20% and 7% for African American, and 46%, 42%, 9% and 3% for Western Europeans (Adeyemo and Soboyejo, 2006). The most widely studied ABO blood types show in general, the allele frequencies of the World to be ABO*O = 0.623; ABO*A = 0.215; ABO*B = 0.162 (McArthur and Penrose, 1949).

In India the incidence ABO*B is higher (0.233) compared to allele ABO*A (0.186), were as frequency of allele ABO*O is 0.581. Among the caste/ ethnic groups of the India, the difference between A and B frequencies are less among the Scheduled Tribes (A=0.213 and B=0.218) compared to different Scheduled Castes (A=0.181 and B=0.246); the frequency of O is almost similar among Scheduled Tribes (0.572) and different Scheduled Castes (0.573) (Bhasin and Walter, 2001; Bhasin et al, 2006). The worldwide distribution of Rh(D) blood type is unique; in

the United States, the frequency of Rh negative is about 15%; almost 20% among European Americans and approximately 5-10% among African Americans. On contrary, less than 1% (sometimes zero) of Asian (mainly Mongoloid) and Native Americans are Rh negative (Mack, 2001). In India, the incidence of Rh(D) positive blood group varies from 94 to 98 % compared to 2 to 6% Rh(D)

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negative (Behera and Joshi, 2013). Keeping in mind, the worldwide (and Indian context) distribution the present study was aimed to determine phenotypic and allelic frequencies of ABO & Rh (D) blood types; and also to ascertain the pattern of variation of ABO blood types across the sex and generation among the Santals of Purulia District, West Bengal, India.

Material and Methods:

The present study was conducted among Santals of Susunia, Tilabad, Kenthol, Boro-Shaluni and Kherak villages of santuri block of Purulia district during December 2016. After proper ethical consideration 260 blood samples were collected from randomly selected participants. Out of 260 individuals 130 were male and 130 were female. Participants were classified according to age and divided into three generation, ≤ 20 years age group as generation-III, 21-44 years age group as generation-II and 45+ years age groups as generation-I. ABO and Rh-D blood groups were determined by the antigen antibody agglutination test of direct slide method, all the materials of blood groups determination like anti-A, B & D, slide,

cotton, alcohol, needle were provided by AnSI. The result was calculated as the frequency of each blood type expressed as percentage. Chi-square test was used to test the heterogeneity of population on the basis of ABO frequency ($p < 0.05$).

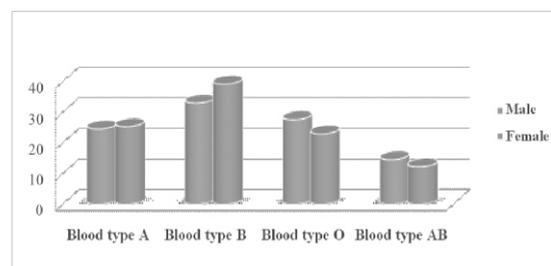
Results and Discussion:

It reveals from the Table I that frequency of B blood type is higher (36.15%) among the Santals followed by O blood type (25.38%), A blood type (25%) and AB blood type (13.46%). The ordinal sequence of the ABO blood type distribution among the Santal population of the present study is B>O>A>AB. Among 130 male Individuals 'A' blood type was found among 24.62% compared to 25.38% for their female counterpart. Frequency of blood type 'B' among male and female was 33.07% and 39.24% respectively. The 'O' blood type was present 27.69% in males and 23.07% in females. Lastly 'AB' blood type was found 14.62% in males 12.3% in females. The ordinal sequence of the ABO blood group distribution among the male Santal population of the present study is B>O>A>AB while among the female it is B>A>O>AB. However the differences are not statistically significant at 0.05 levels.

Table I Percentage wise distributions of ABO Blood Type Phenotypes among the Santals of Purulia

ABO Blood Type	Male (n=130)		Female (n=130)		Total (n=260)		
	Number of Individual	Percentage (%)	Number of Individual	Percentage (%)	Number of individual	Percentage (%)	
A	32	24.62	33	25.39	65	25.00	
B	43	33.07	51	39.24	94	36.15	
O	36	27.69	30	23.07	66	25.38	
AB	19	14.62	16	12.30	35	13.47	
Total	130	100	130	100	260	100	
		χ^2 Value = 1.53 (non significant)					
		p<0.05)					

Fig 1 ABO Blood Type Phenotypes among the Santals of Purulia



The percentage wise ABO blood group distribution of total population across the generation was presented in Table II. Generation-I comprised of 60 Individuals of both sexes; out of 60 6.67% were of A type, 35% B type, 30% O type and rest 18.33% of AB blood type. The ordinal sequence of the ABO blood group in generation-I is B>O>AB>A.

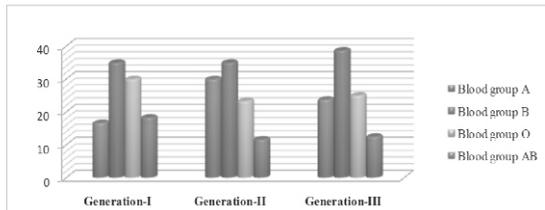
In generation-II (comprised of 120 Individuals of both sexes) 30% possess A type, 35% B type, 23.33% O type and 11.67% AB blood type. In

generation-II highest percentage of blood type is B, followed by A, O and lastly AB (B>A>O>AB). In generation-III out of 80 Individuals 23.75% were A type, 38.75% B type, 25% O type and 12.50% were AB type. In this generation highest percentage of

blood group is B, and lowest AB (B>O>A>B). Phenotypic value of ABO blood group on Santal population is changing across the generation but the differences are not statistically significant at ($p < 0.05$) level.

Table II Generation wise ABO Blood type Phenotypes among the Santals of Purulia

ABOBlood Type	Generation-I(45+)		Generation-II (21-44)		Generation-III(<=20)	
	Number of Individual	Percentage (%)	Number of Individual	Percentage (%)	Number of Individual	Percentage (%)
A	10	16.67	36	30.00	19	23.75
B	21	35.00	42	35.00	31	38.75
O	18	30.00	28	23.33	20	25.00
AB	11	18.33	14	11.67	10	12.50
Total	60	100	120	100	80	100



Regarding allele frequencies of ABO blood group- 'O' allele (r) frequency is predominant (0.5), followed by 'B' allele (q) (0.29) and 'A' allele (p) (0.21). Ordinal sequence of allele frequency of ABO blood group is $r > q > p$.

Table III explores the homogeneity of the ABO blood group phenotypes among the Santal of Purulia. As per χ^2 value the differences are statistically non-significant; therefore, the population maintained homogeneity and also conform the Hardy Weinberg equilibrium.

Table III Test of homogeneity of the ABO blood group phenotypes

ABO Blood Groups	Observed Value	Expected Value
A	65	66
B	94	97
O	66	65
AB	35	32
Total	260	260

χ^2 Value = 0.40457 (Not significant $p < 0.05$)

Table IV exhibits percentage on phenotype of Rh(D) blood group system among the present population. Regarding Rh(D) blood type no such variation observed, as none of them found to be Rh(D) negative.

Table IV Percentage wise distribution of Rh(D) Blood Group phenotype among the Santals of Purulia

Rh (D) Blood Types	Male (n=130)	(%)	Female (n=130)	(%)	Total (n=260)	%
Rh (D) Positive (+ve)	130	100	130	100	260	100
Rh (D) Negative (-ve)	0	0	0	0	0	0
Total	130	0	130	0	260	100

Table V is basically comparison of present data with six other studies among the Santal population of different geographical location. There is no significant difference found in respect of ABO blood types among Santal population of different geographical areas.

Table VI is comparison with other tribal communities of West Bengal. There is no significant difference with Munda, Ho, and Bhumij ($p > 0.05$); But the ABO blood type of Oraon, Lepcha and Toto exhibits highly significant differences when compared with Santals of present study ($p < 0.01$). It is also interesting to note that Santal, Bhumij, Munda and Ho belongs to the Austro-Aasiatic

Table V: Comparison with Santals of different geographical location

Areas in	Blood types				Total	χ^2 value	Reference
	A	B	O	AB			
Santals							
Present Santal	65	94	66	35	260	Present Study 2016
Medinipore	94	122	87	22	325	7.68	Giri et al,1962
Hoogly	22	52	27	14	115	3.084	Mukherjee et al 1977
Bankura	37	51	49	18	155	4.36	Unpublished data of ANSI
Jharkhand	54	64	9	16	193	3.77	Pandey and Ranjhana 2012
Bihar	96	141	68	45	350	7.76	Pandey and Mishra 2012
Odisha	68	66	65	51	250	1.963	Mohanty and Das 2010 (Not significant $p < 0.05$)

language family, while the Oraon belongs to the Dravidian language group, Lepcha is Tibeto-Chinese language group, and Toto is a Tibeto-

Burman linguistic group. Therefore, present study also exhibits that ABO blood type significantly differ in respect of different language groups.

Table VI Comparison with other tribal communities of West Bengal

Name of tribes	Blood types				Total	χ^2 Value
	A	B	O	AB		
Present Santal	65	94	66	35	260
Munda	46	30	34	15	125	2.56
Ho	43	50	28	27	148	3.58
Oraon	48	38	45	00	131	25.504**
Bhumiz	29	37	16	16	98	3.58
Lepcha	94	41	99	16	250	39.594**
Toto	33	61	03	18	115	28.669**

Conclusion

The study reveals that the Santals of Purulia are characterized by the following facts:

In the present study highest percentage of ABO blood type was 'B' (36.15%), and the lowest percentage was 'AB' blood group (13.46%). However, in respect of Rh(D) blood type no such variation observed, as none of them found to be Rh (D) negative.

In ABO blood type there is no statistical differences across the sex and generation; and therefore maintained the homogeneity. There is no significant difference found in Santal population of different

geographical areas with present study. However, here is statistical significant difference in different language family group regarding ABO blood types.

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Understanding Japanese Multinational Companies in India: An Anthropological Perspective

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Abstract

Since the beginning of 21st century when India's economic growth reached sustained rates, Japanese businesses have increasingly shown their interest in India's fast-growing market. It is seen in the last decade that both India and Japan have undertaken many economic initiatives and signed MOUs to speed up the active economic engagement. These agreements open up new areas of cooperation and provide an impetus for fresh investments by Japanese multi-national corporations for taking up new ventures in India. However, for making these economic ventures successful, it is important to understand the cultures of both countries as businesses operate within the national culture of each country. Besides, corporations exhibit distinctive organizational cultures which should be understood and taken care of to make these ventures viable and sustainable in the long run. In this context, the expertise of anthropologists can be utilised for unravelling the intrinsic culture necessary for understanding the internal cultural matrix leading to sustainable and culture - specific products. This paper discusses some of the important cultural factors for achieving sustainability of the Japanese economic endeavour in India from an anthropological perspective. To strengthen the discussion, the first author shares his experiences gained from Japanese MNCs as the source of first hand data during his visit to Japan for JENESYS-2016.

Key Words : National Culture, MNCs, Organizational culture, Culture-specific Products
Jenesys-2016

Introduction

Since India initiated the economic reforms in the early 1990s, Japanese businesses have been increasing their interest in its fast-growing market and their efforts have been multiplied especially at the turn of the century when India achieved sustainable economic growth. The successful selling of the products of the companies like Suzuki and Honda which formed partnerships with Indian firms dominated the markets and encouraging foreign investors. As a result, Japan currently holds the fourth largest investor position of India. In the financial year 2015-16 India-Japan bilateral trade stood at a figure of US \$14513 million along with a cumulative figure of US \$ 19.43 billion of Japanese foreign investment in to India over the time period from 2000 to December 2015 (). In last 10 years it is

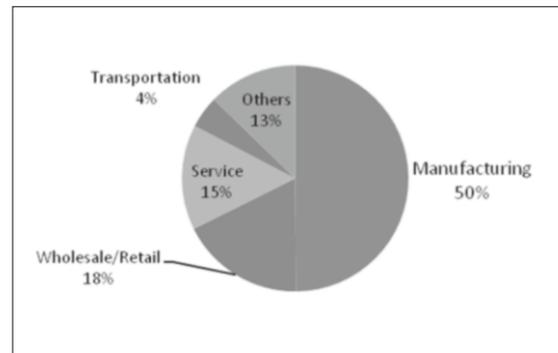
seen that both the countries engaged in many economic initiatives, like 'India-Japan Comprehensive Economic Partnership Agreement (CEPA) in 2011, which is to eliminate around 94% of the tariffs between the countries. In 2014, 'India-Japan Investment Promotion Partnership' is signed during Prime Minister's visit to Japan. Both the countries also remain engaged in negotiations for the creation of a 'Regional Comprehensive Economic Partnership (RCEP) which seeks to promote regional supply chains on the first of October 2016, a Memorandum of Understanding (MOU) for Transport and Urban Development was signed between the two countries to speed up active economic engagements. All of these agreements reduce the cost of doing a smooth business and, in the process, provides an impetus to Japanese companies investing in India.

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However, it is important to understand that while the Japanese economy is currently plagued by problems related to ageing population and a shrink of their working population, India despite enjoying a substantial demographic dividend and an expanding economy, is still unable to unleash its full potential. Moreover, India needs to create adequate future jobs to utilise its demographic dividend. Hence, greater access to Japanese capital and technology will support India's economic growth as well as various government initiatives and projects such as Smart City, Make in India, Digital India, etc. Further, Japan would gain significant dividends from entering Indian markets tapping its vast consumption base and from investing in India's infrastructure sector and technology exchange. However, it is fair to say that the potential of the overall bilateral trade and investment relationship has been largely unrealised so far. India ranks only 20th as a destination for Japanese exports, and accounts for just 1.5% of Japan's foreign investment (EIU, 2015).

According to Economist Intelligence Unit forecasts in 2015, India's economy will grow at an average of 7.1% per year 2020. It has a youthful population and a rapidly increasing middle class. Further, between the year 2015 to 2030 its urban population will rise by 39% to nearly 600 million people. This implies a massive increase in demand for consumer goods and financial services that Japanese firms should be well positioned to provide, given their experience in emerging markets. Theoretically, India should be an attractive opportunity for Japanese companies for outsourcing lower-cost manufacturing bases from which to ship goods to the rest of the world. Thus, India is now appealing as a potential production and distribution hub for markets in the Middle East, Europe and Africa. For example, Hitachi and Kokuyo plans to make India a 'global hub for production' from which to develop products for export to Middle East and Africa as well as for sale locally. In this context, on 14th of January, 2015, at an investment summit in Gujarat, the Chairman of Suzuki, Osamu Suzuki, told that the Nikkei newspaper, "For Japanese companies, India is a gateway to the middle East, Africa and Europe" (EIU, 2015). The 2017 Japanese company survey

result shows in Fig I that the manufacturing sector accounting for 50% of those based in India.



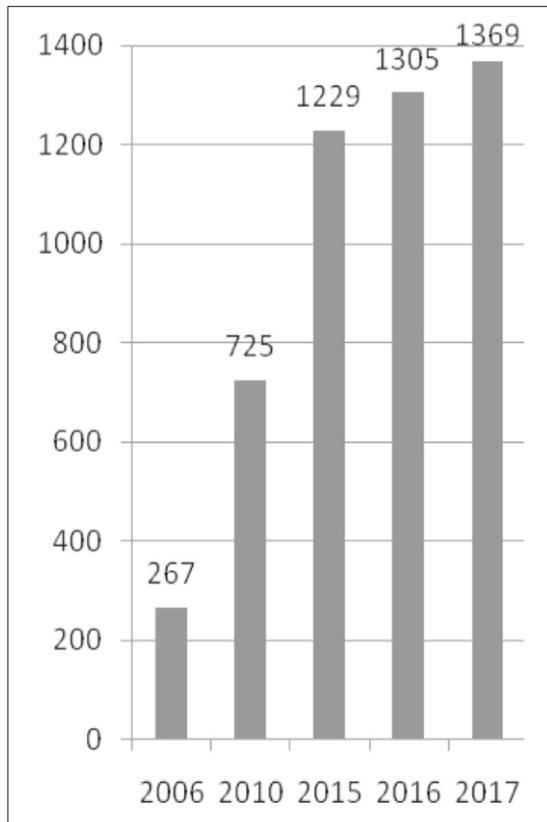
(Source: Survey by Embassy of Japan in India and JETRO)

Fig I Percentage of Japanese companies in different sector in India

The warm relationship between India's Prime Minister, Mr. Narendra Damodardas Modi, and his Japanese counterpart, Mr. Shinzo Abe is the most obvious sign that ties between the two countries is stronger than perhaps ever before. In his 2014 address to business leaders in Tokyo, Mr. Modi proclaimed that the 'environment of disappointment' that had surrounded India's economy was over (NDTV, 2nd September, 2014). Meanwhile, Mr. Abe also promised to double both Japan's investment and the number of Japanese companies operating in India within five years, targeting US \$ 33.6 billion of private and public financing. Accordingly, to the list of Japanese Business Establishment in India-2017 prepared by the Embassy of Japan and the Japan External Trade Organization (JETRO), total number of Japanese companies registered in India is 1369 as of October 2017 and the total number of Japanese business establishments in India is 4590 as of October 2016. Over the one year from October 2015 to 2016 the number of companies has increased by 64 (5% growth) and similarly the number of establishment increased by 173 (3% growth) as compared to 1305 and 4417 respectively. The Fig II is showing the continuous increased trend of Japanese companies in India. Further, recent major investments announced by Japanese companies are listed in below table I and also established 5 Japan-India Institutes for Manufacturing (JIMs) and 1 Japan-Endowed Course (JEC).

Table I Recent major investments announced by Japanese companies

Company	Event	Amount	Time
Softbank	Investment in Paytm, OYO, Policy Bazaar and others	368 billion	From May 2017 to April 2018
Suzuki Motor	Factory establishment in Gujarat	160 billion	January 2016
Nippon Life Insurance (Nissay)	Share acquisition up to 49% for Reliance Life, and up to 49% for Reliance Asset Management	150 billion	From October 2011 to November 2015



(Source: Survey by Embassy of Japan in India and JETRO)

Fig II The number of Japanese companies based in India.

The present paper discusses the various factors meant for Japanese companies for business success in India as an alternative solution, from cultural perspective (KONDO, 2012). It also suggests that the Japanese MNCs can provide a good scope for anthropologists working in India (Sedgwick, 2007). Methodologically the paper is based on the experiences gained by the first author

from the Japanese companies as the source of primary data during his visit to Japan for JENESYS-2016. This paper is divided into four sections: the first section gives an introductory background of the current business relationship between Japan and India, focusing on the Japanese MNCs in India. The second section is a review of the relevant literatures relating to studies on the Japanese MNCs by anthropologists. In the next section, the important cultural factors for effective businesses between the two countries are discussed in details from an anthropological perspective. To justify the relevance and significance of the cultural factors, suitable examples are also cited under different sub-headings. The third section deals with the interactional experiences of the first author with the Japanese people during his visit to Japan under Jenesys-2016, particularly, the Luncheon Exchange Programme with the CEOs of the Japanese companies. The paper concludes with highlighting the success of Japanese MNCs in India as well as widening the area of research and applications for business anthropologists in India.

Synoptic Account of Japanese Organisational Studies by Anthropologists

Many studies of corporations by anthropologists suggest that Japanese corporate 'know-how' is more than technological innovation riding on financial clout. Developed in Japan's specific social and political economic context, the organizational practises of Japanese corporations have been understood as powerful reflectors of Japanese socio-cultural forms. As in other Japanese organisations, Japanese manufacturing firms in Japan, such as the Yama Corporation, weave generalised Japanese cultural practices and technical expertise into an organisational fabric that is conducive to information flows which assist the processes of

design, production and marketing upon which these firms depend. Dore's (1973) and Rohlen's (1974) work, generated sophisticated, non-economic-rewards driven, culture-based explanations of Japanese workgroup behaviour and the dynamics of what came to be called 'knowledge-creation in Japanese corporations. Dore's is known for its comparative rigour complemented by a thorough sense of the embeddedness of the Japanese and British factories he studied in their respective sociological and institutional contexts. Rohlen's is the first long-term participant-observation ethnography of a white-collar organization: a Japanese bank. Younger generations of anthropologists of Japan, studying such topics as education, sport, media, entertainment and religion, have nearly all been working on subject-matter that takes place within organisations. Unlike Dore and Rohlen, however, most have avoided making an explicit focus on organizational dynamics a central concern of their work.

Other Japan anthropologists, have become enamoured of Japan's prolific yield of media output, i.e. popular culture. Japanese media images are, especially in the context of mass consumption, surface expressions of the productions of a complex of mass consumption, surface expressions of the productions of a complex industrial society that are driven by inter-relations of members of Japanese organizations. The fact that the organization studied here is a multinational corporation and highly successful consumer electronics firm- which also produces an enormous number of media images- places it both at the cutting edge of a changing Japanese society and as a subject of theoretical discourse.

Anthropological analysis of Japanese organizations are often extremely high quality, as for e.g. Ben-Ari's (1997) work on child care in Japan, and the strong sense of the networks organising the production of adult manga (comics) by Kinsella (2000). More recent work focusing explicitly on private corporations in Japan has broadened the range of business sectors attracting scrutiny, including small and medium-size enterprises (SMEs). Moeran's (1996) wide-ranging research on an advertising agency stands out here. He is especially successful in elaborating the centrality of interpersonal dynamics in the firm's relations with

their client firms providing an understanding of advertising as a medium between major producer firms. Roberson's (1998) study of men working at a medium-size factory is compelling with regard to the practically literal grind of day to day assembly line work, as well as in exposing the sensibilities of interpersonal relations within and across hierarchies in and outside of the workplace. Matsunaga (2000) and Wong (1999) focus on department store; the former incisive with regard to the complex interactions of hierarchy and, exploitation of gender in organizational life in Japan, and the later exposing the intense competition and politically cliquy nature of the relationship between Japanese managers overlaid with a local/foreign dynamic at a Japanese department store in Hong Kong. Sedgwick (1996, 1999, 2000a, 2000b, 2001) focuses on cross-cultural organizational dynamics in subsidiaries of large Japanese manufacturing firms abroad.

As the only non-western society at a comparable level of economic development to the west, Japanese society provides an important comparative corrective to, and often a thorn in the side of understanding of complex industrial modernity that have traditionally been based upon observations of western societies alone. The analytical strength of anthropological work on Japanese organisations has made it abundantly clear that activity within formal organisations and relations across organisations are a pervasive feature of the experience of modernity in Japan.

When, from the late 1970s, Japan was acknowledged as an economic threat, western business leaders needed an explanation of Japanese industrial success that could be accessibly packaged so that they could improve work group dynamics and knowledge-creation in their own companies, and so continue to compete. Thus, it seems clear that empirical studies of Japanese corporations in large part provided the impetus for proliferation of the term 'organisational culture' in organisational studies (Ouchi and Wilkins 1985). When highly successful, domestic Japanese corporations seriously threatened western firms, most notably through exports from the 1970s to western countries in the automotive and consumer electronics sector, in the 1980s internal innovation as a source of international competitiveness became an essential concern of large corporations throughout the world, and one around which the Japanese were

recognised masters. 'Knowledge creation' at Japanese firms, especially 'quality control circles' and related innovations on assembly lines- burst into the popular press. This also created the opportunity for established scholars to entitle books along the lines of Dore's 'Taking Japan Seriously' (1987) and, if somewhat less significant academically, Vogel's 'Japan as Number One' (1979).

Meanwhile, at the practical level of the international political economy the key response to the extensive success of Japanese consumer goods exports was an international agreement- the Plaza Accord (1985) – which doubled the value of the Japanese yen against the US dollar and by extension nearly all foreign currencies. In so doubling the cost of Japanese exports and having the cost of foreign purchases, Japanese firms were well positioned to globalise in terms of the prerogatives of economics. That is, these firms were, in effect, obliged to become multinational corporations not only, as previously, in trade but in production as well. Of direct interest they were obliged to move increasingly significant proportions of industrial production and, therefore, their organisations- the source of their domestic knowledge-creation success abroad. However, unlike knowledge generated from within an inward-oriented Japanese organisation which is highly centralised 'at home' in Japan itself, the 'transnational enterprise' model calls for knowledge generation from a global network of cross-national, cooperating sub-organisations in an 'Integration-Responsiveness' framework (Bartlett and Ghosal 1989; Bartlett 1986). The prescriptive notion was that 'transnational enterprises' should respond to local markets and information while they seek cross-border integration of their extensive, global organisational capacities. Whether or not one accepts the possibility of transnational firms as anything more than a utopian model sold to managers as a mindset.

Westney succinctly sums up the distinctive thrust of analysis of Japanese firms respectively in their domestic and overseas settings, suggesting that the differences are 'paradoxes', which are as below.

1- The Japanese management system has been a key source of Japan's competitive advantage, especially its decision-making processes, which acted to encourage extensive information sharing and knowledge creation and its human resource

management system (Aoki 1988, Nonaka 1988). But the Japanese management system has been a key weakness of Japan's MNCs, especially its decision making processes, which weakened information sharing across border, and its HRM system (Bartlett and Yoshihara 1988, Lifson 1992).

2- Japanese firms have exhibited a remarkable capacity for learning from other countries (Cole 1989, Rosenberg and Steinmueller 1988). But Japanese MNCs have exhibited a notable incapacity for learning from their subsidiaries in other countries (DeNero 1990).

3- Japanese firms have been models of effective linkage between strategy and organisation, in terms of developing dynamic core capabilities (Prahalad and Hamel 1990) but Japanese MNCs are struggling to build organisational capabilities to match their international strategies (Bartlett and Ghosal 1989).

Rather than paradoxes, as Westney would have it, the matter at hand is a straightforward recognition of differences, and problems, in the ways Japanese firms manage in foreign settings in contrast to within Japan itself. Since persons manage corporations the problem is differences in the ways Japanese persons interact with and consider 'other' persons, even pro forma members of their own firms, in contrast to how they interact among Japanese members, i.e. themselves. At various levels of sophistication, this problem has puzzled analysts of Japanese firms abroad for some years, i.e. in the work of Hamada (1992), Brannen (1993), Kleinberg (1994), Botti (1995), Sumihara (1996), Sedgwick (1996, 1999, 2000a, 2000b), Fruin (1999), Wong (1999) and Sakai (2000), as well as in the naturally related literature on non-Japanese persons working in Japanese firms in Japan itself (Hamada 1991, Grimshaw 1997, Clemons 1999, Reed 2005). The crux of the matter in the study of Japanese multinational corporations, which are organisations at the very core of Japan's inevitable engagement with globalisation, whether dressed up as evolutionary stages of multinationalism, responses to structural macroeconomic conditions, market opportunities, and so on, comes down specifically to the Japanese in cross-national, and so, cross-cultural, relations. In the following section the important cultural factors responsible for success of Japanese MNCs in India, noted by the famous anthropologist KONDO are mentioned.

Cultural Factors for Successful Businesses of Japanese MNCs in India

I. Joint-venture

Merger and Acquisition (M&A) has been one of the preferred methods of Japanese business mainly to gain control of management operations. However, it is also important to understand the risks in the M&A business. In India there remain many cases where the family of the founder holds much of the stock of the major corporations. Corporate governance problems such as irrational transactions between family companies or the central positions being taken up by the same kinship group therefore continues. As Kondo (2012), writes, for Japanese corporations engaging in business partnership, it is necessary to perform prior studies with due diligence listen to the reputation of the owning family in a detailed manner. A lack of mutual understanding has also proved to be a problem when Japanese companies buy assets in India. The story of Japanese M&A in India is more famous for its high-profile failures than its successes. These include the purchase by pharmaceutical company Daiichi Sankyo of Ranbaxy in 2008 and NTT's joint venture with Tata Group in 2009. Similarly, in yet other instance, according to Mr. Sumitani of Kokuyo who brought India's Camlin said, "cultural gaps still exist in some areas, not least in the area of compliance" (Nikkei, 2014). Therefore, in this context, the deep knowledge of anthropologists about family and kinship relations can help to take quick and wise decisions. And if needed they can also do research for better suggestions. For example, Hamada (1991) who helped Japanese and U.S.A businesses to understand each other by negotiating everything from factory layout to product appearance between them.

II. Central Decision Making

It is true that the nature of corporate decision-making also plays an important part. As discussed by Kondo (2012) when Osamu Suzuki decided to enter the Indian market in 1983 many considered his actions irrational and premature. By partnering with MarutiUdyog Ltd., founded by Prime Minister Indira Gandhi's son Sanjay, Suzuki not only understood the importance of elite government relationships but also the opportunities which the Indian market could provide. Suzuki also made a

personal commitment to India and his unique management style is often attributed to the auto firm's success. In this context, it can be said that the management needs to understand not only the cultural diversity of the workforce but also the local needs where it operates. These hidden needs can be unravelled by business anthropologists who can assist multinational corporations to understand the cultures of countries in which they operate. Besides, being sensitive to human diversity anthropologists are valuable for team training and care for changes in new procedures, mergers and corporate restructuring especially in global companies involving different cultures. Increasing diversity becomes strategic and sensitive to the needs of the people and this has been the focus of anthropologists (Jordan, 2010).

III. Adapting to the Indian Market

A common lament by Japanese executives and trade bureaucrats is the delayed realization that products which sold in previously established and developed market such as United States, Europe and even ASEAN were unsuitable for India and needs to be redesigned. This is largely achieved through comprehensive market surveys which paid attention not only to the differences between India and other markets but also peculiarities within India for example according to one Japanese journalist interviewed for example, Korean firms discovered that whilst in the north the preferred colour for refrigerators is white, in south it is red. Hence, only by understanding detailed studies of the market, this type of nuance is visible. Infact, according to one executive at LG, localization of products is not enough but what is required is 'micro-localization'. As Oike, Managing Director of Yakult Danone in India has stated "it is important to Indianize a product and at the same time, not let down on quality". A few Japanese companies were successful in this way. Toyota was thus able to control the top share of automobiles and increased the variety of vehicles offered while carefully reading consumer responses and gained the top spot in the consumer segment.

In this context, business anthropologists are able to manage the aesthetic as well as symbolic capital and understand how products and services have connotations and values beyond its tangible benefits (Alves, 2009). As Denny (2002) explains, "My work

is in decoding the meaning of brands, bringing products and services to life as cultural beings, understanding their role in the context of everyday life, where meaning is produced and consumed. It is at heart a cultural analysis". The uniqueness of anthropologists is the using material culture, which plays a role in constructing identity and thus for understanding human behaviour. In this case, example of Miller (1998) can be cited who has written about consumer response to the introduction of a new variety of Coca-Cola for successful consumer resistance to the dictates of a powerful multinational corporation and its product though sold globally has different local meanings.

IV. Large Scale Advertisement

Another factor for success is the implementation of aggressive and large-scale advertisement campaigns. Since India's liberalization of the advertisement industry in 1991, this field has been ranked, along with mass communication/media, as one of India's highest level industry. The Japanese are gradually realizing their own inactivity and outdated approach to the Indian market has lost them time (Kondo, 2012). However, some of the companies felt the need of advertising industry and invested also. As Ito from Panasonic India stated in late 2011, "Localization has been key to our success for penetration in the Indian market place.

In global business, anthropologists study communication strategies and support in defining, projecting and managing the brand value, and the effects of advertising, commercials and promotions (Pant and Alberti, 1997). Anthropologists have also explored the mechanism by which advertising forms move cultural meanings from their context into the realm of goods and services (Malefy and Moeran, 2003). Kemper (2003) analyses the presentation of goods by advertising firms using the case of pressed flower and scent in Sri Lanka where effective television advertisement captures the local image, while managing to be generic at the same time. This explanation accounts for 'glocalization' phenomena that anthropologists have reported in other contexts.

V. Corporate Culture

The relationship between the corporate office and its local subsidiary is also crucially important. The main challenge faced by any employee sent overseas is adjusting to a change in lifestyle. India as an

emerging economy, presents several potential adjustments but the means through which these are tackled depends as much on the corporate culture from which they were sent to the host country. When Japanese companies come to India, the expatriate staff members often have a difficult time adjusting to India's temperature, food and other living conditions, which contrast with those found in ASEAN countries and particularly in Japan. As a result, training and equipping the Japanese staff to adapt to their new environment becomes important. When Japanese staffers have no desire to come to India and are forced to come, their low morale has a negative impact not only on their productivity but also in the productivity of their Indian colleagues. In such cases the corporate house should take some meaningful steps for smooth functioning of organizations in the local level.

The fact is that not only products move, but also people as businesses employ them leading to cultural differences between the employees and managers. In a study of an Iowa meat packing plant, Grey (1999) demonstrated how the globalization of business creates this kind of cultural issue. He found that the managers in the meat packing plant hired migrants from Mexico as force. Many factors contributed to the high turnover. Gray found a clue to understanding this high turnover which lay in the pattern of migration developed by the Latino workers. While the locals considered the wages to be insufficient for the difficult and the dangerous work, for the migrants the job was relatively well paying and easy to get, so others from the village followed them. This way the migrants took advantage of the available jobs, and the recruitment system was assured a steady stream of workers. The workers also maintain strong ties with their home communities. Supervisors were pressurized by their superior to meet production goals but they did not have the necessary resources to motivate workers to care more about the jobs. They also have difficulty communicating with the migrant workers. Gray recommended many issues like training in people skills, mandatory cross-cultural training skills for supervisors and wage rise for workers which would result in higher productivity. Thus Gray's study demonstrates ways in which cultural factors play a role in businesses that use a global workforce.

VI. Human Resource Relation

The next important factor for success in India is the ability to maintain a high level of quality in human

resources. Since of the time needed to establish local operations and demand for high level negotiation skills in India, finding the right personnel for the Indian venture can be much more difficult than for many other countries. Besides, there is mainly a lack of available middle managers who might reliably oversee the local operations (EIU, 2015). Meanwhile, cultural differences are exacerbated by the relative dearth of personal contact between Japanese and Indian people as only around 7000 Japanese work in India as of 2012 (Statistic Japan dataset, 2012). Hence, finding the right personnel for medium and small sized Japanese companies is a challenge. A small number of Japanese firms of this size who have made inroads into the Indian market, namely, Toyo Engineering, Kansai Paint, Lgarashi Electronics, and Yuken have adopted the 'Shock Crops' strategy. This involves investing in a few key individuals who know India well and who can take quick decisions and know how to read changes in the Indian market. These talented individuals guide the venture, slowly giving more and more responsibilities to the local staff while learning how to adjust operations to meet the unique needs of local consumers. Ensuring positive human resource relations within companies is also important for the reputation of firms among their employees. For example, Eisai, a successful Japanese pharmaceutical company in India owes much of its success in India by hiring skilled Indian staff at their corporate home office who had studied abroad and gained experience about Japan.

The anthropological viewpoint see the organization as a cultural entity and all its components like structure, reward system, rules of behaviour and goals as the components of the organizational culture. However, as no culture is perfectly integrated and isolated entity, similarly an organization is a subculture within large cultural unit or societal culture. Thus, an organization is a wave of interacting cultural groupings, as for example, individual employees of an organization are members of ethnic, regional, gender, and professional cultures outside of the organization which contributes to the greater cultural picture. Hence, from an anthropological perspective, it is important to study the interrelated nature of organization while studying business organizational culture. This can be demonstrated by comparing cultural universals with a list of important

characteristic of an organization. Anthropologically each of these organizational topic is part of the cultural whole, as for example, the reward system cannot be separated from organizational culture as they are one set of ideas and behaviours that contribute to and are integrated with all other aspects of culture, even though this is studied as part of culture's economic system (Jordan, 2003).

An Empirical Account of JENESYS-2016

As mentioned earlier, the first author who is visited Japan for ten days as a Jenesys-2016 fellow, a student of the Japanese Language Pilot Project (JLPP) and a research scholar in the PG Department of Anthropology, Utkal University, Bhubaneswar, Odisha from 28th February to 7th March 2017. The programme Japan East Asia Network of Exchange of Students and Youths (JENESYS (2016) is an exchange programme which invited 257 students and youths from 11 overseas third-world countries like India, Brunei, Cambodia, Philippines, Singapore, Thailand, Timor-Leste, Vietnam, Malaysia and Lao to promote people-to-people exchanges between Japan and the invited countries. The theme of the programme was 'Economics', which was set for strengthening Asia-Pacific economic partnership. The programme is organised and sponsored by the Ministry of Foreign Affairs (MoFA), Japan and the Japan International Cooperation Center (JICE) and facilitated by the office of Consulate General of Japan in India (Embassy). The following paragraphs highlight his first-hand experiences of his stay in Japan, his visit to various business organizations and his discussion with Japanese CEOs as well as his living with a Japanese family to be a participant observer of Japanese culture.

Twenty three Indian delegates selected from various parts of the country, from different educational institutions as well as professional business delegates from companies reached Delhi on the 27th February 2017 to fly to Tokyo. The programme began with a presentation by Hideo Kimura, who is the Executive Director of the Strategic International Management Associates (SIMA) on the 1st of March. His presentation included an overview of the present day Japan, its economy, geography, climate, culture, history, modernization and situations after the Second World War. On the next day officials from

the department of planning and promotion gave their presentation followed by industrial visits to Tohoku Electric Power Company, Noshiro Thermal Power Plant, and Kazeno-Matsubura Wind Power Station in Akita prefecture.

A luncheon exchange programme with all local business delegates and government officials of the host country was organized on 3rd of March, the visiting delegates have an opportunity to discuss with some Japanese CEOs. The first presentation was made by Mr. Yoshitaka Taki, Founder and CEO of Nippon SMT Co., LTD, a semiconductor based MNC which has its presence in Indonesia and Philippines and manufactures products like PCB boards, USB memory cards and boards for sensors for lift switches, indicators, speedometer and so on. It was followed a presentation by Mr. Taro Kanazawa, managing director of Dynamic Sanito Inc. briefing how family business of pest control solutions grew up as an MNC with its branch operational from Singapore. The other business delegates were from Hokuto Bank Co., LTD, Omori Construction Co., LTD and various government officials from Akita Trade Promotion Association, Akita Chamber of Commerce and Industry and so on. Their presentations gave first-hand knowledge about the business activities and strategies of Japanese companies who develop their business in the participating countries. During lunch the first author had opportunity to sit besides and talk to Mr. Taro Kanazawa who could speak English. who was sitting beside me as well as know the English language. He shared his opinion to expand his business to India in general and Odisha in particular. He is very much interested to expand his business but as a medium entrepreneur he also described the possible risks to do a smooth business in India. He said,

“My Company is always believes in environment-friendly pest-control products. I was inspired and learned this method from my grand-mother and mother. At the beginning, my mother was using this pest control in our home and gradually she gave this to our neighbours and then sent to local market also. So, after my studies I was interested to market this product and set up the Dynamic Sanito Inc. The Dynamic Sanito has many branches in the whole Japan and also in Singapore. Now Dynamic Inc. is interested to go further to other countries and India is

one among them as the country has a big consumer market. So, if you can talk to your state government officials and arrange a meeting our company delegates can go and talk about the possibilities. Further, as my company is a medium scale one, the large scale capital and workforce investment at one time will be a risk for me. So it will be better to go for partnership either with the State Government or any private enterprise. In this context, Dynamic will also need some local personnel who can understand our business motto and requirements so that our business will sustain for a long run while being profitable. So please take it (his business card (mesi) and if possible try to arrange a meeting to start a new business partnership.”

His words clearly highlighting the points which are discussed in the previous section such as merger of two business organizations, right personnel (cross-cultural human resource), understanding of Indian culture, set up new organization, etc. This situation clearly states that the present situation is a very good scope for the anthropologists, particularly the business anthropologists who can be right person for the companies like Dynamic Inc. who are very much interested to do business in India. The respective state governments have also many responsibilities to grab from this situation. Mainly, for small and medium industrial set up many things can be done by merging the Indian industries with the Japanese counterparts.

Conclusion

To conclude, Japanese companies, particularly the small and medium- scale ones, want to set-up and expand their businesses in India, which has now prove to be a favourable destination for such ventures. But the cultural gap between the two countries poses to be a major barrier for this development. However, this can be effectively solved by sensitive handling of the cultural factors required for such ventures with business anthropologists working in India. As the understanding of both producer culture and consumer culture is always an important parameter for a successful and sustainable business, the present business environment provide a very good scope for business anthropologists working in India to apply an anthropological perspective in business consulting as an alternative source of employment. In this context, learning Japanese language and a

training in business anthropology can provide additional skills for anthropologists to improve their quality and be a part of the business world. Further, Japanese and Indian universities can do collaborative research for the successful business of Japanese MNCs in India as well as their Indian counter parts in Japan.

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Constructing the Drop-out Childhood: Implications for Formal Schooling among Paniyars of Wayanad District in Kerala

Manojan K P

Abstract

The drop-out rates among the adivasi communities in India are still in alarming conditions. Each attempt of the central and state policies on education have given priority in addressing this issue. But it is evident that there lies a large number of unsatisfactory parameters in the context of adivasi education which poses a number of questions. Why is there a drastic level of discouragement and withdrawing conditions produced by the formal schooling structures? Why are the experiments on addressing the drop-out continuously failing? What are the issues involved in the epistemological frames of formal schooling curriculum? To answer these questions, the present paper attempts to discuss and analyze the process of drop-outs from an ethnographic study conducted among the Paniyars of Wayanad district of Kerala.

Keywords : *Drop-out, Formal schooling structures, Critical Pedagogy, Curriculum.*

Introduction

The phenomena of school drop-out among adivasi children are not a recent concern, which is prevalent ever since the educational services started reaching to the Adivasi areas. By the beginning of the last quarter of the twentieth century, the entry of children of marginalized strata into the schooling appeared as a trend across regions in India. In a chronological note, if we look into the empirical assessment so far, an overwhelming progress is visible in terms of their participation (Sujatha, 2002; Narayana, 2010; Prasad, 2010). However while comparing with the non-adivasi population; a disparity is visible in the indicators like enrolment, dropout or absenteeism of the adivasi children with an alarming condition (Sujatha, 2002). Bringing this context into Kerala, a state claimed to be the most progressive in the country in terms of development indicators like literacy, education with better standards of living such as high life expectancy and less infant mortality rates. However, it is contended that, the condition of adivasi's in these domains are at a position of severe disadvantage. Specifically, in the educational regime, the alarming rates of dropout are a recurring phenomenon among adivasi children and the efforts to bring it down are continuously in fail (Prasad, 2010). Throughout, enormous accounts of quantitative studies on the aspects of dropout among

adivasi children are emerging rapidly. These studies largely carried out under the policy frameworks through empirical research methods and found a common pattern of analysis signifying largely on the socio-economic aspects. Other than the dilemmas prevailing on these socio-economic regimes, the aspects within the cultural contradictions between the formal schooling and the habitational milieu interrogated considerably in the disciplines such as anthropology, sociology, education and many more interdisciplinary frameworks in recent years. A common trait even found in these studies is that the issues of the agency and subjectivities of children and their conflicts with the pedagogical processes are not sufficiently explored (Nambisan and Rao, 2013; Batra, 2015). More specifically, there is a vacuum of studies in the comprehensive form especially from the perspectives of immediate stakeholders like children, parents, and teachers in the respects of a qualitative inference. Issues such as incompatibility of existing curriculums against the aspirations of adivasi children as a prominent causality in creating dropouts are less explored (Kumar, 1985; Singh, 1995; Manojan, 2012). Positing in this realm this paper attempts to map out the social occurring of dropout among Paniyars in Wayanad, the largest adivasi community in Kerala through a qualitative lens.

Implications of Curriculum and Pedagogy: Contextualizing Adivasi Vulnerability

The discourse of knowledge distribution in the educational regime and its implications for the children from disadvantaged communities reminded rapidly in the academia. The scholars like Krishna Kumar (1985, 1989 and 1991), Shukla, 1985, Rudolf C Heredia (1995) Padma Sarangapani (2003), SaradaBalagopal (2003, 2003.a, 2003.b), NandiniSundar (2004, 2010), R Govinda(2002) and Sujatha (1999, 2002) were keen in their studies in addressing this predicament. Importantly, the traditional natures of curriculums in schools are argued to be disengaged from the life and culture of adivasi children (Kumar, 1985, 1989). Within this, the neglect of their languages, history, folklore, and the knowledge systems in the curricular frameworks eventually lead the children to frustration and alienation (Singh, 1995; Sunder, 2010). In the pedagogic level, the apathetic attitude of teachers towards the language and knowledge systems of often appears to be a problem for the children. Apart from this, the exclusionary behavior of the non-adivasi peer children in the name of colour, clan, dress, dialect, and occupation make adivasi students more vulnerable that eventually results in their withdrawal from schools.

More specifically these conflicts between the traditional home culture and the modern school culture also create certain constraints for Adivasi children (Ghosh, 2009; Singh, A. K, 1995). The child's home environment caters an environment of freedom and pleasure is drastically different from the scheduled hours of school timing attached to the bell rings of discipline in the schooling structure. Quite often, these children are in a territory of differences and have not gone through a phase, which brings up an obligatory consciousness towards educational responsibilities in their communities (Isaac, 2010). Correspondingly, there always exist certain fear factors in a typical school environment in the authoritative form. It can be due to the behavior or attitude of the teacher manifested in the various forms of punishment includes insulting and labeling. It is common in a classroom that the performing students get rewarded often and the weak student is blamed as inefficient, backward, and ignorant. This is an outcome of the power relation between the student and teacher. Likewise, the failure in any division, especially more than

once, makes him/her feel a sense of insecurity. Similarly, a lack of interest, motivation, aspiration, and ambition in life are common in Adivasi students (Pradhan, 2004: 150-151). It argued that these children have a long memory of oppression hailed from the social formation of their communities, they exhibit the 'culture of silence' and become silent or inactive in classrooms (Freire, 1970). Ideally, the teacher as a democratic pedagogue must enhance children to break these sorts of submissive attitudes and to bring confidence in them. In addition to this, the language factor becomes a major hurdle for them in the learning process.

According to the 2011 census, the Adivasi population in India is 104 million constitutes 8.6 percent of the total population settled in more than 600 groups of varying cultures and dialects. In Kerala, Adivasis are 1.14 percent of the state's total population, which is 0.43 percent of the country's total ST population (GoI, 2011). Their literacy rates vary significantly from the non-Adivasi sections. In Kerala in the year 2001, the Adivasi literacy rate was 60.4 percent against the general rate of 90.4 percent within the state. In 1991, it was 57.22 percent against the total literacy rate 89.81 percent (GoI, 1991 and 2001). A comparison of literacy rate of Adivasi with total general population would reveal the widening gap between them. When it comes to the context of the dropout in elementary schooling, Kerala has frequently balanced with a low dropout rate. A decade back in the year 2005-06, the dropout rate in Kerala was 0.59 percent at the lower primary level, 0.52 percent at the upper primary level and 1.29 percent at the high school level. In the year 2006-07, it was 0.59 percent, 0.52 percent, and 1.38 percent respectively. Among the 14 districts of Kerala, Wayanad has the highest dropout ratio having a dropout rate of 4.18 percent among the Adivasi students (KILA, 2013). In the community wise dropouts, the major share contributed from the children of Paniyars. In a study by Narayana(2010), it finds that in the level of primary school (1-7) the dropout rate of students in Kerala in 2010 is 46.02, and for Wayanad, it is 50.63 which contributes 80 percent by the Paniya children, (Narayana, 2010) while, it is 34.71 for the secondary school (8-10). In terms of the educational attainment of Paniyars until date, among the illiterate Adivasi groups, 34.81 percent are from Paniya community. The percentage of people who completed 10th or intermediate is 2.81

and 1.65 is the percentage of the graduated. There are some few countable postgraduates and definitely no engineers and doctors so far (see table 1) (Kila, 2013).

Table 1 Educational Status of Tribal communities in Kerala

DISTRICT	Persons	Illiterate	Formally educated	Neo literates	Total	Percentage	Overall literacy (Total Population)
1 Thiruvananthapuram	10149	980	9058	111	9169	90.34	92.66
2 Kollam	4120	747	3281	92	3373	81.87	93.77
3 Pathanamthitta	5792	666	4976	150	5126	88.5	96.93
4 Alappuzha	2793	375	2387	31	2418	86.57	96.26
5 Kottayam	10622	717	9797	108	9905	93.25	96.4
6 Idukki	35978	9335	24592	2051	26643	74.05	92.2
7 Ernakulum	7999	1585	6172	242	6414	80.2	95.68
8 Thrissur	4984	1601	3264	119	3383	67.88	95.32
9 Palakkad	41881	17743	22335	1803	24138	57.63	89.95
10 Malappuram	12561	4207	8013	341	8354	66.5	93.55
11 Kozhikode	9633	1695	7605	333	7938	82.4	95.24
12 Wayanad	137374	39349	93751	4274	98025	71.36	89.32
13 Kannur	34265	7791	24880	1594	26474	77.26	95.41
14 Kasaragod	43729	11745	28873	3111	31984	73.14	89.85
Kerala	361880	98536	248984	14360	26344	72.77	93.91

Source: KILA survey, 2013

The district wise dropout in the state as per the report published by KILA, the vulnerability of Wayanad in terms of producing a huge number of dropouts in a single academic year itself. The districts Wayanad, Idukki, Palakkad, and Kasaragod are the places of Adivasi concentration where the dropout rate is too high. Six children in every 100 Adivasi students of Wayanad are out of school amounting 1351 dropouts across government and aided schools whereas, the number of dropout in other districts such as Idukki and Palakkad is 202 and 184 respectively. An examination into the occurrence of dropout specifically in Wayanad in the last ten years reveals

(See Table. 2) that the general dropout rate varies in between 1 to 2, whereas, the Adivasi dropout is in between 3 to 7 in these years. The percentage of the Adivasi children within the general dropout highlights the disparity between the Adivasi and non-Adivasi through the last decade. Every year an average of 73 percent of the total dropout in Wayanad is Adivasi children. It was 84 percent in the years 2012-2013 and 2015-2016. In the period from 2007 to 2017, the total number of general dropout was 17771 in which the major share 13015 children were from Adivasi communities who went out of the school for various reasons of incompatibility.

Table II Dropout in Wayanad District (I to X) from 2007 to 2017

Academic Year	Total Enrollment	Tribal Enrollment	Total Dropout	Tribal Drop Out	Total Dropout Rate	Tribal Dropout Rate	Percentage Of ST In Total Drop Out
2007-08	126132	26017	2718	1661	2.15	6.38	61.11
2008-09	126213	27427	3365	2154	2.66	7.85	64.01
2009-10	125767	28738	713	516	0.56	1.79	72.37
2010-11	124452	29566	1264	913	1.01	3.08	72.23
2011-12	122816	30179	1463	1130	1.19	3.74	77.23
2012-13	118960	29560	2053	1727	1.73	5.84	84.12
2013-14	114963	28987	1771	1368	1.54	4.72	77.24
2014-15	114761	28738	1746	1352	1.52	4.70	77.43
2015-16	113972	27896	1380	1163	1.21	4.17	84.28
2016-17	112082	27794	1298	1031	1.16	3.71	79.43
Total	1200118	284902	17771	13015	-	-	73.24

Source: Field Survey, Data Collected from DDE, Wayanad.

An Ethnographic account of the Paniyars of Wayanad

The field area of the study is located in Wayanad district of Malabar region, north part of Kerala. In terms of demography, Wayanad is the largest Adivasi settlement in Kerala. They constitute about 17.43 percent of the total population of Wayanad. Around 36 Adivasi groups enumerated in Kerala and 12 among them inhabit in Wayanad itself (KILA, 2008). Out of the total Adivasi population of Wayanad, almost half of them belong to Paniya community. At the beginning of their early generations, Paniyars were wandering in the hilly areas of this region for centuries. They did not possess any particular occupation pattern and they were completely depended on the forest resources (Thurston and Rangachari, 1909; Aiyapan, 1948). Their language called Paniya, which has no script and seems to be a mixture of Tamil, Kannada and Malayalam languages. They converse in Paniya language in their home and community as well. Adivasi communities in Kerala all have the experience of severe social exclusion and alienation from their traditional livelihood, geographic territories and cultural spaces. Within this Paniyars are said to be the most vulnerable and still living at the bottom line of development. If we look into the

trajectory of social exclusion of Paniya community we can see that they have continuously oppressed under feudal, colonial and post-colonial period and continuing even till the present-day neo-liberal paradigm.

One of the notable features of the Paniya community is that, they have undergone the experience slavery under the bonded labour system since the 10th or 11th century A D. The Paniyas life as agriculture labourers might have begun when the Goundars from Karnataka and Chettis from Tamilnadu migrated to Wayanad and started cultivating here. They made Paniyars and other Adivasi Adiyars as bonded labourers to work in their paddy fields and other farming sites (Kunhaman, 1989; Santhosh, 2008; Prasad, 2010). It was only in few places in India Adivasis subjected to the slave system. There has found evidences for the exchange bonded labourer even in the 1980 in certain parts of Wayanad. The rich folklore persistent among the Paniyars such as dances, stories and songs narrates instances of their oppression under the slave system. The bonded labour system is considered as most exploitative system devised and maintained by the landlords belong to upper castes (Aiyapan, 1982; Kunhaman, 1989).

The menace of British colonialism is said to be the

one of the crucial episode that forced the adivasis in Wayanad to get dispossessed from the forest as well as other natural resources. The different forest policies and property rights initiated during the British regime has taken advantage of the marginal conditions of adivasis who were illiterate and turbulent with the modalities of modern political institutions. None from those vulnerable adivasi communities got education or could engage with the formalities of technicalities required to perform. In addition to that a huge amount of exploitation occurred in terms of the land transaction by betraying the illiterate adivasi populations. The construction of dams and the expansion of plantation industries has acquired the forest lands traditionally inhabited by the adivasis and they got displaced during each of these intervention by the government. In the post independent India also the forest bills or land reform policies could not help in improving the trivialities faced by the adivasis, particularly Paniyars. The accelerated migration happened from the Travancore region of Southern Kerala to Malabar has created more instances of land alienation for them. Especially the Syrian Christians has occupied huge area of land from adivasis with a meager rate and they expanded their territories within a five-decade of period (Johny, 2006; Tharakan, 1976; Cherian, 1999). It is evident that the migrant population has increased in each decade from 1920's to 1980's and which resulted in making the adivasis populations as a negligible strata in the cultural geography of Wayanad (Panoor, 1963 & 1989). The traditional occupational and cultivation patterns maintained by the adivasi folk in the region got replaced by the newer forms of agriculture in the region which disadvantaged the Paniyars mostly since they were concentrated in the paddy fields and allied occupations.

It can be also found the widely celebrated Kerala Development Model in terms of social and economic progress is outside of the experience of adivasi populations in Kerala. Studies argues that there had been created an 'outlier' in the history of Kerala, wherein the Dalit, adivasi and the fisherfolk communities couldn't get the fruits of the development and they continue to halt in the deprived contexts (Kuriyen, 1995). The land reform interventions initiated by the government could not do justice to the adivasi communities and the land has reached only into the upper and middle-

classpopulations who were included in the 'peasants' category and the adivasi 'workers' were remained out of this scheme. Consecutively the later periods of 20th century till date has created certain improvements in their socio-economic condition but not in a significant form. The government policies and interventions could make them enter into the civil society realms as well as the public sphere as in education, health, trade and employment but it is observed that only some adivasi communities such as Kurichyars and Kurumars could access this mobility who were landholders since long back (Tharamangalam, 1998; Parayil & Sreekumar, 2007). Several studies lament that the condition of Paniyars, Adiyars and Kattunaikar who had an experience of slavehood in the history (Kjosavik & Shanmugaratnam, 2004 & 2007). These correlations signify the importance of land and other basic rights as the mandate of any marginal communities to get empowered.

Currently, they are seen indulged in forest dwelling and occupations in the unorganized sector. Recently a considerable amount of Paniya youth has turned to construction related works and women found jobs under the employment guarantee schemes. Nevertheless, they are often disadvantaged in getting surety of a number of jobs regularly and this situation has an impact on their poor economic status. The sight of people sitting idle in their hamlets in Paniya settlements without having any jobs now appears very normal. There would be three or four children in each family staying in the same shed and might have quitted the school (at least one child in the family). These different issues have a strong relation to the devastating attitude of children towards schooling.

The trajectory of Paniyars in the contemporary history reveals that they are yet to find their autonomy in the private, public as well as the intellectual regimes in the civil society. The mere literacy level or the enrollment status would not alone help in articulating their rights and demands. In fact the educational regime has not successful in addressing the real aspirations of their educational potential or could not successfully engage them into the processes of education. It signifies, there are severe complexities involved in the educational experiences of Paniya children and their attainment in different spaces of public sphere. The dropout

phenomenon has been a bottleneck in the effective delivery of education among (Paniya) adivasi children. Through this paper I would argue that the formal education regime couldn't engage the adivasi children into real of critical engagement or least a positive engagement with the knowledge process. The phenomena of dropouts cannot be considered as a mere occurring in the structural-functional perspective, but rather a severe domain where multiple echelons of power relations are operating simultaneously. As a result the causality of the occurring of dropout must be interrogated to unravel the cultural politics behind this.

Objectives and Methodology

The context elaborated above posits certain ambiguities within the schooling for Adivasi children and the occurrence of dropout among them. The study here thus attempts to probe on following research questions vide; (1) what are the social conditions prevailing in school environments that create dropout among Adivasi children? (2) Why is there a drastic level of discouragement and withdrawing conditions in the formal schooling structures? (3) What are the implications of conflicts between children's socio-cultural life and formal schooling structures in dropouts and; (4) How far children perceive themselves as dropped out and how it implicated in their everyday life?

Two types of schools are available in the study area. One is Government school and the other is Private Schools aided by the government. Both these schools function similarly and considered equally in administration, training, and pedagogy under state board (SCERT). Adivasi children enroll these schools according to their geographical and transport conveniences. The study is conducted through ethnographic fieldwork relied on three major methods; vide, (1) Life history, (2) Interview, (3) and Participant Observations, Five selected dropout Adivasi children from the Paniya community in the age group of 6 to 18 are considered for the case study. Another five students attending the school regularly has considered for the interview. To get the perspective from the delivering end, information from five teachers from the selected schools gathered through unstructured interviews. To strengthen the observations further a non-participant observation method also deployed in the communities and in the school premises. Four

different aided and government schools two each from Mananthavady and Panamaram Panchayaths of Wayanad district selected for the study. The lists of the respondents have selected through simple random sampling from the school records and payrolls.

Experiencing Exclusions: How are we becoming dropout?

Life histories as a method of ethnography has used in this section to make an account of the experiences of the children in their own perspective. For this, the tools like detailed interview, informal interactions and participant observations deployed at the subject's respective habitations in their settlement as according to the need. Five children from Paniya community selected randomly from the details the school records those reported as dropout in the last five years. The names of children presented in these cases changed to ensure the confidentiality of the research.

1. Madhu who was a student of eighth standard in 2014-15 was the younger one of the two children for his agricultural parents. His parents said that he was regularly going to the school and accidentally stopped in a day. I met him in his home. He was very reluctant to speak up in the initial interactions. Later, after establishing a good rapport, he opened up and shared his experiences. In fact, he could not explain what was the specific reason lead him to decide to stop going to school; he gave a vague response to my queries. In the middle time of his academic year, he has visited his sister's place in Kambalakkad; a nearby village and spends some weeks thereof. Due to the continuous leave for more than 15 days, the school authorities removed his name from the school register, and thereafter he was reluctant to go to school premises. The School he had studied was neither good nor interesting and he was ready to go to some other schools nearby. He recalls that even though he understood the teachers never asked him a question and they did not give much attention to him in the classrooms. On an on-off context like that, he gradually stopped attending schools. He was unable to explain the actual reasons for his withdrawal. In totto, it resembled as an outcome of various discouraging and threatening experiences for him. His expressions were very implicit and bleak but genuine, lovely and expressed with no pulse of regression or rebellion. He was energetic in

climbing trees, laddering and felt free with the ambiance of freedom to celebrate. He said that he has the interest to study but he is not interested in the subjects given in the school. He used to forget the things he studied in the school and gradually lost interest in that practice. He is ready to go to some other school and said he would study well if there are no disciplinary measures like the former.

2. Sreejith; a twelve-year-old boy is the eldest among the three boys to his parents who are agricultural workers. He has stopped his schooling in 2013 when he failed in the fifth standard. He was good in sports and he performed well in sprint and high jump. Since he has not promoted to the sixth standard, he felt lazy and disappointed. During the last three months of the fifth standard, he was absent for two months. This made him unable to attend the exams and the end- term classes. After this, he stopped going to the school and started going for some manual works for cheap wages. His parents said that they are very much interested to make him educated and want to see him with some good job. They are providing him all the facilities they could muster for his education. They are ready to spend more as much as they can for children's education and there is no need for Sreejith to go to work and earn for the family. In the school, he got no suitable companies and received less attention from his teachers and peers. He identifies himself as never active in the classroom and wishes to sit silently. In the sports-related events, he was active and was the champion in a few items. Nevertheless, no teachers gave him any directions or guidance in sports other than the occasional casual comments. He remarked that he never find any classes as interesting. The topics discussed in the classrooms appeared strange too. He felt active and energetic in the evenings and holidays back at home with the elder ones in the community who were going for some menial jobs and making money to spend as they wish. This made him interested to go with them for assistance work and he earned wages from them. During the last schooldays, he was going with his friends for some work in a distant place so that he could not attend the classes on those occasions.

3. Ambili; she is aged fourteen and stopped going to school in her sixth standard in 2012. Her father left the family when she was very young. Her mother goes to work and takes care of the family including Ambili's Grandmother. They have neither land of

their own nor a proper house. They live in a temporary shelter. Now, they got land to construct a home and are waiting for some financial assistance from block Panchayath under the government housing scheme. During the interaction with Ambili, it is observed that she is neither interested in going school nor to talk about the classroom experience or other instances of her schooldays. One thing about the school, which she remembers vividly, is that she was quite upset with her weaker position in the classroom. Naturally, she was not active in class. Some of her classmates often ignore her in-group activities. She herself has the opinion that she was not good in studies. During her school days, one teacher often encouraged her on many occasions. Once she left the school, she totally lost the connection with the school and she does not like to study further. She wanted to be with the grandmother and mother at home. She seems to be content with what she is now.

4. Radhika's story is not very different. She was in ninth standard in 2014 and dropped school two months before the end- term examination. She has one younger brother in the sixth standard and they live in a joint family. Her parents expressed great hope in educating them, but they were disappointed on Radhika's decision to stop going to school. She herself believes that she is not much interested in learning things but interested to go to school along with friends. Before quitting the school, she was frequent and was not absent. In her last academic year, she was absent for a month due to fever and other illness. After taking one-month leave, she lost interest in the school. She started staying behind the home and looking after the household activities. Even though her parents compelled her to keep going school, she refused.

5. Sarath; is a single parent child aged fourteen. He stopped his schooling in the eighth standard. His family is very poor and his mother goes for work to look after him and two more people in his family. They are facing severe economic crisis. They do not have a proper home or permanent income source. They all are staying in a temporary home and waiting for financial assistance from the government to construct a new home. Sarath was an average student in the class according to his own opinion. He could read, write and comprehend the lessons offered in the classroom. He promoted to eighth standard in 2014. In between the academic year, he

started going to work in a hollow bricks industry. He earns around 300 rupees per day and that wages increases every year. He says that this money is sufficient for him to help his family. Even if he studies along with this, he would only manage to get similar amount of salary. He appeared as comfortable with his current position and he does not want himself caged in a school. During the interaction, he did not share any occasions of pleasure in the school days. He also said that he is not interested to go to school any further, even if all the financial issues are resolved.

While taking these anecdotes of their expressions, we could see some common patterns emerging out of it. The reasons for the dropout of these five children connected in many aspects. Firstly, the socio-economic conditions of these five children act as a major obstacle in their educational prospects. The condition of economic deprivation affects the entire prospects of a family in terms of education, health, housing, and wellbeing. In almost all conditions, children are the first victims of this disadvantaged-ness and their choices, aspiration, and career being jeopardized due to this. Sreejith's story leads us to make an apprehension that school is not a neutral institution but affected by the larger socio-economic and political conditions of the society. In his case, though his parents were ready to invest, whatever meager resources they have, in the possible ways for his education, he wants to go to work and make his own money. This, in his point of view, would enable him to assist his parents in family expenses. The cases of Radhika and Ambili portray the problem of girl children in the families who are experiencing multiple levels of marginalization. These two cases of experience of being dropped-out are not simply an issue of their condition at home but it is about the inaccessibility of services that ought to be emancipatory in bringing up girl children.

The second aspect is the structural issues of the school as an institution within the classrooms and outer environment. Prominently, the school does not act as welcoming spaces that accommodate these children with an underprivileged background in terms of emotional and socio-political concerns. All five students had expressed that they gave less attention and care from the teachers. The school as an institution exerts authoritarian power over the children in many ways. Such as in the form removal

of name from the school register, making them fail in divisions with rigid rules that make the children keep a distance from the comfort sphere of school that is supposed to be friendly for these children. Here the problem is not just with the mandatory frameworks of norms but also about the historical concern towards these children from marginalized communities. These cases thus lead us to assert that school as an institution has established certain forms of control and surveillance through its official organs that are difficult for the Adivasi children to cope with. The school, which is, ought to offer a friendly atmosphere instead caters feelings of academic turbulence and a troublesome site of experiences. The problems and difficulties of a child to learn the lesson also remain un-addressed. Eventually, the schooling as a site appeared distancing, leading the child to become sophisticated within the schooling environment.

Thirdly, the disinterest expressed by the children about knowledge transmitted by the school. Almost everyone among the respondents has shared that they could not find anything interesting in the topics taught by the teachers. This, in fact, raises a crucial pedagogical conflict with the school-knowledge and the cultural milieu of Adivasi communities. The cause of disinterest cannot be seen as a problem of the capability of children to engage with the curricular knowledge, rather it emanates from the lack of concern towards their knowledge and cultural milieus, which have a varied tradition of distinct epistemologies. This mismatch results in the larger terrain of disinterest among the children whereas the curricular frames devised in a way along with the imaginaries of a dominant mainstream.

What do the 'Regular' Children have to say?

The section above has derived from the expression of those children who are the dropout from the schools. In this session, the author discuss the cases of five non-dropout students from the same community and these cases employed for a comparative analysis. The rationale behind such an account is that a comparison between the stories of dropouts and non-dropouts help us to unravel the differences of experience of these school going students from that of the dropped outs which are already explored in the case study section above. Their responses collected from interviews briefed below under certain specific themes. Since

interviews conducted here represented in the form of a narrative description comprehended from the analysis of their responses to each question raised. Among the respondents, three are girls and two are boys studying in the fifth, sixth, and seventh standard.

1. Positioning School in the Daily Life - Among the five selected students, all are regular in schools, have not shown much absenteeism and never failed in any classes. Interestingly, they all love their school primarily because the school provides meals and breakfast. Compared to the home, they get good food in schools and it is joyful eating with friends. Girl students shared that they get friends only in schools, not in the home and there are plenty of game equipment available in the school. In terms of the classroom, they are having the opinion that they are active in classes. However, there are some 'more' active students who often receive rewards are the pets of teachers with a privileged position. The boys say that they considered backward on some occasions reasons that they do not know. One boy added further that he was often ~~get~~ discouraged by the teacher in becoming a class leader when there was a class topper who was also interested in the same post. Altogether, they all are having the opinion that school is a good place to be even though there are instances of bad experiences. They also strongly believe that they all get some good job in the future after getting educated and hence, they should take schooling seriously.

2. Comprehending the Teacher-Student Relationship - Children are having major difficulty in understanding subject mathematics, English, and Hindi. Science, Social studies and the stories in the lessons seems interesting. However, when unfamiliar things taught in the class they lose their interest and connectivity between the topics. In their observation, these topics are welcoming for the non-Adivasi students. Apart from the difficulties of the subject, the teachers are unable to create attention and kindle curiosity in some sessions primarily because they failed to make imaginations work about certain matters that they are explaining. In their experiences, they fear teachers a bit, even though they teachers are all helpful to them. Many teachers are helping them personally to make the student understand and they lend some emotional support on some occasions. They shared that teachers sometimes took them outside the

classrooms to the natural settings to teach and this was very interesting to them. They like teachers who visit their home and interact with their parents. They feel comfortable in school with such teachers. In terms of punishment, all of the five respondents have got at least five punishments. Not all are severe in form. The punishments are of the form such as keeping stand over the desk, beating with small sticks. Girls said they are considering it as a corrective measure to make them good citizens, Boys on the other hand opined that such punishments of getting out, standing on the desk are often humiliating and disturbing. Even though they get such punishment, they would cover it by some defense mechanisms such as making it as a heroic act.

3. Difficulties in Classroom interactions and their performances - They are not having the opinion that they excluded or discriminated in the classrooms in terms of color, race, or cleanliness. Nevertheless, they disturbed by the fact of considering them backward on many occasions. Very few students are always in top positions and are very much active even in-group activities where the Adivasi children generally fail to participate. Non-Adivasi students knew many things related to the topics that the Adivasi children are not familiar. This is conspicuous in terms of the Adivasi student's linguistic expressions. Students who are well equipped in Malayalam and familiar with English seem to have expressed superiority towards the Adivasi students for their pronunciation and dialect. Sometimes they felt humiliated in telling their parents' name because others laugh at it. The problems of the language they face in the classroom pedagogy also, they find it difficult to get the meaning of certain Malayalam word, which is often used, in the textbooks. In those occasions, they would skip the word this will lead to the loss of connectivity between lessons learned already.

4. Difference between school and home - The reason behind putting this theme is an attempt to analyze the bridging between two locations; school environment and the home environment. In many cases of the dropout, Adivasi children are more interested to stay in the home. Here the question is how they differentiate between school and home. They prefer home than school but they have no problem in going to school that aroused their interests. However, they observe certain issues that

are structural in nature within the school which thwart their expressions such as freedom and liberty in movement in terms of talking and playing. In the home, they will not have any restrictions to play. Instead, in school, they have to follow certain rules and disciplines bounded by the school ethos. They stated that in the home they considered as equal with all others in the community but in school, they feel considered themselves as inferior to the non-Adivasi children and they did not even know why.

From the impression of the school-going children, it is very difficult to reach an apprehension that the children had democratic forms of experiences in classrooms. Since the Adivasi children are not in a position to unravel the politics and reason of their seemingly inferior position in the society they will not be able to explore much in a reason-bounded form. In the first level, in terms of pedagogy, it observed that the Adivasi children are facing difficulties compared to the non-Adivasi children. Some subjects like mathematics, Malayalam, and Hindi are not easy for them. The reason is that the languages of these disciplines are different from the Adivasi children's dialogues of transactions and this leads to the difficulty in comprehending it. In fact, it is the problem of the difference between their transaction language and academics language. It leads to the assertion that they face problems in the classroom language, which is not their mother dialect.

The Teachers' Reflections

Five teachers are selected for this specific interview. All are teachers at the primary level and teaches topics interchangeably as the Headmaster instructs. The major subjects they teach include basic science, social science, mathematics, English, Malayalam and environmental science. All of the teachers have more than 10 years of experience in teaching and well acquainted with the issues of Adivasi children in the area and have been intervening in dropout cases. The teachers are having a common observation that the Adivasi children have some problems in comprehending the subjects compared to the non-Adivasi students. Though they consider these children as intellectually smart and active they do recognize that when it comes to the classroom curriculum they Adivasi students tend to withdraw from their smartness and activeness. In addition, the children show lack of attention in the classroom in

certain topics and it is difficult to drag their attention to this. This may be due to many reasons; they do not understand the language they speak, or the topics discussed are being unfamiliar and alien to them or some other regular nature of restlessness visible in Adivasi children. They strongly raised a common opinion that there are some issues with the existing knowledge-frame given in the curriculum, which is not suitable for the specific cultural context of Adivasi children. Therefore, they insisted the need for assessments from the perspective of Adivasi children as important in deciding the syllabus for them at least in the future.

Adivasi children are active in the classroom and playgrounds for extracurricular activities; they seem weak in classroom performances. Always in classrooms, non-Adivasi children dominate in discussions and debates. Exceptionally in very few cases seen, where Adivasi children are active in classroom interactions. It is common that even in the question-answer session, Adivasi children found inactive. One teacher shared the opinion that their fear has some historical reasons, wherein they tend to fear any form of authority since their ancestors have faced a severe form of tortures from government authorities and other dominant sections in the society. This is the reason that they tend to appear as obedient before any forms of superior authority. The school as a structure reproduces the same form of authority in a different way and act adversely against the democratic performance of the children in the classroom.

The teachers often visit the Adivasi settlements and they can identify the parent by name. Many teachers had conducted events in schools with the participation of parents in organizing it. They shared that though the parents are interested to attend the meetings, they sit idle and do not interact. This is most common in the PTA meetings and in fact, PTA meetings are less worthy for the Adivasi community is concerned. In fact, it is more worthy if the teachers are visiting their community and asking about the performances of the children individually.

With regard to the curriculum issues, all these teachers have experienced at least two terms of curricular revisions in their period. They opined that once DPEP (District Primary Education Programme) started it has given more advantage to the Adivasi children, where their experiences also

considered in the classroom pedagogy. However, they do have a consensus that the existing curriculum has some disadvantaged-ness to the children from marginalized sections. They suggested that if there are some collective methodologies to combine both students' milieu and the existing school framework it would be helpful in making an effective pedagogical model for the Adivasi children. In most of the cases of dropout, the major reason for their withdrawal is that these children cannot find many things as interesting to them. These apprehensions lead to the necessities to cultivate the spaces of interest among the children through appropriate pedagogical interventions.

Usually, when the drop out happens in their assigned classes, they visit the houses of the children and make efforts to bring them back. In some cases, this would work effectively through the cooperation of parents. In other cases, once a child is a dropout, they cannot find him further since they escape their vicinity. A teacher having more than twenty years of experience shared that she used to meet the children at their home and tried to conduct counseling for the child for understanding the real reason for their dropout and to correct it. She said that it was successful in many cases if it is a small issue curable by herself. The teachers shared distinct forms of opinions regarding the reasons for dropout. They are having the opinion that it is because of the family issues and poverty children are getting dropped out, and these children are not interested in studying. A teacher commented their parents of these children are showing their eagerness to get financial grant aids only, but not in children's future.

Conclusion

If we take a comprehended analysis of the perceptions of the three categories, a consensus on the implications of formal educational operands is peeling out. The entire discussions from each section have at least one argument that, dropout does not emerge out; rather being built up. Imperatives of multidimensional consequences are occurring within the regime of schooling in which the Adivasi children are more vulnerable to it. Their class position is under severing material deprivation. It further goes coupled with the racial and ethnic prejudices operate simultaneously in forming the subjugated position of Adivasis. The resemblance of which emerges within the schools as the

withdrawn subjectivities under conditions denied of their autonomy and critical reflexivity. With regard to the status of being a dropout, there are contentions among the Adivasi children against categorizing and labeling them as dropouts; who are inefficient in achieving the desired objective.

Santhosh from Kattunaika Community; an ex-student and present organizer of Kanavu, the alternative school in Wayanad says;

'We are stopping at a school is not because of we are incapable or less efficient, we may be unable to do many comprehensions and arithmetic operations given by the textbooks in an alien language, but we are able in many things. Once we fail to do any classroom exercise, the teachers used to blame us as good for nothing. We are not supposed to buy that, we are not inefficient or ignorant, we are organic in many ways and the teachers cannot identify those in us. The categorically labeling us as dropouts is highly differentiating us into another stratum within 'Adivasis' again. We are not dropouts, we are pushed out by the system or else; one should see the dropout as our form of resistance against the impositions of discomforts in the period of schooling in our lives, It is our Walkout!

This contention endorses the presumption of dropout, as an outcome of social construction under hegemonic social relations. It further implicates that schooling cannot be seen as an independent activity; rather has to be perceived as a regime of various subjectivities contesting at the same time and place. To put it in empirical terms, the context here elaborates a qualitative defect in the schooling of Adivasi children where their socio-economic deprivation and the cultural response of the schooling structure are functioning at a not-so-welcoming genre. An interrogation well informed by the historicity and the political of Adivasi children is the need of the hour. A radical reconstruction may not be possible at a sooner pace, but there are possibilities to unravel and transform the elements in those structures that act as hindrances to their liberation. A socio-political will of affirmative action that stands on the concern of social justice must be in priority to make schooling as the spaces of autonomous learning in a democratic environment.

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Photo Ethnography and Photo Elicitation in Visual Anthropological Research: A Discussion

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Abstract

Since Visual Anthropology is embedded in cultural images, in most societies, family photographs have considerable cultural significance, both as repositories of memory and as occasions for performance of memory photography can better be seen as the material result of cultural practice. Hence, still photography in visual anthropological methodology can be seen both as a tool to obtain or record data and can also be an object of anthropological inquiry, an expression of anthropological information. The present paper is a discussion of using photography as an ethnography or Photo Ethnography as the analysis of photography yield important cultural information. Similarly, Photo Elicitation is the analysis of a series of photographs forming a continuum of thoughts in the memory of the informants. Both methods can be useful in documenting cultural data of any community.

Key Words : Still Photography, Cultural memory, Photo Ethnography, Photo Elicitation.

Introduction

Visual anthropology logically proceeds from the belief that culture is manifested through visible symbols embedded in gestures, ceremonies, rituals, and artifacts situated in constructed and natural environments. Culture is conceived of as manifesting itself in scripts with plots involving actors and actresses with lines, costumes, props, and settings. The cultural self is the sum of the scenarios in which one participates. Although the origins of visual anthropology are to be found historically in positivist assumptions that an object's reality is observable, most contemporary culture theorists emphasize the socially constructed nature of cultural reality and the tentative nature of our understanding of any culture.

The scholarly study of photography has been dominated by the art historians search for significant work by important artists and the discovery of the naïve products of vernacular practitioners.

During the past decade a social approach to the history of photography has emerged in which photographs are seen as socially constructed artifacts that tell us something about the culture depicted as well as the culture of the picture taker. Such studies

concentrate more on the social context of making and using images and less on the photograph as text. Visual anthropologists have contributed to this movement with their analyses of historical photographic practice as cultural behavior (Ruby, 1988; Edwards, 1992) and ethnographic studies of vernacular practices, such as snapshot (Musello, 1980). These studies attempt to provide insight into the conditions of production and consumption, so that the meaning of the image can be comprehended as something negotiated rather than fixed. For example, the photographs of Edward Curtis can be understood as the products of a nineteenth century romanticized view of Native Americans and criticized as being racist and ethnocentric (Lyman, 1982). At the same time, the Curtis images can be examined for their value to contemporary Native Americans who use them in constructing their cultural identity (Lippard, 1992).

Photography is not merely the instrument of indexical inscription; it is a technology for visual display experienced as meaningful. Materiality translates the abstract and representational of "Photography" into "Photographs" which exist in time and space. As Porto (2001) argued, one should think in terms of representational, imprinted objects

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rather than an imprinted representation. The possibility of thinking about ethnographic photographs rests on the elemental fact that they are things- “ they are made, used, kept, and stored for specific reasons which do not necessarily coincide. They can be transported, relocated, dispersed or damaged, torn and cropped because viewing implies one or several physical interaction". These material characteristics have a profound impact on the way images are “read”, as different material forms both signal and enforce different expectations and use patterns.

The primary function of photographs taken in the field is as aide-de-memoire, similar to written field notes, to help reconstitute events in the mind of the ethnographer. Some images become illustrations for publications, slides or lectures or occasionally the basic for an exhibition. Once the fieldwork is written up the photographs are deposited either in a museum or in the author's personal archive along with written field notes and are usually forgotten.

On a formal level, photographs taken by anthropologists are indistinguishable from the snapshots or artistically intended images taken by tourists, that is, there is no discernible anthropological photographic style. Although ethnographic photography shares some affinity with the documentary, the aesthetic and political intent of most documentary images separates them from ethnographic photography. Studies by Bateson and Mead (1942) and Gardner and Heider (1968) are among the exceptional attempts at publishing photographic ethnography. Some Sociologists in the International Visual Sociology Association are extending the tradition of photo ethnographies. In the 1990s experiments with multimedia- hypertext technology opened up the promise of a future, with computer generated pictorial ethnographies which was a new kind of text producing a different type of learning experience.

Use of Photography and Pictorial Media in Anthropology

The last 20 years have seen a remarkable transformation of the world of images. The technology to both see and produce picture has literally gone around the world. Anthropological pictorial media research has taken three slightly different paths:

1. The examination of historical photographs, usually of non-western people, to reveal the ideology or culture of the maker and how that manifests itself within the image.
2. The study of indigenous media as a production of culture and
3. The ethnographic study of the reception of pictorial media.

Cultures that were once the passive subjects of ethnographic and documentary work are now imaging themselves, and critiquing the image made by others. After ignoring pictorial media as a researchable topic for some time, anthropologists have finally seen their potential to deal with important theoretical interests such as globalization. An anthropology of pictorial media has now become increasingly common and acceptable as a research topic. Several universities are offering graduate training in media research. Scherer(1990), a scholar interested in the representation of Native Americans, has been one of the pioneers in the study of historical photographs (1990). Edwards'(1992) edited volume examines the work of several different British photographers and is another outstanding example of this scholarship. The chief merit of this research is to offset the naïve use of historical documents as objective records of the past, and to see them as ideologically constructed as any other form of human communication.

While the anthropological analysis of the content of historical photographs is valuable, it is unfortunate that few anthropologists seem interested in researching the social uses of contemporary or even historical photographs (Pinney, 1997; Jones ,2002). Unlike film or video, anthropologists have not shown much interest in using photography as a technique for communicating their research. This is curious because one of the classics of visual anthropology is Bateson and Mead's photographic ethnography (1942). As more and more anthropologist utilize the Web and CD- Rom to produce ethnographies, and programmes like picture story and PowerPoint make it relatively easy to combine words and pictures, anthropological photography will play a much more important role.

The anthropological study of films and television has been a more common interest among anthropologists working in pictorial media,

particularly in indigenous media as among the Australian Aboriginals, Inuits and Kayapo. Two edited volumes cover most of the significant literature (Crawford et al., 1996; Ginsburg et al., 2002). While there are a few precursors like Mead and Metraux's study of the "culture at a distance" (1953) and Worth and Adair's Navaho film project (1972), it is pioneering work of people like Turner (1991) and Ginsburg (1991) that established the legitimacy of the subject. The anthropology of pictorial media encompasses two basic types of research:

- 1) Reception studies that explore the impact of pictorial media on a culture (Caldarola 1990; Dickey 1993)
- 2) The study of how people, often non-Western people, make their own production (Michaels 1987, Turner 1991).

Ethnographically based studies of media production and consumption in the western world are unfortunately less common. (Intintoli, 1982; Michaels, 1987; Kottak, 1990).

Anthropology's interest in pictorial media production and use should be seen in a larger context. During the past 20 years there has been both a methodological and a subject matter shift among scholars who study visual objects. Among some, an interest in art shifted to a focus on pictures, that is, from the extraordinary to the ordinary. For example, some art historians moved away from textual analysis of art to a contextual analysis of visual culture objects (Mirzoeff, 2002) and, the use of ethnographic method among cultural studies scholars (Hall et al., 1996; Silverstone, 1994). The initial emphasis in cultural studies was television reception studies, gradually broadening to include studies of the social life of the living room (Schulman, 1993). There was a convergence in interests and methods among media scholars from a number of different disciplines and that the anthropology of pictorial media has captured the attention of cultural anthropology with departments increasingly listing media as one of the acceptable research interest. As the anthropology of pictorial media becomes more and more acceptable, the anthropologists associated with the research seem less inclined to identify themselves as visual anthropologists which produced an interesting dilemma. Some anthropologists, who have long

decried the fact that visual anthropology has been ignored and marginalized, now choose not to affiliate themselves with visual anthropology being a part of cultural anthropology. Perhaps it is because media research is only one of their research interests, or because visual anthropology is most widely associated with the making of educational films. Logically there are three ways about how the field of visual anthropology perpetuates itself: by becoming autodidacts that is, by training themselves; through training in departments where one cultural anthropologist teaches the occasional course in visual anthropology; or through the universities that have extensive courses of study in visual anthropology. (Ginsburg, 1998)

Ethnographic Photography

Discussion of photography in the emergent tradition of visual anthropology have been concerned with two principal areas

1. The use of still photographs as a methodological tool in social research,
2. The use of photographs as a means of presenting social research.

The use of still photography as a research method has been fruitfully addressed by a number of scholars (Bateson & Mead, 1942; Becker, 1974; Byers, 1964; Caldarola, 1985; Collier, 1967; and Wagner, 1979)

1. Photography as a Social Transaction

Historically, photography has been viewed as (1) an art and, (2) a precise machine-made record of a scene or a subject. In the first view, the primary concern is the vision of the photographer – artist who uses the technology to produce a creative photograph of which the photographer is the "source". In the second view, the primary concern is the accuracy with which the subject is recorded on film, in which case the subject is the "source" (Byers, 1964)

Approached from either of these perspectives, photographic meaning is conceptualized as being contained within the image itself. The photograph becomes a receptacle from which individual viewers draw meaning. However, these two perspectives fail to consider the role of the spectator in the process of constructing photographic meaning. The viewing process is a dynamic interaction between the

photographer, the spectator, and the image; meaning is actively constructed, not passively received. Barthes (1964) characterizes photographs as “polysemic,” capable of generating multiple meaning in the viewing process.

Similarly, Byers (1964) writes, the photograph is not a message in the usual sense. It is instead, the raw material for an infinite number of messages which each viewer can contract for himself. Hall (1966) has suggested that the photograph conveys little new information but, instead, triggers meaning that is already in the viewers. In order to benefit social research, the use of photographic methods must be grounded in the interactive context in which photographs acquire meaning. Viewing photographic imagery is a patterned social activity shaped by social context, cultural conventions, and group norms in order to present photographs to informants. Some fore-knowledge of the respondent groups' use of photographs is required so that methodological strategies can be planned, and the resulting data assessed within the context of informants' shared meaning.

Musello (1980), in his study of family photography of middle – class Euro- Americans approached photographs as “mechanical records of real events” and not as a symbolic articulations. Meaning and interpretation are most often based on a belief in the photograph's value as a document of natural events and on recognition of its iconic referents. However, the photographic illusion increasingly expand as viewers' interact with a broad range of natural events, experiences, people, and responses which they recall, and attribute to the depicted contents. Presented photographs are embedded in a verbal context delineating what should be attended to and what significances are located in the image, thus providing the contextual data necessary for understanding them.

2. Doing Ethnographic Photography

Schwartz (1989) use of photographs in the ethnography of a rural Iowa farm community builds upon contradictory nature of photography, a medium noted for its realism, yet subjected to multiple perceptions and interpretations. He considers photographs inherently ambiguous, their specifiable meanings emergent in the viewing process. This ambiguity is not a disadvantage or

limitation; rather, the multiple meaning negotiated by viewers can be mined for the rich data they yield. Building upon the evidence that viewers tend to look “through” photographs, he made use of the ways in which photographs are routinely used by middle-class family viewers in order to elicit reaction and information concerning community life which might otherwise never become apparent.

Discussing ethnographic photographs of community life, Musello (1980) tried to establish a “verbal context delineating what should be attended to and what significances are located in the image”. By eliciting this verbal context, Schwartz (1989) attempted to gain access to meaning shared by viewers, and used photography and photo elicitation as a method of gathering data among Waucoma, a rural farm community in northeastern Iowa. After hearing stories about its demise launched a photographic study examining the nature of the changes taking place here. Waucoma, was settled in 1855 by Irish, German, Scotch and English and in 1883 the town was incorporated. The Davenport and St. Paul branch of the Chicago, Milwaukee and St. Paul Railway arrived for the first time in May 1880. The town prospered- four passenger trains and two freight trains stopped in town daily. By 1900 it had grown to include a mill, a post office, four churches, two banks, two hotels, three livery stables, drug stores, hardware stores, grocery stores, schools, a town newspaper, and an “opera house”. A box factory was opened in 1919, providing employment for many residents. The factory burned down in 1923 and its owners decided not to rebuild. According to many residents, these events marked the turning point in the town's prosperity. Once a thriving commercial center serving surrounding farms, the number of main street businesses has declined since the 1920s. The town has experienced a gradual reduction in population, from 457 persons in 1900 to the most recent figure, 308 (U.S. Census Bureau, 1980). The majority of these residents are retirees: farmers who have moved to town, merchants, and elderly widows. Residents often mention greater number in discussions of the town population at the turn of the century, and (Marron, 1976) reports a population of 600 in 1919. The railroad depot closed in 1972 and by 1976 the number of businesses and professional people counted among the population had diminished (Marron, 1976). Today the town has a small feed mill, a grocery store, a branch bank, a

welding shop, a beauty shop, two churches, two funeral homes and two insurance agencies. An attorney holds office hours one day per week, as does an optometrist, and a veterinarian resides in town. Waucoma has evolved from a relatively self-contained, self-sufficient agricultural community into a less clearly definable unit, economically and socially dependent upon surrounding larger communities and on more distant urban centers. The intermingling of traditional rural value with urban culture is clearly in evidence as Waucoma continues to undergo change.

3. Photographing the Community

Photographing requires strategic planning because the act of making photographs may serve as the community's introduction to the photographer. Collier (1967) suggested that the physical environment should be photographed at the outset. A descriptive record of architectural and ecological features is likely to be less equivocal than other kinds of photographic documentation, and serves as a good starting point. Following Collier, Schwartz (1989) began photographing the building in Waucoma and mapping the physical surroundings. While photographing the town, she observed ongoing patterns of daily activity and included these observations in field notes, along with description of photographic activities. Seeing a stranger in their midst making photographs of their town piqued the curiosity of residents, many of whom approached her to ask questions about what she was doing. Initially they sought to identify her and understand her presence by pinpointing her kin relationships within the community. When she told them that she was studying the changes that had occurred over the years in Waucoma, the residents' responses took one of two forms: they expressed surprise that someone found Waucoma interesting or important enough to study; or they told how worthwhile her efforts seemed considering the interesting history of the town.

The camera itself became an important means of entering into the social life of the community, allowing the engagement in understandable, task-oriented activity in the course of observation. Picture-taking provided residents with an obvious reason to start up a conversation. She was able to move from photographing the environment to photographing public events as her contacts with

community members multiplied. Over time, she was able to ask and receive permission to photograph family activities as well. She kept field notes detailing observations, photographic activities, and the results of informal interviews and built an extensive photographic archive showing such things as the physical environment of the town and surrounding countryside, church, associational, and civic events, family activities, the organization of farm labor, farm auctions, and alternatives to farming.

4. Photo- Interview

Interviews centered around discussions of the photographs. Schwartz (1989) study of Waucoma, prepared and assembled photographic sets representing locales, activities and events which appeared to be significant to community members. She chose what to include and how to sequence the photo-sets on the basis of analytical inferences drawn from field notes. The picture groupings were categorized as follows:

- (1) The physical environment a photographic survey of Waucoma,
- (2) Specific locales such as churches, businesses, or the community center, and the public events or activities which occur at these sites.,
- (3) Farm families, including different kind of farm work, different ways of organizing farm work, family activities, events, and rituals,
- (4) The town's Memorial Day Celebration,
- (5) Auctions, including a farm auction, an estate sale held by an elderly women preparing to move into a nursing home, and a sale of the house and household goods of a young couple forced to leave the community in search of better job opportunities, and
- (6) Work activities at a factory 25 miles from Waucoma which provided a significant source of off-farm employment for local residents.

Interviews were held at the homes of the respondents. She told informants, explaining to tentatively arrange pictures into groups organized into what seemed to belong together and what seemed important. She gave them the photographs, group, and asked them to make comments. She did little to guide their responses or probed for further explanations. She took this approach because she

was most interested in the range of responses the pictures might evoke and make an intergenerational comparison among them. These interviews were similar to family-viewing situations described by Musello (1980). Although she had made and ordered the photographs, they were treated attributionally, in much the same way that family snapshots might have been approached. After the interview, Schwartz wrote field notes describing them and noted the patterns that were emerging in the informant responses, comparing the kind of responses generated by members of different generations. After conducting the interviews she was able to play a more active role during the sessions. She could draw upon data from previous interviews in order to probe for overlaps and comparing the worldviews held by members of different generations.

Photo Elicitation

Photo elicitation is based on the simple idea of inserting a photograph into a research interview. The different between interviews using images and text, and interviews using words alone lies in the ways we respond to these two forms of symbolic representation. This has a physical basis the parts of the brain that process visual information are evolutionarily older than the parts that process verbal information. Thus images evoke deeper elements of human consciousness that do words ; exchanges based on words alone utilize less of the brain's capacity than do exchanges in which the brain is processing images as well as words. These may be some of the reason the photo elicitation interview seems not like simply an interview process that elicits more information, but rather one that evokes a different kind of information.

The photographs used in photo elicitation research extend along a continuum. At one extreme are what might be considered the most scientific, that is, visual inventories of objects, people and artifacts. Like all photographs these represent the subjectivities embodied in framing, exposure and other technical considerations. Photographs of this type are typical of anthropological field studies. In the middle of the continuum are images that depict events that occurred earlier in the subjectivities embodied in framing, exposure and other technical considerations. Photographs of this type are typical of anthropological field studies. In the middle of the

continuum images that depict events that were part of collective or institutional pasts. These might be photos of work, schools, or other institutional experiences, or images depicting events that occurred earlier in the lifetimes of the subjects. These images may connect an individual to experiences or even if the images do not reflect the research subject's actual lives. At the other extreme of the continuum photographs portray the intimate dimensions of the social family or other intimate social group, or one's own body. Elicitation interviews connect "core definitions of the self" to society, culture and history. Photo elicitation was first named in paper published by the photographer and researcher Collier(1957), who was , in the mid - 1950s, a member of Cornell University's multi-disciplinary research team examining mental health in changing communities in the Maritime Provinces in Canada. Collier proposed photo interviewing as the solution to a practical problem: research teams were having difficulty agreeing on categories of the quality of housing in the research area. Collier's photographic survey made it possible for researchers to agree on their previously taken –for- granted categories.

Collier concluded the characteristics of the two methods of interviewing can be simply stated. The material obtained with photographs was precise and at times even encyclopedic: the control interviews were less structured, rambling and freer in association. Statements in the photo interviews were in direct response to the graphic probes and different in character as the content of the pictures differed, whereas the character of the control interviews seemed to be governed by the mood of the informants. . Further, Collier noted the pictures elicited longer and more comprehensive interviews but at the same time helped subject overcome the fatigue and repetition of conventional interview.He also noted that photo interviewing involved a more subtle function of graphic imagery. This was its compelling effect upon the informant, its ability to prod latent memory, to stimulate and release emotional statements about the informant's life.

Within visual anthropology there have been a small number of film elicitation studies. For example, Connor et al. ,(1996) filmed the Balinese healer JeroTapakan in a conventional ethnographic film, and then recorded her reaction to seeing these films, and then recorded her reaction to seeing these films

in a second separate film. Film one presents itself as a conventional anthropological film; film two shows the savvy Jero Tapakan asserting her own self definition against that provided by the first film.

These and a few additional experiments are most of the film elicitation found in anthropology. The reasons may have to do with the difficulties encountered in constructing films-about-films, as Marcus Banks noted that "even more so than still photography, the moving images – film, video or television broadcast – is a wayward medium, difficult for the research to control" (2001). This waywardness is partly film's grounding in time and the spoken word, and the resulting fact that a film can contain very few words relative to an essay or book. The organization of film based on elicitation presents the difficult problem of having people speak about images which must be presented to the film viewer; yet a film seldom works well if it is rooted in static images.

In later years Collier (1987) continued to make the case for photo elicitation, for example, in his contribution to the inaugural issue of the journal "Visual Anthropology". Anthropologists often use photographs in interviews but that few of these are written up as photo elicitation studies. Anthropological studies that rely primarily on photo elicitation, however, are few and far between. For example, in the entire publication run of "Studies in the Anthropology of Visual Communication" (1974-1979); renamed "Studies in Visual Communication" (1980-1985) there appeared only three articles relying primarily on photo elicitation: Ximena Bunster B.'s (1978) study of the culture of proletarian mothers in Peru (expanded to a book in 1989), Paul Messaris and Larry Gross' (1977) analysis of how different age groups interpreted a fictional photo story about a medical doctor's indifference to an automobile accident, and Victor Calderola's (1985) study of duck egg harvesting in Indonesia. In Hocking's encyclopedic *Principles of Visual Anthropology* (1975), photo interviewing is only mentioned in passing in a small number of studies, and does not warrant a separate discussion. Examining the journal *Visual Anthropology* (1986 to the present) and the *Visual Anthropology Review* (approximately the same run) finds almost no photo elicitation-based research, except for a study by Keith Kenney of self-portraiture and identity (1993).

Photo elicitation studies have been concentrated in four areas, 1) social organization / social class, 2) community / historical ethnography, 3) Identity / biography/ autobiography, 4) culture/cultural studies.

1) Social Organization / Social Class

These studies include empirical study of family photographs (Guschker 2000), books that document popular education movements (Barndt 1980, 1990), reports of larger projects in which photo elicitation studies played a part, and studies in which researchers completed projects on the impact of children on family dynamics (Steiger 1995), and the social organization of an Indonesian village (Calderola 1985). Many photographs used in these studies catalogue social life; other photographs are produced by the people being researched. Steiger's study demonstrates how technical aspects of photographs contribute to the communication of sociological ideas. Steiger uses techniques such as double flash, varying shutter speeds and the child's perspective to suggest the phenomenological frame of the child. Her subjects come from several social classes in Switzerland, which allows the viewer to easily compare the material circumstance of families with first children, and the meaning of these family changes. Steiger has in the meantime rephotographed couples as they age, move, and add children to their families. The elicitation interviews now include the themes of family change and development, and the photographs comprise a kind of family album.

2) Community and Historical Ethnography

Suchar's studies of gentrification (1988, 1992; Suchar and Rotenberg 1994) use photographs to show how urban neighborhoods based on strategies which derive from their own social locations and identities. Suchar's photographs records refurbishing, redecorating, and ways of occupying space. Suchar approaching his project as a documentary photographer and his photographic skill and sociological acuity lead to visual essays that could grace museum walls as well as sociological articles. The portfolios of fine-art quality images presented to research subjects encourage serious engagement

Suchar's environmentally contexted portraits portray new residents, who represents, the gentrification

process, and long term residents whose worlds are threatened by gentrification. Subjects are posed in their apartments and house, surrounded by the objects through which they define their spaces. The work recalls the portraits and environmental studies of suburbia completed by Owens in 1972. Owens, a photojournalist who was then a student of John Collier, included brief statements from the people he photographed, a rudimentary form of photo elicitation. Suchar's work fully develops this methods by including lengthy and analytically driven interview. Both Owens and Suchar used medium format photography and produced images consistent with that photographic technology. It is not, however, necessary to base elicitation research on professional documentary or art photographs. Sampson- Cordle's recent dissertation (2001) studies the relationship between a rural school and its community by having study subjects (teachers, community members and students) photograph their worlds with inexpensive automatic cameras. Her methods include what she calls "photo feedback" (were photographers analyze their photographs with written comments, what might be called photo-self-elicitation), "photo interviewing" (a more conventional form of photo elicitation) and "photoessays," where subject integrate several elements of analytical thinking, images and reflection. She first performed several pilot studies, working as a photographer, to uncover "the biases that might come out of years of being a rural educator." In these pilot studies she photographed the social world under consideration and assembled the text and images to make photo essay. In the analysis section of the pilot studies she considered her changing role in the community as a researcher and politically committed individual. These essay were integrated into the lengthy and many-dimensional community study. Sampson- Cordle shows how people who are not skilled photographers, working with extremely modest equipment, can be taught to record their social worlds and to process those visual statements in self-interviewing and conventional elicitation methods.

Historical ethnography can be considered the memory of community. For photo elicitation to create historical ethnography, photographs must represent the earlier experience of people interviewed. In practical terms, this means that the photos cannot be more than sixty or perhaps seventy

year old. One book-length historical ethnography relies on photo elicitation (Harper 2001). Here the photos shows the collective organization of agricultural labor, farming technology sixty rural identities were etched in the facial expressions, the gestures, the cloths and the interactional mannerisms of the people photographed. The farmers in the historical photographs were different than the subject who were interviewed, but their farming was the same as experienced by the research subjects. The historical photographs became a kind of memory bookend, a starting point from which to evaluate changes in farming which had occurred in the meantime. In this instance the historical photographs operated simultaneously on the empirical dimension (the farmers' saw in the photograph details of work they had not specially imagined for decades) and subjective dimension as the research subjects saw themselves implicitly in images from earlier decades of their lives.

3) Identity

Researchers using photo elicitation have examined the social identity of kids, drug addicts, ethnically different immigrants, work worlds and visual autobiography. As in the case of community, photographic studies of identity rely heavily on what is seen, raising the question of what parts of identity are not visible. Jo Spence's (1986) autobiography employs her body as a text to confront the social definitions of physical attractiveness and the experience of her own debilitating illness. One other study (Harper 1987b) is a book-length portrait of a single individual: here Willie, a rural artisan, reflects on photographs of his fixing, building, deconstructing and in creating and recreating himself through his work. Several studies of identity focus on ways people mark themselves through clothes, or how they are marked by illness or ethnic differences. The importance of clothes for adolescents made it a natural study using photo elicitation (Hethorn and Kaiser 1999). In the matter of ethnicity, the "invisibility" of ethnic difference to outsiders make a photo elicitation a natural method, as demonstrated in Gold's research on Asian immigrants' definition of Asian ethnicity (1991). The key element is not the form of the visual representation, but its relationship with the culture under study. Images may be made by the researcher or the subject during the research, or they may have been made prior to the study, as in the

case of where subjects interpret their pasts through the analysis of photo archives (Chiozzi 1989; Harper 2001).

4) Culture/ Cultural Studies.

At the core of cultural studies is the interpretation of signs. A common criticism of cultural studies is that researchers often assume how audiences or a public define hegemonic or other ideological messages. Photo elicitation offers a means for grounding cultural studies in the mundane interpretations of cultural users. Three studies of advertising texts (Craig et al . 1997; Harper et al.,2000; Kretsedemas ,1993) may offer a model of how this could be done. In these studies researchers interviewed subject such as Africans Americans Italian and American women and others about meanings of advertisements to show how the group that advertisements are aimed at interpret (accept, contest, or reject) their messages. These insights must then be understood theoretically, that is as indicators of cultural processing of sociologically meaningful messages. Several elicitation studies focused on the meaning of local cultural. In these

studies a researcher takes photographs of a group doing its normal round of activity. Interviews inspire subjects to define how they interpret the events depicted. Several athletic subcultures have been investigated in this manner(Curry et al., 1986; Snyder 1990; Snyder et al.,1993). This is straight forward procedure which sometime produces studies that beg for greater theoretical and substantive significance. In other words, the micro study culture that can be visualized may become an end in itself. With this muted criticism in mind, it is most remarkable how few investigations of local culture have used photo elicitation, an obvious choice for circumstance in which the local cultures have a distinctive visual character.

1990; Snyder et al., 1993. This is straight forward procedure which sometime produces studies that beg for greater theoretical and substantive significance. In other words, the micro study culture that can be visualized may become an end in itself. With this muted criticism in mind, it is most remarkable how few investigations of local culture have used photo elicitation, obvious choice for circumstance in which the local cultures have a distinctive visual character.

Table I Photo Elicitation : Form and Topics

	Disserations	Books	Articles, reflections on larger studies	Articles, research fully described
Social class/ social organization/ family	2 (Guschker 2000; Sustik1999)	3 (Barndt 1980, 1990; Bunster B. 1989)	2 (Collier 1957; Guindi 1998)	2 (Calderola 1985; Steiger 1995)
Community / historical ethnography	1 (Sampson-Cordle 2001)	2 (Harper 2001; Schwartz 1992) .	2 (Chiozzi 1989; Rusted 1995)	6 (Orellana 1999; Suchar 1988, 1992; Suchar and Rotenberg 1994; van der Does et al. 1992; Wagner 1978)
Identity/ biography/ autobiography		3 (Harper 1987b, 1994; Spence 1986)		7 (Blinn and Harrist 1991; Clark 1999; Gold 1991; Hethorn and Kaiser 1999; Jansen 1991; Kenney * 1993; Smith 1999)
Culture/cultural studies			1 (Faccioli and Zucheri 1998)	8 (Craig et al. 1997; Curry and Strauss 1986; Harper 2000; Kretsedemas 1993; Messaris and gross 1977; Snyder 1990; Snyder and Ammons 1993; Stiebling1999) Sources; Douglas (2002) Visual Studies Vol, 17.

Conclusion

Photo ethnography attempts to construct “a record about culture” (Worth, 1980). It is not the photographs themselves which inform, but rather, the analysis of them. The photographs show concrete details of everyday events, activities and the contexts in which they occur, and provide data about community life. The analysis of the images is informed by insights gained through ethnographic fieldwork and informants' responses to the photo-sets. Photo- interviewing, used in conjunction with traditional ethnographic method of data collection, enhances our ability to understand the meaning of everyday life for community members. The use of photographs in ethnography implies a presentational strategy which brings their multiple meanings into foreground. By presenting photographs with a written text which draws attention to informants' varied responses and the role of the photographer as an elicitor, viewers' proclivity to treat these pictures either as mirror images of their subjects or as aesthetic objects might be redirected. The yield of such an approach would be twofold, giving the reader/ viewer a way to understand the culture of the community under investigation, as well as a way to understand photography as a medium of communication. Photo elicitation are useful in studies that are empirical and rather conventional: photo elicitation may add validity and reliability to a word-based survey (recall, this was Collier's first project). But at the other extreme photo elicitation mines deeper shafts into a different part of human consciousness than do words-alone interviews. It is partly due to how remembering is enlarged by photograph itself. Photographs appear to capture the impossible: a person gone ; an even past. That extraordinary sense of seeming to retrieve something that has disappeared belongs alone to photographs, and it lead to deep and interesting studies.

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Conceptualisation of Flowers among the Tribes of Odisha: A Case of Dongria Kondh

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Abstract

Since the dawn of human civilization, flowers have lots of interaction with human culture, starting from the birth to the death of human life. Be it a modern or traditional society, everywhere flowers play an essential role in numerous ways. The present paper basically deals with the Dongria Kondh belonging to Particularly Vulnerable Tribal Groups (PVTGs) of Odisha is found in Niyamgiri hill ranges extending in both Rayagada and Koraput districts. As the present study is an anthropological research, empirical techniques like observation, interview, schedule, focused group discussion etc. are used for data collection from Kurli, Khambesi and Khajuri village of Bissamcuttack block under Rayagada district. Respondents of the study are Dongria Kondh people including both male and female of different age groups. Special attention is given to different religious functionaries and medicine man of the community. This paper is concentrated on various uses of flowers like religious, economic, ethno-medicinal, as food, in personal naming, body ornamentation etc. particularly among the Dongria Kondh community.

Key words : Flower, Dongria Kondh, Odisha, Niyamgiri hill, Community

Introduction

Though flowers blossom in a natural process both in the wild and domesticated conditions, it is very appropriately perceived in human culture in a variety of ways. Though it is not used very much as a food directly, their fruits and seeds keep the world's 7.2 billion people from starvation. Before recorded history, all cultures collected, used, and admired flowers not only for utilitarian purposes, but for their elusive fragrances and ephemeral forms that, ironically, symbolized recurring vigor and even immortality. (Buchmann, 2015). Thus it has several inputs and uses in human culture since the time immemorial. In course of its association with human culture, it is found well expressed in almost all aspects of culture slowly and gradually. From both sacred and secular points of view, flower has been expressed in human cultures cross-culturally in the fields of food, medicine, and as a part of ritual offerings in the religious field along with its commercial field of marketing. It has ultimately raised its position all around the world. For a long time flower have been of very little relevance in human culture studies in different parts of the world.

Therefore, the ethnographic enquiry regarding flower has been, on one hand, a research one and at the same time, it is a never ending aspect of cultural study in almost all human cultures.

A flower has several connotations. Biologically especially from the botanical point of view, a flower is a reproductive organ of the plant, because of which every plant bears flower, fruits and seeds for the propagation of the species, but culturally, a flower has several functional dimensions in the human society. Flowers were the first decorative implement for the earliest attempts of man to adorn himself; they grew all around him and were his just for the taking. (Ernst, 2012.). It is so much so associated with the human members that in the culture of man, flower has found a definite space. Though every human member around the world is directly or indirectly connected with flower as a part of his/her culture, for a long time no specific attention has been paid by any sociologist or social anthropologist in this regard. Mainly because of this, following the pioneering contribution of Jack Goody mostly in the field of sociology (usually based on secondary sources), attempts have been made in the paper to

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present an empirical picture from among the so called primitive or vulnerable tribes of Odisha.

Specifically the tribes under study here (six tribes namely, Dongaria Kondh, Lanjia Saora, Juang, Paudi Bhuinya, Hill Kharia, Birhor) consider flower as a gift of nature equivocally. Flowers are nature's advertisements, using their beauty to beguile and reward passing insects or birds or bats or people willing to attend to their reproduction. (Buchmann, 2015). The similar phenomenon found among Dongaria Kondhs who believe that flower is directly connected with reproduction, except the roots, tubers and other underground products. For most other plant productions flower becomes the symbol of producing almost all fruits, nuts and berries either in edible or inedible form. In case of the roots and tubers and other eatables like greens, flowering is associated with biological maturity of the plant with regard to its eatable part (root, tuber or leaf). Besides the productive dimension, Dongaria Kondhs also conceptualise the flower as (in a symbolic way they also use flower in their folk literature) relating to the beauty of a girl. Among all the six tribes under study, flower has never been explained to express the character, feature or beauty of a male person. On the other hand, the Hill Kharia and Birhor mostly consider a flower with specific reference to their seasonal forest collections especially sal resin, honey etc.

As both the communities are hunter-gatherers and have no connection with agriculture, they mostly depend on the forest resources of Similipal hills and therefore, for them, blossoming of flowers in the forest, as they feel, brings in prosperity through various forest products. Especially in the field of honey collection, when varieties of flowers blossom in the forest which are favourites for the honey bees, mostly the Hill Kharias express their happiness expecting more honey collection in the season. (Dash, 1999) As both the communities say, under the wild conditions of Similipal, plant resources especially flowers never blossom equally every year. Sometimes, it blossoms in plenty in every alternative year. Therefore, every year they don't expect a bumper collection. It may also refer to the celebration of agricultural crop among the Dongaria Kondhs which is known as "Pongalapa" (Nayak, 1989). Due to the Hindu impact (who mostly inhabit in the immediate surrounding), all the six tribes under study here, consider their crop, either from the

cultivated field or forest, as Goddess Laxmi and therefore, when they preserve the seeds in a handmade leaf packet also put a marigold flower with the seed in the honour of Goddess Laxmi who will bless them for the next year's crop. The other two tribes Juang and Paudi Bhuinya are to some extent Hinduised and like Hill Kharia they conceptualise the flowers both for the symbol of beauty and prosperity.

Objectives of the study

Though the study originally deals with various uses of flowers among six Particularly Vulnerable Tribes of Odisha such as Lanjia Saora, Dongaria Kondh, Hill Kharia, Mankidia, Juanga and Pauri Buyan, in the present paper it is focused specifically on the Dongaria Kondh community and their cultural conceptualization and uses of flowers such as in the fields of religion, medicine, economy, art and body decoration etc.

Methodology

As the present study is an anthropological one, empirical techniques like observation, interview, focused group discussion, schedules etc. are used for data collection from Kurla, Khambesi and Khajuri villages of Bissamcuttack block of Rayagada district. Respondents of the study are Dongaria Kondh people including both males and females of different age groups. Special attention is given to different religious functionaries and medicine man of the community who possess more knowledge and experience than the common people.

Dongaria Kondh : A Brief Introduction

Odisha is the homeland to 62 different tribal communities and 13 Particularly Vulnerable Tribal Groups. Dongria Kondh belongs to Particularly Vulnerable Tribal Groups (PVTGs) of Odisha found concentrated in Niyamgiri hill range extending in Bissamcuttack and Muniguda blocks of Gunpur subdivision and Kalyansinghpur block of Rayagada district and Lanjigarh block of Kalahandi district. They claim themselves to be the descendants of Niyam Raja their supreme God and the nomenclature of Dongaria Kondh signifies their living in the valleys of high altitude hills locally termed as Dongar.

They are very well known for their horticultural products like orange, banana, pine apple, turmeric,

and arrowroot etc. in their Donger land. Their hand-woven cloth “Kapadaganda” is very well known for its embroidery work and cultural values. In India, Dongaria Kondhs are mostly known for their Meriah sacrifice which was connected with human sacrifice (a girl-child) in the pre-independence time and at present it is replaced by the sacrifice of a she-buffalo. Dongaria Kondhs are mostly shifting cultivators which is also associated with horticultural practices. Another interesting feature of the tribe is the presence of girl's dormitory in the village where all the unmarried girls sleep in the night and socialize themselves in all the cultural activities expected from them. Very interestingly, the boys in the community keep long hair, use nose and ear rings along with a number of hair clips fixed to the braid like that of the girls. However, among the boys attending the schools and high schools outside the village, this practice is declining gradually.

Flowers and Dongaria Kondh: The Cultural Interface

Whenever, we come across any poster or photograph of a Dongaria Kondh woman the most attractive part is their beautiful ornamentation which is also enhanced by addition of some fresh flowers to their hair knot. Apart from this, three nose rings (Mungeli Murma) made of brass they wore, also give the impression of the design of flowers and act as a symbol of identification of Dongaria Kondh woman which they wear since a very tender age and this can be removed from the body only after death. They call them puyu for a single flower or punga for more flowers. The following are some local terms related to flower. Usually Dongaria women love to wear ornaments with floral motifs designs. Besides they also like to use fresh flowers on the hair lock and knot. Boys also use the flowers on their knots in a similar manner when they visit girls' dormitory.

Table No :-ITerms for Different Parts of Flowers among Dongaria Kondh

Sl. No	Parts (Eng)	Parts (Odia)	Parts (Dongaria Konds)
1	Flower	Phula	Puyu (singular)Punga (plural)
2	Bud	Kadha	Dandi
3	Petals	Pakhuda	Puyu kelu
4	Receptacle	Dempha	Puyu thabedhi
6	Stamens	Phukeshar	Puyu marang
7	Filament	Garva danda (paraganali) (M)	
8	Anthers	Paragasaya (M)	
9	Style	Garva danda (paraganali) (F)	
10	Stigma	Garvasirsa (F)	
11	Ovary	Garbhasaya	Puyu tapadi
12	Ovules	Sahadimbaka	

Flowers and Religion

As already discussed, Dongaria Kondh community is well known for the practice of horticulture and shifting cultivation. So, most of their religious festivals are related to the each important phase of cultivation. As these festivals are held on the hill or Dongar, flowers are not highly essential. Offering flowers to Gods and Goddesses is not an important part of these rituals (as in case of Hindus) due to lack of sacred flowers in Dongars though many wild flowers are available there. For other rituals (non-agricultural) flower is not a common element for worship unless it is specifically demanded or desired by concerned deities.

After the harvesting of *Kosala*, a millet, they put some *lahi punga* (Marigold) on the top of the heap of

the millet in the honour of the Goddess Laxmi. They believe that if Goddess Laxmi will be pleased, more *Kosala* will be produced in future. To all of them, *lahi punga* is the favourite flower of *lahi* peNu or Goddess Laxmi. Apart from this, it is also believed that, for other millets like *Koshala* or *Mandia*, if they decorate the seeds with *lahi punga*, a good harvest will be possible by the blessings of Goddess Laxmi, otherwise next year the crops may be destroyed by monkeys.

The Bichhahapa (communal hunting) is organised during the month of Mar.-Apr.. On this occasion after hunting animals like boar (Bariha) or elk (samber) the team becomes very much excited and bring the hunted animal in a procession by decorating it with *Bandheni Punga* (Cassia fistula

L.) which is available in the forest during this period.

Flowering period of Red gram and Castor plant becomes very crucial for the people. If the flowers will be infected by pest, crops fail severely. Therefore, people perform a ritual called as *Pidika Puja*. In this festival in order to protect the flower of both Red Gram and Castor from insects (*Pidika*) they worship *Jatrukudi*. It is a communal festival and they sacrifice either a goat or buffalo as per the decision of the villagers and the priest. They bring a *pidika* (insect) from dongar to the place of worship and after certain rituals with it they make the insect free. It is believed that if they do so, no insect will damage the crops and their will be a bumper production. Some festivals are discussed below where the use of flowers is highly essential

1. Punapadi

Punapadi is the first eating ceremony of newly cultivated millets like *Kosla*, *Jana* and *Ganthia*. It is a communal ceremony observed in the month of *Dia Lenju* (Oct.-Nov.). In this ritual, young boys and girls play a vital role and prepare the structure of the deity *Jatrukudi Penu*. Young girls collect new crop from each household and also collect different flowers like *Lahi Punga*, *Wati Punga* & *Kasaka Punga* from agricultural field. First they decorate the body structure of deity with flowers and afterwards both boys and girls wear flowers.

2. Ghantaparbo

It is a grand festival observed for three days in the month *Chaitra* or (Mar.-Apr.n-May) in honour of the *Eja penu* (household deity), *Lahi penu* or *Ghata (earthen pot) Penu*. Main purposes of observing this festival are:

- For getting cured from ailments
- For better cultivation
- To satisfy the gods and goddesses when someone becomes the bearer of enough money.

In these festivals they plaster the mud-wall of their houses and paint there different flower motifs and triangle with red, black and yellow colour. Different flowers like *Kandul Punga*, *Japi Punga*, *Tak Punga* etc. are highly required on this occasion.

3. Pongalapa

For the well-being of the domesticated animals such as (goat, pig, cow, poultry bird) and for good cultivation, they observe *Pongalapa* in the month of *Dialenju* (November). It is a communal festival in which flower and rice is collected from each house. So, in the morning one family member of each household go to their own donger and collect various types of Marigold flowers locally known as (*Kasaka Punga*, *Wati Punga* and *Lahi Punga*). It took place in front of the shrine *Jatrukudi*. A buffalo is sacrificed in gap of three years as it is more costly than other sacrificial animals such as (hen and pigeon). In this festival *Bejuni* (shamanin) and all girls as well as boys (if interested) can put *LahiPunga* (Marigold) flower in their hair knots.

4. Angushika

Angushika ritual is performed mainly for the wellbeing of women and children. If a women is facing the problem of miscarriages for several times, cannot conceive or for the ill health of the children, such a ritual is generally performed. *Angushika* is the name of a local flower which is mainly offered to satisfy the concerned deity following which the ritual is so named.

5. Ambapuyu Dakina

This ritual is held in the month of Push *lenju* (Jan-Feb) to appease deities like *aji budhi* and *bima penu* by worshipping mango flowers under a flowering mango tree. It is mainly meant to protect mango flowers from the damage.

Uses of flowers as food

Dongaria Kondhs as they are living in the lap of nature, have immense indigenous knowledge regarding edibility of different plants and its different parts. They believe that any edible flower blossomed first in the forest either cultivated or collected from forest is to be offered to their Gods/Goddess and ancestors first before people use them. Everyone including a child is also restricted to do so. Deviation of the rule may lead to cause various health issues or loss of crop or wealth. So, before consumption of each flower they offered it to their Deity.

Table No:- II List of Flowers Used As Food

Botanical Name	Odia Name	Vernacular Name	Raw (by Sucking its nectar)	Cooked		Beverage
				Fresh	Dried	
Cucurbita maxima Duch	Kakharuphula	Kumnda Puyu		✓		
Musa paradisiaca	Kadali phula	Tadi Puyu		✓		
Brassica juncea (L.) Czer	Sorish phula	Harich Puyu		✓		
Indigofera	Gilri phula	Girli Puyu		✓	✓	
cassioidesnrottlex						
Butea monosperna	Palasha phula	Padeli Puyu	✓			
Madhuca longifolia	Mahula phula	Irpi Puyu			✓	✓
Bauhinia purpurea	Barada Phula	Kaleri Puyu		✓		
Tamarindus indica	Tentuli phula	Leli Puyu		✓		
Lantanacamara	Kanta phula	KunglahaPuyu	✓			
Woodfordia fruticosa	Dhataki Phula	Drae puyu	✓			

Flowers are consumed both in raw and cooked form. Some wild flowers like *Padel punga*, *Kunglaha punga*, *Drae punga* are taken by sucking its nectar by the people (mostly by the children). Some flowers are taken for cooking. They cook fresh flowers and sometimes they preserve some flowers (*Girli Punga*, *Irpi Punga*) by sun-drying method for future use during lean time. So, cooked flowers includes both sun dried flowers and fresh flowers.

Kumda punga (Pumpkin Flower) and *Kaleri Punga* and *Harich punga* (mustard flower) are generally cooked along with their green leaves (*kuchha*). At first they chop both leaf and flowers together and by adding some water, the total stock is boiled. After sometime by adding chopped onion, garlic, chili, salt, they cook it carefully. Sometimes, they also add some rice/*koshla* (millets) to it.

In case of *Tadi punga* (Banana flower), they first remove the stamen which is identified by a long filament (*Jela*) from each flower. Then boiled it by adding water and salt. After this they drain the water and fry it with salt and chili. In another way at first they boiled the flower after processing and cleaning

and drained the water. After it they prepare a stew by adding papaya or red gram to it.

Fresh or dried *Irpi punga* (Mahua flower) are boiled with Tamarind seed/ Sal seed/ red gram and they also make a cake out of it with *Mandia* (ragi) or rice flour. *Irpi kalu* (Mahua liquor) is also prepared from mahua flower in a very tedious process. They fry *Girli punga* by adding salt, chili and oil to it after boiling them several times in order to get rid of its bitterness. Sometimes, they add *leli punga* to the curry to give it a sour taste.

Flowers as a Source of Income

From economic point of view flowers are also valuable for the Dongaria Kondh either directly or indirectly. Generally it is found that in their society, women play vital role in economic activities like crop production to selling of it in the local market. Similarly the collection and selling of various flowers are also done by women folk. After the collection, the final decision is taken by the women as regards the amount of flower to be kept for future use (some as seed and others in dried form as food) as well as for the market.

Table No: III Flowers For Market Purpose

Sl. No.	Botanical Name	Odia Name	Vernacular Name	Place of Collection	Month of Collection	Business Dealings
1	Madhuca longifolia	Mahula phula	Irpi Punga	Forest	Feb- April	Through local Domb
2	Thysanolaena maxima	Phula jhadu	Herpi	Forest and Dongar	Feb – May	Selling through SHG
3	Tagetes erecta	Gendu	Lahi Punga Kaska punga Wati punga	Cultivated in Donger	Nov-Jan	Local people in the weekly market
4	Indigofera cassioides	Gilri phula	Girli Puyu	Forest	Feb-Mar	Local people in the weekly market
5	Brassica juncea (L.) Czcr	Sorisha phula	Harich Puyu	Cultivated in Dongar	Nov-Jan	Local people in the weekly market
6	Woodfordia fruticosa Kurz	Dhataki phula	Drae Puyu	Forest	Feb-Mar	Traders come to village to purchase for its medicinal value
7	Curcuma angustifolia	Palua phula	Batra punga	Cultivated in Dongar	Aug-Sept	Traders come to village to purchase for its medicinal value

Generally women and children are involved in the collection of Mahua Flowers (*Irpi punga*) from the forest during the month of March to April in the morning time. After the collection they dry it by sundry method. Very less amount is consumed at the time of fresh. But they keep dry mahua flower for future use as per personal requirement. After keeping for personal use, they generally sell the rest to the local Domb who ferment them to prepare a distilled alcoholic beverage by locally called “*Irpi kalu*”. This is a favourite beverage of Dongaria Kondh People. They also cultivate marigold in the field both for personal use and market. They usually sell it in the local weekly market. Maximum local Odia people buy them for various ritual purposes

and during December specifically for the propitiation of Goddess Laxmi on Thursdays of Margasira (Nov.-Dec.).

They also sell Mustard greens (*Kuchha*) and its flowers and *girlipunga*, *kumuda Punga* in the local market. Different Self Help Groups (SHGs) are now functioning in the study area whose main income source is to make brooms from the locally available broom sticks which are nothing but the flowers of the plant. Because of the medicinal value of *batra punga* and *drae punga* local traders come to their village to buy from them.

Apart from the, direct use of flowers, indirectly flowers also help people to be economically benefitted in the form of honey.

Table No: IV Types of Honey collected by Dongaria Kondh

D. Kondh name of Honey	Available Place	Time of collection	Purpose of Collection		
			Personal Use		Selling
			Honey	Larva	
<i>Kirga Niru</i>	Trees like Simli, Mango	Night	✓	✓	✓
<i>Ba-al Niru</i>	Hole of Rock	Day	✓		
<i>Lakata Niru</i>	Hole in the house	Day	✓		
<i>Tekeri Niru</i>	Mango trees	Night (In the absence of moon)	✓		✓
<i>Mudad Niru</i>	Trees	Day	✓	✓	✓
<i>Paredi Niru</i>	Trees	Day	✓	✓	

They generally collect honey for their own consumption. But in case, if the collection is more than their personal need, they go for selling. Two types of honey i.e. *Tekeri* and *Kirga* are collected in the night. Out of this *Tekeri* is collected in the night of new moon day (absence of moon). Rest four types of honey are collected in the day time. At the time of honey collection they sometimes bring honey hive to their house and collect honey bee

larva. They take it by frying on fire. Rest are collected in the day time. They use their indigenous knowledge for honey collection.

Ethno-medicinal uses of flower

Flowers are not only useful from aesthetic or religious point of view but also for their medicinal properties which are mentioned below in the tabular form.

Table No: V Medicinal Importance of Some Flowers

Botanical Name	Odia Name	D. Kondh Name	Medicinal Importance
Indigofera cassioides	Gilri Puyu	Girli Phula	Good for anemic mother and roots are used for cough
Madhuca longifolia	Mahul Phula	Irpi Puyu	Constipation
Azadirachta indica	Nema Phula	Nima Puyu	Worm infection, skin disease and snake bite.
Musa balbisiana	Banana Phula	Tadi Puyu	Treatment of Gynecological problems of females
Butea monosperma	Palasa Phula	Padel Puyu	Reduce body temperature

Flowers for Ornamentation

Dongaria Kondhs are very fond of flowers. Both male and female usually decorate themselves with different flowers. But it is more associated with females rather than males. Whenever a Dongaria Kondh woman finds a beautiful flower, she immediately pluck it and put it in her hair knot. Generally they don't plant flower tree in their kitchen garden like the local Odia people. They collect it from *dongars* while returning from their work in the afternoon. So that they can wear it after taking bath (generally they take bath once in evening after completion of work) in the evening for group dance and spending night in dormitory. And rest are kept on the roof of their house to keep it fresh for further use in the morning. Though putting flowers is a personal choice but variation is easily noticed in day to day

life and in special occasions. A Dongaria Kondh girl put more flowers when she pays a visit to weekly market, other neighbouring village, attending marriage ceremony and festivals. The main purpose is to look more beautiful and attractive. So, unmarried young girls use more flowers than unmatured, married and aged women in both daily and occasionally. Though there is no restriction for women to wear flowers daily but heavy workload refrains them from it. But during festival times such women wear flowers when they are free from their usual busy schedule and enjoy. They use it both in single and as a garland depends upon the size and quantity of the flower. For making garland they use thread and needle. Apart from fresh flowers they use ribbon flowers and also some artificial flowers they brought from local market.

Table No : VI List of Some Favourite Flowers for Hair Decoration

Sl.No.	Scientific Name	Odia Name	D. Kondh Name
1	Michelia champaca	Swarna Champa phul	Japi puyu
2	Pandanus fascicularis l-Lam	Kia phul	Kia puyu
3	Jasminum sambac	Malli Phula	Mugura puyu
4	Tagetes erecta	Gendu Phula	Lahi puyu Kasaka puyu Wati puyu
5	Holarrhena antidysenterica	Kurei Phula	Palchi Puyu
6	Rosa hybrid	Golap Phula	Jena puyu

Seasonally, it can be summarized that in winter season they prefer to wear more marigold flowers (*Lahi puyu*, *Kasaka puyu*, *Wati puyu*), whereas, it is Swarna Champa (*Japi punga*) which is most favourite during summer season. In case of rainy season it is the ribbon made flower which they like most due to lack of some attractive flower. Now-a-days rose is their all season favourite flower as it is available in every season. The Dongaria Kondhs women generally use different ring for their fingers. A floral design as ring (like four petals of a flower) known as *puyu mudi* they mostly put on fingers.

Flowers for Naming

The naming pattern of Dongaria Kondhs generally varies with attending different stages of life. For example name giving ceremony is generally organized one month after the birth of the new born baby where he/she is named for the first time as per

name of his/her ancestor. When they entered into dormitory during their early youth they are named by their peer groups and after marriage the in-laws family also assign a name to the new member in their family. Similarly after attaining parenthood when they also named as father and mother of their elder child. Unset of old age also initiate another naming basically given by villagers on the basis of their physical appearance. But apart from the above 5 naming pattern for (stages of life) the name which is assigned by their dormitory peer groups is mainly associated with the name of different flowers basically on the basis of physical structure or personality of the individual. Here it is to note that in other society flower name always associated with a girl but in Dongaria Kondh society both male and female can be called by the name of a flower. Some examples are cited below for reference.

Table No : VII Use of flower in Personal Naming

Sl.No.	Botanical Name	Odia Name	D.Kondh Girl	D. Kondh Boy
1	Hibiscus rosa-sinensis	Mandar phula	Kandulwani	Kandula
2	Tagetes erecta	Gendu phula	Watiwani	Watinga
3	Tagetes erecta	Gendu phula	Lahiwani	Lahinga
4	Indigofera cassioides	Gilri phula	Girulwani	Girula
5	Holarrhena antidysenterica	Kurei phula	Palchiwani	Palcha
6	Butea monosperma	Palasha phula	Padelwani	Padela
7	Nymphaea nouchali	Kain phula	Bendiwani	Bendinga

Very interestingly, when a boy brings some flowers for his lover as a gift item, he is named as per the name of the flower he brought. Sometimes a Dongaria Kondh youth also named as per the name of his dormitory partner. In this way very peculiarly boys are named as per flowers name during their

youth. A very interesting naming patterns also found among aged male of Dongaria Kondh who are named as per more crop he produce in his *dongar*. Suppose an aged have more *Kandula* cultivated land, then he is named as *kanga Puyu*. Some such examples are sited below for reference.

Table No: VIII Name of the Aged Connected With Flowers

Sl. No	Botanical Name	Odia Name	D. Kondh Name	Name of Aged
1	Cajanus cajan (L.) Millsp.	Kandula	Kanga	Kanga Puyu
2	Ricinus communis L.	Jada	Kaba	Kaba Puyu
3	Musa balbisiana	Kadali	Tadi	Tadi Puyu
4	Curcuma longa L.	Haladi	Hinga	Hinga Puyu
5	Linum usitatissimum	Alasi	Tiding	Tiding Puyu
6	Brassica juncea (L.) Czern	Sorisa	Harich	Harich Puyu

Conclusion

The above discussion concludes that flowers have lots of interconnection with Dongaria Kondh culture. They divide total plant kingdom into two

types i.e *punga mara* (flowering plants) and *punga hila mara* (Non-flowering plants). Blooming of different flowers gives them indication regarding agricultural year for example blooming of mango

flower marks the beginning of their agricultural activity. Huge blooming of *Bija* (*Pterocarpus marsupium* Roxb.) tree alert people regarding heavy rain fall in rainy season, on contrary blooming of bamboo tree brings drought in the area. Offering flowers to Gods and Goddesses is not an important part of every rituals as in case of Hindus but it is also indispensable part for certain festivals like *Ambapuyu Dakina*, *Punapadi*, *Pongalapa*, *Ghatparab*, *Kedu Parab* and *Angusika* as already discussed. Flowers provide food to human beings directly or in the form of fruit. Apart from this, certain flowers have also some medicinal properties. It is also valuable from aesthetic point of view, Dongaria Kondh women are very much found of various flowers to decorate themselves and also feel exultant after getting it as gift from their lovable persons. Impression of various floral designs also noticed in tattoo, wall painting, wood carving etc. Dreaming of flowers by Dongaria Kondh women generally initiates their monthly menstrual activity. When a Dongaria Kondh girl frequently dreaming of different flowers it indicates her starting of menstrual cycle and plenty of flowers in dream leads to heavy menstrual flow. Moreover, when a Dongaria Kondh *Dhangidi* (matured girl) dreams her lover offering her flowers it represents that she will achieve motherhood very soon, on the contrary taking away of flowers by her lover manifest her bareness or the time of menopause. Though they use various ethno medicinal methods to cure various gynecological problems but in case of failure, they go for “Angush Puja” (*AngusikaDlakia*), where offering of *Angush puyu* is very much essentials. Thus, flowers play very important roles in making

the life of Dongaria Kondhs more blissful.

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Issues and Challenges of Migrant Women Labourers in India : A Critical Review

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Abstract

The central objective of the present paper is to identify the underlining causes of migration and the working condition, employment status, social security, health and hygiene of women migrant labourers engaged in construction sector. The qualitative exploration was adopted by collection of critical review papers which were linked with migration, women labor, socio-economic status, and its issues and challenges. It also highlights the issues that the women migrant workers face in their work place as well as outside. Finally, it analyses the socio-economic changes brought about by migration in the lives of the women migrant laborers. The methodology followed in this paper is analytical based on the secondary sources. The paper highlights the hurdles faced by women migrant laborers in the construction sector and identifies the lack of grievance redressal mechanism as a primary issue that prevents their access to entitlements and rights.

Key Words : Migration, Status, Security, Health, Hygiene

Introduction

In worldwide, migration is as old as the human civilization as a strategy for survival. Migration is a phenomenon to cope with adverse situations and is frequently resorted to by the society to tide over difficult times, notwithstanding the unpredictability of migration. Though migration is an inherent phenomenon of human society, the magnitude of migration has increased quantitatively in the modern era of globalization, privatization and liberalization (Arti & Shastri, 2014). Unorganized sector comprises a major part of the Indian economy. It refers to the enterprises and employer-employee contractual relationships that are unregulated by legally established authorities. It is observed from various studies that this unorganized sector provides approximately 90 per cent work force worldwide (ibid). In case of India more than 80 per cent human resource is engaged in the unorganized sector. In the above context, workforce women constitute more than 90 per cent of the labourers (ibid). Thus a study of unorganized informal labour sector is by and large a study of women labourers. The present paper aims to bring out the migrant women construction

laborers in unorganized sector. The paper highlights nature of work, living standards and their problems which they were facing frequently in unorganized sector. It also outlines some of the acts and schemes of the Indian government framed for empowerment of women economically and to prevent them from exploitation. Social upward mobility due to migration is a perception that is widespread and refers the improvements of the opportunities of prior socio-economic condition by availing opportunities of migration (Ravenstein, 2008). It is observed that eastern Indian states have a quantitatively higher rate of migrants, numbering nearly 20 million annually, most of who settle in urban centers like Delhi, Bangalore, Chennai and Mumbai (Kundu, 2005; Swain, 2008). Majority of these migrants are women, and the most predominant unorganized sector in which they are employed is the construction sector.

Although India is transitory through the most ground-breaking phase of progress for last few decades, many of the villages still present poor socio-economic conditions which includes poverty, illiteracy, malnutrition, recurring redundancy,

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masquerading idleness and stumpy output. Consequently, rural people migrate to urban sector with the hope of getting better scope of living (Samantaray, 2016); The village studies carried out by (Deshingkar, et.al. 2009, Karan, 2003, Dayal & Karan, 2003) shows soaring level of out migration from poor and drought prone areas of backward states like Andhra, Orissa, Bihar, Jharkhand, Rajasthan and Madhya Pradesh to developed states for better opportunities in informal economy.

This paper focuses on Odisha as it is a backward state where issues like illiteracy, poverty, lack of skill are rampant as a result of which more people are working in the unorganized sector (Sahoo, 2017). A study by Patra & Pradhan (2017) has substantiated the core issue of migrant in Odisha. According to this study around 30 million people who are seasonal migrant labourers, out of that Odisha has 2.5 million migrant labourers. It has found that a total of 1, 01 012 labourers from different districts were given permission in 1975 to licensed contractors for working outside Odisha in 2016. The Odisha State Migration Profile report 2014 (ibid. 2017) stated that most affected districts are Balangir (67,137 labourers) followed by Nuapara, (13,605 labourers), Sambalpur (6827 labourers), Ganjam (5026 labourers), Puri (3,173 labourers), and Nayagarh (1153 labourers) . However around 41.79 % of the State's population belongs to workers' class. Besides this there is paucity of data on states migrant population; but gathers information on migrant labourers only through the licensed worker-contractors (Patra & Pradhan, 2017). Low income women workers, especially in the informal sector form one of the most vulnerable groups in the Indian economy (Mohapatra, 2012; Sahoo, 2017). The high rate of rural out migration is observed with central-eastern states due to employment opportunities. (Samantaray, 2016).

Odisha is a state known for the prevalence of striking economic disparities. The mainstay of its economy is agriculture with approximately 75 per cent people directly depending on agriculture or allied sectors for their livelihood. But the land holding pattern is highly skewed with a small minority of elites with large landholdings while vast majority of the people have small landholdings which become uneconomic for agriculture. Another factor which has a crucial impact on socio-economic stability of the state of

Odisha is its vulnerability to frequent natural disasters like cyclones, floods and droughts that obstruct the progress of its economy as well as adversely impact the livelihood of the marginal farmers (Sanasristi, 2012). It leads to a vicious cycle of crop failures, distress migration, malnutrition, and other health related issues. The last three decades were hosted above issues in Odisha which it has been the various concerns of displacement induced by development projects which has seriously affected the livelihoods of the poor *Tribes* and *Dalits*. Along this, there are some striking reasons for informal or unorganized sector in Odisha. These are like search of employment social / political problems (riots, terrorism, political refugee, bad law and order, etc.) in search of better employment displacement by development project to take up employment / housing problems better employment natural disaster drought, flood, tsunami, etc. (NSS, 64th Round 2008).

It has been observed that a Government program has counterproductive consequences even on the intended beneficiaries, due to the lack of understanding of local culture. Here questions arise how the state can overcome these hurdles to development? These are issues that force indigent and economically backward sections of society to migrate to other places for survival although they have only a fleeting idea of what they will do or how they will face the challenges in a new and alien land.

This paper aims to assess the Issues and Challenges of Women Migrant *labourers* in India: A Critical Review. It also hosts the basic study questions and its explanations such as;

- (i). what are the factors responsible for the migration of women as informal construction laborers? What are the networks they use for getting the work?
- (ii). What are the hurdles they face in the course of their work as migrant women laborers in the informal construction sector?
- (iii). What are the measures necessary to improve the existing status and address the issue of the security, rights and entitlements of women migrant laborers?

Migration Patterns of Construction Workers in India

It is observed that migration takes place is of different types and for different causes. Most of the

migration is intra-district or states. However a new trend of interstate migration is becoming noticeable in the post liberalization era. The developed states or urban centers generally attract the migrant population from economically disparate states like Odisha, Bihar etc (Bhagat, 2017). The average age of women migrants is 15-60 and marriage acts as a major cause of migration. Migrant population remains heterogeneous and the impetus for migrations also vary greatly (Samantaray, 2016). The major objective of migration to enhance the economic status as well as develop the employment opportunities and educational standard of their children (ibid). The former migrations are regarded as independent migration, while the latter are regarded as distress migration. Distress Migration is symptomatic of the poor socio-economic condition of migrant population (Swain, 2008).

ILO's Definition of Informal Employment (17th ICLS, 2004) that “employees are considered to have informal jobs if their employment relationship in law or in practice, not subject to labor legislation, income taxation, social protection or entitlement to certain employment benefits (advance notice of dismissal, severances of pay, paid annual or sick leave, etc.)”. Thus all unprotected workers in formal as well as informal sector are considered informal workers. The National Commission For Enterprises in the unorganized sector (NCEUS, 2007), government of India defined the unorganized sector which consists all unincorporated enterprises owned by individuals or households less than 10 total workers involved in sale or production of goods and service on proprietary and partnership. (Report on conditions of work of work and promotions of livelihood in the unorganized sector Academic foundation, 1 Jan. 2008 P.1774 Shastri cited, 2014). This sector comprise more than 90 per cent work force, mainly people from construction sector street vendor and domestic worker. The most of the construction worker 44 per cent engaged in urban unorganized sector. And the total female work force is 27 per cent in India out 43 per cent works domestic labor and 37 per cent work in slum (March 8, 2016 PTI).

Women Construction Migrant

Ghai (2003), described a study on decent work to evaluate the adequacy and appropriateness for different groups pertaining number of indicator for

decent work. But he mentions that the basic idea of decent work varies across countries according to the socio-economic structural dynamics of the country. The study argued that the working conditions of informal workers, the nature of their work, decision making, and representation and worker participation should evaluated sui generis against the specific structural background and no universal standard can be fixed. The effectiveness of the policy, procedure and law regarding the informal work conditions a good deal of this localized country or state specific information is necessary.

Dave (2012), discusses the construction migrant women worker and their burning issues like working condition, nature of work, wage discrimination on the basis of gender and socio-economic status and other gender based problems faced by them. The study was based on construction workers, domestic paid workers and agricultural laborers. The outcome of this study shows that migrant women worker engaged in construction sector face exploitation, discriminatory wage in comparison to their male counterparts and sexual harassment due to the causes of illiteracy and poverty; (Saran and Sandhewar 1990; Das et al. 2012 Sultania 1994; Anad, 1998).

Das et al. (2012) conducted their study to know concentration and social security of women workers in unorganized sector in Odisha. They selected Keonjhar, Mayurbhanj and Cuttack district for his sample survey. This study had interviewed more than a thousand respondents for its sampling to know the effectiveness of social security program in the above districts of Odisha. And the outcome of paper shows that unorganized sector is one of the most retrograde sectors in terms of implementation of statutory entitlements like minimum wages for women and prevention of sexual harassment in workplace.

Women Migrant Worker

Das et al. (2016), has studied the feminization of distress migration in Odisha in last five decades. The marriage migration involves uprooting of women from their natal home which is a compulsion seldom shared by men. The study shown that distress migration and patriarchal condition of created subjugation and insecure position for women. The economic and cultural factor for widow and deserted women migration, along with it mentioned how migration is main cause of HIV and the unavoidable

gender relation has made women and children much vulnerable. The very important point has highlighted like, the exclusion of transgender, gay and other as migrants and leaves their native place due to socially unacceptable. .

Parida (2015), aimed to study the significance role of MGNREGS in improving the household living standards and its impact on seasonal distress out-migration, conducting a primary survey of 400 households from Mayurbhanj and Jajpur districts of Odisha during 2012. The study shown that the positive effect of the constructed programme on beneficiary, and the creation of job opportunities, prevention of distress migration, elimination of hunger induced malnutrition, the increase in financial autonomy and improved living standard of the people. The main argument of this paper is that the Govt. should continue the programme along with creation of inter-industry linkages in rural area.

Mohanty (2012), has studied on male migration its impact on women's statuses. The study has mentioned if migration is regulated and maintained it gives positive benefit. The idea of migration has been interpreted in rural to urban context and its consequence also perceived in the counter context and highlighted the lack of economic opportunity engenders migration which benefits the migrant people. The study concluded that due to lack of alternative jobs or livelihood options lack of government facility further channelize the subordinate status of women and perpetuation of migration. The study shows women is underutilised because of gendered division in destination place and how lack of societal support structure leads women who are destitute towards commercial sex work. Besides this the article is critical towards illegal migration and its negative effect on women migrant in destination place.

Madhumati (2013), has revealed the importance of domestic worker in Bangalorean city due to growth of transitional and globalised economy along with rise of different industries like housing, trade, software industry etc. That created more scope for domestic worker in city the main objective of migration to Bangalore to get jobs because scarcity off jobs in other states. The women migration is not properly discussed or brought limelight but remains confined only to the household sphere. The study also shows the female migration has increased due to

change in class relations, new life style and exceptional mobility of. The development of the city attracted many more people for the menial jobs. The case of women domestic workers in Bangalore shows that migration for domestic service is largely a female phenomenon from within the state [from other districts] and from neighbouring states, like Tamilnadu, Kerala, Andhra Pradesh for the menial jobs where migration is primarily due to employment availability of women. The conditions of work in domestic service are deplorable with long working hours, low pay and absence of job security.

Gupta (2003), has studied changing patterns of female migration in India. The study has indentified that woman migrant in cities has increased along with feminist ratio in urban population also increased. The presence of female migration is undermined and avoided from ambit of force. The women migrant remain at the bottom of the occupational hierarchy and consist mostly of illiterate, semi-literate migrant women engaged in transport, production related work. The study shows that inclination toward professional jobs has increased among above matrices level of grade. And the most of the rural women migrant works in cities with low wage in informal sector.

Buberaw and Kamazine (2016), had discussed invisibility of female migrant in migration study. The study shown various reasons of migration for improving the existing livelihood of community; the cause may push or pull. Based on the literature review to signify that women have been largely invisible in migration studies, it shows that there are different factors for migration, referred to as push and pull factors. The paper has critically focused the deliberate invisibility of female migrant in migration literature they cited that patriarchal mentality and partial migration spectrum coverage in migration studies. The study substantiated that there have been efforts for inclusion of women migration studies since 1980. Which shows, the significance of female migration not as only variable 'inside' migratory process but consider gender as important factor in immigration? Theoretically, this paper has incorporated the idea from Ravenstein's Theories of Migration and Lee's Push-Pull Migration Model, that gender relations have been ignored as basic in influencing processes of movements among migrants.

Krishna (2014), has studied female migration of Kerala and their lived experience, how they denied basic human justice because of legal and technical issues. This paper shows the relevance of female migration has increased after 1980, towards supporting the existing household poverty and unemployment condition force them to migrate to Gulf country. Besides, the paper highlights some issues female migrants face in their work place. These issues are like remuneration irregularities, long working hours without proper rest, and illegalities in the recruitment system, work related problems, physical, mental and verbal abuses, lack of laws are the burning problems that they suffer. These migrant female-domestic workers experience multi faced problems. The important insights of the paper point out legality of private home and its employers and their scrutiny by inspector. And most of the time female migration leads towards trafficking and sex trade because of illegality of migration through agent.

Srinivasan and Illangao (2012), conducted a study on the Problems of Migrant Women Workers in Thuvakudi, Trichy District. This research study focused on Socio-Economic Conditions and problems of Migrant Women Workers. The study shows that majority of female migration occurs because of poverty, unemployment and low wage rate in native place, with approximately 60 per cent belonging to the age group of 20-40 years and more than 87 per cent not able to save money. It also analysed various issues faced by female migrant workers during their work, these are like problems such as low wages, and gender based discrimination and other occupational issues.

Major Challenges of Migrant Women Labourers

Lack of strict implementation of existing Laws applicable in construction industry for the building and other construction workers' in construction sector (Ravenstein, 1985 & 1989). Later the Regulation of Employment and Conditions of Service Act, 1996, is the central legislation concerning labor welfare in the construction sector. There is provision in this Act that any construction industry employ more than 10 workers must follow the guidelines but proper health care delivery and sanitation, hygiene facilities for women construction labourers and their children are missing.

Absence of physical security in work Place and dependency on Contractor that leads to exploitation

of women workers for instance Dalmia (2012), has mentioned in his study on Strong Women, Weak Bodies, Muted Voices Women Construction Workers in Delhi that contractor or supervisors forcing women and young girls to have sexual intercourse with them or conveying less laborious work to the women they find attractive in the hope of luring them (Dalmia, 2012). Besides this, there are other issues which affect the quality of women construction work i.e. lack of social protection network, lack of basic amenities, exploitive nature of middle man, informalization of workforce, lack of any formidable pressure group among the construction working group and lethargical attitude of government official for implementing the existing welfare schemes.

The informal sector in India has the leading number of unorganized labourers next to the agricultural industry. And the most significant fact is that women construction workers have many challenges such as unskilled nature of their work, abstain them occupational mobility, low wage, and most concerning matter is hopeless condition of job security. In addition to this, they are not equally treated in comparison to their male counterpart in many instances, which also makes them more vulnerable. Notwithstanding these tribulations, they persist to exertion to bear their family (Patra & Pradhan, 2017; Acharya & Sunita Reddy, 2016).

According to the 2011 census, there are 216 million women migration whereas male 1re 90 million. According National Sample Survey (2010) mentioned 25 per cent migrant people engaged in construction sector. The reasons for their vulnerability are-(a) asymmetrical work, (b) small monetary position, (c) diminutive or no bargaining power, (d) lack of control over wages, (e) lack of proper facilities for children of working women, (f) small or no access to institutional credit, training and information, and (g) lack of assets, (h) lack of decision making capacity, (i) lack of decent work culture, (j) minimal level of participation.

Beside this the study shows intra-district migration is more in females in both of the situations, the mobility of women was higher than male. In addition to that, the migrant women worker engaged in construction sector face exploitation, discriminatory wage in comparison to their male counterparts and

sexual harassment due to the causes of illiteracy and poverty. And another outcome shows that unorganized sector is one of the most retrograde sectors in terms of implementation of statutory entitlements like minimum wages for women and prevention of sexual harassment in workplace. Informal sector needs to maintain the decent work culture for all round development. Which is absent in that sector and sometimes regarded as retrograde field. Women migrations root cause is economic insecurity, structural barriers, lack of alternative job which enforce them to work as migrant labor in informal and other hazardous sector; which sometimes drags them into various social issues i.e. sexual trafficking and other physical humiliation. There is some instance increase of women migration in domestic labors working in various metropolitans' cities, in spite of increasing trend they couldn't able to bring drastic change in their life pattern. For making life better but they also not escape from basic issues i.e. long working hours, insecurity of jobs and low payment.

Beside this, the invisibility of migration have negatively perceived in migration studies and due to legal and technicality issues also abstain women migrant from various facilities i.e. proper remuneration, rest, proper working hours etc. As result of that, most women migrants trap into sex trade illegal migration through agent. And it was also found that most of the female migrant comes from age group of 20-40 years; many of them didn't save their hard earn money.

If we see the overall migration scenario in India, the eastern states are more vulnerable than other developed states of the country. In case of Odisha the total migration during 2011 is 10.8 million, out of which women constitute 80 percent at 8.4 million. The study of Patra & Pradhan (2017) has substantiated the core issue of migrant in Odisha. According to that report there are 30 million of people are seasonal migrant labourers. Out of that Odisha has 2.5 million are migrant labourers. It has found that there are total of 1, 01 012 labourers from different districts were given permission through 1975 licensed contractors to go outside States for work in 2016. The most affected district are like 67,137 workers from Balangir district followed by 13,605 from Nuapara, 6827 from Sambalpur, 5026 from Ganjam, 3,173 from Puri and 1153 from

Nayagarh district (Odisha State Migration Profile, July 2014) Bureau. However around 41.79 % of the State's population belongs to workers' class. Besides this there is paucity of data on states migrant population. Taking all these accounts into consideration, it can be assted that there more rigorous study need to be taken up understand the variation and in-depth of the plight of informal women migrant condition.

Conclusion

The significance of unorganized sector is not only well recognized in the economic the point of view but also for sustaining the livelihood and wellbeing of a large section of population is well recognized. Unorganized sector work is characterized by low wages that are often insufficient to meet minimum living standards including nutrition, long working hours, and hazardous working conditions, lack of basic services such as first aid, drinking water and sanitation at the work sites. Findings show that poverty is a core factor for migration, which has multidimensional effect on individual's life. That brings social insecurity and exclusion for poverty sticken in general women migrant in special. we find that a highly visible percentage of women workers continue to live a life full of subsistence, compromises and most of their own access in terms of right to life is subsidized. The most important determining factor to such in access and denial primarily evolves out of poor literacy and lack of awareness resulting in self-exclusion from the mainstream opportunities. Unequal gender relations play a very imperative role in crucial their insecurities. In addition the vulnerable status at home and at work, income generation alone may not improve population; but it needs a holistic development of the migrant workers. In spite the greater involvement women migrant labor in informal sector, their overall development has not reach at maximum or a satisfactory level. The situation of eastern states are more precarious and more specially drought prone states like Odisha. Women workers have double burden because perform multiple works to maintain the household need. There is a need strict implementation of relevant law by the government to take action against labor contractors in case of exploitation of women workers. And a visionary long term policy should be framed to provide education and health

care facilities for working class women and their family in the informal sector. More especially imitative should be taken to include the exclusion people i.e. transgender, those have been working since long time in informal sector.

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Socio-Economic Condition of the Fishing Community of Jagatsinghpur District of Odisha

Rashmi Rekha Dash

Abstract

The present study is on the socio-economic condition of the fishermen community of the coastal people of Jagatsinghpur district (Odisha). In this paper, the socio-economic parameters such as family size, age structure, educational status, occupational pattern and the standard of living of the coastal fishermen community has been analyzed. The present study uses both primary and secondary data. The primary data were collected with ethnographic approach, where as secondary data is collected from the Census of India, Economic Survey of Odisha, Fishery Survey of India and Annual report of the Department of Animal Husbandry, Dairying, and Fisheries. The result of this study indicates a very miserable condition of the fishermen community. This study highlights the problems of this fishermen community & tries to explore the reasons behind their poor socio-economical status. It also analyse the role of governmental measures taken for their development in the form various beneficiary schemes provided to the fishing community of Jagatsinghpur district.

Key Words : Community, Ethnographic Approach, Beneficiary Schemes

Introduction

Fishing is one of the oldest avocations of man, older than even hunting and farming. Fishery is the one of the most important livelihood option for the inhabitants of the coastal line of the country since times immemorial. This natural resource along with the marine environment has been the custodian of livelihood security of the coastal populace. The web of life of the coastal community is woven around it, be it festivals, weddings or even death, the community is intricately related to the natural marine resource. A large percentage of fishers are involved in artisanal, small scale fishing operations in open water bodies including the sea, rivers and creeks, as well as in fish trading, processing and related activities. Over the last quarter century, changes in the fishing sector have increased at a faster pace than fishers' ability to keep up with them.

Among the seven continents of the earth, Asia is the world's largest continent with 4.2 billion people or constituting 60 % of the world's population. Within Asia, India is second most populous country in the

world with 1.21 billion people or 17.5 % of the world's population (Food and Agriculture Organization of the United Nations, 2010). In India 65% of the people are still dependent on agriculture as their livelihood and employment source which includes fisheries as one of its components. Fisheries also serve as the valuable and cheap source of protein of the country. According to 2001 census India's total population is 1,027,015,247 of which 5,959,144 people are fishermen. In 2002, there were 38 million commercial and subsistence fishermen and fish farmers all over the world. Of this total, 74 percent are engaged in capture fisheries and 26 percent in aquaculture. The world total fishery production of 133 million tons equated to an average productivity of 3.5 tons per person. By 2006, the number of world fishers increased to 43.5 million and the total fishery production was 143.6 million tons with an average productivity of 3.3 tons per person (Food and Agriculture Organization of the United Nations, 2011).

The small scale fisheries sectors are mostly the livelihood occupation of the group of population

within the extreme poverty that leads to a serious social, economic and political issue. Due to lack of knowledge in the socio-economic conditions of fishers and fishing communities, leads to poor planning and implementation of various fisheries management programs (Devi, 2012b and Devi, 2014).

There are six maritime districts in the state: Balasore (80 km), Bhadrak (50 km), Kendrapara (68 km), Jagatsinghpur (67 km), Puri (155 km) and Ganjam (60 km), with Puri district covering more than a third of the coastline (Department of Fisheries, 1998). These six districts cover 14.5 percent of the total land area in the state, but contain nearly 30 percent of its total population (28.35 percent), with an average population density more than twice that of the state as a whole (430 against 203) (Department of Economics and Statistics, 1999–Balasore). Nearly 89 percent of the coastal population resides in rural areas.

Orissa is a maritime state along the east coast of India that has the total population of 4.2 crores among which about 0.793% of the total population are fishermen. The total number of marine villages and inland villages in Orissa are 589 and 3289 respectively. The total number of fishermen population of the state is just over 1 million (Nayak, 2012). In the continental shelf of Orissa the estimated potential exploitable fish stock is 100,000 to 120,000 tonnes (Indian Institute of Foreign Trade). The state of Orissa has 120 kms of continental shelf in northern part and up to 40 kms in southern part. The continental shelves are about 200 m in depth. The southern coastline is composed of sandy beaches and surf beaten sea shores whereas the northern coastline has rivers, estuaries and extended tidal area. Out of the total reserve, 25% is expected to be within 18 metre, another 25% within 18 to 72 metre and rest of the stock i.e. 50% within 72 to 180 metre (Mohanto, 2013).

By analyzing the history of fisheries it shows that the fishing equipments and methods of fishing are improved for all over the world, mechanization came to fishing in the 20th century. The use of mechanical device for fishing boats was the first major technological development in the fisheries sector. The year 1980 is an important period in world marine fishing which witnessed three major technological developments (introduction of

synthetic fibers in the manufacturing of nets, introduction of cold storage and freezing at shore, introduction of electronic equipments for fish detection and navigation) which boosted up the global fish production.

Paul Valiakandathil (1981) studied the socio-economic conditions of fishermen in Poonthura, Kerala. He points out that since fishing is a seasonal occupation, majority of the fishermen are actively employed for a period of 6 months in a year. Their equipments are not usable beyond a certain depth. 10 per cent of them have access to boats and nets, the other 90 per cent remain idle for a substantial part of the year. Underemployment is a major problem in the area. The scanty income and the numerous demands upon it, keep the fishermen in a permanent state of bondage to the moneylenders. The interest rate varies from 36 per cent to 120 per cent. In short, the rebuilding of the life of the fishermen group is a national challenge. Along with economic measures, one should go a systematic and effective educational campaign. Samuel (1989) points out that the study of the socio-economic conditions of fisher folk especially fishermen have been neglected by sociologists and economists. The fishermen have a very low status in the social hierarchy, which leaves them worse off than their counterparts despite the fact, that the involvement of the fishermen in the industry is considerable. But their role stands unrecognized.

Senthilathiban (1989) discussed the cost of production and net income of the fishing households in the selected fishing households in the selected fishing village of the undivided Thoothukudi district. The increase from fishing was found to be highly variable while fish catch was almost static due to traditional fishing methods. Rapid motorization adequate credit and marketing were suggested for improving economic status of fisher folk. Rajan (1990) in his article on credit and capital structure of small scale fishing units in Kerala had studied to what extent did fishermen depends-on credit for investment in fishing units and also the association between magnitude of investment and borrowings. He had analyzed the capital structure, debt-equity ratio and solvency ratio. He had also examined the correlation between investment and debt. He had found that the investment in the small scale fisheries was heterogeneous and the loans

provided by organized sector were insufficient.

Shukla (1990) in his article had outlined the basic characteristics of the Indian fishery sector and stated that the contribution of the Indian fisheries to world fisheries was just three percent even though investment to employment ratio was very high. According to him necessary provisions were to be made in regard to infrastructural, technological, financial, managerial, policy strategy and other such inputs. A correct national fishery policy was to be evolved. Selvaraj (1975) in his study, "Small Fishermen in Tamilnadu" has found out that the socio-economic status of fishermen who are using indigenous boats is low, as measured by low income, low productivity, low savings and a high dependency ratio. Under such conditions labour absorption faces severe constraints. The study has also made fruitful recommendations related to education, production and the marketing of fish to improve the status of small fishermen in the country. Sehara (1983) in their study titled, "An Evaluation of Fishermen Economy in Maharashtra and Gujarat - A Case Study" have studied the general socio-economic conditions of fishermen in these two states and analysed the rate of literacy, the size of the family, the number of earning members, the number of annual fishing days, income and expenditure and the savings pattern of each family. The major findings of the study are: (i) Illiteracy was high in all villages, (ii) The size of the family varied from 7 to 8, (iii) The earning members of different categories were 40 to 59 per cent, (iv) The number of annual fishing days ranged from 200 to 244, (v) The quarterly fishing expenditure and income were the highest in the post monsoon season and the lowest during the monsoon, (vi) Around 54 per cent of the total income in Maharashtra and around 58 per cent in Gujarat were obtained from actual fishery, (vii) Nearly 62.84 per cent of fishermen were indebted in Maharashtra and 57.78 per cent in Gujarat.

Srivastava (1986) in their paper on "Impact of Mechanization on Small Fishermen" have stated that the marine fisheries sector has experienced rapid changes and moved to highly complex and capital-intensive technologies. Keeping in view the interests of small fishermen, the authors have highlighted the following problems: (i) Disadvantages occur due to competition from mechanized boats, particularly those fishing in

shallow waters, (ii) Dominance of non-fishermen households who are presumed to have invested in mechanised boats as an economic strategy aimed at rapid enrichment in the fishing sector, (iii) Unemployment or underemployment in fisheries prevails because of the labour displacement due to mechanisation of fishing craft and (iv) Unfavourable assets and income distribution and mechanisation. Rosaleena Shanthly (1990) have conducted a study on "Socio-Economic Conditions of Small Fishermen" in 6 coastal villages in Tamilnadu arrived at the following conclusions: (i) Variation in the use of fishing craft has resulted in wide disparities in the distribution of income caused by variation in total catches and their composition, (ii) Among the different categories of fishermen, the owners of the mechanised boats could be placed at a higher socio-economic level while the traditional fishermen were poor, and (iii) The government should subsidise the fuel cost of the mechanised fishermen and that the zone of operation, should be clearly marked for mechanised and non-mechanised crafts. Fernando (1981) suggested that for improving the socio-economic status of the fisherman sufficient cold storage and ice plant facilities should be provided so that the additional fishes should not become wastage.

The objectives of this paper are to examine the socio-economic conditions of the fishermen community in the study area. It will also investigate the problems faced by fishermen & analyse the government measures taken for their development. The area of this study is Nolia Sahi village. It comes under the Erasama block in the coastal region of Jagatsinghpur district. There are 176 households in this village. The total population is 1,066. They are basically marine fishing community. This paper is based on the primary and secondary data. The secondary data comprises research papers, articles related to fisheries, books and websites. The primary data collected from 176 household of Nolia Sahi village. Out of the 176, 108 are collected have motorized fishing boat, while the rest are manually powered. Census survey of the entire village is done. The primary data was collected through a questionnaire by applying simple random method. The investigator has personally approached the sample respondents and collected the relevant information. Participatory rural appraisal (PRA) tool such as Focus Group Discussion (FGD) was conducted with

the fishermen to get an overview of the management system of their socio-economic condition. After collecting the data from the fishermen cross-check interviews were conducted with key persons such as, Fisheries Officer (UFO) and the relevant NGO workers for confirmation of the information.

Socio-economic status of the fishermen

Marine fisherman catches Tiger prawn, Sirine, Pamplate etc. Inland fisherman catches manily Kantia, Trisuli, Borei, Potei and Beta fish. For marine fisherman, chaumuhani is the landing centre. And for Inland fisherman, Mahanadi is the landing centre. In early days the place is named as Danturimuhan but in later course of time the name was changed to Neherubangala. Boitikulia is the landing centre for Jatadhar river. Mainly the fishing activities are done in Jatadhar river which is the mouth of Devi river.

In 1975-80 there was a motorized system. Marine fisherman used 3 types of boat one is mechanized, another is motorized and last one is country craft. During that time the marine fishermen used Carta marine, but later due to the advent of science and technology they use Tapa marine which is made up of fiber. There is also a cooperative society name Mahabir Marine Society, which use to collect money from the villagers for different purpose such as development purpose, relief package in case of natural calamity, financial support to families when need.

Income and living standard: Apart from fishing, a sizeable number of fishermen are engaged in fishing allied activities like fish-vending, wholesale trade in dried fish and fresh fish, net making, fish processing and coir making. There are also other options for non-fishery related activities such as wage labor in the other sectors like agriculture, construction, livestock and poultry raising, etc. It was found that, about 85% of total income comes from fish and fishery related activities and a fisherman earns about 50,000 per year. Rest 15% of total income comes from non-fishing activities and a farmer earns about 8,000-10,000 per year.

Housing condition: Most of the fishermen lived in very poor housing conditions. More than 60% households were thatch roof with mud wall, (Kattcha Ghar). Even though, almost all the fishermen are living in houses of their own, but they

don't have any separate kitchen. Most of the houses have only two rooms. Most of the houses are devoid of sanitary facilities. Most of the houses don't have any water supply facility, they use carry water either from the well or hand pump. Indira Awaas, is provided to very few selected people. Even thou it a housing programme for the rural poor, but it is merely restricted to pen & paper & many needy were left behind.

Age and family members: Age and family size of the fishermen were also interviewed. From the census data analysis it was found that 54% were below 30 years old, 22% were between 30 and 39 years, and the remaining fishermen were more than 40 years old. The result indicated that the middle age groups are involved in fishing activities. Men are known to live longer in women. There are more widowers than widows. The overall population of senior citizens is very poor. More than 90 per cent of the households have big families. The average number of the family members in the study area is 5.2 (according to governmental 2011 census data). This accounts for overpopulation in the coastal villages and the consequent socio-economic backwardness of the population.

Literacy and education: From the census data analysis it was found that, 35% of the population were found to be illiterate and cannot write their names, 28% were semi-literate who only can write their names, 30% had received education up to primary level and 7 3.70% had received secondary education. Enrolment of girl child is higher as compared to boys, as they went to sea to help their father in fishing.

Drinking water facilities: The study showed that household of 100% fishermen used tube-well water for drinking. Tube-wells belong to the entire community owned, while few of them even had their own water supply. In earlier days the provision of drinking water in the villages seems to be a perennial problem. To provide safe drinking water, Government has taken adequate steps to install tube-wells in the villages. Apart from this some NGOs have also made available some facilities to such villages.

Hygiene and Sanitation: The residential sites of this community are congested. The poor drainage system has become a breeding ground for mosquitoes. In most houses the fish baskets, nets and

other equipments are stored in front of the house. Cleaning, sorting of small fish, and drying fish is done in front of the houses. Earlier due to mud roads, water would seep into the ground but now due to concrete roads and surroundings the dirty water stays on the road as well as in surroundings helping the flies and mosquitoes to breed. The front portion of individual houses is kept clean but the surroundings are dirty. Though, this village has a public toilet, which is not at all sufficient for the population of this village. These toilets are also not well maintained and cleaned regularly. The coast is polluted due to fish waste, open defecation & dumping of garbage.

Disease, Morbidity Pattern and Health Care

Facilities: An urgent need for a Hospital has been neglected for a long time, but no attentions have been paid to the health issues of the people. Scattered private health services and lack of appropriate public health services are a growing concern for the health of this community. People in general are prone to various diseases. Headache, stomach ache, viral fever, cold and flu have become very frequent. Malaria has become very common in this village. Deaths caused due to fever (Malaria) have been also reported. Jaundice and kidney problems were always present among the villagers. Backache and knee pain and joint pains (Arthritis) among the population of the age group of 35 and above has become a common ailment among the fishermen. In case of any health problems, peoples are treated at the Primary Health Center. The Primary Health Centre provides health services to the people of the surrounding areas. There is no full time Government or private Gynecological services in the area, people have to travel all the way to Pradeep. Most women avail of the BCG/Polio doses from Anganwadi centers.

Common problems faced by the fishermen in this village

Unregulated Market: The Atharbanki market is highly unregulated for fishery with no minimum prices fixed for species, no product differentiation, no control on quality standards of weighing mechanism for the catch, etc. The scenario further worsen with middle men dictating the terms and condition of the trade.

Price Paradox: The pricing of the fish is one of the major concerns in the trade. The species which are

exported sees a quantum jump of more than 500% from the source of origin. There are numerous other ways of modulating the price in favour of business at the expense of the poor fisherman, leverage being the credit which supports the industry and the processors rather than the poor fisherman.

Infrastructure: The state of the infrastructure was observed to be poor except for the few major landing centers. Even the basic amenities like weighing machines, landing platform, icing facility (cold storage) etc were inadequate as per the requirement. Immediate attention by the government in developing the basic facility at the landing center needs to be prioritized.

Credit: The availability of credit to the fisherman is yet another area of concern for equitable growth of the sector. The credit leverage with the bigger players of the trade is one of the most important controls used on the trade. The rising of the “Client Patron Relationship” is the effect of the credit control which has distorted the trade unfavorably for the fisherman. The financial institution needs to review the modus operandi for providing credit facility to the fisherman community on term and conditions which support the fisherman. Also the place of availability needs to be in proximity of the settlement of the fisherman which will help them accessing credit on requirement. Special schemes in terms of credit for boat and nets need to be developed as it is important requirement for the fisherman.

Ancillary support services: Ancillary support services are the life line of the fishery trade owing to the perishable nature of the product. Immediate availability of ice, cold storage and transportation facility is a must for the fishery trade. The control over ice factory, cold storage and transportation lies with the big players of the trade and the poor fisherman is devoid of these facilities when he wants to access/use it.

Role of Government

The Centrally Sponsored 'National Scheme of Welfare of Fishermen' envisaging to provide financial assistance to fishers for construction of house, community hall for recreation and common working place and installation of tube-wells for drinking water. A number of programmes and welfare schemes are in operation in the state for social upliftment of the fishers. A special welfare

package for the fishers of odisha named Matshyajibi Unnayana Yojana (MUY) has been declared by the state government.

Special Public Distribution System for fishermen affected by olive ridley conservation: For sea turtle conservation Fishing ban is imposed for 7 months a year in 20 kms sea ward radius (from November to May) at 120 kms state coast. The objective is to provide financial relief through supply of food grain to the affected non BPL fishermen under PDS system @ Rs 1/- per kg. The survey work has been completed and data entry is in progress. A separate ration card has been issued to the affected fishers for the purpose.

Replacement of wooden country craft with Fiber Reinforced Plastic boat: Demands from the fishers are mounting to operate a bankable scheme for conversion of the wooden country craft to FRP boats. To avail the benefit the applicant must be a traditional wooden craft owner having valid registration and fishing license. Back ended Subsidy of 50% limited to Rs 50000.00 will be provided. The scheme is operated under Rastriya Krushi Vikash Yojana.

Motorisation of country craft: This is being implemented under Community Service Programme scheme. To increase the fishing efficiency and to get better price of the days catch the traditional crafts can be motorised by installation of Outboard motor (OBM). The boats registered under OMFRAct can be motorised under the scheme. Back ended Subsidy of 50% limited to Rs 30,000.00 will be provided after successful installation.

Group accident insurance scheme for fisherman (GIAS): Fishing being a highly risky occupation, this is a very useful scheme under which fishermen are insured annually. The insurance premium is sponsored by the central and state Government. In case of accidental death or permanent total disability the nominee gets Rs.100,000/- and in case of partial permanent disability the claimant gets Rs.50,000/- This is being implemented under CSP scheme.

House sites for fishermen under “vasundhara”: This scheme is meant to provide homestead land measuring 0.04 dec homestead to the land less fishermen. The scheme is in operation by the Revenue and Disaster Mitigation Department.

Mo kudia scheme for fishermen: The scheme is in

operation under Panchayatiraj Department. Poor fishermen not coming under BPL category but are otherwise genuine poor and having no pucca house, are to be selected in consultation with the local PRI members field functionary of the concerned block dealing Mo Kudia scheme.

Financial assistance to fishermen for fatal disease: Matsyajibi Unnayana Yojana provides financial assistance to the deserving BPL fishermen for above mentioned fatal diseases. The Health and FW Department is implementing the Odisha State Treatment Fund (OSTF) for providing financial assistance to BPL holders suffering from major life threatening diseases, which includes the beneficiaries of “Financial assistance for Fatal Diseases” under MUY. Financial up to Rs3.00 lakhs will be given to the affected fishermen through OSTF.

Award of scholarship to meritorious children of the fishermen community: To generate interest among the children of the fishermen community cash award incentive to the pass outs of HSC examination will be provided for higher education after admission in to the course. The scheme will encourage children of active fishermen towards higher education after admission in to the course. The award will be once to a child. 70% and above- 7500/-, above 60% and below 70%- 5000/-, above 50% and below 60%- 3000/-.

Financial assistance to fisherwoman SHGs: The fisher women SHGs involved in fish marketing/pisciculture face difficulties in procurement of fish and other requisites for paucity of funds and opt to lend it from private sources. It is essential to support them through provision of revolving funds of Rs 10000/- per SHG. Now the SHGs are availing Rs 5000.00 as revolving fund from the Women and Child Development Department is not sufficient to carry out their business. So, it is proposed to provide additional fund of Rs 5000.00 to them to carry out the activity smoothly.

Conclusion

Fisheries sector occupies very important place in the socio-economic development of the country. It provides employment opportunity of millions of the people directly and indirectly. Fishing folks belong to both mechanized and motorized sectors have poor standard of socio-economic condition. Socio

economic constraints such as household family pressure, low income, illiteracy, low economic status and lack of alternative employment opportunities are the main problems for marine fisheries development. The offered credit facilities from government and NGOs are insufficient to meet their needs. Besides, in receiving such credit facilities they need to pay high interest. These socio economic factors are affecting marine resources. Fishermen are also facing problems of very low child education, nutrition, cooking fuel, animal feed and house building materials. Almost all fishermen mentioned lack of capital and the increasing fishing pressure as their main problems. The fishermen of this village are socially disadvantaged and lacking in fulfilling their basic needs. Fish production and fish fauna of the area was being drastically reduced due to industrialization and manmade activities such as over-fishing, using restricted gear indiscriminate use of fishing gears and as a whole due to absence of management policy. The decreasing fish resources of Nolia Sahi village should be supplemented by alternative mode of income. Agriculture, animal husbandry, poultry farming small business etc. are identified as important alternative income generating sources for male whereas, handicraft, net making and duck and poultry rearing are especially identified for women. So, necessary step should be taken by government and NGOs to assist the fishermen to adopt these alternative income-generating sources

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Indigenous Knowledge and Food Preservation - An Anthropological Study among Tribes of Nabarangpur, South Odisha

Siba Prasad Dash

Abstracts

Food is one of the basic need of life. Every living being needs to be food to sustain their life. In the modern society food is able to preserve for long time by adopting different scientific methods. During the time of yielding seasons people usually keeps the foods stuffs for long time by adopting the scientific methods. But in the tribal area the tribal are adopting some indigenous methods for preserving the local foods available in their local areas. The methods are like drying, processing, adding salts and other preservatives etc. The present study is only based on the primary data available from the tribal villages of Nabarangpur district. To collect the information some methods and techniques are being adopted viz. observation, Focus Group Discussion (FGD), random sampling, survey, case studies etc. As a finding it is observed that tribes of Nabarangpur are preserving their locally available foods for more than a years' times by adopting the indigenous methods are being used since generations.

Key Words : Food, Indigenous, Preservation, Focus Group Discussion, Nabarangpur

Introduction

Food preservation has been an essential activity throughout history. The very cycle of the seasons creates periods of shortage and abundance of different foods at different points of the year. This problem was only worsened with the development of agriculture as people sacrificed their mobility and came to rely on fewer sources of food, each with its own cycle of growing season (Kala, C.P. 2017). Only through human effort and ingenuity has it become possible to obtain some of these foods throughout the year. Food preservation usually involves “preventing the growth of bacteria, fungi, other micro-organisms as well as retarding the oxidation of fats that cause rancidity”. The activity can be done in different ways both is depends upon the locality as well as types of food. (Gill.Co.1996)) some indigenous methods are using for preserving food have been shown to have a lower energy input find carbon footprint, when compared to modern methods. Maintaining or creating nutritional value, texture and flavor is an important aspect of food preservation, although, historically, some methods drastically altered the character of the preserved food (Joy, J. M. 2000).

The anthropological study of food was given a new direction by C. Levi Strauss who used it as a metaphor for his model of structural approach. In

accordance with his theory that all the products of the human mind display a common cognitive structure he uses the example of food to demonstrate how this structure is worked out in a context, which has often been regarded as governed solely by practical or biological necessities. Combining the structuralist's approach with elements of British structural functionalism, Mary Douglas has sought to delineate the rules, which generate food behavior, as well as linking food taboo to social organization and structural categories. (Narzory.Y.et.al. 2016).

1. Traditional food preservation techniques are based on principles similar to those used in modern industrial food processing and preservation. Units of operations such as crushing, pressing, filtration, floatation, sifting, and size classification are common in most traditional processes. Chemical preservatives used in traditional food preservation are mainly salt, sugar, and smoke. Alcoholic and acidic fermentations are the biological methods of preservation, while drying, concentration, and heating constitute the physical means of preserving most foods in Ghana. (Kaspin D 1995.) The choice of technique depends on the type of material to be preserved, available facilities, and the desired characteristics of the final product. Food commodities that are traditionally preserved in one form or another.

Food commodities that are traditionally preserved in one from another in crude, the root, crops, some vegetables and animal tissues. Preservation of these commodities may be done in one or two ways. Where possible the raw food is preserved to retain its freshness for future use in its original form or it may be processed into products having different functional characteristics. The processed products have clearly defined observable changes in the composition or general properties of the food. (Gulliford, A. 1992).

Material and Methods

The present study is based on information collected through discussion with different tribal people of Nabarangpur and for reference some secondary sources were referred to have clarity about the concepts. There are 8 different tribes staying in Nabarangpur district. Though they are staying in different parts of the area but they practicing similar techniques to preserve their natural resources especially food. To conduct the interview a structural format has been designed based on observation and informal discussion with tribes of the area. There are total 16 households of 8 villages covered under the study where people of *Amanataya, Paraja, Kandha and Majhi* are staying in the district. On the basis of the findings, the present paper has been designed and the importance of use of indigenous knowledge for preserving foods available in the local area is highlighted. To conduct the interview a structural format has been designed based on the observations and discussion with the local people of the area.

Due to limitation of time and resources, as sample total 8 villages are identified and two households are identified from each village for conduct the study. The reason behind the sampling is that they thought there are multiple ethnic groups are staying in the areas but they are being practicing these practices because of availability of resources in the local area. Out of total 10 blocks of the district only 4 blocks (Nabarangpur, Chandahandi, Dabugaon and Raigarh) has been identified on the base of the geographical location, remoteness and exposed to modern civilization and also intervention of merchant communities in the area. The reason of exposing to modern civilization and merchant communities is because some food preservation techniques are changes after exposed to modern civilization to do profit motive. But this study based

on indigenous techniques are being used by the tribal people as a part of their day to day life in a year. In each villages two houses were identified because this is a common practice in the tribal area in each village, these activities are part of their annual routine so there is no need of survey the villages only two households were focused. Apart from this to know more about the topic discussion were done with women groups, and other key persons of the village to uniform the data at the villages.

Objectives of the Study

The present study is an attempt to understand the indigenous techniques being used by the tribal of Nabarangpur. Nabarangpur is one of the tribal districts of Odisha. There are different ethnic groups are staying in different geographical locations. Some of them are staying in the low land are changing their life style but some who are still in the remote unreached area are maintaining the traditional lifestyle. Considering the concept of food security, it is seen that though they are not exposed to the modern society but their traditional habit of preserving the local available foods are playing an important role to make available of regular foods throughout the year. Those traditional practices are being rooted in their custom and tradition and are also there in their life style. The importance of studying these techniques are to understand the concept and also utilize these practices while planning for improving the nutritional aspects and also avoid food insecurities. These techniques can also be used in other modern societies to preserve their local available foods for long time to consume in other seasons. Though the local peoples are adopting these practices they can easily adopt these techniques. To encourage these practices some micro enterprises actives can be planned. These may helpful in the economic condition of the people of the area.

Area and people

Nabarangpur district is located in the South West part of Odisha. Before three decades it was one of the sub divisions of Koraput. Its total population is 12, 18762, out of which 60, 4014 are males and rest 61, 4716 are females. It occupies 5294.0 Sq. km. In the North, the district surrounded with Raipur, East Kalahandi, West Bastar and Koraput in the Southern part of the district. There are different tribal peoples are staying in the district i.e. Majhi, Paraja, Kondh, Gadaba, Bhatara, Kondh and Amanataya etc.

Nabarangpur is the head quarter located about 500 Kms. distance from state capital Bhubaneswar. Memorable communication facilities are available only for urban and semi urban areas. As per census 2011, its total literacy rate is 48.20%. Paddy is the major crop of the area beside that some other crops are available i.e. black gram, horse gram, wheat, maize, ragi etc. Because of lack of irrigation facilities very few vegetables are cultivated in the area. (District Census Handbook Nabarangpur Series 22).

Indigenous techniques for food preservation

Tribes of Nabarangpur staying in villages and mostly depending upon nature. Nature provides most of the basic needs to them and they are accustomed towards local environment. They are gets sufficient amount of fruits roots etc. in different seasons. Like in summer they get a lot of wild and domestic fruits like mango, jackfruits, dates etc. In the rainy seasons they get different types of mushrooms and different types of vegetables. They are able to preserve for years some fruits, vegetables and roots by adopting indigenous methods. They are adopting different techniques for roots, seeds, fruits etc. To preserve their foods their methods can be drying, adopting charcoals, buried in earth, put it in seal pot/basket etc. On the basis of preservation, local available foods are classified into 8 categories viz. Seeds, Leaves and vegetables, Paddy, Roots, Fish and amphibians, Fruits, Onion and Molasses.

Seeds (*Bian*)

To preserve seed they need to be aware about their ripening. For grains, they allow the grains to be dried in sunshine for two days, and then they mix ash (charcoal), so as to prevent the grains from being destroyed by insects. In the case of vegetables, they dry the seeds under the sun and keep them covered and hang them inside their house. By hanging them, they prevent them from being destroyed by rats and in this way they are able to keep these seeds for about 1-2 years.

Leaves and vegetables (*Sag*)

For preservation of leaves, they need to collect good quality leaves, clean them properly and remove small insects with the help of turmeric water. If the leaves are of big size then they cuts the leaves and dry them under sun. After they have dried they are kept in a basket made of bamboo. In other seasons

like rain they consume them. In this they keep other vegetables also. Like leafy vegetables they also preserve cabbages, unripe jackfruits, cauliflower, bringals, bamboo shoots, potato etc.

Paddy (*dhan*) and cearls (*dal*)

Paddy is locally called as *dhan*. These people are able to obtain a little amount of *dhan* by dry land cultivation. They husk the grain properly and dry them under the sun. Then they keep the grains in a *paltati* (bamboo basket) and cover it with cow dung. In this way they are able to keep black gram, horse gram etc., also for years together. But they do not remove the seed cover like paddy.

Case study

Khagapati amanataya is a resident of Dailaguda village. He has 10 acres of land. In an average he has more than 11000 bags of paddy every year. After yielding paddies from the field he preserves that paddy for two years. Due to non-availability of cold storage facilities available in the village or nearby and if they sell them immediate after yielding he will earn very few money and also he has to purchase rice from local market. Hence he preserves the yielded paddy to consume in off seasons also needs to sell in other seasons by doing this he is able to get handsome money for his livelihood and also consume rice throughout the year.

Roots (*Kanda*)

Tribal of Nabarangpur is using many types of wild and also domestic roots as their staple food. Some medicinal routes are using by them are available in the local forest. All medicinal and non-medicinal consumable routes are being preserved by tribal people of Nabarangpur. To preserve them first of all they clean properly with clean water, then cut them in small pieces and allow to sunshine for dry. After dry they keep them in a dry place. During the time of dry season, they boil it before consume or making curry. *Kath kanda* is one of the routes being consumed by local tribes of Nabarangpur.

Fish and amphibians (*mach*)

During rainy season they are catching fishes and amphibians from their agricultural field (Jami). They sell it in the local market and also preserve it for months together. To preserve fish, they clean them in which all the wastages is removed and mixed with salts and dried for some days till dry. After that they

keep them for months together. They locally called it *sukhamach*.

Fruits (phal) Tribes of Nabarangpur preserve some fruits for months and years together. This kind of food preservation is very typical of them. They preserve some ripe and unripe fruits. *Kendu*, *Jamunkoi*, dates, *tola* are preserved only after drying in the sun but some fruits like mango (*aam*) are preserved both in the ripe as well as unripe stage. To preserve unripe mangoes, first remove the cover and then they remove the seed. Then it is dried for some time in the sun. This is locally called as *amat*. Sometimes they cut it into pieces and dry. But for ripe mangoes they take out the juices and spread it on a bamboo mat. This process continues for 7 to 8 days so as to make it thick. This form of juice called as *amsoda*, then they keep it in an earthen pot and seal with cow dung and keep the pot on *attu* the upper part of the *challah*).

Some other fruits are preserved by only drying in the sun like *hareda*, *bahada*, tamarind (*tintili*) are preserved for a long period. They remove its cover and its seed then they allow it to dry. After freeing from moisture they keep it at *attu* in an earthen pot sealed by cow dung.

Case Study

Gridhar belongs to *Paraja* community staying in Dabugaon village. He is staying in the village with his family. He has three daughters and two sons are staying with the couple in the village. There is a 11 acres of land surrounded the village which consists of a more number of mangoes trees in the area. During the time of summer, they used to go to the forests and collect ripen desi mangoes and preserves in different methods. The family keeps some preserves like *amsoda* and mango bites in their home and sells in the local market which is one of the profitable business of their area.

Onion

Tribal of Nabarangpur adopting two different techniques for preserving onion are mentioned in the following

First of all, they wait for full grow of onion at the land. After that they collect from their agricultural land and cut leaves (upper portion of onion). After collection they spread in rack made with wood or

bamboo. They keep the rack in such a place where all onions are exposed to air or proper ventilated place.

The second technique is unique for this area. After collection they make it bundle and knot the leaves and hand in side their room where proper ventilation is there. By these ways they are able to preserve onion for years together.

Case Study

Durjan Bhatra aged 55 staying in the village Kaliaguda. He has more than 3 acre of land in the village. Apart from paddy cultivation in the season he is doing onion cultivation in during the time of winter seasons. Though his land has facilities of irrigation so he is practicing potato and onion cultivation. By doing this practices he is able to earn two quintals of onion every year. He has facilities to preserve those onions up to next year. He will send the onion immediately after cultivation then it is less profit but after preservation he is getting 5 times more than the amount. So they adopt the traditional practices only because they have sufficient space at their home. Apart from the other sources like daily labor, paddy cultivation he is able to earn handsome money by doing this types of practices.

Molasses (gud)

To preserve molasses, tribal of Nabarangpur adopting a unique method i.e. After preparation they shapes in round and keeps in an earthen pots and shilled the cover with help of clay. They place those shilled pots in the upper portion of their heath. (Damuni is staying in kosagumada village. She has 9 acres of land. She is staying in a joint family having. She is doing sugarcane cultivation every year and the whole family is involving in the practices. Every year they yield 10,000 KGs of molasses. For their domestic consumption they need 15-18 KGs of molasses which they preserve for the year. To preserve them they adopt only the traditional methods which was being adopted since long time.)

Conclusion

Food preservation is one of the important activities in day to day life of tribal women of Nabarangpur. They are able to preserving both vegetarian and non-vegetarian type's food. Apart from their staple food they also preserve roots, and wild fruits as their day to day activities of life as which are widely available in the local forest. To preserve food, they generally

adopt indigenous methods. The present study focus on preservation of locally available foods by the tribes by adopting indigenous methods. On the basis of preservation local available foods categorized into six categories are mentioned above. The study also explains the methods adopted in the preservation process. The finding of the preservation method will help to the general population for preserving seasonal available foods for long time to consume throughout the year.

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Brief Communication

The Museum of Anthropology and Tribal Studies Department, North Orissa University, Baripada, Odisha

Laxman Kumar Sahoo

Introduction

This brief communication explains about the museum of anthropology and tribal studies department of North Orissa University, Baripada, Odisha. The writer of this communication had established the said museum and was the first appointed faculty to teach anthropology and tribal studies also served as head of the course during the period 2004-November to 2014-August. During 2001, the then vice Chancellor Prof. P.K. Mishra of North Orissa University established a Centre for Tribal Studies. The Centre for Tribal Studies of North Orissa University is first of its kind in Odisha. North Orissa University from its own source and from MPLAD fund of former Rajyasabha MP S.J. Birabhadra Singh of Mayurbhanj district of Odisha constructed a building for Centre for Tribal Studies. The said building costs around Rs.60 lakhs. The building was being inaugurated by Hon'ble the then Chief Minister of Odisha S.J. Naveen Pattanaik in February-2004. The Centre for Tribal Studies building housed the department of anthropology and tribal studies, museum, having an auditorium to organize cultural programs, established a heritage corner in 2010 in collaboration with Indira Gandhi Rashtriya Manav Sanghralaya (IGRMS), Bhopal. The Centre for Tribal Studies also contributing towards the archives of North Orissa University to collect and preserve socio-cultural history of tribal communities and lot of tribal literature books also preserved.

Rationale

The North Orissa University, established in the year 1998, in Baripada of Mayurbhanj district, Odisha is the eighth university of the state of Odisha. The university was set up with a view to fulfil academic aspiration of the people of Mayurbhanj and Keonjhar districts of Odisha in terms of imparting higher education and learning. These two districts epitomise and champion a characteristic structure of

ethnic mosaic since ages with vivid manifestation of multiculturalism constituting 58.72 per cent and 45.45 per cent tribal population respectively (Census: 2011). Obviously, the setting up of North Orissa University in the northern part of Odisha and its jurisdiction spreads over Mayurbhanj and Keonjhar districts is a silver lining since it hopes to fulfil aspirations and desires of the people, and the University in fact has over the years has played a catalytic role in fostering an ambience of higher learning in several frontiers of knowledge including anthropology and tribal studies.

The North Orissa University because of its strategic location in the tribal dominated district of Mayurbhanj with headquarters in Baripada established a centre for tribal studies in 2001 with an objective to understand and explain tribal values, and document their indigenous culture as well as language on one hand and to assess as well as evaluate the implementation of various welfare measures on them for their economic development. The centre for tribal studies of North Orissa University is first of its kind in Odisha. From 2001-02 academic session the centre for tribal studies started M.A. in Tribal Studies course on self financing mode. The M.A. in Tribal Studies renamed as M.A/M.Sc. in Anthropology and Tribal Studies from 2009-10 academic session and the curriculum changed accordingly.

Museum symbolizes the place where either man made or natural objects are collected, preserved and displaced and through these knowledge spreads. Ashutosh Museum of Indian Art, the first public museum in any university in India was established in 1937 at Calcutta University. It is named after Sir Ashutosh Mookherjee, the great educationist of India and West Bengal (Behera & Mohanty, 2007:28). The anthropological museum of post-graduate department of anthropology, Utkal University, Bhubaneswar is one of few departmental

university museums of India, which is open to public on all working days. This departmental museum was established in 1958 in a very small way, but now it has developed to a well organized museum (ibid.: 32). The history of Odisha and Mayurbhanj narrates that the then Maharaja of Mayurbhanj S.J. Sriramchandra Bhanjdeo was the most popular and benevolent ruler/king not only of Mayurbhanj but also of Odisha. Who perfectly understood the cultural background of northern part of Odisha and had established the first museum of Odisha at Baripada in 1903 and second at Khiching in 1922 (GoO:1967). The then Maharaja had thought that both the museums would go a long way in future to preserve the indigenous culture of not only Mayurbhanj but also the entire northern region of Odisha. But both the museums fulfilled little aspirations of the people and stood as role models in the state of Odisha still needs greater care and attention from the government and administration.

Deriving inspiration from Ashutosh Museum of Indian Art and the efforts of the then Maharaja of princely state Mayurbhanj, under the umbrella of centre for tribal studies a museum was established for the preservation of tribal culture and heritage in northern region of Odisha. The museum of anthropology and tribal studies department of North Orissa University was inaugurated on 13.07.2010 by S.J. P. Bhanjdeo, the then Minister of state for sports

and youth affairs, Government of Odisha in presence of then Vice Chancellor Prof. S.P. Rath.

The Museum

The museum of anthropology and tribal studies department of North Orissa University having the following objectives:

1. Collecting, classifying and preserving a large variety of natural and cultural objects;
2. Making this material accessible for research and education;
3. Publication of the materials, including databases;
4. Organizing exhibitions of the collections;
5. Promoting of research related to the collections.

The museum of anthropology and tribal studies department of North Orissa University collected the specimens through the students during fieldwork and purchased by the help of university. The museum kept 16 specimen of different tribal communities of north Odisha, 18 stone tools (6-handaxe, 4-neolithic, 5-microlithic, 3-mesolithic), 42 photo graphs of different tribal communities of north Odisha, 30 photo plates purchased, 01 skeleton and different human skeletal materials purchased like mandible, humerus, clavicle, tibia and fibula, skull, radius, ulna, etc.

Different Museum Specimens and Their Ethnographic Context Discussed Below for Reference

Museum Specimen No.	1
Local Name	GUNDURA
English Name	Digging Hoe
Material Made Up Of	Wood and Iron
Used By	HILL KHARIA TRIBE
Used For	Digging Roots and Tubers
Collection Area	Similipal
Collected By	Goutam Kumar Pedi

Museum Specimen No.	2
Local Name	SIKA PACHIA
English Name	Hanging Basket
Material Made Up Of	Bamboo and Bark Fiber
Used By	HILL KHARIA TRIBE
Used For	Collection of Eggs of Red Ants
Collection Area	Similipal
Collected By	Goutam Kumar Pedi

Museum Specimen No.	3
Local Name	GANJIA
English Name	Net Bag
Material Made Up Of	Thread
Used By	HILL KHARIA TRIBE
Used For	Carrying Materials from Jungle
Collection Area	Similipal
Collected By	Goutam Kumar Pedi

Museum Specimen No.	4
Local Name	GAND PIDHA
English Name	
Material Made Up Of	Bamboo
Used By	MAHALI TRIBE
Used For	Bamboo Craft Making
Collection Area	San Raikali, Khunta, Mayurbhanj
Collected By	Goutam Kumar Pedi

Museum Specimen No.	5
Local Name	MUGAAR
English Name	Hammer
Material Made Up Of	Bamboo
Used By	MAHALI TRIBE
Used For	Bamboo Craft Making
Collection Area	San Raikali, Khunta, Mayurbhanj
Collected By	Goutam Kumar Pedi

Museum Specimen No.	6
Local Name	KATU
English Name	Knife
Material Made Up Of	Iron
Used By	MAHALI TRIBE
Used For	Bamboo Craft Making
Collection Area	San Raikali, Khunta, Mayurbhanj
Collected By	Goutam Kumar Pedi

Museum Specimen No.	7
Local Name	THUDI
English Name	Net Bag
Material Made Up Of	Thread of Siali Bark
Used By	BIRHOR TRIBE
Used For	Carrying Materials
Collection Area	Oupada, Balasore
Collected By	Jayanta Kumar Nayak
Donated By	Birhor Tribes

Museum Specimen No.	8
Local Name	SHIKA
English Name	A Rope-knit bag having long arms
Material Made Up Of	Thread of Siali Bark
Used By	BIRHOR TRIBE
Used For	Keeping Materials in it they hanged it in tree branch
Collection Area	Oupada, Balasore
Collected By	Jayanta Kumar Nayak
Donated By	Birhor Tribes

Museum Specimen No.	9
Local Name	HATAB BAKAHA
English Name	Gourd Big Spoon
Material Made Up Of	Gourd
Used By	BIRHOR TRIBE
Used For	Serving Food and Water
Collection Area	Oupada, Balasore
Collected By	Jayanta Kumar Nayak
Donated By	Birhor Tribes

Museum Specimen No.	10
Local Name	SULAK
English Name	Bamboo Needle
Material Made Up Of	Bamboo and Jute Thread
Used By	MAHALI AND SANTAL TRIBE
Used For	At the time of thatching roof it acts as a needle
Collection Area	San Raikali, Khunta, Mayurbhanj
Collected By	Goutam Kumar Pedi

Museum Specimen No.	11
Local Name	CHALHA
English Name	Bamboo Basket
Material Made Up Of	Bamboo
Used By	SANTAL TRIBE
Used For	Religious purpose of siping rice bear (handia) and also for cleaning and washing food materials
Collection Area	Rairangpur, Mayurbhanj
Collected By	RajeswarMaharana
Donated By	RajeswarMaharana

Museum Specimen No.	12
Local Name	HATHA
English Name	Bamboo Basket
Material Made Up Of	Bamboo
Prepared By	MAHALI TRIBE
Used By	MAHALI, SANTAL and Others
Used For	Both for religious and domestic purpose –i) it acts as a container to Carrey puja materials to the sacred place, ii) for cleaning husk and small stones from rice
Collection Area	San Raikali, Khunta, Mayurbhanj
Collected By	Goutam Kumar Pedi

Museum Specimen No.	13
Local Name	BAPLHA DAULHA
English Name	Big Bamboo Basket
Material Made Up of	Bamboo
Prepared By	MAHALI TRIBE
Used By	MAHALI and SANTAL TRIBE
Used For	Both for religious and domestic purpose –i) At marriage time bride sit in it for some ritual purpose, ii) Used for keeping domestic products in it
Collection Area	San Raikali, Khunta, Mayurbhanj
Collected By	Goutam Kumar Pedi

Museum Specimen No.	14
Local Name	AHA and SAAR (Iron part is named as UGLI)
English Name	Bow and Arrow
Material Made Up Of	Bow is made by Bamboo and Jute thread, Arrow is made by iron / wood , stick, feather and thread
Used By	SANTAL TRIBE
Used For	Both for religious and hunting purpose – i) As a religious belief, it kept near the head of the newborn baby to protect from evil spirit; ii) For self protection and hunting purpose
Collection Area	Baripada
Collected By	MalatiTudu
Donated By	MalatiTudu

Conclusion

The above mentioned facts are a testimony to make the museum of centre for tribal studies as a departmental public museum in North Orissa University of Odisha. The museum would go a long way in future by disseminating ethnographic and material cultural aspects of tribes of North Odisha. If

Museum Specimen No.	15
Local Name	THUMDAHA (MADAL)
English Name	Drum (Musical Instrument)
Material Made Up Of	Clay Pipe, Leather
Used By	SANTAL TRIBE
Used For	Used in i) Religious Function like BahaBanga, Ful Puja C ii) At the time of marriage, Drama And Special Activity
Collection Area	Barhagadia, Khunta, Mayur
Collected By	Kusal Chandra Hembram
Donated By	Kusal Chandra Hembram

Museum Specimen No.	16
Local Name	KAWHA FASI
English Name	Bird Catcher Cage
Material Made Up Of	Bamboo, Iron, Nilon thread
Used By	KHARIA, HO TRIBE
Used For	Bird Catching
Collection Area	Barhagadia, Khunta, Mayur
Collected By	Kusal Chandra Hembram
Donated By	Kusal Chandra Hembram

the museum would function properly it is not only expected but also assured that, such a museum for tribal studies definitely is of immense help to students, officials, researchers, public and many others to have a clear cut understanding of the importance of tribal societies, their heritage preservation from academic and applied perspectives.

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