

Harmony

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Edited by : Dutta • Kakati • Borah



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Seema Dutta
Dr. Nandini Kakati
Dr. Monalisa Borah

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Dr. Monalisa Borah**

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Foreword

To 'Publish or perish' is a popular saying among the academics having far reaching implications to all. Publication for its own sake, but then, bears no sense if it fails to contribute to the gamut of knowledge. It is the need of the hour for the fraternity from the field of higher education in India to do their level best to enrich the treasury of knowledge. Not to speak about the nations like U.K. and U.S., we are not in a position at present, to touch the level of our nearest neighbour, China. The quality and quantum of publications contributed by the Chinese scholars is ahead of that of contribution made by the Indians. His Excellency, the President of India has recently urged upon the academics to try hard so as to restore the past glamour of higher education in India. We, therefore, must be responsive to the situation that the nation is going to face. It is rather a compulsion for those who are in the field of higher education to get themselves involved in innovative thinking and research.

The present volume is the outcome of the maiden venture of the lady teachers in my Institution. The title of the volume itself speaks how diverse is its content. Yet, the spirit of cohesion within them to compile it as a single volume is, no doubt, praiseworthy. The readers will obviously get a variety of taste while in going through the Papers. The endeavour made by our esteemed lady teachers under the banner of Women-Cell to bring out this volume and that too, on such an auspicious occasion of celebration of Golden Jubilee of our Institution is obviously a matter of great pleasure not only for me, but for everyone in the College family. It deserves high commendation and I do hope that other faculties will be moved by the example of positive outcome of the collective spirit set by the members of the Women-Cell of the College. Finally, I would like to make an appeal before

the contributors that their relentless effort will continue to give us more and more innovative Papers in the volumes to be brought out in the days to come.

S.B.M.S. College
Sualkuchi, 30-10-2013

Dipesh Chandra Bhagabati
Principal
S.B.M.S. College, Sualkuchi

From the Editors' Desk

“The hand that rocks the cradle rules the world.”

This speaks aptly of the “woman” who has been epitomised as the symbol of love, affection and compassion on the one hand, and on the other she wields the sceptre of dignity and authority. Instances of women evincing qualities of head and heart are galore in the annals of history. Women today adorn the pedestal of policy-making and governance, over and above being home-makers. It is little wonder that the woman is said to be the full circle who has the power to create, nurture and transform. Exalting the achievements of women, the world celebrates the 8th of March as the International Women's Day. Equal representation has also been granted to women in India by reserving fifty percent of seats in the village Panchayats lately. It is to the same womanhood we hold our tribute on rendering the “Vande Mataram” in honour of our ‘Motherland’.

It is in this backdrop that the University Grants Commission envisaged an active and functioning Women-Cell in the precincts of every University and affiliated Colleges. Likewise, the Women-Cell of Sualkuchi Budram Madhab Satradhikar College took shape in 2004. The Cell was committed to bring to the forefront the problems relating to women and to alleviate them within its circumscription, and to engage in various activities involving women.

The Women-Cell of Sualkuchi Budram Madhab Satradhikar College, walking hand in hand with its comrades, humbly marched ahead, and thereafter never looked back, as it involved

itself with various programmes such as enlightening the weavers of Sualkuchi, holding health-awareness camps to inculcate consciousness amongst the women-folk of greater Sualkuchi, assisted by the local Public Health Center, hosting Seminar on "Mother and Child Care", and Workshop on "Participation of Women and their Role in Village Panchayets". It also brought to the platform such topics as "Tradition, Modernity and Women in the Indian Context" through a Seminar. This year, the Women-Cell was fortunate to have had the opportunity to organise a U.G.C. sponsored National Seminar, deliberating on the Topic, "Witch-Hunting in the North-East : A Major Challenge to Women" in collaboration with the Assam College Teachers' Association, Kamrup B-Zone.

Almost simultaneously with the proposal for the Seminar, we, the lady-members of the Cell collectively initiated a novel venture in the form of publishing a book. Since it is our maiden attempt, we contemplated on limiting our writing amongst only the women members of the Cell. Besides, the topics are based on assorted issues amalgamating both the fields of Science and Humanities. It is a humble endeavour on our part to place our writings before our esteemed readers. In this context, there might arise some discrepancies which we hope will be pardoned. It would be our sincere effort to try to make amends in future.

In materialising our dream of publishing a book, the Women-Cell owes a major chunk of its gratitude towards the Principal of our College, Dr. Dipesh Chandra Bhagabati for inspiring us in our efforts and for his unstinting advice and co-operation. We also express our heartfelt gratitude to Ms. Mamani Devi, Associate Professor, Department of Political Science, S.B.M.S. College for having volunteered to assist the project financially without which we could not have been able to give shape to our

ideas and thoughts. We also thank the Advisory Committee of the Women-Cell for extending their valuable suggestions. We are also thankful to our College fraternity for their support and goodwill. We owe our gratitude to all the lady-members of the Women-Cell of our College who have dedicated their time and effort in disseminating their valuable information through their writings. We intended to release the book to earmark the ensuing Golden Jubilee celebrations of the College. For that matter, we express our sincere gratitude to Ashok Book Stall, Panbazar, Guwahati for publishing the book expeditiously. Last but by no means the least, we owe our thanks to Elora Offset Press, Hedayetpur, Guwahati for having extended their professional expertise in printing the matter.

Date : 1-11-2013

S.B.M.S. College Sualkuchi.

**Seema Dutta
Nandini Kakati
Monalisa Borah**

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GLOBAL WARMING : A CRITICAL AND COMPLEX ENVIRONMENTAL ISSUE

Mamani Devi

ABSTRACT

Glaciers serve as early indicators of climate change. Climatic and environmental variations from the Polar Regions and ongoing widespread melting of high-elevation glaciers and ice caps indicate that a rapid change in Earth's climate system is underway. This paper highlights main causes of climate change, observes effects and steps to be taken to minimize its adverse impact. The current warming is unusual when viewed from the millennial perspective provided by multiple lines of proxy evidence and the 160-year record of direct temperature measurements. Despite all these evidences, plus the well-documented continual increase in atmospheric greenhouse gas concentrations, societies have taken little action to address this global-scale problem. Hence, the rate of global carbon dioxide emissions continues to accelerate. As a result of our inaction, we have three options - mitigation, adaptation and suffering.

KEYWORDS

Climate change or Global Warming,

INTRODUCTION

The climate change, specifically referred as "Global Warming", has drawn the attention of people worldwide. It has also inspired

more action and debate at personal, corporate and political level than perhaps any other environmental issue in history. But all of that discussion, along with huge amount of national and international data and conflicting point of views of leading scientists of the world sometimes make it hard to really understand what is going on. Most of the scientists of the world consider that Global Warming is the greatest environmental threat of the 21st Century. However, during the 80s and early 90s scientists argued about the causes and effects of global warming. In the late 1990s scientists reached a consensus that global warming was a cause for concern.

The Union of Concerned Scientists, a union of about 1700 leading scientists of the world including majority of Nobel laureates in the sciences, issued a warning in 1992 that "we the undersigned, senior members of the world's scientific community, hereby warn all humanity of what lies ahead. A great change in our stewardship of the Earth and the life on it is required, if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated, we need your help. We hope that this message will reach everywhere and affect the people of this planet." However, the study will try to highlight the main causes with facts and figures and assess its impact on earth and living organisms. It will not provide a comprehensive review of all published studies. Instead it aims to concentrate on those studies that address the problem, new concepts and real advances in climate change for impact assessment. The review will also concentrate on effects and advocate prevention or control of global warming.

MATERIALS AND METHODS

The study is based on secondary information and data. After collecting data, these were compared and analyzed in a suitable manner and discussed on the basis of recent available data related to climate change.

OBSERVATION AND RESULTS

The most general definition of climate change is a change in the statistical properties of the climate system when considered over long periods of time, regardless of the cause. It may be a change in average or more or fewer extreme weather events. The term sometimes is used to refer specifically to climate change caused by human activity, as opposed to changes in climate that may have resulted as part of Earth's natural processes. Especially in the context of environmental policy, the term climate change has become synonymous with anthropogenic global warming. It is caused by factors that include oceanic processes like oceanic circulation, biotic processes, variations in solar radiations received by the earth, plate tectonics and volcanic eruption and anthropogenic activities or human-induced alterations of the natural world.

Scientists are actively working to understand past and future climate by using observations and theoretical models. Borehole temperature profiles, ice cores, floral and faunal records, glacial and various related processes, stable isotope and other sediment analyses, and sea level records serve to provide a climatic record that spans the geologic past. More recent data are provided by the instrumental record. Physically based general circulations are often used in theoretical approaches to match past climate data, make future projections, and link causes and effects in climate change.

Factors shaping climate are called climate forcing or forcing mechanisms. Forcing mechanisms can be either internal or external. The Internal forcing mechanisms are natural processes within the climate system itself e.g., the thermohaline circulation while the external forcing mechanisms can be either natural changes in solar output or anthropogenic increased emissions of greenhouse gases. Earth-orbiting satellites and other technological advances have provided big picture and many different types of information about the planet and its climate on a global scale. The study of these climate

data collected over many years shows the signals of a changing climate.

GREEN HOUSE GASES

The main reason of global warming is Green House Gases (GHGs). The Green House Gases (GHGs) are Carbon dioxide, Methane and Nitrous Oxide. The main sources of Carbon dioxide are thermal power plants, industrial smoke and vehicular exhaust while those of Methane are paddy cultivation in standing water, cattle and bovine animals and the main sources of Nitrous oxide are vehicular emissions, production of fertilizers. Besides, coolants and refrigeration aerosols powered canisters are also important sources of these green house gases. However, the animal agriculture is the single largest source of two of the most significant GHGs i.e. Methane and Nitrous oxide. This is also single largest user of land and water, a cause of deforestation, wide scale land degradation, species loss, polluter of wetlands, lakes, rivers, oceans and drinking supplies etc.

The Carbon dioxide has heat trapping characteristic and directly blocks thermal radiations. The increase in Carbon dioxide from 320 parts per million in 1950 to 348 parts per million may be attributed to anthropogenic factors, mainly emissions from fossil fuel combustion, followed by aerosols (particulate matter in the atmosphere) and cement industries. Other factors, including land use, Ozone depletion, animal agriculture and deforestation etc also play a significant role in affecting climate. The Figure-1 is based on the comparison of atmospheric samples contained in ice cores and more recent direct measurements. It provides clear evidence that atmospheric CO₂ has increased since the Industrial Revolution. (Source: NOAA).

The Methane reacts with hydroxyl ions and converts it into Carbon dioxide. The Nitrous oxide comes from the Gasoline part of the smog and OPM causes acid rain and reduces visibility. Moreover, the incident thermal radiations is absorbed by the Earth and then re-

emitted but it is blocked by smog and OPM. Increased levels of greenhouse gases heat the atmosphere. Figure-2 shows concentration of various greenhouse gases while figure -3 reveals the contributing sources.

TEMPERATURE

On the broadest scale, the rate at which energy is received from the sun and the rate at which it is lost to space determine the equilibrium temperature and climate of Earth. This heat energy is distributed around the globe by winds, ocean currents, and other mechanisms to affect the climates of different regions. The three major global surface temperature reconstructions reveal that the earth has warmed since 1880 and most of this warming has occurred since the 1970s. Though the 2000s witnessed a solar output decline resulting in an unusually deep solar minimum in 2007-2009, surface temperature continues to increase. Since 1950, the number of record of high temperature events in the United States has been increasing while the number of record of low temperature events has been decreasing. The U.S. has also witnessed increasing numbers of intense rainfall events. The Figure-4 is sample forecasts of future temperature change. It shows seven forecasts by the same climate mode- seven different possible futures for the earth's temperature. All seven forecasts can be defended as reasonable.

SHRINKING ICE SHEETS

Glaciers serve as early indicators of climate change. Glaciers grow and shrink due to natural variability and external forcing. Variability in temperature, precipitation, and englacial and subglacial hydrology can strongly determine the evolution of a glacier in a particular season. Climatic and environmental variations from the Polar Regions and ongoing widespread melting of high-elevation glaciers and ice caps indicate that a rapid change in Earth's climate system is underway. Glaciers are retreating almost everywhere around the world -

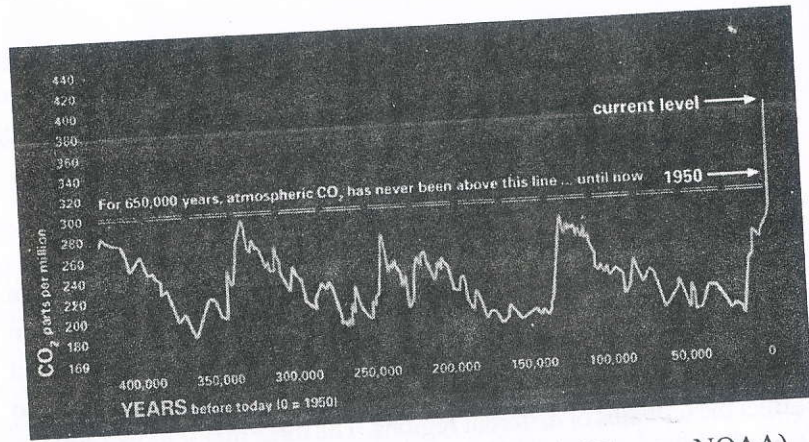


Figure:1. Shows increase in Carbon dioxide (Source- NOAA) .

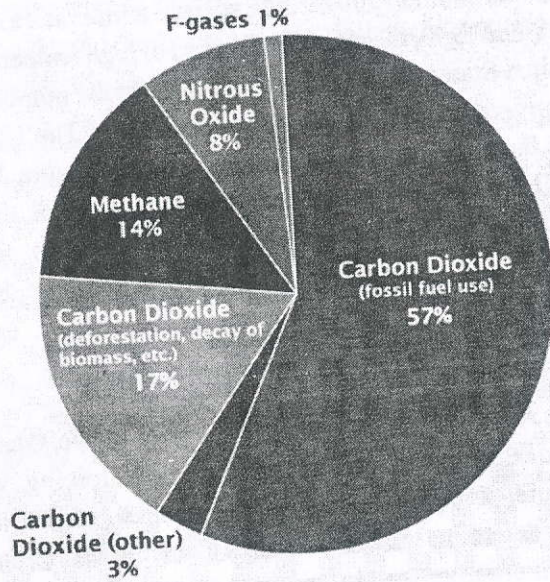


Figure: 2 Greenhouse gases emission from various sources (Source: IPCC - 2007)

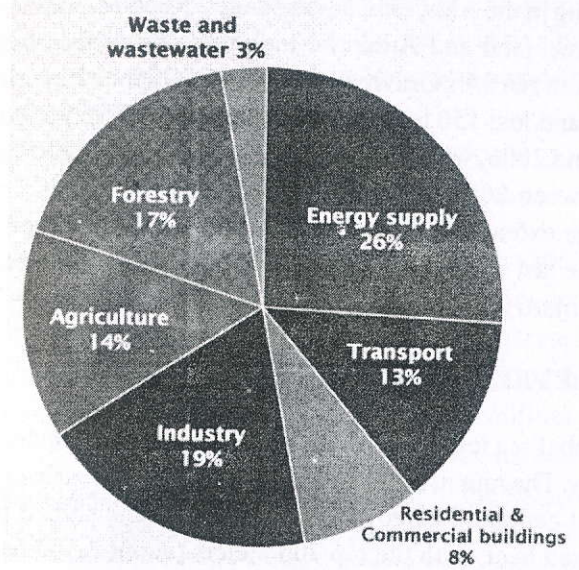


Figure 3 : Various sources of carbon dioxide (Source: IPCC -2007)

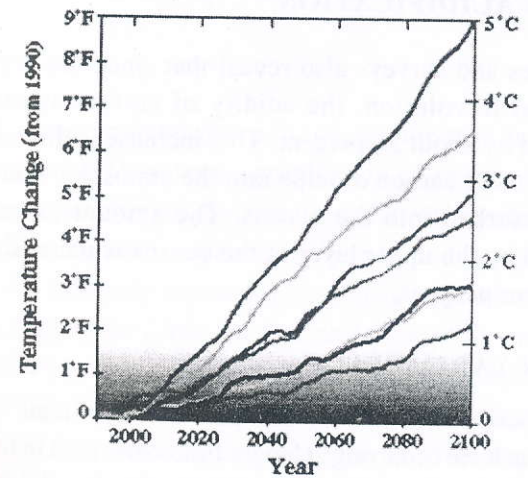


Figure 4 : (Source: Massachusetts Institute of Technology Joint Program on the Science and Policy of Global Change

including in the Alps, Himalayas, Andes, Rockies, Alaska and Africa. The Greenland and Antarctic ice sheets have decreased in mass. Data from NASA's Gravity Recovery and Climate Experiment shows Greenland lost 150 to 250 cubic kilometres of ice per year between 2002 and 2006, while Antarctica lost about 152 cubic kilometres of ice between 2002 and 2005. Visualization of the 2007 reveals that both the extent and thickness of Arctic sea ice has declined rapidly over the last several decades. The disappearing snow-cap of Mount Kilimanjaro is visible from space.

SEA LEVEL RISE

Global sea level rose about 17 centimetres (6.7 inches) in the last century. The rate in the last decade, however, is nearly double that of the last century. Moreover, the oceans have absorbed much of the increased heat, with the top 700 meters (about 2,300 feet) of ocean resulting warming of 0.302 degrees Fahrenheit since 1969.

OCEAN ACIDIFICATION

Studies and surveys also reveal that since the beginning of the Industrial Revolution, the acidity of surface ocean waters has increased by about 30 percent. This increase is the result of human emitting more carbon dioxide into the atmosphere and hence more being absorbed into the oceans. The amount of carbon dioxide absorbed by the upper layer of the oceans is increasing by about 2 billion tons per year.

OCEAN VARIABILITY

The ocean is a fundamental part of the climate system. Some changes in it are occurring at longer timescales than in the atmosphere. The short-term fluctuations like the Pacific decadal oscillation, the North Atlantic oscillation and the Arctic oscillation represent climate variability rather than climate change. On longer time scales,

alterations to ocean processes such as thermohaline circulation play a key role in redistributing heat by carrying out a very slow and extremely deep movement of water, and the long-term redistribution of heat in the world's oceans

LIFE

Life affects climate changing the carbon and water cycles and mechanisms such as albedo, evapotranspiration, cloud formation, and weathering. The best examples of how life may have affected past climate are the glaciations 2.3 billion years ago triggered by the evolution of oxygenic photosynthesis, glaciations 300 million years ago ushered in by long-term burial of decomposition resistant detritus of vascular land plants forming coal, termination of the Palaeocene Eocene Thermal Maximum 55 million years ago by flourishing marine phytoplankton, reversal of global warming 49 million years ago by 800,000 years of arctic azolla blooms and global cooling over the past 40 million years driven by the expansion of grass-grazer ecosystem.

SOLAR OUTPUT

The sun is the predominant source for energy input to the Earth. Both the long term and short term variations in solar intensity are known to affect global climate. Solar output also varies on shorter time scales, including the 11-year solar cycle and longer-term modulations. Solar intensity variations are considered to have been influential in triggering the Little Ice Age, and some of the warming observed from 1900 to 1950. The cyclical nature of the sun's energy output is not yet fully understood. Some studies point towards solar radiation increases from cyclical sunspot activity affecting global warming, and climate may be influenced by the sum of all effects (solar variation, anthropogenic radioactive forcing etc.). CERN has announced in Aug 2011, through Press Release, the initial results

from its CLOUD experiment. The results indicate that ionisation from cosmic rays significantly enhances aerosol formation in the presence of sulphuric acid and water but in the lower atmosphere where ammonia is also required, this is insufficient to account for aerosol formation and additional trace vapours must be involved.

MAGNETIC FIELD STRENGTH

Some recent (2006+) analysis suggests that global climate is correlated with the strength of earth's magnetic field.

VOLCANISM

In atmospheric temperature from 1979 to 2010, determined by MSU NASA satellites, effects appear from aerosols released by major volcanic eruptions. It is a separate event, from ocean variability. Volcanic eruptions release gases and particulates into the atmosphere. The eruptions affect climate and cause cooling by partially blocking the transmission of solar radiation to the Earth's surface. The eruption of Mount Pinatubo in 1991, the second largest terrestrial eruption of the 20th century affected the climate substantially. Global temperatures decreased by about 0.5 °C (0.9 °F). Volcanoes are also part of the extended carbon cycle. Over very long geological time periods, they release carbon dioxide from the Earth's crust and mantle, counteracting the uptake by sedimentary rocks and other geological carbon dioxide sinks. The US Geological Survey reveals that volcanic emissions are at a much lower level than the effects of current human activities, which generate 100-300 times the amount of carbon dioxide emitted by volcanoes.

EFFECTS OF GLOBAL WARMING

Some of the important effects of global warming are shared below.

1. Infrastructure, lakes, rivers, forests etc are mostly damaged.
2. Sea levels are rising. If this goes like this, then by 2020, many areas of the world along with India Gate of Mumbai will be in sea.
3. Many areas are experiencing intense precipitation and very likely more intense precipitation will be seen over many areas.
4. Due to climate change, there is and there will be more volcanic eruptions resulting in increase in Sulphur dioxide level in the atmosphere. Sulphur Dioxide reacts with Oxygen of the atmosphere and oxidizes it into Sulphate, aerosol and penetrates to Stratosphere. Sulphate aerosol then interacts with solar radiation. Such natural events may have triggered increase in global temperature.
5. We are witnessing wild fire in America, Australia and even in Jammu and Kashmir. It will Increase in other areas also.
6. More variable precipitation patterns are likely to compromise the supply of fresh water and increasing the risk of water borne diseases. Besides, the rising temperature and variable precipitation may or likely to decrease the production of staple food in many of the poorest regions thereby resulting more risk of malnutrition.
7. Rising sea level may increase the risk of coastal flooding and may lead to population displacement. More than half of the world's population now lives within 60 Km. of the sea.
8. The climate change may lengthen the transmission seasons of important vector-borne diseases. This may alter their geographic range, potentially bringing them to regions which lack either population immunity or a strong public health infrastructure.
9. Dengue is a mosquito borne viral fever and characterized by fever, rash, muscle and joint pains. About 2500 million people are now at risk from dengue. They were earlier found at elevations not higher than 1000 meters. But due to global warming, they have recently detected at 2200 meters on Columbia's Andes Mountain.
10. Similarly, Chickengunia fever is a disease characterized by

fever, rash and severe joint pain . It is rarely life threatening. More than 1.25 million cases have been reported from India with 752245 cases from Karnataka and 255998 from Maharashtra state.

11. The populations of many animals like Porcupine Caribou Herd have declined at the rate of 3.5 % to a low of 123000 animals by 2001. The Dall sheep live exclusively in Alpine Tundra. Their habitat area is reducing due to climatic change and as a result their population is also declining.

12. The polar ice cap is melting. The total ice covers of Kilimanjaro is decreasing (Ecological Service And Canadian Wildlife Service, 2005). The numbers of polar bear in Peril, Western Hudson Bay reduced to 225 in last 17 years. The percentage of fasting bears in spring over the Beau for sea also increased from 9.6 % (1885) to 29.3 % (2006). They are listed as threatened species.

13. The rising temperature, shrinking habitats, scarcity of food, expanding diseases and competition created risk for some animals like polar bear, walruses, black guillemots, ice seals , salmon etc.

DISCUSSION

Nevertheless, there is a strong, credible body of evidence, based on multiple lines of research, documenting that climate is changing and the climate system of the earth is unequivocally warming. Further global climate changes are predicted, with impacts expected to become more costly as time progresses. These changes are in large part caused by anthropogenic activities that increase concentrations of greenhouse gases in the atmosphere, such as deforestation and burning fossil fuels and has been offset by increased aerosols. Besides, some natural mechanisms including climate oscillations, variations in solar activity and earth's orbit and volcanic activity can be attributed to climate change or global warming though these natural forces alone cannot explain the observed warming.

Moreover, it is a well known fact that man is by nature greedy.

God can fulfil our needs but not our greed. In the name of urbanization, modernization, development and industrialization, the natural resources are over exploited destroying the ecology of the earth. The unprecedented ice melts in the Arctic and Antarctic, melting of many of the worlds glaciers , submergence of 18 islands already around the world , 25 million environmental refugees in 2007 alone, decimation of rainforests at 13.5 million hectares per annum, species loss 1000 to 10,000 times higher than the expected natural extinction rate, ocean acidification and water pollution causing oceanic dead zones and affecting marine life and ecosystem, 80 percent of global fish stock fully or over exploited, water scarcity and food insecurity, atmospheric carbon dioxide levels at 385 parts per million steadily reaching to 450 parts per million (catastrophic level) , exponential increase of Methane vs. Carbon dioxide and increased frequency and intensity of natural disasters all over the world, including draughts, floods and wildfires etc are results of anthropogenic activities and created environmental crisis.

National and International Science Academies and Scientific Societies have assessed the current scientific opinion on recent global warming. These assessments have largely followed or endorsed the Intergovernmental Panel on Climate Change (IPCC, 2001). The main conclusions are:

1. The global average surface temperature has raised 0.6 ± 0.2 °C since the late 19th century, and 0.17 °C per decade in the last 30 years.
2. There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities, in particular emissions of the greenhouse gases - carbon dioxide and methane.
3. If greenhouse gas emissions continue, the warming will also continue, with temperatures projected to increase by 1.4 °C to 5.8 °C between 1990 and 2100. Accompanying this temperature increase will

increase in some types of extreme weather and a projected sea level rise.

SUGGESTIONS

The first and very important step is to understand the problem and the main causes of global warming and then some specific measures have to be taken for mitigation. Moreover, as a citizen and a consumer, we can put pressure to influence the public policy and business decisions that affect and cause global warming. However, change and modification in our lifestyle or some of the activities may significantly contribute in reducing the adverse effects of global warming or climate change. Few suggestions or solutions to overcome, to some extent, the crises are given here under.

1. Certain measures like efficient and wise use of water, conversion of waste into manure, saving energy in cooking, burning of fuel efficiently, pollution free or minimum pollution industries etc can reduce GHG emissions.

2. For emissions reduction in building construction, saving cement, height of the tank and tap size, provision for maximum light, rain water harvesting, compulsory solar water heater, solar panels on roof top and passive solar design must be emphasised.

3. For renewable installation of renewable energy systems- wind, solar or geothermal, stress on use of Bio-fuels, Carbon Neutral and Carbon offsets be stressed and Denali Green Tags be heard.

4. The following measures must be adopted to increase energy efficiency - reduction in home's heat, replacement of incandescent lights with fluorescents, and appliances with "energy star" rated appliances and production and use of hybrid car.

5. We have to remember that nature has given adequately for everybody's need and not for everybody's greed. Therefore, we have to change from carbon based energy economy to renewable and solar and from consumerist society to need based consumption.

6. The following conservation measures - as far as possible walk, more use of bike and public transit or carpool, use of properly tuned up car, lowering water heater and home thermostats, reducing shower length and temperature, buying locally produced food, unplugging appliances not in use, habit of turning off lights and other equipments when leaving a room or office, use of recycled paper etc have to be paid due attention.

7. We have to remember that we have for everybody's need and not for everybody's greed and change from consumerist society to need based consumption. Moreover, saving forest and forestation, wise use of water, power or energy, proper use of automobiles etc have to be stressed.

CONCLUSION

However, the effects of global warming or climate change are often discussed in future terms at national or international levels, but many of those effects are already under way. Some causes and effects have been discussed above, and showing its adverse impact or influencing everything from human being to the biodiversity, climate, seasonal change etc. of the world. However, the leading scientists of the world, working on global warming or climate change and climate, still believe that it is not too late. Moreover, it is hoped and agreed that there is still enough time to address this problem at national and international levels and many of the worst effects of climate change or global warming can be avoided or checked. It requires a combination of enlightened public policy, corporate commitment and individual action of a nation. Otherwise we have to be ready to have three options - mitigation, adaptation and suffering in our hand. □

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UNDERSTANDING PHILOSOPHY

Banti Borah

The unexamined life is not worth living.

Socrates

Three questions were put forward by my family members at different times which may be treated as the inspiration of writing this article. The first question was: what is the utility of philosophy? It was asked by my father when I was a student of undergraduate course. The second question came from my son and he wanted to know about the subject matter of philosophy. And the last question was asked by my daughter that was the most interesting and more philosophical. The meaningful question was: who am I? These three questions at least made me think that philosophy works in the minds of common people. It is a common sense view that philosophy deals with some abstract ideas which have no practical utility. Life becomes impossible without science but it is not essential to know about philosophy for the smooth running of his or her life. The aim of this article is to clarify the subject matter, the method it applies and the utility of philosophy.

First of all, we are going to discuss about the subject matter of philosophy. Like any other department of enquiry, philosophy also has its own area of interest. But the fact is that there is no limit of its subjects of investigation and philosophy looks at them from a different angle of vision from that of science or any other branch of enquiry. The literal meaning of philosophy is "love of wisdom" and therefore in the wider sense philosophy includes the knowledge of the reality

or entire experiences. Caird has rightly said: "There is no province of human experience, there is nothing in the whole realm of reality, which lies beyond the domain of philosophy, or to which philosophical investigation does not extend."¹ So philosophy tries to give a rational conception of reality as a whole. Aristotle said more than two thousand years ago that philosophy begins with wonder at the marvels and mysteries of the world.²

The dictionary meaning of philosophy is "the study of the most general and abstract features of the world and categories with which we think: mind, matter, reason, proof, truth, etc."³ In philosophy the concepts with which we approach the world themselves become the topic of enquiry. A philosophy of a discipline such as history or physics seeks not so much to solve historical or physical questions but to study the structure of such thinking, and to lay bare their foundations and presuppositions.

Every department of science deals with a particular area of interest. But the domain of philosophical enquiry includes the whole of human enquiry; about the nature of the universe, the nature and destiny of human soul, the concept of God and the Absolute, matter, space, time, causality, evolution, life and mind including the concept of right, wrong, good, evil, beauty or ugliness, etc. Philosophy critically explains the life and the universe as a whole. From the very beginning of our existence we have been trying to find out the meaning, significance and answer of some questions regarding our life and have treated them as important as the knowledge of the external world. The reflective mind sometime disturbs us by bringing some questions like Who am I really? How much free am I? What is soul? These are definitely some important questions about which we are curious enough but difficult to find out definite answers. But philosophers have spent a great deal of time analyzing and trying to answer them.

In the beginning, every systematic search for knowledge was treated as philosophy. The full title of Sir Isaac Newton's Principles,

in which in 1729 Newton set forth his famous theories of mechanics, mathematics and astronomy, is *Mathematical Principles of Natural Philosophy*.⁴ So, every subject at some point or other is related to philosophy. The reflection of this fact can be seen in the modern universities where the highest degree granted in all of the sciences and humanities is the Ph.D. or the doctor of philosophy. But some of the branches of knowledge are now doing their study independently and philosophy carries its study as a search for wisdom.

Philosophical knowledge does not result from the sense experience on the one hand and the reality on the other hand. Therefore philosophy cannot be said to be the first order of enquiry as sciences are. It means philosophy does not deal with reality but with the concept of reality. Again, philosophy is not a formal science like mathematics. Formal sciences are bodies of analytic statements and not empirical statements. So the language of philosophy is neither analytic nor synthetic. Philosophical sentences cannot be proved or disproved because of its distinctness from both formal and empirical sciences. But this does not mean that philosophy has no meaning at all or it is useless. Philosophy is the very foundation of human enquiry about the external world as well as his own existence.

Philosopher's view is not one-sided like that of an artist or a businessman. An artist looks the aesthetic side of a creation and a businessman's interest lies on the side of profit and loss. But a philosopher's view includes every aspect and the possible ones irrespective of particular space, time and existence. Plato, therefore, called a philosopher as the spectator of all time and existence.⁵ A philosopher wants to give a synoptic view. For him a genuine or philosophical knowledge is always the knowledge of the whole and this is the true spirit of human enquiry. And in doing so a philosopher uses different methods like analysis, argumentation, criticism, reflection, speculation and interpretation.

Philosophical speculation usually goes against the majority or

popular views which are partial and never go to the reality. But philosophy goes to the deeper truth which is reflective and exciting. The virtue of philosophy is the ability to live by reflective thought in the midst of noise of the masses and which originated at the very beginning of human search for wisdom. In the words of Louis P. Pojman "The laboratory of the philosopher is the domain of ideas; the minds, where imaginative thought- experiments take place; the study, where ideas are written down and examined; and wherever conversation or debate about the perennial questions takes place, where thesis and counter- example and counter- thesis are considered."⁶

The major areas of philosophy are metaphysics that deals with the nature of ultimate reality, epistemology that deals with the nature of knowledge and justification, logic that deals with arguments, ethics that deals with values and political philosophy, etc. But there are other areas of philosophy that work on conceptual and theoretical problems arising within first-order non philosophical disciplines. They are secondary areas of philosophy. Some of the examples of secondary areas are philosophy of science, philosophy of mathematics, philosophy of language, etc. Recently due to the advancement of technology we find another area of interest in philosophy. This is known as applied ethics which includes branches like biomedical ethics, business ethics, environmental ethics, bio ethics, etc.

In India, philosophy is not considered as intellectual pursuit only. Here, philosophy is closely related to human life. Indian philosophy is known as 'darsana' which means vision of truth. Indian philosophy holds that within man there is the spirit that is the centre of everything. It considers "moksha" as the highest end of human life and shows the way to attain the highest goal of life. Indian philosophy, therefore, is said to be more practical than western philosophy which is more theoretical and intellectual. It would suffice to refer to Swami

Vivekananda and such others who have tried to add practical dimension to philosophy in general and Vedanta in particular.⁷ Philosophy in India is essentially spiritual due to the intense spirituality of India. But the supremacy of religion and of social tradition in life does not hamper the free pursuit of philosophy. Contemporary Indian philosophers have given more emphasis on the humanistic approach along with the spiritual approach.

In many other countries of the world, reflection on the nature of existence is a luxury of life. But in India, philosophy is not an auxiliary to any other science or art. It always occupies an independent position. The *Muṇḍaka Upaniṣad* speaks of *Brahma-Vidyā* or the science of eternal as the basis of all sciences, *sarva-vidyā-pratiṣṭhā*.⁸ So, Indian philosophy gives emphasis on the objective world along with the subjective one. But in India, philosophy is regarded as the master science without which other sciences will become empty and foolish. In India the relation of philosophy to human life is so close that our approach of life and our dealings with others are very much determined by the philosophy we adhere to.

Regarding the utility of philosophy, Bertrand Russell said, "If the study of philosophy has any value at all for others than students of philosophy, it must be only indirectly, through its effects upon the lives of those who study it."⁹ Philosophical thoughts often disturb our common sense or the representation of the majority opinion. But it is not necessary that the majority opinion always brings the factual truth. There is often a deeper truth that disturbs our reflective mind and forces us to revise or reject some of our beliefs. This experience may be painful but it is exciting and innovative. Here lies the difference between physical sciences and philosophy. As physical sciences are related to this external world it can bring benefits through different inventions to innumerable people who are in fact ignorant about it. So, science not only affects the student but also affects the whole mankind and people are well aware of it. But the picture of

the utility of philosophy is something different. In order to understand the value of philosophy one must first of all free his mind from the belief that material needs are the only necessity of human life.

Philosophy shows us how familiar things work in an unfamiliar way. The man who has no interest of philosophy goes through life with the prejudices coming from common sense, without the co-operation of his rational power. For him, the world is definite and obvious. But when we start to think philosophically with the common objects they lead to problems to which only incomplete answers can be given. Philosophy, though unable to give us the true answer to the problems we raise, it can definitely suggest many possibilities which can enlarge our area of thinking. So, no philosophical theory is a last word.¹⁰ It can be better said as the hypothesis accepted so long as it is found to be able to explain the meaning and significance of life and reality but subject to further and higher imagination. A philosophical thinking starts from the world that appears before us but wants to get the synthetic view of Reality, the source of such appearance. A philosopher's view is that the appearance and the Reality are inseparably related to each other which comprehends everything but excludes nothing.

But the most important contribution of philosophy to human life is that it teaches us to be the citizen of the universe that consists of man's true freedom and liberation from his very narrow hopes and fears. We want not only to live but to live in a meaningful way. This meaningful life is not a life of internal enjoyment. In fact we want to be a part of the world. Material need, no doubt, is an important part of our life but not the ultimate one. Bertrand Russell writes: "If all men were well off, if poverty and diseases had been reduced to their lowest possible point, there would still remain much to be done to produce a valuable society; and even in the existing world the goods of the mind are at least as important as the goods of the body."¹¹

Another important point is that knowingly or unknowingly we realize that our life is temporary and we want to do something worthwhile with what we've got. So we are careful about our choices and the relationships we form. In the journey of our life we may move from course to course, career to career and be efficient in our profession, but there will also be these questions which we will immediately recognize as philosophical like Who am I really? How can I make myself more free? How should I live? Or what should I value? "And now you know: ultimately, you are on your own, and you have to make your own life by answering these questions in your own way."¹²

Finally, philosophy can save us from superficiality and dogmatism. But it requires objectivity, reasonableness, and an open mind. As philosophy originates from wonder and our love for wisdom, so philosophical thinking will be there so long as human race will be there. Now it is your time to think philosophically about philosophy and welcome it. □

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NEED OF WOMEN EDUCATION IN INDIA

Dipali Kalita

A woman influences every member of the family in varieties of roles that she plays. Women constitute the most elegant resource of a society being the dynamic source of power. She comprises the very backbone of the family with multiple role – playing as a mother, a wife, a sister and a host of others. The status of a nation, its overall socio-economic condition can very well be assessed by judging and apprising the status of its women. From this point of view, education plays an important role for providing educational opportunities for all.

The significance of the education of women cannot be overemphasised. There cannot be an educated nation without educated women. Mother is the first educator of a child. From birth to school going age, the home environment and association of other members of the family plays a significant role in developing proper attitude among children. But much more important is the influence of mother on the child. She is responsible for his or her up-bringing and care. Therefore it is very important that a mother is imbued with good qualities and acts of a model. Only then she would be called an efficient citizen conscious of her rights and responsibilities. Thus education of women is of great importance in our national and social life. It is the duty of our society and the Government to provide adequate facilities for the education of women, because, if we educate a girl, we educate the whole family.

HISTORICAL BACKGROUND :

The ancient people of India gave a remarkable place to women in society. According to Vedas, women should have the opportunity to attain knowledge of the Vedas. More than 400 verses in the Vedas are dedicated to 24 women seers. In the Vedas a woman has been called updeshtri (knowledge giver) and this indicates women working as teachers. The Rigveda proclaims, "O learned lady! Everyone's life is dependent on you, because you impart education to all." In the Manusmriti it is stated "From the point of view of reverence due, a teacher is ten-fold superior to a mere lecturer, a father is a hundred fold to a teacher, a mother is a thousand fold to a father". Again it is written in Manusmriti – "Where women are honored, there the gods become delighted, and where they are not, there, all work and effort comes to naught. Thus in ancient India women enjoyed a high status in the society. They were provided educational opportunities comparable to men. The social evils like purdah, sati, enforced widowhood and child marriages crept into the society much later and resulted in the degradation of their status. There were no institutions for education of girls during Muslim period, but girls did receive religious education in recitation of the Quoran in their homes. In 1863 Brahma Samaj started correspondence education for girls and named the mission as "Antehpur Shiksha" which attracted large number of married women to get education. Gradually women education became a wave and the first women College was established in Lucknow in 1901 named as Women's Christian College and subsequently first women university was established in 1916 at Mumbai named as Shrimati Nathibai Damodar Thakersey (SNDT) University. Today women are adept for professional courses also such as fashion designing, hotel management, airline operation, medical, engineering, nursing etc. We can mention the name of Kalpana Chawla, first Indian woman who went to space, Kiran Bedi, the first lady IPS, Mrs. Vijay Lakshmi

Pandit, first woman to receive the Magsaysay award, and Mrs. Indira Gandhi, first lady prime Minister of India and first awardee of Bharat Ratna. In spite of these women education is lagging behind in India.

Individual girls and women may face bleak future of dependency and unnecessary hurdles in economic development unless they are not developed with literacy, skills and exposure to technological change. We have faced two revolutions of agriculture and industry. Now we are going through the knowledge revolution where knowledge is shared by one and all. Governments in centre and state are completely aware of the role of both male and female in this revolutionary process. But there is a gender disparity. There is a gap between the concept and the solution. To know and act accordingly are two different things. The male dominated society has already realized the need of women's education, their utility, but not wholly prepared to accept it and do something. The age-old traditional thinking of not educating girls should not be allowed to continue any more. The women of India constitute 48.3% of the total population, whereas male constitute 51.7% which dominates and deprives the women from their rights, economic parity, social justice etc. Hence, Gender equality is a must for our society. A ground must have to be prepared for acceptance of the concept of girls education. So, awareness is a long term affair for which Education is essential.

To safeguard the interest of women the Government has enacted some laws such as -

- ◆ The Moral Traffic (prevention) Act 1956
- ◆ The Maternity benefit Act, 1961
- ◆ The Dowry Prohibition Act 1961
- ◆ Indecent Representation of women Act' 1965
- ◆ Protection of women from domestic violence Act, 2005

The 73rd and 74th amendment (1993) to the constitution of India

have provided for reservation of seats in the local bodies of Panchayats and Municipals for women. National commission for women was set up by an Act of parliament in 1990 to safeguard the right and legal entitlements of women.

But mere enactment of these laws will not serve any purpose if knowledge, power, utility and strength of these laws do not reach to the women faculty. Women education is the only solution to it. No girl should be left out at the educational institution until she reaches the age of twenty.

WOMEN EDUCATION IS THE PRESENT CONTEXT

Women play a multidimensional role in our society. Education is the main factor to play the role meaningfully. Education helps in enhancing women's income, social respect, family care etc. But there are still some problems in girls education in rural areas-

- ◆ Parents are sometimes unable to bear educational expenses
- ◆ Engagement of girls in family occupation.
- ◆ Lack of proper guidance and supervision
- ◆ Lack of proper social attitude towards education of girls
- ◆ Parents do not want their girls to stay when school continues until dark.

Due to adoption of various programmes like Sarva Siksha Abhijan, Kasturibai Gandhi Balika Vidyalaya, Education for all etc, the rate of girls education has raised from 8.86 percent in 1951 to 65.46 percent in 2011. Some other special programmes such as total literacy campaign, Operation Black Board, Farmer Functional Literacy Programme are also helping towards elimination of literacy among girls. The table below expresses the trend of literacy rate over the years.

Literacy Rates in India (1951-2011)

Census year	Person	Males	Females	Male/Female gap in literary rate
1951	18.33	27.16	8.86	18.30
1961	28.30	40.40	15.35	25.05
1971	34.45	45.96	21.97	23.99
1981	43.57	56.38	29.76	26.62
1991	52.21	64.13	39.29	24.84
2001	65.38	75.85	54.16	21.69
2011	74.04	82.14	65.46	16.68

The world wide movement for women's rights has had the effect of legitimizing equal education for women, women control over their fertility rates, women's increased participation in wage labour markets and women's right to vote. The increased demand for low cost labour and greater sense of women that they have the same rights as man has brought enormous numbers of married women into wage employment world wide. This, in turn, has created increased demand for education by women at higher and higher education level.

Education and modernization are the two wheels of the same cart. Both when combined together lead to a rapid socio-economic development of a nation. While the study of advanced science and technology helps to achieve modernization, the basic education helps the women and poor masses to be blessed with the advantage of scientific and technological development and hence of modernization. Sustainable growth in our society is linked with women education. Educating girls offer multi-dimensional benefits to them, their families and the society. Women are the driving force to promote moral and spiritual values in the society, to lay new foundation of a just and fair society, to propagate and establish the importance of divine virtues like peace, love, tolerance, co-operation, unity etc among the common masses. It is educated woman who can fight

against poor child health, low educational performance of the successors and higher fertility and ultimately in reducing gender inequality. Former president A.P.J. Abdul Kalam has rightly said – “Empowering women is a pre-requisite for creating a good nation. When women are empowered, society with stability is assured. Empowerment of women is essential as their thoughts and their value systems lead to the development of a good family, good society and ultimately a good nation”. □

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THE POSITION OF WOMEN IN SANKARDEVA'S PHILOSOPHY

Seema Dutta

Sankaradeva, the great philosopher and social reformer of early sixteenth century Assam propounded the Eka-sarana-naam-dharma at a time when Assam was in the grip of several religious beliefs in the form of Tantricism, Saktism, Saivism and so forth, which gradually yielded place to Assam Vaisnavism. Nevertheless, Sankaradeva has been subjected to severe castigation by a section of intellectuals and scholars who believe that Sankaradeva had conspicuously set aside the women-folk from the mainstream, relegating them to a subordinate position in his faith.

It is pertinent to refer to the fact that there is a marked silence as to the subject of the image of women alluded to through the teachings of Sankaradeva and his followers, or any attempt to constrict the role of women in the social fabric they were endeavouring to rebuild. Despite the fact that Sankaradeva had derived inspiration from certain schools of Northern and Southern Vaisnavism, yet the fact remains that the Eka-sarana-naam-dharma of Sankaradeva is conspicuous by the absence of nuns in his monastic order as against the existence of Kevaliyas or monks. Women were debarred from participating in religious gatherings of men. They, no doubt, carried on devotional chantings or hymns in the temple-courtyard, but not alongside men.

History stands evidence to the fact that Sankaradeva had refused to initiate kings and orthodox Brahmins, and also prohibited women

from entering the Vaisnava monasteries. Sankaradeva's declination of ordaining women was probably based on the assumption that they would not be able to concentrate whole-heartedly on Bhakti in the true sense of the term. Taking the example of Sankaradeva's great grand-daughter-in-law, Kanaklata, and Harideva's daughter, Bhubaneswari belonging to the seventeenth century serving as heads of their respective sub-sects, it is a mere bifurcation from the established norm, for the latter history of Assam Vaisnavism does not present a single case of women being ordained as disciple or managing a Sattrā. In some of the important Sattras, they are still denied the right to enter the central prayer-hall. Perhaps his Kayastha lineage, his education in the traditional Vedic scriptures by a Brahmin tutor, his peregrination which brought him in close contact with the reformist trends in Hinduism associated with Sankaracharya, Sridharswami and Kabir went a long way in influencing his religion and philosophy. In this back-drop, the seclusion of women would be of greater significance than in normal circumstances. Sankaradeva had started preaching his faith when Tantric Devi cult was reigning supreme.

The prevalence of the Devi cult does not presuppose a matriarchal or matrilineal society. Women under such cults, as expressed by Dr. Banikanta Kakati, had a degraded role to play. This is however, also an indication of the distinct transition of society, wherein the woman enjoying a prominent position in society as well as sexual freedom, shifted to one in which the woman's productive power was forcibly incorporated into male-dominated social order. In these societies, the Devi is the iconic symbol representing the lost social, economic and sexual independence of women. In such transitional societies, women have a ritually important place, but are politically powerless, as real power was vested in the male king. It is within the precincts of the changing scenario that Sankaradeva's social and religious teaching may be set. Sankaradeva propagated his version of patriarchal Hinduism amidst the tribal fold which emitted strong matriarchal

influence. Politically and economically, the Ahoms with their male-god, Somdeo, were vanquishing the primitive food-gatherers and agriculturists and their tribal cults, including for instance, the Devi worshipping Chutiyas, the Kacharis and the Morans. The Devi-worshipping Bhuyan chieftains to whom Sankardeva belonged, were feeling the pressure from their tribal neighbors and of the growth of the Ahom power. Sankardeva had actually propagated patriarchal Hinduism when the social proclivity was towards the Devi cults. However the Tantric and Devi cult had actually objectified women as she was made to play the role of sexual partner in mystified rites. The Goddess Kamakhya and the Tamreswari were respectively the tutelary deities of the Khasis (which was a matriarchal society) and of the Chutiyas (which was a male-ruled yet matrilineal society). So far as the upbringing of Sankardeva goes, his grand-mother sought to execute her matriarchal hegemony and insisted on Sankardeva receiving good education. But on the other hand, Sankardeva's wife never shared in his spiritual concerns, or perhaps was not allowed to do so. She might have been subjected to the traditional norms of a family. There is again evidence to the fact that pre-puberty marriage was prevalent at that time. Sankardeva's daughter was married off at the tender age of thirteen. Sankardeva's father predeceasing his mother, she had to follow her husband to the funeral-pyre and thus exalted as Sati. After the demise of Sankardeva, his widowed daughter-in-law was sought in marriage by a local potentate, which was tantamount to the then existing social norms as widow-remarriage was not permitted. On the other hand, Sankardeva himself married twice.

Sankardeva as a proponent of the Bhakti cult, tried to adhere to the liberalities of the Hindu faith. The rigidity of the caste system was mitigated, but the caste hierarchy was not altogether done away with. Sankardeva's niece was married to Sukhladhvaj, the brother of the Koch king Naranarayan. Premarital chastity, which was not the norm in earlier tribal societies, was strictly enjoined, which would

again inevitably mean popularizing pre-puberty marriages. Widow remarriage was not permitted in order to avert the danger of miscegenation. The economic and sexual independence of tribal women is totally opposed to the patriarchal code which advocates subordination of women. From the economic standpoint, women were privileged to have been proficient as weavers of cotton and silk yarn, irrespective of their caste and social status. Momai Tamuli Barbarua made it obligatory for every woman to weave an assigned amount of yarn. In addition to spinning and weaving, women assisted their husbands in the agricultural fields, and also shouldered manifold household responsibilities. The Assamese women were free from the purdah-system, though the upper-class women donned the Sarudaiya-Japi or Bor-Japi (or decorated sun-shade) while moving out in public.

The Vaisnavite literature decried as well as eulogized the fairer sex in their works. In his Harischandra Upakhyan, Sankardeva epitomizes the quintessential wife for her love, cooperation, advice and service, but simultaneously decries the mind-enchancing beauty of women. In all Sankardeva's writings, the association of women with Maya is pronounced. Women are connected with the darkness of material existence in contrast to the light of spiritual life. Home is decried as Andha-Kupa or the abyss of darkness, women and children are considered as obstacles as they continually remind one of the basic needs of the material world. In relation to the question of the attitude towards women is therefore, the problem of marriage and celibacy. Himself leading the life of a Grihastha, Sankardeva never extolled celibacy as a prerequisite for pursuing religion, though his writings seem to imply thus. Sankardeva had actually prescribed marriage as a safeguard from allurements of women and wealth but for persons with saintly character and natural indifference to worldly attractions, celibacy was recommended, if not forced. But his disciple, Madhabdeva followed the life of a celibate, an ideal which is followed by the Nika-Samhati of Assam Vaisnavite monasteries. In the Carita

literature, Sankardeva's own wife is not spared for her ignorance in spiritual matters. Madhabdeva has to advise her to address her husband as Lord and pay obeisance as a dutiful wife morning and evening. There is again the famous episode in the Katha-Guru-Charita of the disposal of the Ghar Jeutis (household deities) which were kept in the kitchen by Sankardeva's wife, by Madhabdeva. On being made aware of the fact of the inconsistency of keeping the Ghar Jeuties within the precincts of the kitchen when God is omnipotent, Sankardeva's wife justified her action by saying that they were meant for the wellbeing of her children. Probably the Sati- Savitri psyche failed to gain ground on the common psyche of the Assamese women, and they even showed propensity towards Tantric, Vamacara and other heterodox faith amidst the influence of Eka-sarana-naam-dharma. Since women were not allowed to enter the monastic life or even the precincts of the Sattras, there was no provision of educating them in spiritual matters. Women were no doubt, allowed to be initiated and could enter monasteries at day-time. But they were never allowed to stay at night, and at the time of initiation, the celibate heads could not look at the face of women, a process normally carried on from behind a screen. In semi-monastic Sattras, separate exit and entrance existed, and they could not participate in religious functions organized by or intended for males. There is no order of nuns, and women in general were not allowed to intermingle with men in congregation. There were of course, certain diversions, as for instance the cases of Kanaklata and Bhuvaneshwari mentioned earlier, who guided the destiny of their respective sub-sects. In the political field, heroines like Mula Gabharu, Jaymati and Queen Pramateswari played conspicuous role in moulding the history of Assam.

Taking into consideration the tradition of classical dancing, the Sattriya style does not allow any women dancer. Even in village performances, men enacted the role of women. The fact remains that Eka-sarana-naam-dharma exalted the worship of Visnu as the Supreme Being. It remains to say that by not admitting Radha or any

other female counterpart of Visnu, Shiva and Indra, Lakshmi, Parvati and Sachi respectively are depicted as docile and dedicated wives. This image of women are also etched in the Ankiya-Naat (Rukmini Haran where Rukmini pines for her chosen husband; Parijat Haran where the celestial wives are represented as seeking the favour of their husbands). Thus, in Sankardeva's writings, marriage is shown as strictly monogamous, though there is apparently no bar to the practice of polyandry. Again, in Sankardeva's writings, the first prototype of a chaste wife is depicted with Radhika donning the veil, which acts as a symbol of a physical barrier to contain the sexuality of women. Yet another prototype is the concept of Mohini, which is an allusion to the depiction of women as Maya where she is successful in breaking the meditation of seers. In the Hara-Mohana section of the Kirtan, Hari in the guise of Mohini entices Hara. The Dasya aspect which calls for complete surrender of body, mind and word of the devotee to the guru emphasized by Sankarite philosophy, is a prototypical relation between the Lord and the devotee, also between man and woman. The Rasa Krida (or the divine dance of the Gopis with Lord Krsna) is an integral part of Assam Vaisnavism. But, as interpreted by scholars, the very concept of Gopis thronging Krsna, relegating their household chores runs contrary to the conventional image of a loyal wife. The Gopini concept prevails even today where the congregation of women for propitiating deities like Ai are called Gopini Sabah. The total oblivion of the Gopis to worldly ties and responsibilities with an attitude of religious ecstasy was the inherent concept of Sankardeva's philosophy as expressed in his writings. Amidst the many views as forwarded by scholars, it seems evident that women, if viewed as part of the patriarchal society, or as the quintessence of chastity, seem to have been subjected to a passive position, leaving aside the personal predilections of Sankardeva while preaching his faith. Their existence therefore seems to have been in sublime association with their male counterparts. □

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MICROBIAL DETERIORATION OF MUGA SILK

Dr. Nandini Kakati

ABSTRACT

Fifteen different fungal spores were isolated and identified in the study carried out on Muga cocoons. The yield of spores from the cocoon was the highest followed by Muga silk yarn and fine product. The count was highest in summer than the winter season. Spores like *Aspergillus*, *Alternaria*, *Bispora*, *Cercospora*, *Drechslera*, *Mucor* etc. were observed. *Aspergillus* was the dominant type.

INTRODUCTION

Assam is one of the traditional area where sericulture is a part of the rural economy. The origin and history of sericulture is indeed very old and is a miracle of early industrial development. Sericulture is deemed to be an agro based cottage industry per excellence, the main end product being the raw silk. The natural raw silk is the most precious textile fibre produced by the silk gland of silkworm. Infact, sericulture is a well developed science on the one hand and a fine art on the other, which involves many phases of operation, namely, food plant cultivation, silkworm rearing and other part cocoon processing such as silk reeling, twisting, dyeing, weaving, printing and finishing.

Silk in Indian customarily refers to four varieties of silk, namely mulberry, tasar, eri and muga. Among all the four silk varieties golden yellow muga silk is the most elegant, strong and durable which is

indigenous to the North-Eastern Region in general and Assam in particular. Muga silkworm (*Antheraea assama*, Westwood) is exclusively endemic to the North-Eastern Region of India possibly because of the congenial ecoclimatic conditions prevalent around its natural habitat. Muga culture is mainly confined to the state of Assam which produces 95% of the total muga raw silk. The muga silk cloth can be nominated to be called the "King of the Fabric" due to its strength, durability, exquisite and elegant lustrous natural golden colour. (Gogoi and Goswami, 1998). Muga silk is strongest of all the natural silks. Tenacity of RMRC-VI reeled yarn of muga silk is 5.201g/d (Sengupta, et. Al. 1991) that of eri silk is 3-3.50g/d; machine reeled tropical tasar silk is 1.8-2.562g/d, oak tasar is 2.8-3.0g/d. (Sonwalkar, 1991). Moisture regain capacity of muga silk is the highest ie., 30% (Choudhury, 1992) followed by 13% of eri, 12% in tasar and 11% in mulberry fibre (Neeru Saluja et. Al. 1993). Due to the highest tenacity, muga silk is the strongest and most durable among the natural silks. Muga silk fibre also has the highest hygroscopicity and therefore, muga silk cloth is comfortable to wear and hygienic. Thus muga silk fibre has opened up a new vista in various modern technology development in addition to its use as the best textile fibre.

Muga culture is thus a traditional avocation of the Assamese people, constituting an inseparable component of their socio-economic life and cultural heritage for centuries together. The practices of silkworm rearing, reeling or spinning and weaving are the cultural ethos of Assamese people. The quality of silk yarn and the cost of production of the thread depends on the quality of cocoons used for reeling. The microbiodeterioration of cocoons is one of the serious problems all over the sericulture-cultivating countries of the world especially in storage of cocoons, silk yarns and the fine product i.e. the muga, eri and silk clothes. Special attention is most important where the climate is very hot and humid.

Microorganisms growing on cocoons are actinomycetes, bacteria and fungi. These microorganisms multiply their number on cocoons and other silk materials under favourable conditions of 25°C to 35°C temperature and more than 80% humidity. These multiplication in numbers of fungi increases and decreases due to the vegetation and weather condition, nature of cocoon and source of contamination of the organisms in the area.

Soil, air, water, animal body and so on are the major sources of contamination of the cocoon and the other silk materials. The major damages of the cocoons i.e. all layers of cocoon shell, discolouration of the cocoon may be due to production of spores pigments and other chemical substances and alteration of the hydrogen ion concentration of the medium and impact on reeling performance of cocoons and quality of raw silk production. The nature of properties of some of the microorganisms, which cause damage to textiles and silk fibre has been studied in recent years. The present investigation deals with the association and deterioration of muga cocoons, silk yarns and the fine products, in relation with the climatic factors during keeping cocoons and other materials in storeroom.

MATERIALS AND METHODS :

Four pairs of petri plates were prepared by filling Czapeck's (Dox) Agar medium. One muga cocoon, after rearing muga cocoon, muga fibre and a small piece of muga cloth were kept in each of the four pairs of petriplates. The plates were incubated at 28°C + 10°C until growth appeared. The fungal colonies were counted and identified by different literature. (Gilman, 1956, Tilak 1989, Nair 1986). These procedures were done twice in a year in the summer season as well as in the winter season.

RESULTS AND DISCUSSION :

During the summer season, it reveals that 15 different types of fungal colonies were recorded in the petriplate containing muga

cocoon. These are *Aspergillus* sp., *Alternaria* sp., *Bispora* sp., *Cercospora* sp., *Cladosporium* sp., *Curvularia* sp., *Drechslera* sp., *Fusarium* sp., *Mucor* sp., *Nigrospora* sp., *Penicillium* sp., *Rhizopus* sp., *Trichoderma* sp., *Trichothecium* sp. and *Torula* sp. The second set of petriplate where after rearing cocoon was placed, showed only 10 different types of fungal colonies. In the third set of petriplate containing muga fibre, only 5 different types of fungal colonies were observed. On the fourth set of petriplate containing fine product of muga only 3 different varieties of fungal colonies were observed namely *Aspergillus* sp., *Cladosporium* sp. and *Penicillium* sp.

Same experiments have been done in the winter season also. Screening studies in the winter season revealed that 12 different types of fungal colonies were recorded in the petriplate containing muga cocoon and 8 different types of fungal colonies were recorded in the petriplate containing the cocoon after rearing. The third petriplate containing muga fibre had only 3 different types of fungal colonies. The fourth petriplate containing fine product of muga showed only 2 different types of fungal colonies. Only 2 colonies, one from *Aspergillus* sp. and the other from *Penicillium* sp. were observed in the last sets of petriplates.

It was observed from the above experiments that maximum number of fungal colonies were counted in the summer season than the winter season. Highest number of fungal colonies were counted from the petriplate containing muga cocoon than the petriplate containing the cocoon after rearing. A less number of fungal colonies were counted from the petriplates containing the muga fibre. Only 3 different varieties of fungal colonies were counted from the petriplates containing fine products of muga in summer season. In the winter season only 1 or 2 fungal colonies are seen in the petriplates containing muga fine product.

It was in agreement with the findings of Rahman, et. al (2004) and Gogoi and Goswami (1998).

Table - 1 Fungal Colonies Associated with Muga Cocoons during Summer and Winter season.

Sl. No.	Fungal Spores	Summer Season					Winter Season				
		No. Of Fungal colonies in Cocoon	No. Of Fungal colonies in Cocoon after washing	No. of Fungal colonies in Muga Fibre	No. of Fungal colonies in Fine product	No. of Fungal colonies in Cocoon	No. Of Fungal Colonies in Cocoon after Washing	No. of Fungal colonies in Muga Fiber	No. of Fungal colonies in Fine product		
1	Aspergillus sp.	10	6	4	2	8	4	2	1		
2	Alternaria sp.	4	2	0	0	3	0	0	0		
3	Bispora sp.	2	0	0	0	3	0	0	0		
4	Cercospora sp.	6	2	0	0	4	0	0	0		
5	Cladosporium sp.	8	5	4	2	7	4	1	0		
6	Curvularia sp.	5	2	1	0	4	2	1	0		
7	Drechslera sp.	1	0	0	0	0	0	0	0		
8	Fusarium sp.	4	2	0	0	5	2	1	0		
9	Mucor sp.	9	3	2	0	7	3	0	0		
10	Nigrospora sp.	4	1	0	0	3	0	0	0		
11	Penicillium sp.	6	2	0	1	5	1	1	1		
12	Rhizopus sp.	2	1	0	0	0	0	0	0		
13	Trichodrema sp.	5	3	1	0	6	4	2	0		
14	Trichothecium sp.	1	0	0	0	0	0	0	0		
15	Torula sp.	6	2	0	0	3	1	0	0		

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ROLE OF ANIMAL PROTEIN RICH DIET IN DEVELOPMENT OF OESOPHAGEAL CANCER – A CASE STUDY

Bandana Deka

ABSTRACT

Oesophageal cancer is a relatively rare form of cancer, but some world areas have a markedly higher incidence than others. Most cancers appear to be related to environmental factors and the diet is one of these factors which appear to play a vital role. It is not fully understood which constituents of the diets are protective and which are risk factors for cancer. A hospital based case-control study was conducted to study the link between animal protein rich diet and the occurrence of oesophageal cancer in Lower Assam region. In this study no positive association between intake of poultry meat and pork, and oesophageal cancer has been found. An elevated risk of oesophageal cancer was generally linked to high intake of mutton and beef. The consumption of animal protein like fish and milk has emerged as protective factors. It is difficult to interpret the role of eggs because of different procedures adopted by people to prepare egg dish. The findings added to growing consciousness that beef and mutton were found to be risk factors for oesophageal cancer and awareness against these factors has to reduce the burden of oesophageal cancer.

Key words : oesophageal cancer : risk factor : animal protein :

INTRODUCTION :

Oesophageal cancer is malignancy of the oesophagus. Dysphagia (difficulty in swallowing) and odynophagia (painful swallowing) are the most common symptoms of oesophageal cancer. It is a relatively rare form of cancer, but some world areas have a markedly higher incidence than others (Stewart and Kleihues, 2003). The etiology of Oesophageal cancer remains unknown. Most cancers appear to be related to environmental factors and the diet is one of these factors which appear to play a vital role (Phukan *et al.*, 2001).

Dietary habits as risk factors of oesophageal cancer have been studied in relation to the quantity and quality of consumed foodstuffs. Experts believe that around a third of all cancer cases are linked to diet. But it is not fully understood which constituents of the diets are protective and which are risk factors for cancer. Scientists believe that the eating habits influence the risk of cancer of the food pipe (Wang *et al.*, 1991).

Although smoking and chewing of tobacco as well as drinking alcohol are considered as the major risk factors in developed countries, it has been demonstrated that heavy drinkers and smokers do not develop the disease (Cheng *et al.*, 1995). Thus, even strong carcinogens, seemed to be secondary factors, that may have a modifying effect on risks (Cheng *et al.*, 1996). High incidence of oesophageal cancer has also been observed in various regions where alcohol and tobacco are prohibited for religious and other ethnic reasons. In these areas the dietary habits and nutrients are considered as the major contributors to the occurrence of oesophageal cancer (Kinjo *et al.*, 1998 and Ryuichiro *et al.*, 1990). Locally available foodstuffs are implicated as risk factors for oesophageal cancer in some geographical areas of the world (Ghadirian, 1987).

In some, recent case-control studies, it is found that diet rich in foods from animal origin and poor in foods containing vitamins and

fiber increase oesophageal cancer risk (Bravi *et al.*, 2011). Again, diets high in saturated fats (Anon., 1997) and alcohol and low in vegetables and fruits (Ahmed, 1999) have been associated with increased risk for cancer. According to Gallus and Vecchia (2006) red and processed meat intake have been associated with an increased risk of oesophageal cancer while, whole-grain foods have been associated with a decreased esophageal cancer risk in China. There was a positive association between esophageal cancer and milk, soups, red meat, and butter and an inverse relationship with white meat, fish, raw vegetables, fruits, and olive and seed oils (Bosetti *et al.*, 2003).

An extremely high prevalence of oesophageal cancer was observed in Lower Assam especially in Kamrup district, where the population consumes large varieties of traditional foods (Anon. 1984-1993). An estimated 25% of all cancer in men and 15% in women were in the oesophagus (Anon., 2010). There are sufficient reasons to investigate a case-control study of risk associated with animal protein diet, which may cause oesophageal cancer of the people of Lower Assam Region of North East of India.

OBJECTIVE OF THE STUDY :

Keeping these views in mind the study has been conducted to find any link between animal protein rich diet and the occurrence of oesophageal cancer in Lower Assam region.

METHODOLOGY

The study was conducted in the B Barooah Cancer Institute, Guwahati and North East Cancer Hospital and Research Institute, Jorabat, Guwahati. Patients with newly diagnosed oesophageal cancer confirmed by histopathology were selected and informed about the project and consent was obtained before inclusion in the study. The

patients were selected from ten districts - Kamrup Metro, Kamrup, Nalbari, Baksa, Barpeta, Bongaigaon, Chirang, Kokrajhar, Dhubri and Goalpara of Lower Assam region when they visited the hospitals for their treatment. At the time of investigations data were also collected from the attendants of the patients (controls) selected from the close relatives of the patients who visited the hospital. Two controls were selected for each case. All eligible cases and controls were interviewed at the hospitals using a face-to-face, pre-tested and pre-designed, and standardized questionnaire. A total of 280 patients and 560 controls were finally included in this study. The study period was from June, 2010 to June, 2012.

STATISTICAL ANALYSIS :

Multiple logistic regression analysis was used to analyze the data. The crude measurements of association between single putative risk factors and oesophageal cancer were expressed as the OR (odd ratio) and its 95% CI (confidence interval) was calculated from the standard error and regression co-efficient. The statistical package used for the analysis was SPSS version 12.

RESULTS :

Risk factors according to consumption of animal protein, by the cases, such as poultry meat, mutton, pork, beef, egg, fish and milk were presented in Table 1 and Fig 1, 2, 3, 4, 5 & 6. All the eating habits are categorized into following groups – non-user, low, medium, high and ex-user. There was not any risk associated with the consumption of poultry meat (OR = 0.68, 95% CI = 0.41 – 1.11) and pork ($p > 0.05$) so far the investigation was concerned. An elevated risk of oesophageal cancer was generally linked to high intake of mutton (OR = 1.98, 95% CI = 1.19 – 3.26) and beef (OR = 2.23, 95% CI = 1.01 – 4.94) (Table1). Consumption of animal proteins

like fish and milk has emerged as protective factors as their p-value was greater. But it is difficult to interpret the role of eggs because of different procedures adopted by people to prepare egg dish (Table 1).

Though intake of animal protein like poultry meat and pork at all levels; mutton and beef at low and medium level did not show any risk statistically, but it is assumed that these could be risk factor as their odd ratio (OR) was remarkably high (Table 1).

Table 1.: Risk factors for oesophageal cancer according to consumption of animal proteins

Habits	Case/control	OR	95% CI		P-value
			Low	High	
Fresh poultry meat					
Non-user	69/110	1.0	Ref.		
Low	61/109	0.89	0.56	1.41	0.686
Medium	57/130	0.69	0.44	1.10	0.130
High	42/99	0.68	0.41	1.11	0.129
Ex-user	51/112	0.73	0.45	1.16	0.197
Fresh mutton					
Non-user	48/106	1.0	Ref.		
Low	72/164	0.97	0.61	1.54	0.980
Medium	36/92	0.86	0.50	1.49	0.670
High	68/76	1.98	1.19	3.26	0.007
Ex-user	56/122	1.01	0.62	1.66	1.000
Fresh pork					
Non-user	138/289	1.0	Ref.		
Low	67/144	0.97	0.67	1.41	0.958
Medium	37/64	1.21	0.75	1.95	0.477
High	15/22	1.43	0.68	2.98	0.402
Ex-user	23/41	1.18	0.65	2.10	0.665

Fresh beef

Non-user	218/426	1.0	Ref.		
Low	27/71	0.74	0.45	1.22	0.263
Medium	19/49	0.76	0.42	1.36	0.397
High	16/14	2.23	1.01	4.94	0.046

Fresh fish

Non-user	18/45	1.0	Ref.		
Low	80/142	1.41	0.74	2.72	0.340
Medium	102/192	1.33	0.71	2.52	0.432
High	68/133	1.28	0.66	2.49	0.533
Ex-user	12/48	0.63	0.23	1.56	0.370

Egg

Non-user	35/67	1.0	Ref.		
Low	75/123	1.17	0.69	1.99	0.630
Medium	94/197	0.91	0.55	1.51	0.803
High	56/144	0.74	0.43	1.28	0.319
Ex-user	20/29	1.32	0.62	2.82	0.550

Milk

Non-user	46/78	1.0	Ref.		
User	234/482	0.82	0.54	1.25	0.390

Low = occasionally; Medium = 1-3 times a week; High = more than 3 times a week

DISCUSSION :

The present investigation revealed the negative association of the consumption of poultry meat and oesophageal cancer. The finding was supported by the study conducted elsewhere which reported that frequent intake of fresh chicken was found to be protective (Anon., 1997). An elevated risk of oesophageal cancer was observed with the high intake of mutton and beef. In contrast to this Phillips (1975) reported the significant relative risks for oesophageal cancer

use of beef, lamb, and combined group of saturated fat foods. On the other hand, Chiu *et al.* (2003) found that diets high in red meat, eggs, and preserved foods increased the risk of colon cancer in Shanghai, China.

An investigation stated that the pork consumption among the black residents of Washington D.C. was high and this could be one of the reasons for high incidence of oesophageal cancer among them and found that the processing of pork and pork products may be associated with this disease than the pork itself (Kaul *et al.*, 2006). This finding agrees with the present study where some amount of risk factor for oesophageal cancer has been found with consumption of pork.

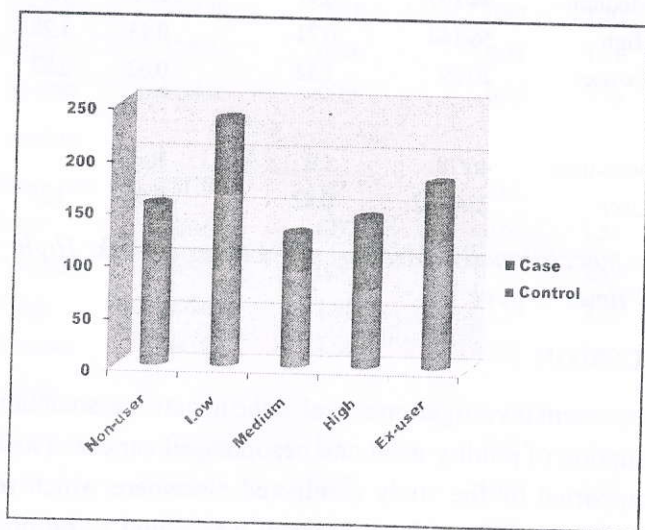


Fig 1. : Showing frequency of fresh mutton consumed by case and control

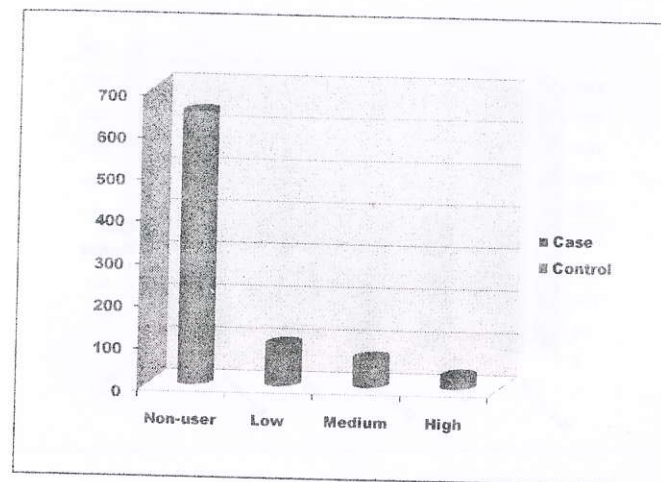


Fig 2. : Showing frequency of fresh beef consumed by case and control

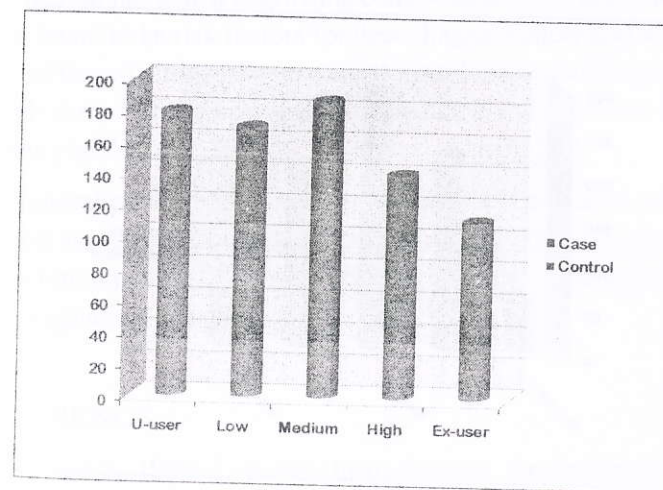


Fig 3. : Showing frequency of fresh poultry meat consumed by case and control

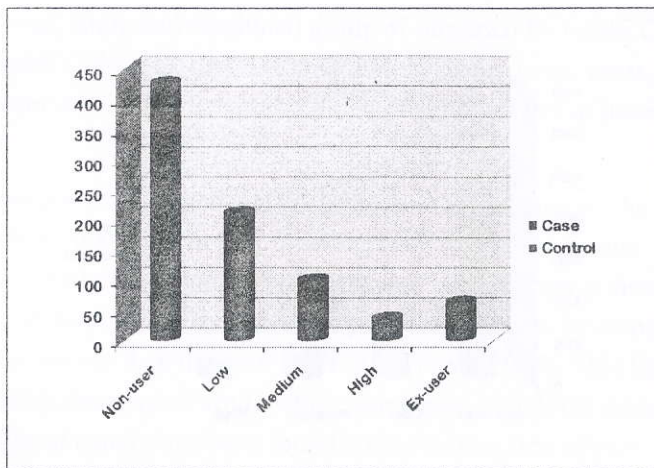


Fig 4. : Showing frequency of fresh pork consumed by case and control

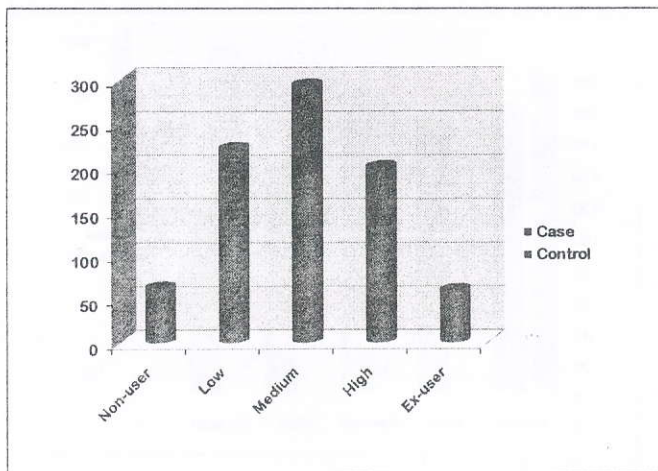


Fig 5. : Showing frequency of fresh fish consumed by case and control

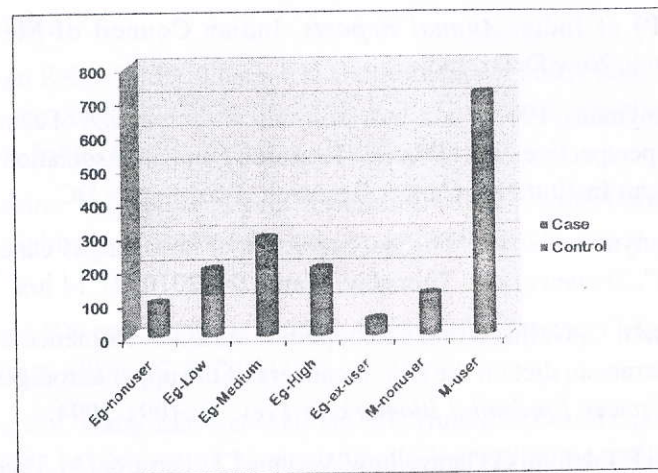


Fig 6. : Showing frequency of egg and milk consumed by case and control (Eg=egg; M=milk)

CONCLUSION :

The findings added to growing consciousness that beef and mutton were found to be risk factors for oesophageal cancer and awareness against these factors has to reduce the burden of oesophageal cancer which is one of the common malignancies and a greater threat to human population.

General public education and awareness is essential to root out the risk associated factors in diet that are deeply rooted in food habits of common people of Lower Assam which may lead to occurrence of oesophageal cancer. □

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QUANTITATIVE AND QUALITATIVE TECHNIQUES IN RESEARCH

Arpana Nath

There has been widespread debate in recent years within many of the social sciences regarding the relative merits of quantitative and qualitative strategies for research. The positions taken by individual researchers vary considerably from those who see the two strategies as entirely separate and based on alternative views of the world, to those, who are happy to mix these strategies within their research projects. For example, Bryman (1988) argued for a 'best of both worlds' approach and suggested that qualitative and quantitative approaches should be combined. Hughes (1997), nevertheless warns that such technicist solutions underestimate the politics of legitimacy that are associated with choice of methods. In particular, quantitative approaches have been seen as more scientific and objective.

Quantitative research consists of those studies in which the data concerned can be analysed in terms of numbers. Research can also be qualitative, that is, it can describe events, persons and so forth scientifically without the use of numerical data. Quantitative research is based more directly on its original plans and its results are more readily analysed and interpreted. Qualitative research is more open and responsive to its subject. Both types of research are valid and useful. They are not mutually exclusive. It is possible for a single investigation to use both methods. (Best and Khan, 1989-90)

Qualitative research is harder, more stressful and more time

consuming than other type. Qualitative research is only suitable for people who care about it, take it seriously and are prepared for commitment.

Quantitative research is, as the term suggests, concerned with the collection and analysis of data in numeric form. It tends to emphasize relatively large scale and representative sets of data and is often, falsely in our view, presented or perceived as being about the gathering of 'facts'. Qualitative research on the other hand, is concerned with collecting and analyzing information in as many forms, chiefly non-numeric, as possible. It tends to focus on exploring, in as much detail as possible, smaller numbers of instances or examples which are seen as being interesting or illuminating, and aims to achieve 'depth' rather than 'breadth'. (Blaxter, Hughes and Tight, 1996:61)

Research is a systematic investigation to find answers to a problem. Research in professional social science areas, like research in other subjects, has generally followed the traditional objective scientific method. Since the 1960s, however, a strong move towards a more qualitative, naturalistic and subjective approach has left social science research divided between two competing methods: the scientific empirical tradition, and the naturalistic phenomenological mode. In the scientific method, quantitative research methods are employed in an attempt to establish general laws or principles. Such a scientific approach is often termed nomothetic and assumes social reality is objective and external to the individual. The naturalistic approach to research emphasises the importance of the subjective experience of individuals, with a focus on qualitative analysis. Social reality is regarded as a creation of individual consciousness, with meaning and the evaluation of events seen as a personal and subjective construction. Such a focus on the individual case rather than general law making is termed an ideographic approach (Burns, 2000:3)

FEATURES OF QUALITATIVE AND QUANTITATIVE RESEARCH

Quantitative	Qualitative
“There’s no such thing as qualitative data. Everything is either 1 or 0” –Fred Kerlinger.	“All research ultimately has a qualitative grounding” – Donald Campbell.
The aim is to classify features, count them, and construct statistical models in an attempt to explain what is observed.	The aim is a complete detailed description.
Researcher knows clearly in advance what he/she is looking for.	Researcher may only know roughly in advance what he/she is looking for.
Recommended during latter phases of research projects.	Recommended during earlier phases of research projects.
All aspects of the study are carefully designed before data is collected.	The design emerges as the study unfolds.
Researcher uses tools, such as questionnaires or equipments to collect numerical data.	Researcher is the data gathering instrument.
Data is in the form of numbers and statistics.	Data is in the form of words, pictures or objects.
Objective – seeks precise measurement & analysis of target concepts, e.g. uses surveys, questionnaires etc.	Subjective – individual’s interpretation of events is important e.g. uses participant observation, in-depth interviews etc.
Quantitative data is more efficient, able to test hypotheses, but may miss contextual detail.	Qualitative data is more rich, time consuming and less able to be generalized.

Researcher tends to remain objectively separated from the subject matter.	Researcher tends to become subjectively immersed in the subject matter
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(The Two quotes are from Miles & Huberman (1994, P.40)
Qualitative Data Analysis)

QUANTITATIVE AND QUALITATIVE TECHNIQUES IN RESEARCH

Quantitative	Qualitative
Assumptions: <ul style="list-style-type: none"> • Social facts have an objective reality. • Primacy of method • Variables can be identified and relationships measured. • Etic (outsider’s point of view) 	Assumptions: <ul style="list-style-type: none"> • Reality is socially constructed. • Primacy of subject matter. • Variables are complex, interwoven and difficult to measure. • Emic (insider’s point of view)
Objective/Purpose : <ul style="list-style-type: none"> • To quantify data and generalize results from a sample to the population of interest. • To measure the incidence of various views and opinions in a chosen sample • Sometimes followed by qualitative research which is used to explore some findings further. 	Objective/Purpose: <ul style="list-style-type: none"> • To gain an understanding of underlying reasons and motivations. • To provide insides into the setting of a problem, generating ideas and/or hypothesis for later qualitative research. • To uncover prevalent trends in thought and opinion.
Sample: <ul style="list-style-type: none"> • Usually a large number of cases 	Sample: <ul style="list-style-type: none"> • Usually a small number of non-representative cases. Respondents

representing the population of interest. Randomly selected respondents.

Data Collection:

- Structured techniques such as online questionnaires, on street or telephone interviews.

Data analysis:

- Statistical data is usually in the form of tabulation. Findings are conclusive and usually descriptive in nature.

Outcome:

- Used to recommend a final course of action.

Researcher Role:

- Detachment and impartiality.
- Objective portrayal.

selected to fulfill a given quota.

Data Collection:

- Unstructured or semi-structured techniques eg. Individual depth interviews or group discussions.

Data Analysis:

Non-statistical

Outcome:

Exploratory and/or investigative. Findings are not conclusive and can not be used to make generalizations about the population of interest. Develop an initial understanding and sound base for further decision making.

Researcher Role:

- Personal involvement and partiality.
- Empathic understanding.

QUANTITATIVE APPROACHES :

Strengths:

- Precision – through quantitative and reliable measurement.
- Control – through sampling and design.

- Ability to produce causality statement, through the use of controlled experiments.
- Statistical techniques allow for sophisticated analysis.
- Replicable.

Limitations:

- Because of the complexity of human experience it is difficult to rule out or control all the variables.
- Because of human agency people do not all respond in the same ways as inert matter in the physical sciences.
- Its mechanistic ethos tends to exclude notions of freedom, choice and moral responsibility.
- Quantification can become an end in itself.
- It fails to take account of people's unique ability to interpret their experiences, construct their own meanings and act on these.
- It leads to the assumptions that facts are true and the same for all people of all the time.
- It is not totally objective because the researcher is subjectively involved in the very choice of a problem as worthy of investigation and in the interpretation of the results.

QUALITATIVE APPROACHES

Strengths:

- Because of close researcher involvement, the researcher gains an insider's view of the field. This allows the researcher to find issues that are often missed by the scientific, more positivistic enquiries.
- Qualitative descriptions can play the important role of suggesting possible relationships, causes, effects and dynamic processes.
- Because statistics are not used, but rather qualitative research

uses a more descriptive, narrative style, this research might be of particular benefit to the practitioner as she or he could turn to qualitative reports in order to examine forms of knowledge that might otherwise be unavailable, thereby gaining new insight.

- Qualitative research adds flesh and blood to social analysis.

Limitations:

- The problem of adequate validity or reliability is a major criticism. Because of the subjective nature of qualitative data and its origin in single contexts, it is difficult to apply conventional standards of reliability and validity.
- Contexts, situations, events, conditions and interactions cannot be replicated to any extent nor can generalizations be made to a wider context than the one studied with any confidence.
- The time required for data collection, analysis and interpretation is lengthy.
- Researcher's presence has a profound effect on the subject of study.
- Issues of anonymity and confidentiality present problems when selecting findings.
- The viewpoints of both researcher and participants have to be identified and elucidated because of issues of bias.

SIMILARITIES BETWEEN QUALITATIVE AND QUANTITATIVE APPROACHES TO SOCIAL RESEARCH

- Whilst quantitative research may be mostly used for testing theory it can also be used for exploring an area and generating theory and theory.
- Similarly qualitative research can be used for testing hypothesis and theories even though it is mostly used for theory generation.
- Qualitative data often includes quantification (eg. Statements such as more than, less than, most as well as specific numbers).

- Quantitative (i.e. questionnaire) approaches can collect qualitative data through open ended questions.
- The underlying philosophical positions are not necessarily so distinct as the stereotypes suggest.

Although some social science researchers (Lincoln & Guba, 1985; Schwandt, 1989) perceive qualitative and quantitative approaches as incompatible, others (Patton, 1990; Reichardt & Cook, 1979) believe that the skilled researcher can successfully combine approaches. The argument usually becomes muddled because one party argues from the underlying philosophical nature of each paradigm, and the other focuses on the apparent compatibility of the research methods, enjoying the rewards of both numbers and words. Because the positivists and the interpretivist paradigms rest on different assumptions about the nature of the world, they require different instruments and procedures to find the type of data desired. This does not mean, however, that the positivist never uses interviews nor that the interpretivist never uses a survey. They may, but such methods are supplementary, not dominant. Different approaches allow us to know and understand different things about the world. Nonetheless, people tend to adhere to the methodology that is most consonant with their socialized world view. □

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SEMANTIC DIFFICULTY OF ENGLISH VOCABULARY : A PEDAGOGICAL PERSPECTIVE

Dr. Anima Baishya

ABSTRACT :

Vocabulary is central to language and is of great significance to language learners. As Assamese medium learners of English do not get enough exposure to English, they tend to encounter several problems or difficulties in learning the minimal unit of language that is word. As basic level learners, they face difficulties in articulating proper pronunciation, perceiving correct spelling, gain faulty knowledge of word structure, as well as confusions arising out of identical lexical items that have different meanings. All these problems faced by the student community motivated us to choose the present topic to explore the pedagogical issues of English vocabulary items.

1.1. INTRODUCTION :

We will deal with the problematic areas confronted by basic level Assamese medium students from the point of view of semantics. To understand a word fully entails that the second language learner must know not only what it refers to, but also where the boundaries are that separate it from words of related meanings. However, our study will restrict to the problematic areas that arise out of meaning and sense relationships, considering the subjects being the basic level

Assamese medium learners. We will not discuss the problem areas created out of collocation, multiword verbs and other aspects related to lexical semantics.

Comparing the foreign language vocabulary with that of the native language, Robert Lado (1957) has located the following difficulties and difficulty patterns:

- a) Similar in form but different in meaning
- b) Similar in meaning but different in form
- c) Different in form and in meaning
- d) Different in their types of construction
- e) Similar in primary meanings but different in connotations
- f) Similar in meanings but with restrictions in distribution

1.2. PROBLEM OCCURS DUE TO RELATED MEANINGS :

If we have to consider words from related meanings from the point of view of problematic areas then we have to keep in mind the context. That is, a group of words which shares a general sense and so may be interchangeable in a limited number of contexts, but if we consider the words with a closer inspection, we will have the idea that there is some degree of difference in the words regarding conceptual meaning which causes problem for the Assamese learners of English as due to proper lack of knowledge of the usage, they confront difficulty in learning the words. For example, in the words 'sink' and 'basin', many a time it is seen that Assamese learners of English don't use the word 'sink' to wash dishes and panes in the kitchen. Instead they use the word 'basin' which is actually found in bathrooms and used for personal hygiene. Conceptual synonymy or partial conceptual synonymy thus poses problems for the Assamese learners. In this regard, 'increase/extend/expand' are the examples of partial synonymy. All the three words mean a sense of enlargement, though all the three have three different conceptual meanings which

are also to be taken care of. Here the confusion occurs. It is just because in Assamese, there are no separate words used in order to show the notion of enlargement: enlargement of size, enlargement of quantity and enlargement of volume; only one word stands for all the three meanings in Assamese.

Similarly, 'broad' and 'wide' have related meanings, but they are not absolutely synonymous. They are context-restricted synonymy (Lyons, 1981:149). It is very difficult for an Assamese medium learner of English to know when there is and when there is not a difference of meaning. This is because learners learn the word forms and the meanings, but confuse which form goes with which meanings, a phenomenon that is known as 'crossassociation'. Crossassociation is a genuine problem for the Assamese learners of English. Perhaps as much as 25 percent of similar words initially taught together are crossassociated (Nation, 1990).

1.3. PROBLEM OCCURS DUE TO DIFFERENT MEANINGS :

Regarding the problem areas caused due to different meanings of words stand in front of the Assamese learners of English, we have to consider the words from the point of homonymy, polysemy and antonymy.

1.3.1. Homonyms are the words that are homophones as well as homographs and these create problems for the Assamese medium learners of English. This will be discussed as the following:

a) Separate lexeme which have the same spelling and same pronunciation, but different meanings. For example,

left (opposite of right) / left (past tense of 'leave')
bank(edge of a river) / bank (a financial institution)

b) Separate lexeme which have the same spelling irrespective of pronunciation, but different meanings. For example,

wind (air in motion) / wind (to move something in a twisting manner)

tear (pull something sharply to pieces) / tear (drop of salty water coming down from the eye)

c) Separate lexeme which have same pronunciation irrespective of spelling, but different meanings. For example,

hour / our
right / write

1.3.2. Polysemy, though similar to homonymy in some aspects, differs from homonymy in the sense that homonyms are two or more words having the same written or spoken form. A polysemic word on the other hand, is a single word form with several different but closely related meanings. However our main concern is not to demarcate the line between them, but to discuss how these meaning differences pose problems in front of Assamese learners of English and to what extent. For example,

head : (i) part of the body
(ii) head of the family

mouth : (i) opening through which we take in food
(ii) opening of a river.

That is these words have primary meanings and also one or more secondary meanings. The secondary meanings are metaphorical extensions of their primary meanings.

1.3.3. As far as different meanings are concerned, opposite words also make confusion, but we have to look into as to what extent. But since at the same time as there are limited stock of words that Assamese medium learners are aware of, the problem arises how to consider this? Here we will not discuss each and every types of

antonyms that we have in English as our intention is not to do so.

When we consider opposite meanings of words from the difficulty point of view in order to acquire, we have to consider relational antonyms (Palmer, 1981:98) or rather converses (Lyons, 1968:467). These are pairs in which one describes a relationship between two objects, and the other describes the same relationship when the two objects are reversed. However it is found that Assamese learners of English have confusion regarding the actions that represent relational antonyms in the following pairs of words:

buy — sell

push — pull

lend — borrow

exit — entry

debit — credit

debtor — creditor

According to Nation (1982), new items are better retained if unrelated in meaning while new words sharing features of meaning are likely to be confused. Although organization can facilitate learning, teaching similar or related words together can be counter-productive. In addition to learn the meanings of the two words, learners have the additional burden of keeping them separate. Higa (1963) found that words which were strongly associated with each other, such as antonyms, were more difficult to learn together than words which had weak connections or no relationship at all. Crossassociation is a genuine problem for the Assamese learners of English as far as antonyms are concerned. Antonyms are particularly prone to crossassociation as because they tend to be taught in pairs. Intuitively it seems a good reason why words of related meanings or antonyms are taught together as the learners can see the distinction between them and acquire a reasonably complete idea of a defined area of meaning. In order to avoid crossassociation it is desirable to

teach the most frequent or useful word of a pair first and only after it is well established, and then its partner has to be introduced.

However, it has been shown by various writers (Channell, 1981; Neuner, 1992) that suggest teaching words in lexical sets as for the following reasons

- It requires less learning to learn words in a set (Neuner, 1992);
- It becomes easier to retrieve related words from memory;
- It helps learners see how knowledge can be organized (Dunbar, 1992);
- It reflects the way such information is stored in the brain; and
- It makes the meanings of words clearer by looking at how they are related and how they differ from other words in the set.

Opposing to this, learning related words in sets is not a good idea for initial learner of English as there is possibility of occurrence of lexical interference. The errors usually occur between related words when second language learners of English are acquiring related vocabulary although initially learning related words together (e.g., parts of the body) was easier than learning a set of unrelated words (Schneider, Healy and Bourne, 1998).

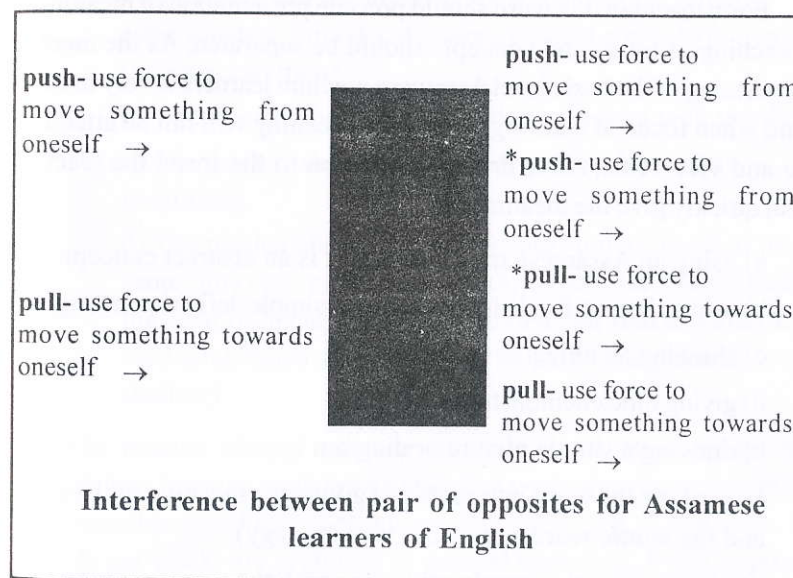
1.3.4. INTERFERENCE AS A PROBLEM AREA

The notion of 'interference' generally refers to "the errors a speaker introduces into one language as a result of contact with another language; also called negative transfer-----". The most common source of error is in the process of learning a foreign language, where the native tongue interferes; but interference may occur in other contact situations (as in multilingualism)" (Crystal, 1997:199-200).

It has been an established fact that interference between items was regarded as one of the major causes of forgetting (Higa, 1963). The principle behind lexical interference is that if two or more items

share some strongly related common features and they are learned together at the same time, the similar features make them strongly associated with each other, and the differences interfere with each other. Based on Nation's Input/ output diagram of interference between pair of opposites for Japanese learners of English, it can be shown diagrammatically as the following:

Input/output Diagram



The black box in the diagram represents the learner's brain, where we can directly observe the input and output. The internal processing of the brain cannot be directly seen, so it is typically represented by the black box. *Asterisks indicate that what follows is not semantically correct.

Similarly, the 'principle of interference' applies to formal similarities as well. In this regard we can mention the aspect of synforms. Synforms are word pairs or groups of words with similar

(though not identical) sound, script, or morphology, which learners tend to confuse. If “effect” and “affect” are taught together, they are likely to become cross-associated in the learner’s mind. The students should not be taught several new synforms together; instead, the students practice them after all members of the pair or group have been encountered individually.

2.1. PEDAGOGICAL PERSPECTIVE :

Form teaching of a word should precede presentation of meanings. Teaching of forms and concepts should be separated. As the mental processing of the basic level Assamese medium learners is very limited and when focus of learning is on form, meaning will not be attended to and vice-versa. After drawing attention to the form, the teacher can quickly give the meaning by:

- a) using an Assamese translation, if it is an abstract concept.
- b) using a known English synonym or a simple definition in English
- c) showing an object or picture
- d) giving quick demonstration
- e) drawing a simple picture or diagram
- f) breaking the word into parts and giving the meaning of the parts and the whole word (the word part strategy)
- g) giving several example sentences with the word in context to show the meaning
- h) commenting on the underlying meaning of the word and other references.

2.1.1. The teacher should use translation judiciously with words especially abstract words that have an exact equivalent in Assamese in order to teach meaning especially in early stages of learning. Translation is justifiable for explaining conceptual similarity of the words so that the distinction between them is clearly drawn instead

of lengthy and possibly futile explanations for lower level learners. The teacher should be accustomed to group items together by synonymy, hyponymy, antonymy, and other types of sense relations so that learners can understand semantic boundaries that separate lexical items.

- a) The teacher should make students incorporate new words into language that is already known by similarity of meaning features (e.g., pretty, beautiful) ;by lexical relations : synonyms (shallow, superficial) ,antonyms(cry, laugh), subordinates(animal, cat), superordinate and cohyponyms (vehicle, car, train)
- b) The teacher should make students interact with words.
- c) The teacher should make students use the mental processing.
- d) The teacher should avoid teaching similar words at the same time (e.g. push, pull; affect, effect) .He should teach the most frequent or useful word of a pair first and after it is well established ,then introduce its partner(e.g. deep, shallow).

The teacher should enhance students’ motivation by setting vocabulary learning goals which state that goals are seen as important and possible to achieve. Setting specific goals (e.g., I will learn 10 words per week) are preferred to general ones (e.g., I will improve my English) as specific goals lead to higher performance.

3.1. SUMMARY :

From the foregoing discussion, it can be inferred that there is a need to increase the differences between the items so that it can decrease the strength of the association between them, thus reducing the chance of interference. Given the items in contrast to each other can clarify their differences in meaning and use, but this contrast should not occur until one or both of them are firmly established.

Where interference does occur, it considerably increases learning difficulty. If the interference effect is large, then teachers and learners need to try to reduce the possibility of interference in a variety of ways such as drill, rote learning etc. □

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STUDY OF AC CONDUCTIVITY OF MUGA AND ERI FIBRES

Chandrama Kalita

ABSTRACT

In the present investigation the ac conductivity was measured with the help of LCR meter of Muga and Eri fibres and it was found the conductivity of Eri at room temperature is 6.23×10^{-7} and for Muga 6.01×10^{-7} .

INTRODUCTION :

Silk culture is a traditional cottage industry rooted in the life and culture of Assam. Sericulture in Assam comprises mulberry (pat) and non-mulberry silkworm culture. The latter includes endi, muga, and oak-tassar. Endi and muga silks are considered to be of indigenous origin and found only in Assam and the foot-hills of Meghalaya. Oak-tassar culture is a recent introduction in some temperate zones of Northeastern region especially in Manipur, the commercial prospect of which is yet to be ascertained. Endi culture has always remained a subsidiary occupation of Indo-Mongoloid and Tibeto-Burman ethnic groups of the Brahmaputra valley (i.e. the Assam plains) and the adjacent hill areas. It is carried out traditionally by the rural and tribal womenfolk in their leisure hours. Endi silkworm

(*Philosamis ricini*) derives its name from the castor oil plant (*Ricinus communis*) called 'era' in Assamese, on which it is usually fed. Endi cocoon is open at one end for which the silk does not form into a continuous filament. Hence, the cocoon is spun not reeled. The coarse, durable endi cloth is regarded as the silk of the poor. The status of endi clothes in the folk life of Assam can easily be gauged from an old Assamese proverb, dair pani, erir kani, which implies that while curd cools, endi cloth warms up a person.

Muga worm (*Antheraea assama*) is basically a wild variety. It is commonly fed on som (*Persea bombycina*) tree in Upper Assam and sualu (*Litsea monopetala*) in Lower Assam. Mejankari (*Litsea cubeba*), pan chapa (*Magnolia sphenocarpa*) dighlati (*Listsea salicifolia*) are secondary host plants. Muga silk in general is rich golden yellow or light brown in colour depending on the host plant on which the worms are fed and the season. Most of the cocoons are purchased ultimately by the traders of Sualkuchi (in Kamrup district of Lower Assam) where commercial reeling and weaving are done almost as a monopoly. Though the bulk of the rearing is done in Upper Assam, the womenfolk there reel a very small quantity of cocoon to utilize in their looms for household use. The most important Muga cocoon rearing villages lie in Lakhimpur, Dibrugarh, Sibsagar and Jorhat districts. The items of dress made out of muga are Assamese women's apparels like riha, mekhela, chadar, saree and wrapper. Mulberry silk industry in Assam is also pretty ancient. The climate condition of Assam is favourable for mulberry culture. Mulberry silk locally called 'pat', is produced by a silkworm known as *Bombyx mori*, which feeds solely on mulberry (*Morus indica*) leaves. Hence, the name of the silk. The mulberry yarn reeled by the rural folk is primarily meant for domestic consumption. The

commercial weavers purchase every year about 25,000 kg of twisted mulberry silk from Karnataka. Mulberry silk is light and cool, has sheen and is strong; delicate and resilient. It is used in Assam primarily for manufacturing items of dress such as mekhela, chadar, riha, saree, men's wrapper, dhoti and upper garment.

CONDUCTIVITY OF POLYMERS :

The electrical conductivity of polymeric materials depends on the presence of free ions not connected with the molecules. The molecules chain proper does not participate in the transfer of electric charges. Therefore, the conductivity of polymers depends largely on the presence of low molecular mass impurities that can serve as sources of ions. The chemical constitution has only an indirect effect on the mobility of the ions.

MATERIALS :

Sample for experiment is supplied from Sualkuchi and Ramdia

CHARACTERISATION :

Using the LCR meter the data of fourteen parameters such as [Z], [Y], q, Rp (DCR), Rs(ESR, DCR), G, X, B, Lp, Ls, Cp, Cs, D (tand) and Q can be measured at different temperatures.

RESULT AND DISCUSSIONS :

AC conductivity is related with dielectric constant and loss of tangent and it is measured in the frequency range 50 Hz to 1 MHz at different temperatures using the formula

$$\sigma_{ac} = 2\pi f \tan \delta \epsilon_0 \epsilon'$$

DIELECTRIC CONSTANT :

A dielectric material is characterized by its dielectric constant and dielectric loss, both of which are functions of frequency and temperature. This dielectric constant is the ratio of the strength of an electric field in vacuum to that in the dielectric. It is also measured with the help of formula $\epsilon' = ct / A\epsilon_0$ where c is capacitance, t is thinness, A is area of the flat surface, ϵ_0 is permittivity of free space ($\epsilon_0 = 8.55 \times 10^{-12} F/m$)

Since, the dielectric constant is not a constant, it is frequently called the 'dielectric permittivity'. The relative dielectric constant which is ratio ϵ / ϵ_0 (where ϵ_0 is the dielectric constant of free space) is the one commonly used. When variation of dielectric constant with frequency occurs, the symbol is commonly primed as ϵ' . Measurements of the dielectric properties of a material give information about the configurational behaviour of the dielectric.

Table -1

Dielectric Constant of Eri

log f	303	323	343	363	383
2	84.57	17.5605	153.73	61.147	145.34
3	54.45	64.29	65.09	65.064	65.63
4	29.44	36.4	35.69	36.71	36.717
5	56.77	54.34	55.4214	55.92	55.45
6	100.383	100.15	100.54	100.57	1100.59

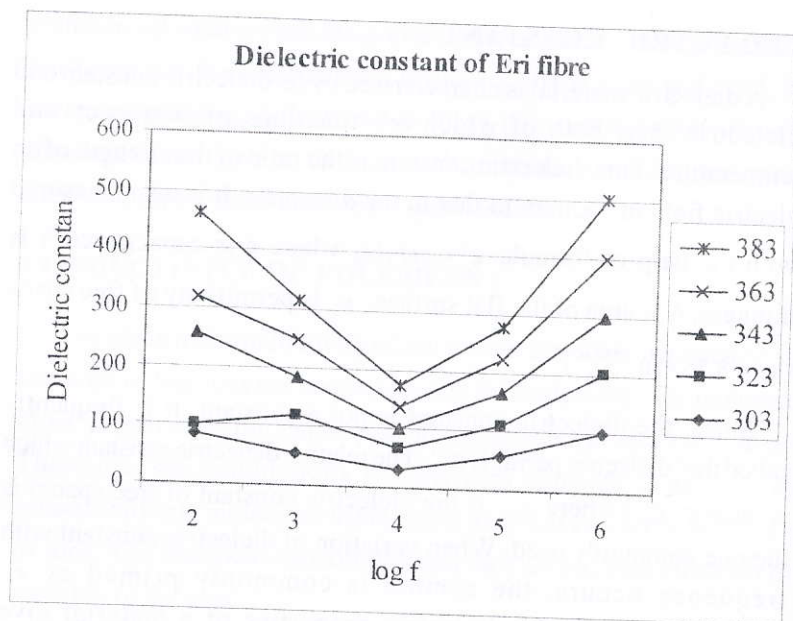


Fig. No. 1

Table- 2

Dielectric constant of Muga fibre

	303	323	343	363	383
2	0.91396	0.76207	0.79462	1.67569	0.62528
3	0.4421	0.41733	0.40363	0.40679	0.40824
4	0.1946	0.1777	0.16952	0.18668	0.1864
5	0.09345	0.09558	0.09461	0.09355	0.09706
6	0.04881	0.04576	0.044	0.052234	0.05525

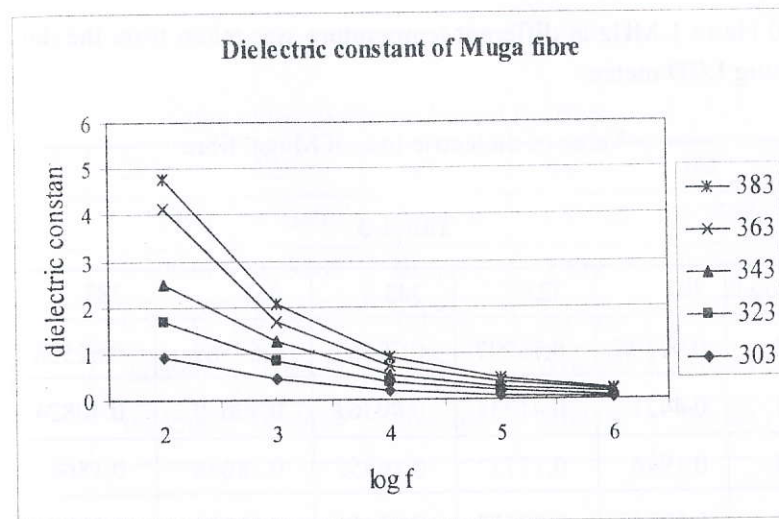


Fig. No. 2

The dielectric constant is high in the lower frequency region and decreases continuously with increase in frequency and increase with temperature. In the lower frequency region the dielectric constant is high due to the combination of all the polarizations such as electric, ionic, dipolar and space. The low value of dielectric constant at higher frequencies may be due to the loss of significance of these polarizations gradually.

DIELECTRIC LOSS :

The electrons in a dielectric cannot generally leave the atoms or molecules to which they are bound. An external electric fields applied to the material by means of condenser plates can, however, cause relative displacements of the electrons and atomic nuclei, thus polarising the atoms. The loss tangent $\tan(\delta)$ in the frequency range

50 Hz to 1 MHz at different temperature was taken from the data using LCD meter.

Value of dielectric loss of Muga fibre

Tabel-3

log f	303	323	343	363	383
2	0.91396	0.76207	0.79462	1.67569	0.62528
3	0.4421	0.41733	0.40363	0.40679	0.40824
4	0.1946	0.1777	0.16952	0.18668	0.1864
5	0.09345	0.09558	0.09461	0.09355	0.09706
6	0.04881	0.04576	0.044	0.052234	0.05525

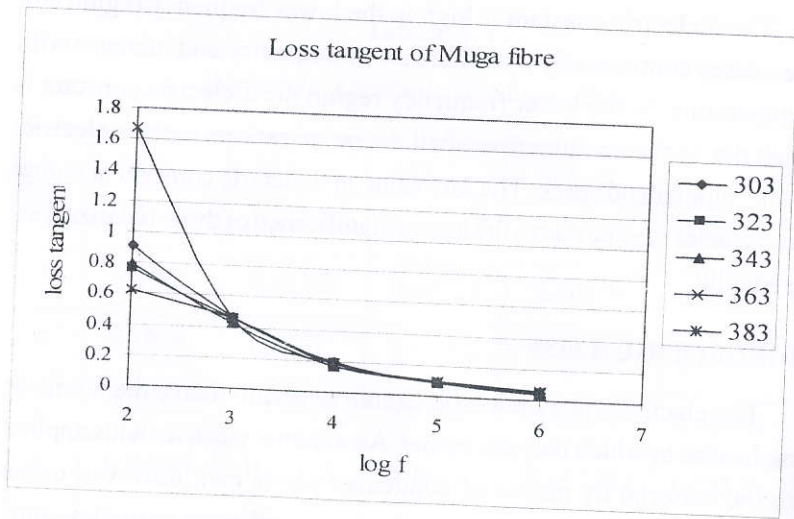


Fig. No. 3

Table- 4

Value of the dielectric loss of Eri fibre

log f	303	323	343	363	383
2	1.32499	0.73499	0.64854	1.31363	0.75586
3	0.39878	0.39809	0.38911	0.40058	0.38369
4	0.18297	0.16167	0.1792	0.19627	0.1916
5	0.0899	0.08873	0.093	0.09079	0.09842
6	0.04506	0.04659	0.04244	0.04197	0.04013

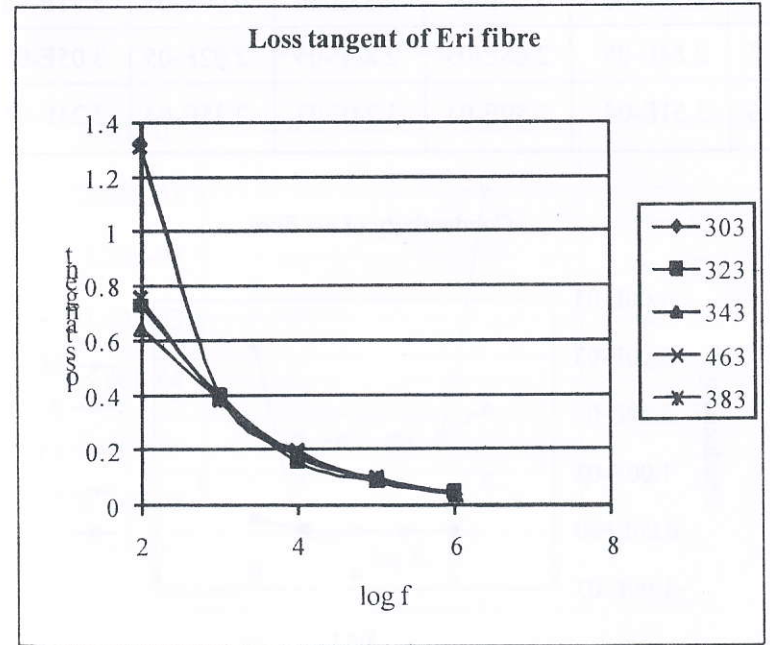


Fig. No. 4.

From the figure it is evident that the loss tangent is low at higher frequencies. This can be attributed to superior optical quality and the possibility of using the samples for higher frequency applications(10).

STUDY OF AC CONDUCTIVITY OF FIBRES :
AC CONDUCTIVITY OF ERI :

Table -5

	303	323	343	363	383
2	6.23E-07	1.29E-11	5.54E-07	1.07E-06	6.11E-07
3	1.21E-06	1.42E-06	1.41E-06	1.45E-06	1.40E-08
4	2.99E-06	3.27E-06	3.55E-06	4.00E-07	3.91E-06
5	2.84E-05	2.68E-05	2.86E-05	2.82E-05	3.05E-05
6	2.51E-04	2.59E-04	3.24E-03	2.35E-04	2.24E-04

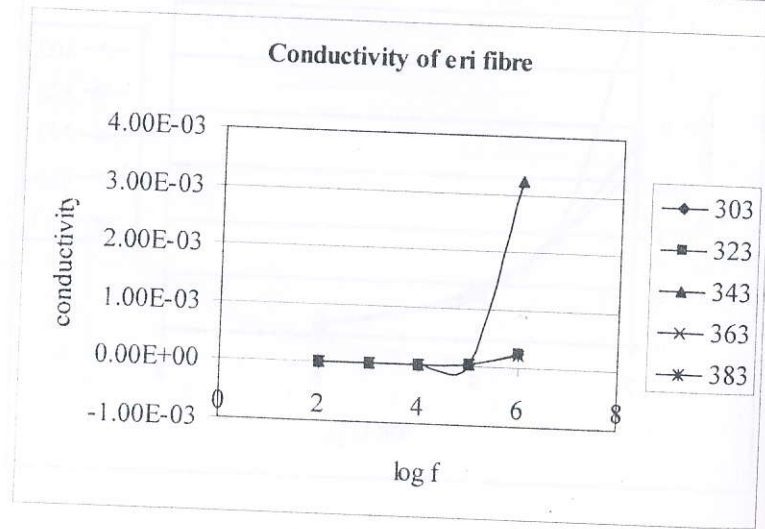


Fig No-5

AC CONDUCTIVITY OF MUGA:

Table -6

log f	303	323	343	363	383
2	6.10E-07	1.71E-07	4.75E-07	4.43E-07	4.89E-07
3	1.24E-06	1.10E-06	1.07E-06	9.57E-06	1.11E-06
4	2.91E-06	2.47E-06	2.42E-06	2.65E-06	2.72E-06
5	2.56E-05	2.63E-05	2.60E-05	2.57E-05	2.68E-05
6	2.54E-04	2.38E-04	2.69E-04	2.02E-03	2.73E-04

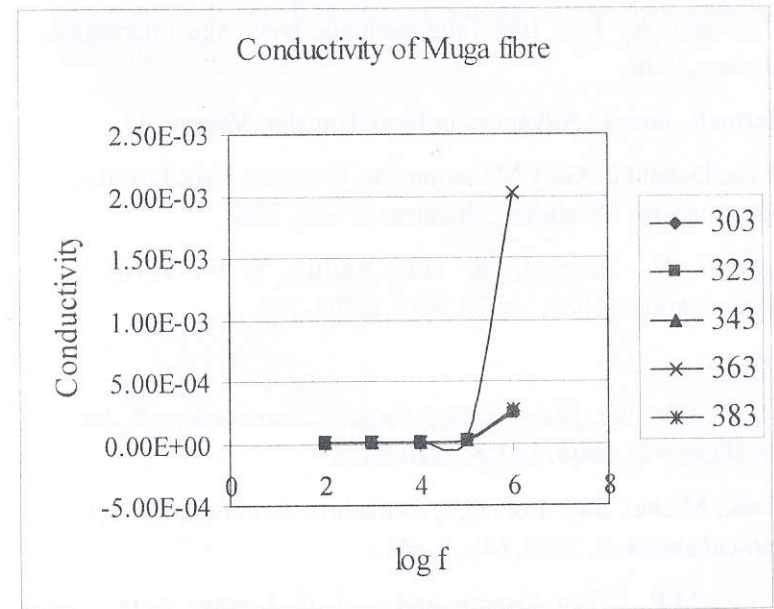


Fig No-6

From the figure it is evident that the ac conductivity increases

continuously with frequency and increase with temperature. At higher temperature the increase conductivity could be due to the reduction in the space charge polarization(11).

The conductivity of Eri at room temperature is more than Muga. The loss of tangent of Eri is more than Muga silk and the dielectric constant of Muga is more than Eri.

The conductivity diagram is similar with other silk which indicates that Muga and Eri show similar conductivity with other silk. □

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NANOCRYSTALLINE II-VI SEMICONDUCTOR : ZNS

Dr. Utpala Baishya

Among the II-VI semiconductors, ZnS has received wide attention because of their immense application potentials in light emitting diodes, electroluminescent devices, photovoltaic devices, lasers, single electron transistors as well as biological labelling and diagnostics [1-4]. The properties of ZnS in its nano form differ significantly from those of their bulk counterparts. Also, the specific structural characteristic of nanomaterials is known to bring distinct performance different from their bulk form. Considerable successes have been achieved in the synthesis of some well-known structures of ZnS, such as nanospheres, nanobelts, nanoribbons, nanorods, nanowires, nanosheets, core/shell nanocrystals [5-8] and so on. The fact is by now well acclaimed that many physical properties of the materials in nano form are size, shape and structure dependent. ZnS forms two structural polymorphs, hexagonal wurtzite (less stable form) and cubic sphalerite (more stable form). Wurtzite ZnS is more desirable for its optical properties than the sphalerite one. ZnS has the highest band gap among all II-VI compounds. Owing to wide band gap value, ZnS can be used for fabrication of optoelectronic devices such as blue light emitting diodes, electroluminescence devices, electro-optic modulator, optical coating and especially photovoltaic devices, such as solar cell and all transparent p-n junction devices. The large band gap of nanostructured ZnS is advantageous over a smaller band gap bulk ZnS as it opens up more options to play with by opening the gap suitable for visible light absorption. Because

of high transmittance in visible range, ZnS can be used as reflectors and dielectric filters. Moreover, many intermittent dopant levels can be created within the gap to tailor its optical properties. Also it is an important base material for cathode-ray tube luminescent materials. ZnS is chemically more stable and technologically better than other chalcogenides. So it is considered to be a promising host material for elaborate study.

Considerable progress has been made towards the synthesis of this material in its nano form to suit particular needs. There are various methods of synthesis of nano materials such as thermal evaporation, flash evaporation, pyrolysis, vapour phase reaction, induction heating, solvo thermal process, laser beam evaporation etc. Chemical bath deposition (CBD) method has more advantages over other methods such as easier composition control, better homogeneity, low processing temperature, lower cost, easier fabrication of large area films, possibility of using high purity starting material and having an easy coating process of large and complex shaped substrates. I have synthesized ZnS nano particles of different shapes and sizes under different conditions. Here, I want to represent a brief summary of the work I have done. The composite films are deposited by CBD method using polyvinyl alcohol (PVA) as the capping agent. Anticipating wide applications of nanomaterials in future, I have studied the synthesis and characterization of compound semiconductor nanoparticles or nanoclusters to provide many more details viz., effect of reactant concentration, reactant temperature etc. Attempts have been made to make a point to point correlation between the structural and other physical properties of the nanocrystalline ZnS on the deposition parameters. It is expected that such study will add new knowledge to the existing database and facilitate deposition of desired nanocrystalline ZnS films by optimizing different conditions.

ZnS nanostructures have been prepared by chemical reaction of basically two reagents: one is zinc source and the other sulphur source in presence of PVA in aqueous ammonia medium. It is observed that by changing the concentration of Zn and S source in the reaction mixture the shape and size of the obtained nanoparticles change. This change is also materialized by changing the reaction temperature. Spherical, hexagonal and ID structures are obtained by these changes, associated with change in physical properties.

Spherical shaped ZnS nanoparticles are obtained by varying the sulphur source concentration, keeping the Zn source concentration fixed [9]. The results show that with decrease in sulphur source concentration, the particle size (as is evident from the XRD/TEM) is found to decrease, whereas the band gap increases. It is observed that with decrease in concentration the photoluminescence (PL) intensity increases and PL peaks show red shift.

Hexagonal shaped ZnS nano particles are obtained by varying the zinc source concentrations keeping the sulphur source concentration fixed [10]. The results show that with decrease in zinc source concentration, the particle size (From XRD/ TEM) is found to increase, whereas the band gap for direct optical transition decreases. Further, with decrease in concentration we observed decrease in PL intensity of the peaks.

The effect of temperature has been visualized by observing the effect of synthesis temperature. Nanorods [11] of different phases (Hexagonal and cubic phase) have been found by varying the deposition temperature, which show very sharp green emission along with broad blue emission, which are very important in device application. □

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URBANISATION AND SOLID WASTE – ITS MANAGEMENT AND RECYCLING

Sikha Rani Kalita

Solid Waste (SW) is more commonly known as trash or garbage — consists of everyday items we use and then throw away, such as products packaging, disposable items, clothing, bottles, food scraps, newspapers, appliances, machinery items etc. This comes from our homes, schools, hospitals, and business. It also includes industrial hazards.

In recent years natural growth of population, reclassification of habitation and migration trends are the most important factors for increasing the urban population in India. The population of urban India was 285 million as per 2001 census, which accounts for 27% of total population. Global experience shows that when a country's urban population reaches almost 25 % of the overall population (as in the case of India), the pace of urbanisation accelerates. Due to rapid urbanisation and uncontrolled growth rate of population, Municipal Solid Waste Management (MSWM) has become acute in India.

ENVIRONMENTAL CONCERN OF SOLID WASTE :

The urban population of 285 million is concentrated in a few large cities and 32 metropolitan cities are accounting for 34.5 % of the urban population that is expected to reach 341 million by 2010 (Census of India, 2001). The waste quantities are estimated to increase from 46 million tonnes in 2001 to 65 million tonnes in 2010.

The waste characteristics are expected to change due to urbanisation, increased commercialisation and standard of living. With increase in the global population and the rising demand for food and other essentials, there has been a rise in the amount of waste being generated daily by each household. This waste is ultimately thrown into municipal waste collection centres from where it is collected by the area municipalities to be further thrown into the landfills and dumps. However, either due to resource crunch or inefficient infrastructure, not all of this waste gets collected and transported to the final dumpsites. If at this stage the management and disposal is improperly done, it can cause serious impacts on health and problems to the surrounding environment. The present trend indicates that the paper and plastic content will increase while the organic content will decrease. In keeping with the present practices and estimates of waste generation, around 90 % of the generated wastes are land filled requiring around 1200 hectare of land every year with an average depth of 3m. The larger quantities of solid waste and higher degree of urbanisation will necessitate better management involving a higher level of expenditure on manpower and equipment.

Waste that is not properly managed, especially excreta and solid waste from households and the community, is a serious health hazard and leads to the spread of infectious diseases. Unattended waste lying around attracts flies, rats, and other creatures that in turn spread disease. Normally it is the wet waste that decomposes and releases a bad odour. This leads to unhygienic conditions and thereby to a rise in the health problems. The plague outbreak in Surat is a good example of a city suffering due to the callous attitude of the local body in maintaining cleanliness in the city. Plastic waste is another cause for ill health. Thus excessive solid waste that is generated should be controlled by taking certain preventive measures.

SOLID WASTE MANAGEMENT :

Waste management is the collection, transport, processing or disposal, managing and monitoring of waste materials. The term usually relates to materials produced by human activity, and the process is generally undertaken to reduce their effect on health, the environment or aesthetics. Waste management practices can differ for developed and developing nations, for urban and rural areas, and for residential and industrial producers.

PROBLEMS ASSOCIATED WITH THE SOLID WASTE MANAGEMENT SYSTEM :

Solid Waste Management (SWM) Systems exist in most of the urban centres since last few decades. However, these systems have yet to emerge as a well-organised practice. Although, the solid waste characteristics in different urban centres vary significantly, there is a meagre effort to tailor the system configuration to the waste characteristics. The major deficiencies associated with the system are described in the following sections:

- 1) The solid waste quantities generated in urban centres are increasing due to rise in the population. The increasing solid waste quantities and the areas to be served strain the existing SWM systems.
- 2) The equipment and machinery presently used in the system are usually that which have been developed for general purpose or that which have been adopted from other industry. This results in underutilisation of existing resources and lowering of the efficiency.
- 3) Mostly out of the total expenditure, around 90% is accounted for man power of which major portion is utilised for collection. Since citizens tend to throw the wastes on the adjoining road and outside the bin, the work of the collection staff is increased. Hence, the cost of collection increases considerably.
- 4) The operational efficiency of SWM depends on the active

participation of both the municipal agency and the citizens. Since the social status of SWM is low, there is a strong apathy towards it, which can be seen from the uncollected waste in many areas and the deterioration of aesthetic and environmental quality at the uncontrolled disposal sites.

5) The SWM system is unplanned and is operated in an unscientific way. Neither the work norms are specified nor the work of collection staff appropriately supervised.

PROBABLE DESIGN FOR APPROPRIATE WASTE MANAGEMENT SYSTEM :

An approach to design sustainable waste management system and operating guideline is outlined bellow (according to National Environmental Engineering and Research Institute):

QUANTITY AND CHARACTERISTICS : Quantity and characteristics of the waste are the major factor, which decide magnitude of waste management problem. Because on the basis of waste quantity, infrastructure requirement can be estimated. It is also necessary to carry out characterisation studies frequently in order to assess the changes in waste characteristics due to ever-changing scenario. This data will also serve as a basis for selection of disposal / treatment option.

COLLECTION OF WASTE : Properly designed collections bins and implements should be used for collection and storage of waste. Wastes should be collected frequently in order to avoid accumulation, which leads to degradation of environmental and aesthetic quality. House to house collection system can be introduced gradually to ensure environment friendly collection practices.

TRANSPORTATION OF WASTE : Properly designed vehicle should be used for collection of wastes. Various factors like width of the road, transport volume, road conditions, public and environmental disturbance etc. play important role in selection of vehicles.

DISPOSAL OF WASTE : Sanitary landfill technique should be adopted for disposal of waste.

TREATMENT OR RECYCLING OF WASTE : Composting is the process of decomposition and stabilisation of organic matter under controlled condition. Since India is an agriculture based country, there is a need for popularisation of the product among the farmers and to exploit the manure value of the product. Waste minimisation, through segregation of recyclable material like plastic, glass, metals etc. is another aspect, which needs special attention. NGOs may come forward to promote the activity. Waste pickers may be trained so that the segregation of recyclable items can be done in a more systematic and organised way.

COMMUNITY PARTICIPATION : Community participation is essential for smooth and efficient operation of SWM system in every area, citizen forum should be formed. These forums should comprise citizen representatives, social workers and municipal officers. Immediate action based on feedback from such forum will go a long way in improving the situation. Various programmes should be conducted for increasing public awareness.

SUGGESTION FOR SAFE WASTE MANAGEMENT :

1) The collection, transportation and disposal of loose garbage in bulk quantities by manual methods should be avoided because it is unhygienic for the public and carriers. Attempts should be made to borrow the technology adopted in other countries.

2) The dumping areas have become serious health hazards to the people living in the neighbour-hood. The ground water in that area is also liable for contamination. So the dumping should be done at a good distance from the human habitat.

3) Following proper technology, the households may use non-plastic wastes as manure by the process of biodegradation. Fermentation of organic wastes produces biogas, which can be used

for cooking, industry etc. The slurry is used as manure. Waste paper can be converted to toilet paper. After extraction of metal from the ore, a waste product called slag remains, which can be powdered and added to cement for construction work. In Mumbai, the Excel Company produces manure by collecting the daily wastes. So at present Government should give special attention and take necessary steps for recirculation of wastes and protect the environment.

4) Like Himashal Pradesh, Sikkim, Goa etc., in other states of India the use of hazardous and non-biodegradable house-hold plastic items should be banned immediately.

5) Bio-medical wastes should not mix with domestic garbage. It should be burnt under controlled conditions and then the heat produced may be utilised for some useful purpose. Ashes left after burning are dumped in water or disposed of in the fields.

6) Enough care and attention should be paid for the safe disposal of Industrial Hazardous wastes. These should not be dumped or disposed at public places.

7) Citizens should be conscious in this field and should try to manage their own house-hold waste by the process of sanitation, burning etc. as far as possible and help in proper waste management system to create a healthy environment. □

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ROLE OF RURAL LIBRARY IN THE OVERALL DEVELOPMENT OF RURAL WOMEN

Geetali Das

Abstract :

Rural library plays a very important role in the development of a rural society. This paper mainly discusses what a rural library is and its objectives. It also highlights the role that innovative rural library services can play in the development process of rural women. How rural library can educate rural women by organizing different activities within library campuses is also discussed here. Active role of rural library in economic, socio-cultural development of rural women is also mentioned in this article.

Keyword : Rural Library, Rural Women

1. Introduction :

Women constitute an important segment of society and almost fifty percent of the world population constitutes women. They are the centre of family life and custodians of culture and fundamental values of society. They are also the agents of change. So if they are properly educated they can play an important role in the overall developmental process of the society. An educated woman enhances the literacy skill of the family, provides better hygiene, improves family economic growth, and reduces child mortality rate and malnutrition.

A Rural library plays an important role in the socio-economic, cultural and educational development of a rural society. Rural library is a social institution for all sections of the people irrespective of race, religion, sex, colour, language, status etc living in the rural society. It is available for use to all who have desire of using it. According to UNESCO "a rural library is one, which serves the population of a community or region free of charge or for a nominal fee. However such a library should not remain as they tend to do as a mere store-house of books, they should be dynamic and set out to educate and attract adult to use them".

The importance of rural library can be established by the fact that majority of rural women are living in small scale poor illiterate farmers families. Rural libraries can create reading habit among these rural women through distribution of books, display of attractive pictures etc. In our society, rural population's economic needs are very much related to small enterprises and agriculture. The rural library should provide information regarding better farming techniques, new seed technology, pesticides, good health, family planning programmes, cultural values, small savings and other activities related to social wellbeing.

2. Objectives of Rural Library :

Rural libraries are those libraries which are established at lower level of public library to fulfill the information requirement of rural community. These are run by state Government, Local Authority, NGO, Organization etc. The objectives of rural libraries are given below-

- a. To infuse awareness among rural people of the sources of information and encourage them to make extensive and comprehensive use of information stored in a library.
- b. To take care of economic, educational, social and cultural information needs of the local population.

- c. To cultivate interest in reading books.
- d. To formulate programmes for adult education.
- e. To build up a healthy and civilized human race

3. Role of Rural Library in Overall Development of Rural Women :

Rural library is an important entity in a local community development and empowerment process, particularly in a rural and disadvantaged community. It provides information that is essential for the community progress. The development of rural community is closely associated with the development of rural women. Development of rural women means improving the quality of life of women. The development of rural women means development in the field of education, agriculture, health, social welfare, small scale industries, community development etc. Rural libraries usually undertake various activities for the development of the rural women and some of them are discussed below-

3.1 Self education :

Education is one of the important instruments for the self development of rural women. Most of the rural women are uneducated or semi-literate. The reasons behind this are in rural society, since most of the people believe that women should be busy in their household works, agricultural works, taking care of their children etc., so they do not want to educate their girl children. So they remain uneducated. Rural libraries can offer the opportunity to women to educate themselves continuously. In this case rural library can support these uneducated rural women by organizing special classes within the library campus for them so that at least they can learn the basics of literacy in order to utilize library resources as per their requirements. This way rural library can create lifelong self-education process among rural women. Rural library should collect different books, newspapers, periodicals and other sources of information and provide them to rural women for reading.

3.2 Agricultural Development :

Most of the rural society is based on agriculture and rural women are associated with farming process. In this case rural library can provide information on modern agricultural techniques, how to improve their farms and means through which they can improve their productivity and also provide information on modern farm practices and chemicals that will improve their farm yields. The information should be in a language that they must understand. For this a purpose a rural library can take help from audio-visual aids such as radio, television. The audio-visual aspect has the advantage of combining both vision and sound especially for the demonstration of modern farming techniques. Rural libraries also provide information on modern pisciculture, horticulture, dairy farming, poultry farming etc.

3.3 Financial Development :

Today government provides many schemes for the welfare of rural women and girl children. Rural library can help the rural women by organizing meeting.

3.4 Health related Issues :

Rural Library can provide information to rural women on modern birth control method, childcare and nutrition, immunization for children and pregnant women, infertility, sanitary and health care schemes. For these rural library can organize awareness programmes, health camp etc. They also can organize lectures on various health related topics with the help of local doctors for the benefit of rural women from time to time.

3.5 Social Development :

Rural library can encourage the rural women to take active part in social services such as construction of houses, construction of

roads, repair of roads, market cleaning, slum cleaning etc. Rural library can also help the rural women to change their attitude towards superstitious belief, dowry system, inter-caste marriage, widow re-marriage, child marriage etc. It can also help them to improve their leadership qualities by encouraging them to participate in different programmes of the society they live in.

3.6 Training Programmes :

Rural library can organize different training programmes in cooking methods, interior decoration, embroidery, sewing etc. This type of activity is a community development effort, it helps not only to develop their personal skills but also to empower themselves to generate new knowledge.

4. Conclusion :

Women play key roles in social and economic life of a rural community. Hence greater attention should be paid to the overall development of rural women. Rural libraries support and assist in the development and improvement process of the rural women. Rural women come to the library for more than just reading. But they come here to talk, share their feelings; they give information to each other. So rural library is an information place where rural women come when they have an information- related need or want to find an environment that supports the fulfilling of information related needs, whether for educational, business, or recreational purposes or for purposes comprising all themes regarding information finding and seeking, reading, lifelong learning. □

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HUMAN RIGHTS AND DEVELOPMENT INDUCED DISPLACEMENT

Pinku Kumari Das

Human rights are universal rights. Each and every human being is entitled to these rights irrespective of their caste, creed, religion, place of birth, sex, nationality etc. The term Human Rights, got recognition of United Nations Organisation (UNO) in Universal Declaration Of Human Right 1948. Today every country includes provision for the protection of Human rights in their Constitution. But it is not that easy to define human rights, it is a very complex term. Human Rights are not accessible to every human beings still there are vast differences, among various groups of human beings. It seems mere being human is not sufficient to get these rights. In spite of having a number of provisions for protection of human rights of all sections of human beings, still there are a number of vulnerable sections in almost every society whose human rights are not safe at all. Women, children, minorities, refugees, IDPS etc are some such groups. In this paper it will be tried to analyse the human rights condition of IDPS of india who are forced to be displaced from their home for various reasons.

OBJECTIVES

The main objectives of this paper are —

1. To analyse the relation between various developmental projects and IDPs.

2. To analyse the violation of Human Right of IDPs.
3. To analyse the resettlement and rehabilitation process of IDPs.

METHODOLOGY

The method applied for preparing this paper is descriptive and the sources of data are secondary such as books, Journals, articles, Internet etc.

DEVELOPMENT AND IDPS.

Development Induced Displacement can be defined as the forcing of the communities and individuals to leave their dwelling places for the purpose of economic and national development. This type of displacement can be within a city or district, from one village to another or displacement across long distances and borders often to economically, culturally, socially quite different settings. In earlier time the phenomenon of Development Induced Displacement was associated only with the construction of dams for hydro electric power and irrigation purpose. But in contemporary time the concept of development and modernization is represented by a number of other activities such as mining, creation of military installations, airports, industrial plants, weapon testing grounds, rail-ways, road development, urbanization, conservation projects, forestry etc. along with construction of dams for hydro electric power and irrigation purposes. But this concept of national development does not include all sections of society within its arena. Then why in a democracy should some people be made to sacrifice for benefiting other ?

People affected by various development projects consist of only marginalized and down trodden, oppressed section of society such as tribals, poor villagers, peasants. The internally Displaced People do not get any benefit in return for their sacrifice which they have to make because of various developmental projects. Apart from this marginalized sections of society have to bear all sorts of brutalities of coercive force of state govt. Against these inhumanities the displaced people can not raise their voice strongly because their

contenders are very powerful and they have close nexus with the govt. In each specific case the marginalized and poor people are asked to shoulder the burden of prosperity. This is the rule of the modern times; any sort of brutal acts can be committed against humanity and human lives in the name of development and industrialization. The rich nations force the poor countries to bear the burden of toxic and waste products generate by their extravagant and luxurious life style. To quench their thirst for endless profit, imperialism cause destruction of lakhs of hectares of forest and agricultural lands, spoil hundreds of rare species of flora and fauna and liquidate human lives in the colonies and semi-colonies. In countries like India the vested interest groups do not feel the dangers posed by environmental degradation. They do not mind if some people are thrown into perennial hunger and undernutrition. Their only concern is to preserve their consumerists life style. At the receiving end there are the marginalized people, land less peasantry, uprooted industrial labourers, the dalits who have to bear the bitterness of modernization. Lakhs of small farmers and agricultural labourers are up rooted from their land and habitat to facilitate the construction of big dams and mega hydel project in the Narmada vally, Bargi dam but not a single electric bulb is seen to glow in thier shanties. Then why this development, for whom this development, why a section of society is compelled to sacrifice everything to fulfill the desire of another section in a democratic country, the term itself implying equality.

DEVELOPMENT THAT LEADS TO HUMAN RIGHTS VIOLATION

Various development projects leads to severe human rights violation for internally Displaced People. Almost all vulnerable sections of society have to pay heavy price for so-called national development associated with developmental projects. Women are the worst sufferers in this regard. According to a study of the National Commission for women in India (NCW) violence against woman is

increased due to displacement. Displacement leads to alcoholism among the male members of the concerned society which in turn has led to domestic violence against women. Apart from this other consequences of displacement can be analysed as below —

1. Displacement leads to landlessness among concerned people which is the prime loss for them. Land is the sole source of livelihood for peasants. It is also the main foundation upon which people's productive system and all sorts of livelihood are based. So, displaced people have to lose both natural and man-made resources.
2. Displacement leads to unemployment among the affected people. The risk of losing wage employment is very high both in urban and rural displacements for those employed in enterprises services or agriculture.
3. Displacement leads to homelessness. This is violation of the right to shelter.
4. Displacement leads to the violation of the basic right to food. Forced up rooting increases the risk that people will fall into temporary or chronic under nourishment.
5. Displacement induced social stress and psychological trauma are sometimes accompanied by the outbreak of relocation related illness, unsafe water supply and improvised sewage systems increase the vulnerability to epidemics and chronic diarrhea, dysentery etc. This is the violation of the right to basic standard of health and living conditions of displaced population.
6. Loss of access to common property is another severe consequences of displacement. For poor people particularly for the landless and assetless, loss of access to the common property assets that belong to the relocated communities (i.e the postures, forest, lands, water bodies, burial grounds, quarries etc) result in significant deterioration in income and livelihood levels of displaced population.

7. Forced displacement tears apart existing social fabric. It disperses and fragments communities, dismantles patterns of social organization and interpersonal ties, kinship, groups become scattered as well. Life sustaining informal networks of reciprocal help, local voluntary associations and self organized mutual services are disrupted. This is a net loss of valuable social capital that compounds the loss of natural, physical and human capital.

8. The displaced communities suffer from loss of access to community services like health clinics, educational facilities. The major losses for displaced families are loss or delay in opportunities for the education of children.

9. Environmental degradation is another negative consequence of developmental projects.

In this way all sorts of developmental projects lead to severe human rights violation for displaced population.

REHABILITATION AND RESETTLEMENT

An estimated 2% of the total population has been displaced by development projects. These 40% are tribals although they constitute only 8% of the total Indian population. During the last fifty years almost 3,300 big dams have been constructed in our country and some 1000 dams are under construction. These dams have led to large scale forced eviction of marginalized groups. The condition of tribal people is of special concern because they constitute 40% to 50% of displaced population.

In India there is no official statistics of displaced people due to the construction of large scale developmental project. In 1994 the Government mentioned the figure of 15.5 million internally displaced and acknowledged that some 11.5 million were still waiting rehabilitation. However calculation based on the number of dams constructed since independence shows that some 21 to 33million persons are likely to have been displaced. Narmada Vally

Development Project has been one of the most controversial project of India. Under this project some 3200dams were likely to be constructed. Among these 30 will be major dams, 135 medium and the rest will be small. Of these Sardar Sarover Dam and Narmada Sagar are the mega scale dams. The Bargi Dam which was constructed over Narmada river in 1990 displaced around 114,000 people from 162 villages. The official estimate for the number of families that would be displaced by the Sardar Sarovar Dam was about 6,000. Today it is ranged between 40,000 and 42,000 families which means about 200,000 families. In the Vindhyaachal Super Thermal Power Project 2,330 families were displaced of whom only 1,298 could be traced after the end of the first phase.

Despite the severity and scale of the trauma of displacement India is yet to formulate a national impoverishment and marginalization of the IDPs. Less than one fourth of the IDPs have been resettled. Rehabilitation is not part of most project. Displaced people and project affected people can not ask for compensation or demand resettlement because India is yet to have a national rehabilitation policy or law. In most cases Law Acquisition Act is used to pay a symbolic cash payment or compensation to the patta holders. The landless do not get any compensation.

CONCLUSION

So in case of rehabilitation and resettlement of Internally Displaced People, government's failure is proved in every perspective. Government fails to perceive the issue of displacement in its totality. The problem is analysed only from economic point of view. Therefore alternative given by the government is of economic nature with the absence of other perspective of human being's life. In maximum case displaced people are paid money against their land and amount of money is also very less in comparison of their sacrifice. The problem if further incorporated with unhealthy practices adopted by the businessman and middleman. In the words of Arundhati Roy in The

Greater Common Good, the million of displaced people do not exist anymore; when history is written they would not be in it, not even as statistic. The millions of displaced people in India are nothing but refugess of an unacknowledged war. □

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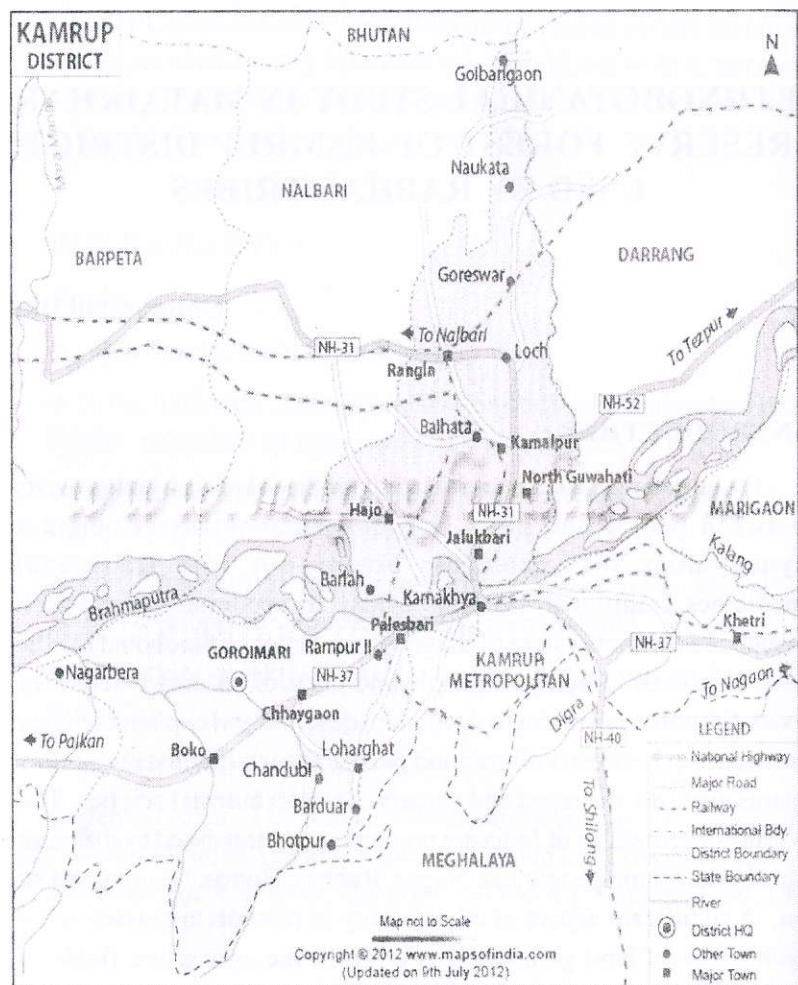
ETHNOBOTANICAL STUDY IN MATAIKHAR RESERVE FOREST OF KAMRUP DISTRICT USED BY RABHAS TRIBES

Chunamoni Das

INTRODUCTION :

Ethnobotany is the scientific study of the relationship that exists between people and plant. The term ethnobotany is neither synonymous with economic botany nor with traditional medicines. Traditional medicine today incorporates several well organized distinct system of diagnosis and cure. Ethnobotany is the inter-relationship between people and plant of an area where they exist. Ethnobotanists aim to document, describe and explain complex relationship between cultures and plants, focusing primarily on how plants are used, managed and perceived across human societies. The North-Eastern states of India are predominantly inhabited by different aboriginal ethnic people like Nagas, Rabhas, Bodos, Deories and so on. A significant aspect of ethnobotany in relation to grasses is the dominance of land germinacious crops in the agriculture fields of tribal people. This tradition has helped to a great extent in conservation of germplasm which now being utilized in crop improvement programmes. The traditional economy of the Rabhas in general is based in agriculture, forest based activities of weaving. Rabha people traditionally practice a few animistic rituals.

The present paper has been undertaken with an attempt to collect and study of plant species of Mataikhar reserve forest of Kamrup



district which has certain ethnobotanical potentialities. It is inhabited by the Rabha tribes and they lead an intricate life totally dependent on forest plant. Plant species are used for both religious purpose as well as in the treatment of different ailments.

Kamrup district is the centre of Assam that is situated between $25^{\circ}43'$ and $26^{\circ}51'$ N latitude and between $90^{\circ}36'$ and $92^{\circ}12'$ E

longitude. The district is bounded by foot hill of Nalbari district in the north and Meghalaya state in the south. The eastern boundary is covered by Nagaon and Darrang district. To the west there lies Goalpara and Barpeta district.

Mataikhar reserve is the deep forest stretch of the Loharghat range under West Kamrup division. There are three reserve forests – Mataikhar, Borduar and Mayong under Loharghat range.

Mataikhar reserve forest is around 50 km from Guwahati city.

REVIEW OF LITERATURE :

Ethnobotanical studies in general may also provide valuable information like new sources of proteins, starches, alkaloids tannins etc. Basing on available literature, a field study has been made to show that large number of grasses are used by Rabha people for various purposes.

R.R. Rao, N.S. Jamir (1982) studied the Ethnobotanical studies in Nagaland. I. medicinal plants. This paper reports of an Ethnobotanical study in the state of Nagaland. Fifty one medicinal plants are used in the Aos tribe in Nagaland.

S.Ivancheva, B Stantcheva (2000) studied Ethnobotanical inventory of medicinal plants in Bulgaria. The paper reported, some of the plants are applied in practice for the treatment of cardiovascular, gastrointestinal, respiratory and other disorders.

Alex Asase^{a,b}, Monique S.J. et.al (2005) aimed to find the ethnobotanical study of some Ghanaian antimalarial plants. Malaria in one of the major fatal diseases in the world, especially in the tropics and in endemic.

P. Erasto, A.J. Afolayan et. al (2005) studied an ethnobotanical study of plants for the treatment of diabetes in the Eastern cape province of South Africa.

Tilalun Tekhehaymanot and Mirutse Giday (2007) made research an ethnobotanical study of medicinal plants used by people in Zegie peninsula, North western Ethiopia.

NKechi V offiah^{1,2} Sunday Makama¹ and David Shamaki¹ et.al (2011) studied an ethnobotanical survey of medicinal plants used in the treatment of animal diarrhoea in plateau state, Nigeria. The use of medicinal plants in the treatment of diseases has generated renewed interest in recent times, as herbal preparation are increasingly being used in both human and animal healthcare system.

METHOD AND MATERIAL :

The study of ethnobotany has emerged to be of utmost necessity to know and preserve the rich botanical knowledge of the primitive people. It is of utmost necessity to study the possibility of using those plants used by the tribal men as the source of some active principles to be used in modern drugs. Secondly an urgent step should be taken to prevent these plants from extinction in view of the drastic decrease in plant resource due to human disturbance on natural environment and ruthless exploitation of forest wealth. Collection of information along with collection of available plant specimens in the forest and village area were done during 2012-2013 during survey and collection of relevant information in regard to abundance and detail of use were also recorded. The required plant material collected during the course of investigation were preserved for future use.

The survey was conducted in following forests, villages – Deopani village, Kanapana village, Hanapana village.

The plant specimen as reported by the village people as medicinal and other plants used by the Rabha and other were collected from different experiment sites. Moreover, the uses, preparation and doses of herbal medicine and other useful plants of the Rabhas were collected from Ojas ad Bezas.

RESULT AND DISCUSSION :

Plant used in Rabha festivals and other occasions :

The Rongdani and Maitory celebrate “Baikhoo” and Khoksi puja. *Ocimum sanctum* (Tulsi) *Aegle marmelos* (Bel) *cycadan daetylon* (dubri) *piper betel* (pan) etc. are used by the Rabha people. Tulsi (*ocimum sanctum*) is the most sacred plant as it is related to hand “Bishnu”. Tulsi is used in every Hindu household rituals. The tulsi plant is connected with every worship and rituals. The Rabha people observe various festivals and ceremonies in connection with religion worship like child-birth, wedding, death and agricultural activities. The Pate Rabhas of South-East Kamrup institute Maraipuja or Merepuja to propitiate Goddess “Manase”.

Food Plants : The forest supplies a wide variety of wild food plants. It includes a large number of angiospermic plants and a few cryptogamic plants like – mushroom and ferns. The available fleshy wild food plants provide the nutritional requirements for the better health of the people. Based on the floristic composition of the vegetation type, the district may be broadly classified into semigreen, evergreen and deciduous forests. These forests supply a wide variety of wild edible food plants. There are also a large number of wild plants which provide edible fruits and seeds.

Food Plants with underground edible part : A number of plants belonging to the families of *Araceae* and *Dioscoreaceae* come under this category of food plants. *Colocasia*, *Alocasia* with number of varieties represent the *Araceae* family. There are a number of varieties *colocasia antiquorum*.

Wild edible flowers and inflorescence : Flowers and inflorescence of some wild plants belonging to the families of *Musaceae*, *Araceae*, are used as vegetables.

Edible fruit plants : The major part of Mataikhar reserve forest is covered by subtropical forest which abounds with a large number

of edible fruit plants. Many of such plants not only yield fruits but also produce vegetables. *Artocarpus heterophyllus*, *Dillenia indica*, *Annona squamosa* and *musa sp* are common in all forests. Unripe and young fruits are very often used as vegetables.

Wild edible seeds : A few plants belonging to the families *Sterculiaceae* *Monaceae*, *Nymphaceae*, *Anacardiaceae*, are noted for yielding edible seeds, These plants are common in primary as well as secondary forests. Seeds of *Artocarpus heterophyllus* of the family *Monaceae* are roasted and taken. Seeds of different species of *sterculia*, *Monaceae*, *Nymphaceae*, and nuts of *carex* of the *cyperaceae* family are taken raw. The plant species which are used by Rabhas, as food plant are discussed in table -I.

TABLE-1

Sl. No.	Local Name	Botanical Name	Family	Uses
01	Bonoroi Kachu	<i>Colocasia antiquorum</i>	<i>Araceae</i>	Rhizome and leaf stalkes are cooked and taken.
02	Kath alu	<i>Dioscorea bulbifera</i>	<i>Dioscoreaceae</i>	Under ground swollen roots are cooked and used as vegetables.
03	Tita Bhekri	<i>Solanum integri folium</i>	<i>Solanaceae</i>	Bitter fruits are cooked as vegetables
04	Gas alu	<i>Dioscorea heniltonii</i>	<i>Dioscoreaceae</i>	Bitter fruits are cooked as vegetables
05	Kashkal	<i>Musa Sapientum</i>	<i>Musaceae</i>	Green fruits are used as vegetables
06	Malbhog Kal	<i>Musa Sapiantum</i>	<i>Musaceae</i>	Ripe fruits are taken raw
07	Bhim kal	<i>Musa balbiciana</i>	<i>Musaceae</i>	Fruits are eaten raw

08	Dalim	<i>Punica granatum</i>	<i>Pomegranate</i>	Fruits are eaten raw
09	Lesu	<i>Litchi sinexsis</i>	<i>Sapindaceae</i>	Fruits are eaten raw
10	Sajna	<i>Moringa oleifera</i>	<i>Moringaceae</i>	The flowers are used as vegetables
11	Gajor	<i>Daucus carota</i>	<i>Apiaceae</i>	Fruit are cooked or fried and taken
12	Jam	<i>Eugenia Jambolana</i>	<i>Myrtaceae</i>	Fruits are eaten raw
13	Kochu	<i>Colocasia esculenta</i>	<i>Araceae</i>	Rhizometaus stems, leaves are cooked
14	Man Kochu	<i>Alocasia indica</i>	<i>Araceae</i>	Young rolled leaves are used as vegetables
15	Poduma	<i>Mentha viridis</i>	<i>Laminaceae</i>	Leaves are taken shoots and used as chutney.
16	Bhedalota	<i>Paederia fortida</i>	<i>Rubiaceae</i>	Tender shoots are cooked and used as vegetables
17	Khejur	<i>Phoenix dactylifera</i>	<i>Araceae</i>	Ripe fruits are taken raw
18	Pan	<i>Piper betel</i>	<i>Piperaceae</i>	Leaves are chewed with betel nut.
19	Titakakiral	<i>Monordica Charantia</i>	<i>Cucurbitaceae</i>	Fruits are cooked or fried and taken as vegetables
20	Bhol	<i>Luffa cylindrica</i>	<i>Cucurbitaceae</i>	Fruits are cooked and taken as vegetables
21	Dhunia	<i>Coriandrum</i>	<i>Apiaceae</i>	Tender leaves and fruits are used as condition
22	Ala Phol	<i>Annona squamosa</i>	<i>Annonaceae</i>	Ripe fruits are taken raw
23	Ananas	<i>Ananas comosus</i>	<i>Bromeliaceae</i>	Tender shoots and leaves are used as vegetables
24	Kathal	<i>Artocarpus heterophyllus</i>	<i>Moraceae</i>	Fruits are taken raw

25	Jati Banh shoot	<i>Bambusa tulda</i>	<i>Poaceae</i>	The young succulent is sliced into small pieces, cooked and taken as food
26	Tezpat	<i>Cinnamomum tamale</i>	<i>Lauraceae</i>	Leaves are used for flavouring curry
27	Outenga	<i>Dillenia indica</i>	<i>Dilleniaceae</i>	used as vegetable
28	Kordoi	<i>Averrhoa carambola</i>	<i>Averrhoaceae</i>	Used as vegetables
29	Madhuriam	<i>Psidium guajava</i>	<i>Myrtaceae</i>	Fruits are eaten
30	Komora	<i>Pueraria tuberosa</i>	<i>Leguminaceae</i>	Used as vegetables
31	Gamari	<i>Gmelina arborea</i>	<i>Verbenaceae</i>	The flowers are used as vegetable
32	Ada	<i>Zingiber officinale</i>	<i>Zingiberaceae</i>	Rhizomes are used in curry and vegetables

Plants used for fish poisoning : Fishing is a part and parcel of the Rabha way of life. Poisoning of water of shallow streams and small river are some of the common practices used for catching fish. Several plants are used for poisoning fish.

1. Bish Dhekia ' → *Amphineuron estensus* ' → The entire plant is used for poisoning fish.

Plants used for dyeing clothe and yarn : The manufacture of dyeing materials has been known to the Rabhas. The Rabha women are interested in colours and insisted in getting the exact shades they prefer. They weave their own garments, typical bright coloured "Ruphan" (mekhal)

1. Haldi → *Curcuma domestica* → The rhizome is used frequently for yellowing yarn.

2. Bokal → *Mimusops elengi* → The bark yields a known colour on boiling which is used for dyeing cloth.

3. jetuka → *Lawsonia inermis* → The leaves yield an orange dye. The leaves are grinded into a paste squeezed. The bright orange colour is obtained and used for dyeing yarn.

4. Polash → *Butea monosperma* → yellow colour dye is extracted from the calyx of the flower for dyeing yarn and cloth.

Rice is indispensable item in among preparation : Straw is burnt and used in "Chhai Mod" is smoky in colour. Chhai mod is prepared only in the special occasion on any religious festivals. Important guests are entertained by offering 'Chhai Mod'.

Medicinal plant used by the Rabha people : The forests are very rich in wild medicinal plants. Large number of plants are being used by the local people for treating their major and minor ailments. The knowledge of traditional medicine of the Rabhas has handed from generation to generations. The available sources of such oral information have been collected solely from the village people. A total 30 plants species have been used against various diseases. A detailed list of the medicinal plants for treatment of various diseases by the Rabhas are given in table 2.

Table -II

Sl. No.	Local Name	Botanical Name	Family	Uses	Disease
01	Manimuni	<i>Centella asiatica</i>	<i>Apiaceae</i>	Leaves are boiled and taken	to improve poor memory
02	Raisung bakai	<i>Allium sativum</i>	<i>Liliaceae</i>	Some pieces are warmed with mustard oil and rubbed over the body and throat. It is used particularly for the children	Cough

03	Raisung	<i>Alliumcepa</i>	<i>Laliaceae</i>	Onion juice mixed with mustard oil. and applied on the affected parts. Onion is crushed and applied the paste on the head	Pain in limbs due to arthrities
04	Paduni lewa	<i>Paederia foetide</i>	<i>Rubiaceae</i>	Extract prepared from fried or boilded leaves are regularly administered orally to patients	Dysentery and chronic dysentery
06	Tulsi	<i>Ocimum Sanctum</i>	<i>Lamiaceae</i>	Fresh leaves crushed and rubbed over worn infected skin	Ring Worm
07	Thekra	<i>Garcinia Pedunculata</i>	<i>Guttiferaceae</i>	Preserved dried slices of fruits are soaked in water for some time	Blood dysentery
08	Gajor	<i>Daucus carota</i>	<i>Apiaceae</i>	Juice of carrot mixed with honey are taken orally	Blood impurities, urine retentions
09	Jam	<i>Engenia Jambolana</i>	<i>Myrtaceae</i>	Powder of dried fruit pulp with sugar are mixed	Blood in stools, dysentery
10	Sajona	<i>Maringa oleifera</i>	<i>Moringaceae</i>	Juice of leaves are applied on the affected areas frequently	Black heads, pimples
11	Kal	<i>Ocimum</i>	<i>Laminaceae</i>	Leaf juice are	Acne vulgaris

	tulsi	<i>basiticum</i>		applied on the affected areas	pimples
12	Golap	<i>Rosa centifolia</i>	<i>Rosaceaes</i>	Seeds and red rose are boiled in a water stained and taken	Anaenia
13	Neem	<i>Azadirachta indica</i>	<i>Meliaceae</i>	Massaging of the body with neem oil	Join pains rheumatium worm
14	Nanikal	<i>Cocos nucifera</i>	<i>Arecaceae</i>	Tender coconut water and milk extract are taken	Stomach ulcer
15	Dhania	<i>Cariandrum sativum</i>	<i>Apiaceae</i>	Seed are used	Abdominal Pain, Diarrhoea
16	Haldi	<i>Curcuma longa</i>	<i>Zingib eraceae</i>	A pasts of ginger and turmeric in heated and applied on affected part	Muscle sprain Anaemia
17	Dhatura	<i>Datura stramonium</i>	<i>Solanaceae</i>	Leaves and ginger are mixed with coconut oil applied on swollen limbs	Swollen legs
18	Pan	<i>Piper betel</i>	<i>Piperaceae</i>	A little castor oil is smeared, warmed the leaves and applied on affected areas	Arthritis, orchitis, and other type of local inflammation
19	Chirata tita	<i>Swertia chirate</i>	<i>Gentianaceae</i>	Juice of plant or an infusion of the dried part	Fever, indigestion skin disease
20	Orjun gos	<i>Terminalia arjuna</i>	<i>Combreticeae</i>	1 or 2 pinches of bark powder taken with water	Cirrhosis of lever, high Blood Pressuse

21	Jobaphol	<i>Hibiscus rosa sinensis</i>	<i>Malvaceae</i>	Flowers are boiled in Water and mixed with honey	Heart Problem
22	Poduma	<i>Mentha arvensis</i>	<i>Lamiaceae</i>	Leaf juice is used	Abdominal pain, fever, heart, burn jaundice poor digestion
23	Dalim	<i>Punic granatum</i>	<i>Puniaceae</i>	Seeds are mixed with ghee and taken	Dysentery

Religious and Rituals : The Rabhas have some religious rituals, among those the Hasong Puja, Grimbuda Puja and Baikhu Puja are famous for merry making as these pujas are performed annually for a particular occasion. The Hasong Puja is performed in the month of October and November every year before harvesting to offer prayer and extend thanks to the deity of crops. At the time of Hasong Puja prasad are offered to the deities of Laxmi, Langer, Tara Kanchu, lakhi and darmong etc with sacrificial offering like goat, pig, and tortoise. The Grimbuda puja is observed in month of October-November, before the Sali paddy blooms in the fields. Baikhu Puja is the greatest festival of the Rabhas which is performed during the full moon "Jeth Rangne" meaning the jeth purnima. Another religious festival of the tribe is connected with the propitiation of "Kachai Khaiti" daily presumed to be the protector of all humanity. Some pati Rabhas hold his puja simultaneously with the Langa Puja. Alternatively this Puja is known as "Dingapuja".

The Rabha marriage system is very important in respect essential of knowing some basic customary rules.

No marriage takes place between the same "Barai" (Barai means Gotra) or between to Barais" including in a 'Hur'. A "Hur" is alternatively called souru' and may better be expressed on 'Mitragotra'.

Plants used in construction : The construction pattern is very simple and it is rectangular in shape. Building materials required are first collected. The posts may be from durable timbers or nature bamboo. Before starting construction in the selected site, four bamboo pegs each of 1.5 feet long are posted at four corners of the boundary. This is a preliminary work ascertaining correctness of the angles. Other materials like Odal, jute and ropes obtained from wild climber are also used. When it is completed, then thatching starts. Thatch like *Imperata cylindrica*, *saccharum spontaneum* are commonly used for this purpose. Walls are made mainly of phragmites Kakra, *Saccharum* sp, *panicum* sp and bamboo splits. Wall is plastered with mud mixed with cowdung. The villagers assist each other in building their house without any remuneration. One invites his neighbours to help him in building his house on co-operative basis which is known as "Saori". This is a wonderful example of co-operation which is still prevailing in Rabha society. Plant used in house building are discussed in table III. Some of the plants are used for construction of a thatched house. These plants are discussed in table.

Table - III

Botanical Name	Family	Rabha Name	Part used
1. <i>Shorea robusta</i>	<i>Dipterocarpaceae</i>	Sal	Used as posts, plank and beams
2. <i>Dalbergia sissu</i>	<i>Papilionaceae</i>	Sissu	posts, door and windows panels
3. <i>Cassia fistula</i>	<i>Caesalpineae</i>	Sonaalu	Used as posts
4. <i>Artocarpus sheterophyllus</i>	<i>Moraceae</i>	Kanthal	door and window panel
5. <i>Garcinia cowa</i>	<i>Guttiferaceae</i>	Thekra tenga	used as posts

6. <i>Trema orientalis</i>	Cannabaceae	Kadam	Rope is prepared for house building
7. <i>Gmelina arborea</i>	Verbenaceae	Gamari	Best wood for plank, doors and window panels
8. <i>Cedrela toona</i>	Meliaceae	Poma	used as posts and beams

Table - IV

Botanical Name	Family	Rabha	Part used Name
1. <i>Imperata cylindrical</i>	Poaceae	Alua kher	Used for roofing
2. <i>Saccharum sponteneum</i>	Poaceae	Kasi kher	Used for wall and ceiling
3. <i>Arundo donax</i>	Poaceae	Nol	For making door ceiling wall and

Wild Vegetables : Wild vegetable plants belonging to the families of solanaceae, cucurbitaceae, Astaraceae, chenopodiaceae, Anacardiceae, piperaceae, Apocynaceae, Euphorbiaceae, Tiliceae etc grow wild in the forest. Some of the very common and widely used leafy wild vegetables are grown in own kichen gardens. No oil and very less oil is used as cooking medium in preparing the leafy vegetable. Unripe and young fruits are very often used as vegetables. A few species of solanum of the family Solanaceae are also used as vegetable. A few plants belonging to the family Cucurbitaceae are also used as edible fruits and vegetables.

Famine food : Discovery of technique of growing food plants probably compelled the early man to give up his nomadic habit. Firstly he had to wait till the time of harvesting of his products and secondly he had to keep a constant watch on his crop to protect it from wild animals. However probably the product was not sufficient for the whole year and there were probable losses due to the frequent attack

of wild animals and other insects pests. Natural calamities consequently compell man to search for alternative source of food other than from the jungle. As necessity leads to new invention in course of time, the early man had discovered some important wild plants which could serve as an alternative food for him during the lean period. The Rabhas also used a few domestic and wild plants as source of alternative food during famine. A list of such important plants is given below.

Table - V

Botanical Name	Family	Rabha Name	Part used
1. <i>Colocasice andiquorum</i>	Araceae	Kachu	The leaf, stalks are cooked and eaten.
2. <i>Bambusa tulda</i>	Poaceae	Jati banh	The young shoot is taken as food

Plants used as birth control : Rabha tribes traditionally used some plants for birth control .

- A. *Abrus precatorius* ; powder seeds are crushed into and mixed with the content of crushed seed of *Ricinus communis*
- B. *Ricinus communis*

The mixture of *Arbus precatorius* and *Ricinus communis* is taken orally by diluting with water during mensuration

C. *Amaranthus spinosus* ; The leaf extracted of A. Spinosus mixed with the juice extracted from root of M. para are taken orally.

Plant used as herbel galactogogues. *Carica papaya* plants are used for flow of breast milk .

Part used- Powder of root bark taken orally . Unripe fruits cut into pieces and boiled. Pices taken with slight salt.

Conservation of plants and plant resources among the Rabhas communities of Mataikhar Reserve forest : There are wide range of animistic conceptions associated with vegetation, groves plant species and forest worship among the Rabhas communities. The Rabha communities believed in supernatural power and they considered that unique vegetation, unnatural grove, forest with specific plant etc. are the dwelling place of supernatural powers and ancestral souls. It is believed that any injury to these plants brings incurable disease which leads to death. As a result some trees of amazing size belonging to different species are frequently found near villages, which help indirectly in conservation of that species and also conservation of biodiversity in the area. Some example of such plants, *Dillenia-indica*, *Mangifera indica*, *Ficus bengalensis*. Medicinemen never uproot or pluck the whole plant gathering the medicinal roots, tubers, rhizomes, tender shoots, fruits from single population. They collect only the useful parts. There is a practice among medicine man not to introduce the medicinal plants to other, which is a very important conservation system among the Rabha community. As a result a good number of creepers, herbs, shrubs and trees are found in the forest. These plants particularly represent the species most of the taxa of the surrounding vegetation.

Hence, the forest shrine plays an important role in conservation of genetic resources as well as biodiversity of the area.

CONCLUSION : After visiting different places and approaching different Rabha people, it has been observed that varieties of wild plants used by Rabhas from the forest have not been identified so on. They use not only the edible ones but also numerous medicinal and otherwise medicinal herbs from curing their disease. From the study it has also evolved that large number of grasses and unknown plants are used by the Rabhas. The study of different places suggest complex relationship between medicinal plants used and migrating people. Additional investigation on Ethnobotanical uses of women's

plants will strive to elucidate specific uses, administration of historical agencies. The forest resources include food of vegetables plants, timber, medicinal, food, beverage and plants of miscellaneous uses. It has been observed that these Rabha people have their own unique culture, tradition, medicinal practice, rituals, belief etc. and they make use of various plants that too mostly herbaceous in meeting their requirement. The economy of ethnic groups of people is basically agricultural. The present study tried to document the traditional knowledge of plant utilization of this area. □

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THE FOUR NOBLE TRUTHS OF THE BUDDHA

Mridula Baishya

The philosophical thoughts of Buddhism involved the background of the teaching of Gautama Buddha. His teaching was at first in Pali and then were translated into Sanskrit. Buddha's teaching is to be found in the three Pitakas which constitute the Pali literature. They are such as-

1. The Sutta Pitaka.
2. The Vinaya Pitaka.
3. The Abhidhama Pitaka.

Gautama Buddha was primarily an ethical teacher and social reformer, not a metaphysician. The message of his enlightenment points out the way of life that leads beyond suffering. Buddha mentions about pain but he is not pessimistic because he finally finds out the way from pain. The teaching of Buddha may be said to be three folds-

1. The four noble truths.
2. The noble eight fold path.
3. The doctrine of dependent origination.

FOUR NOBLE TRUTHS :

Buddha discovered four noble truths in his attempt to remove suffering. These four noble truths are following:

1. There is suffering. [Dukha.]

2. There is a cause of suffering.[Dukha - Samudaya.]
3. There is a cessation of suffering.[Dukha -Nirodha.]
4. There is a way leading to the cessation of suffering.[Dukha - Nirodha marga.]

The first noble truths state that there is suffering. According to Buddha life is full of misery. Even the so called pleasures are mixed with pain. Buddha stated that “there is pain in birth, destruction is painful, separation from pleasure is painful and passion is painful.”

The second noble truth is concerned with the cause of suffering. When conditions are fulfilled then alone something arises. Everything of this world is conditional and relative. This point is presented in Buddhism in the form of a doctrine. The doctrine is called the doctrine of the Dependent Origination (pratitya samudpada). Buddha stated that there is a twelve link causal chain. In this twelve link causal chain, ignorance is the root cause of suffering. The twelve link causal chain connects ignorance with suffering in the following:

1. Ignorance
2. Past impression.
3. Initial consciousness of the embryo.
4. Psycho physical organism.
5. Six sense organs, including the mind.
6. Sense object contact.
7. Sense experience.
8. Thirst for sense object.
9. Clinging.
10. Will to be born.
11. Birth or rebirth.
12. Old age and death (suffering).

The third noble truth states that there is a cessation of suffering. Everything arises when certain conditions are fulfilled. When these conditions are removed then the thing also ceases to be. Suffering has a cause and therefore it is conditional. When the cause of suffering

is destroyed then suffering also comes to an end. This is a central idea that we find in the third noble truth.

In the fourth noble truth the Buddha stated that there is a way out of suffering. The famous noble eight fold path is discussed in certain details in Buddhism. This noble eight fold path is known as Astāngika mārḡa. The noble eight-fold path involves the following:

1. Right faith.
2. Right resolve.
3. Right speech.
4. Right action.
5. Right living.
6. Right effort.
7. Right thought.
8. Right concentration or right mindfulness.

Someone who follows this noble eight fold path can obtain liberation (nirvāna). He becomes free from suffering.

Buddha's account of the four noble truths occupied a very important place in both philosophy and religion. Buddha here gave an ethical solution to the problem of suffering that touches every walk of our life. The four noble truths may be criticized on the ground that the problem of suffering is a real problem. Buddha attempted to give an ideal solution to real problem. That is his basic drawback. Moreover, it may be pointed out that our sufferings belong to different types. They have different formulations. Buddha grouped them together. Thereby perhaps a mistake is committed. Buddha's ideal solution to a real problem could not satisfy all philosophers.

CONCLUSION:

Buddha teaches neither self-indulgence nor self-mortification. It teaches the middle path of right knowledge, right speech and right conduct. Buddha teaches the religion of nonviolence. He always tried to avoid the metaphysical discussion because it cannot solve our day

to day life problem. Our main problem is suffering and we should concentrate our mind to solve how we can get rid of sufferings. Generally the human mind tends to attract materialistic welfare which ultimately leads us to be self-centered. Pursuit of pleasure makes us arrogant about our life. Buddha's eight-fold path can bring a change in our thinking and decision-making process. Progress of individual as well as society is not possible without morality. Today we are working against the ideas as laid down by that noble personality. It is my opinion that if we put the ideas of Buddha into practice we can do away with the burning evils of our society like murder, rape, violence, corruption etc. To lead a virtuous life through honest means is the ideal of life and Buddha's thought reminds us of this great truth. □

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অসমীয়া আৰু বাংলা ভাষাৰ সম্বন্ধবাচক শব্দ : এটি তুলনা

ড° মনালিছা বৰা

আধুনিক ভাৰতীয় আৰ্যভাষাসমূহৰ ভিতৰত অসমত প্ৰচলিত অসমীয়া ভাষা আৰু বংগদেশত প্ৰচলিত বাংলা ভাষা হ'ল অতি সমৃদ্ধিশালী ভাষা। প্ৰাচীন ঐতিহ্য, সাহিত্য-সংস্কৃতিৰে সমৃদ্ধ এই দুয়োটা ভাষাই আনুমানিক খ্ৰীষ্টাব্দ নৱম-দশম শতিকাত জন্ম লাভ কৰিবলৈ সক্ষম হয়। মাগধী প্ৰাকৃতৰ পৰা অৰ্থাৎ মাগধী প্ৰাকৃত অপভ্ৰংশৰ প্ৰাচ্য শাখাৰ পৰা অসমীয়া, বাংলা আৰু উড়িয়া ভাষাৰ উদ্ভৱ হয়।^১ একেটা মূলৰ পৰা জন্ম লাভ কৰা বাবে অসমীয়া আৰু বাংলা ভাষাৰ মাজত এনে কিছুমান সুকীয়া বৈশিষ্ট্য আছে যিবোৰে দুয়োটা ভাষাৰ বৈসাদৃশ্য প্ৰতিপন্ন কৰি দুয়োটা ভাষাকে স্বকীয় ৰূপত তুলি ধৰিবলৈ সক্ষম হৈছে। একে উৎসৰ পৰা উদ্ভৱ আৰু বিকাশ লাভ কৰা বাবে গাঁথনিক দিশত অসমীয়া আৰু বাংলা ভাষাৰ মাজত মিল আৰু অমিল দুয়োটাই দেখা যায়। অৰ্থাৎ, ভূগীস্থানীয় এই দুয়োটা ভাষাৰ ধ্বনিতত্ত্ব, ৰূপতত্ত্ব আৰু শব্দসম্ভাৰৰ ক্ষেত্ৰত কোনো কোনো দিশত কিছুমান সাদৃশ্য আৰু কোনো কোনো দিশত কিছুমান সুকীয়া বিশেষত্ব পৰিলক্ষিত হয়। এই দুয়োটা ভাষাৰ মাজত থকা সাদৃশ্য আৰু বৈসাদৃশ্য বিচাৰ কৰি স্বকীয় বৈশিষ্ট্য নিৰূপণ কৰিবৰ বাবে তুলনামূলক অধ্যয়নৰ প্ৰয়োজনীয়তা আছে।

ভাষাৰ অধ্যয়নত ধ্বনিতত্ত্ব, ৰূপতত্ত্ব, শব্দতত্ত্ব এই কেউটা দিশেই প্ৰধান ভূমিকা গ্ৰহণ কৰে। ৰূপতাত্ত্বিক অধ্যয়নত শব্দৰ প্ৰয়োগ, শব্দৰ গঠন আৰু প্ৰকাৰ আদি বিষয় অন্তৰ্ভুক্ত হয়। ভাষাৰ ৰূপতাত্ত্বিক অধ্যয়নৰ এক অন্যতম দিশ হ'ল সম্বন্ধবাচক শব্দৰ ব্যৱহাৰ। ভাষাত ব্যৱহৃত সম্বন্ধবাচক শব্দসমূহে ভাষাৰ বৈশিষ্ট্য নিৰূপণত ভালেখিনি অৰিহণা যোগায়। ভাষা এটাত বিভিন্ন ধৰণৰ শব্দৰ প্ৰয়োগ পোৱা যায়। ভাষাত ব্যৱহৃত শব্দসমূহৰ ভিতৰত বিশেষ্য শব্দসমূহ অন্যতম। অসমীয়া আৰু বাংলা ভাষাত ব্যৱহৃত

বিশেষ্য শব্দসমূহক কেইবাটাও ভাগত ভাগ কৰিব পাৰি। তাৰ ভিতৰত সম্বন্ধবাচক বিশেষ্য শব্দসমূহৰ এক বিশেষ গুৰুত্ব আছে। অসমীয়া আৰু বাংলা এই দুয়ো ভাষাতে বিভিন্ন ধৰণৰ সম্বন্ধবাচক বিশেষ্য শব্দৰ প্ৰয়োগ পোৱা যায়। সম্বন্ধবাচক বিশেষ্য শব্দৰ প্ৰয়োগে দুয়োটা ভাষাৰে স্বকীয়তা ফুটাই তোলাৰ লগতে দুয়ো ভাষাৰ শব্দমালাকো পৰিপূৰ্ত্ত কৰি তুলিবলৈ সক্ষম হৈছে। সম্বন্ধবাচক শব্দৰ ক্ষেত্ৰত দুয়ো ভাষাতে কিছুমান সাদৃশ্য আৰু বৈসাদৃশ্য দেখা যায়। সম্বন্ধবাচক শব্দৰ ক্ষেত্ৰত অসমীয়া আৰু বাংলা ভাষাৰ সাদৃশ্য আৰু পাৰ্থক্যসমূহ বিচাৰ কৰি স্বকীয় বৈশিষ্ট্যসমূহ নিৰূপণ কৰিবৰ বাবে 'অসমীয়া আৰু বাংলা ভাষাৰ সম্বন্ধবাচক শব্দ : এটি তুলনা' এই বিষয়টো আলোচনাৰ বাবে বাছি লোৱা হৈছে। প্ৰবন্ধটো প্ৰস্তুত কৰিবলৈ যাওঁতে দুয়ো ভাষাৰ পৰা সম্বন্ধবাচক শব্দৰ তথ্য সংগ্ৰহ কৰি সেই তথ্যসমূহ তুলনামূলক পদ্ধতিৰে বিশ্লেষণ কৰা হৈছে। তলত অসমীয়া আৰু বাংলা ভাষাত ব্যৱহৃত সম্বন্ধবাচক বিশেষ্য শব্দৰ এটি তুলনামূলক আলোচনা দাঙি ধৰাৰ প্ৰয়াস কৰা হ'ল—

অসমীয়া ভাষাৰ সম্বন্ধবাচক শব্দ :

সম্বন্ধবাচক বিশেষ্য শব্দৰ ক্ষেত্ৰত অসমীয়া ভাষা অতি চহকী। অসমীয়া ভাষাত বিভিন্ন ধৰণৰ সম্বন্ধবাচক শব্দৰ প্ৰয়োগ পোৱা যায়। অসমীয়া ভাষাৰ সম্বন্ধবাচক শব্দবোৰ জন্মসূত্ৰে, বৈবাহিকসূত্ৰে আৰু সামাজিকসূত্ৰে— এইদৰে কেইবা ধৰণেও গঢ়ি উঠে। এই তিনিধৰণে গঢ় লৈ উঠা সম্বন্ধবাচক শব্দসমূহ হ'ল—

জন্মসূত্ৰে : মা, দেউতা, ককা, আইতা, আজুককা, আজু আইতা, খুৰা, বৰদেউতা, পেহী, জেঠাই, ককাই, ভাই, বাই, ভনী, পো, জীয়াৰী, নাতি, নাতিনী, মামা, মাহী, ভতিজা, ভতিজী ইত্যাদি।

বৈবাহিকসূত্ৰে : শহুৰ, শাহু, বৰমা, খুৰী, জোঁৱাই, বোৱাৰী, পেহা, মহা, জেঠো, ভনীজোঁৱাই, দেওৰ, ননন্দ, জা, ভিনিহি, মামী, নবৌ, বৰজনা/জেঠাল, খুৰশালী, জেঠেৰী, বৈনাই, শালপতি, জেশাহু, সতিনী, বিয়ে, বিয়নী, ভাগিন, ভাগিনী ইত্যাদি।

সামাজিকসূত্ৰে : তাই, আঁমৈ, মিত্ৰ, সখি, মিতা, মিতিনী ইত্যাদি।

অতি আদৰ অৰ্থত সৰু ল'ৰা- ছোৱালীক সম্বোধন কৰিবলৈ অসমীয়া ভাষাত মইনা, বাবু, সোণ, ধন আদি শব্দ ব্যৱহাৰ কৰা হয়। এইদৰে অসমীয়া ভাষাত বিভিন্ন ধৰণৰ সম্বন্ধবাচক শব্দৰ প্ৰয়োগ পোৱা যায়।

অসমীয়া ভাষাত ব্যৱহৃত সম্বন্ধবাচক শব্দসমূহৰ সৰ্বসংখ্যক শব্দৰেই মূল হ'ল সংস্কৃত। অৰ্থাৎ, সংস্কৃতৰ পৰা পালি-প্ৰাকৃত-অপভ্ৰংশ স্তৰৰ মাজেদি বিকাশ লাভ কৰি অহা প্ৰায়বোৰ সম্বন্ধবাচক শব্দই তদ্ভৱ শব্দ। সম্বন্ধবাচক শব্দবোৰক গঠন অনুসৰি মৌলিক আৰু যৌগিক— এই দুটা ভাগত ভাগ কৰিব পাৰি। মৌলিক শব্দবোৰক খণ্ড-খণ্ডকৈ ভাঙি দেখুৱাব নোৱাৰি। অসমীয়া ভাষাৰ মৌলিক সম্বন্ধবাচক শব্দবোৰ হ'ল— শহুৰ, শাহু, পো, ককা, পিতা, ননদ, নাতি, বাই, ভনী, খুৰা, ভতিজা, মহা, ভাগিন, মামী ইত্যাদি। যৌগিক সম্বন্ধবাচক শব্দবোৰ গঠন কৰিবলৈ মূল শব্দৰ পাছত বিভিন্ন প্ৰত্যয় সংযোগ কৰা হয়। যেনে— ককাই (ই), জেঠাল (আল), দেউতা, আইতা (তা), জীয়াৰী, বোৱাৰী (আৰী), বৰমা, বৰদেউতা (বৰ), জেশাহু (জে), বাইদেউ, মহাদেউ (দেউ), ককাইদেউ, মোমাইদেউ, দদাইদেউ (ই + দেউ) ইত্যাদি ৰূপবোৰলৈ আঙুলিয়াব পাৰি।

অসমীয়া ভাষাৰ সম্বন্ধবাচক শব্দসমূহ কেইবাটাও দিশৰ দ্বাৰা নিৰ্ণিত হয়। অৰ্থাৎ, সামাজিক পৰম্পৰা, ধৰ্ম, জাতি বা গোষ্ঠীভেদে এই সম্বন্ধবাচক শব্দসমূহৰ ভিন্নতা লক্ষ্য কৰা যায়। তদুপৰি অসমীয়া ভাষাৰ অন্তৰ্গত ভিন ভিন উপভাষা বা আঞ্চলিক ৰূপবোৰতো বেলেগ বেলেগ সম্বন্ধবাচক শব্দৰ প্ৰয়োগ পোৱা যায়। অসমীয়া ভাষাত প্ৰয়োগ হোৱা সম্বন্ধবাচক বিশেষ্য শব্দসমূহৰ কিছুমান বিশেষত্ব পৰিলক্ষিত হয়। সেই বিশেষত্ববোৰ হ'ল—

(ক) অসমীয়া ভাষাত সম্বন্ধবাচক শব্দবোৰ দুই ধৰণে প্ৰয়োগ হয়। কিছুমান সম্বন্ধবাচক শব্দ নিৰ্দেশৰ ক্ষেত্ৰত (Terms of reference) প্ৰয়োগ হয় আৰু আন কিছুমান সম্বন্ধবাচক শব্দ সম্বোধনৰ ক্ষেত্ৰত (Terms of address) ব্যৱহাৰ হয়। নিদৰ্শন স্বৰূপে— মাক, দেউতাক, শহুৰ, শাহু, স্বামী, স্ত্ৰী, দেওৰ, ননদ, পুত্ৰ, কন্যা, জেঠাল, জেশাহু, ককায়েক, ভনীয়েক ইত্যাদি। সম্বন্ধবাচক শব্দবোৰ নিৰ্দেশৰ ক্ষেত্ৰতহে প্ৰয়োগ হয়। সেইদৰে পিতা, মাতা, তাই, আঁমৈ, ককা, আইতা, দাদা, নবৌ, খুৰা, খুৰী, মামা, মামী, মা, দেউতা, পেহী, মাহী ইত্যাদি সম্বন্ধবাচক শব্দবোৰ সম্বোধনৰ ক্ষেত্ৰত প্ৰয়োগ হয়। অৰ্থাৎ, অসমীয়া ভাষাত সংস্কৃত বা তৎসম সম্বন্ধবাচক শব্দসমূহৰ অধিকাংশই নিৰ্দেশৰ ক্ষেত্ৰত ব্যৱহাৰ হয় আৰু সৰ্বসংখ্যক তদ্ভৱ সম্বন্ধবাচক শব্দই সম্বোধনৰ ক্ষেত্ৰত প্ৰয়োগ হয়।

(খ) অসমীয়া ভাষাৰ সম্বন্ধবাচক শব্দসমূহৰ এটা প্ৰধান বৈশিষ্ট্য হ'ল এই শব্দসমূহত পুৰুষৰ বিভক্তি সংযোগ হয়। অৰ্থাৎ, সম্বন্ধবাচক শব্দত পুৰুষ অনুযায়ী বেলেগ বেলেগ

বিভক্তি লগ লাগে। পুৰুষৰ বিভক্তি সংযোগ হোৱাৰ পাছতহে কাৰক বা আন আন বিভক্তি সংযোগ হয়। অসমীয়া ভাষাৰ সম্বন্ধবাচক শব্দত স্বৰাস্ত আৰু ব্যঞ্জনাস্ত অনুসৰি লগ লগা পুৰুষবাচক বিভক্তিবোৰ ভিন ভিন। নিদৰ্শন স্বৰূপে—

পুৰুষ	সম্বন্ধবাচক শব্দ	পুৰুষৰ বিভক্তি
প্ৰথম পুৰুষ	মোৰ দেউতা/ভনী	- ০
দ্বিতীয় মান্য পুৰুষ	তোমাৰ দেউতাৰা/ভনীয়েৰা	- ৰা/- এৰা
দ্বিতীয় তুচ্ছ পুৰুষ	তোৰ দেউতাৰা/ভনীয়েৰ	- ৰ/- এৰ
তৃতীয় পুৰুষ	তাৰ দেউতাক/ভনীয়েক	- ক/- এক

অসমীয়া ভাষাৰ সম্বন্ধবাচক শব্দৰ লগত পুৰুষৰ বিভক্তি সংযোগ হোৱা এই বৈশিষ্ট্যটো আন নব্য ভাৰতীয় আৰ্য ভাষাত পোৱা নাযায়। ভাষাবিদ গ্ৰীয়াৰ্ছন চাহাবে অসমীয়া ভাষাৰ সম্বন্ধবাচক শব্দত পুৰুষৰ বিভক্তি সংযোগ হোৱা ৰীতিটোত তিব্বতবৰ্মী ভাষাৰ প্ৰভাৱৰ কথা উল্লেখ কৰিছে।^১ ড° বাণীকান্ত কাকতিয়ে অসমীয়া ভাষাৰ সম্বন্ধবাচক শব্দত পুৰুষৰ বিভক্তি সংযোগ হোৱা এই ৰীতিটোত অষ্ট্ৰিক ভাষাৰ প্ৰভাৱ বুলি মত প্ৰকাশ কৰিছে।^২ গতিকে সম্বন্ধবাচক শব্দত পুৰুষ অনুসৰি বিভক্তি সংযোগ হোৱা এই বৈশিষ্ট্যটো আৰ্যভিন্ন ভাষাৰ প্ৰভাৱত অসমীয়া ভাষাত সোমাই পৰিছে বুলি ক'ব পাৰি।

(গ) অসমীয়া ভাষাত যথেষ্টসংখ্যক সম্বন্ধবাচক শব্দৰ প্ৰয়োগ পোৱা যায়। অসমীয়া সম্বন্ধবাচক শব্দৰ আন এটা বৈশিষ্ট্য হৈছে বয়স অনুসৰি ডাঙৰ-সৰু বুজাবলৈ অসমীয়া ভাষাত বেলেগ বেলেগ সম্বন্ধবাচক শব্দৰ ব্যৱহাৰ কৰা হয়। বয়সত ডাঙৰ-সৰু বুজাবলৈ ভিন ভিন সম্বন্ধবাচক শব্দৰ ব্যৱহাৰে নব্য ভাৰতীয় আৰ্যভাষা অসমীয়াক এক স্বকীয় ৰূপ প্ৰদান কৰিছে। নিদৰ্শন স্বৰূপে— ককাই-ভাই, জেঠাই-মাহী, খুৰা-বৰদেউতা, বৰজনা-দেওৰ, বাই-ভনী, ভিনিহি-বৈনাই ইত্যাদি। তিব্বতবৰ্মী ভাষাবোৰতো এই বৈশিষ্ট্যটো দেখিবলৈ পোৱা যায় বাবে পণ্ডিতসকলে অসমীয়া ভাষাৰ এই বৈশিষ্ট্যটোও তিব্বতবৰ্মী ভাষাৰ ফল বুলি অনুমান কৰিছে।

অসমীয়া ভাষাৰ সম্বন্ধবাচক শব্দসমূহৰ কিছুমান পুংলিঙ্গবাচক আৰু কিছুমান

স্ত্ৰীলিঙ্গবাচক। অৰ্থাৎ দেউতা, ককা, খুৰা, মামা, বৰদেউতা, দেওৰ, জেঠাল, জেঠেৰী, ভিনিহি, মহা, পেহা, আদি ৰূপবোৰ পুংলিঙ্গবাচক আৰু মা, আইতা, পেহী, মাহী, মামী, খুৰী, বৰমা, বাইদেউ আদি ৰূপবোৰে স্ত্ৰীলিঙ্গ নিৰ্দেশ কৰে। তদুপৰি অসমীয়া ভাষাত দুটামান সম্বন্ধবাচক শব্দ লিঙ্গ নিৰপেক্ষ ৰূপত পোৱা যায়। অসমীয়া ভাষাত ভাগিন-ভাগিনী, ভতিজা-ভতিজী এই দুয়োটা ৰূপ পোৱা যদিও সাধাৰণতে ভাগিন আৰু ভতিজা শব্দই পুংলিঙ্গ আৰু স্ত্ৰীলিঙ্গ উভয়কেই সামৰি লয়। সেইদৰে অসমীয়া ভাষাত 'খুৰশালী' শব্দই পত্নীৰ ভায়েক-ভনীয়েক উভয়কেই বুজায়। আকৌ সখি, বন্ধু আদি শব্দও লিঙ্গ নিৰপেক্ষ ৰূপত প্ৰয়োগ হয়।

বাংলা ভাষাৰ সম্বন্ধবাচক শব্দ :

অসমীয়া ভাষাৰ দৰে সম্বন্ধবাচক শব্দৰ ক্ষেত্ৰত বাংলা ভাষাও যথেষ্ট সমৃদ্ধিশালী। বাংলা ভাষাতো যথেষ্টসংখ্যক সম্বন্ধবাচক শব্দ পোৱা যায় আৰু এই শব্দবোৰক জন্মসূত্ৰে, বৈবাহিকসূত্ৰে আৰু সামাজিকসূত্ৰে—এই তিনিটা ভাগত ভাগ কৰিব পাৰি। বাংলা ভাষাত এই তিনি ধৰণে গঢ় লৈ উঠা সম্বন্ধবাচক শব্দৰ নিদৰ্শন হ'ল—

জন্মসূত্ৰে : মা, বাবা, দাদু, দিদা বা দিদিমা, ঠাকুৱদা, ঠাকুৱমা, ভাই, বোন, নাতি, নাতিন, ছেলে, মেয়ে, বড়দাদু, বড়দাদী, কাকা, দাদা, দিদি, পিসি, মামা, মাসী, ভতিজা, জেঠামশায় ইত্যাদি।

বৈবাহিকসূত্ৰে : শ্বশুৱ, শ্বাশুৱী, পিসামশায়, কাকীমা বা কাকীমণি, দেওৱ, ননন্দ, ভাগনা, ভাগনী, মামী, জেঠীমা, মেসোমশায়, জা, ভাশুৱ, জামাই বা জামাতা, বউ বা বউমা, বৌদি, সম্বন্ধী, ভগ্নীপতি, ভাইৱা ভাই, জামাইবাবু, শালা, শালী, ননাইশ, জেবাইশ, বিয়ান, বিয়েনী, তালৈ, মাইও, স্বামী, স্ত্ৰী, সতিন ইত্যাদি।

সামাজিকসূত্ৰে : সখি, মিত্ৰ, সংগী, সংগিনী ইত্যাদি।

এইদৰে বাংলা ভাষাত যথেষ্টসংখ্যক সম্বন্ধবাচক শব্দ পোৱা যায়। এইবোৰৰ উপৰি বাংলা ভাষাৰ আঞ্চলিক ৰূপ বা উপভাষাবোৰতো কিছুমান সম্বন্ধবাচক শব্দৰ প্ৰয়োগ আছে। বাংলা ভাষাৰ সম্বন্ধবাচক শব্দসমূহৰ কিছুমান আৰ্যমূলীয় আৰু আন কিছুমান অনা-আৰ্যমূলীয়। সেইদৰে কেতবোৰ সম্বন্ধবাচক শব্দ মৌলিক আৰু কেতবোৰ সম্বন্ধবাচক শব্দ যৌগিক। অসমীয়া ভাষাৰ দৰে বাংলা ভাষাৰ সম্বন্ধবাচক শব্দসমূহৰো কিছুমান বৈশিষ্ট্য দেখিবলৈ পোৱা যায়। সেই বৈশিষ্ট্যসমূহ হ'ল—

২ Grierson, G. A. : L S I, V. IV, P-43

৩ Kakati, Banikanta : Assamese, its Formation and Development, P-289

(ক) অসমীয়া ভাষাৰ দৰে বাংলা ভাষাতো বয়সত ডাঙৰ-সৰু বুজাবলৈ বেলেগ বেলেগ সম্বন্ধবাচক শব্দ ব্যৱহাৰ হোৱা দেখা যায়। নিদৰ্শন স্বৰূপে— দিদি-বোন, দাদা-ভাই, জেঠামশায় (দেউতাকতকৈ ডাঙৰ)-কাকা (দেউতাকতকৈ সৰু), ভাশুৰ (স্বামীৰ ককায়েক)-দেওৰ (স্বামীৰ ভায়েক), ননাইশ্ (স্বামীৰ বায়েক)-ননন্দ (স্বামীৰ ভনীয়েক), জেবাইশ্ (পত্নীৰ বায়েক)-শালী (পত্নীৰ ভনীয়েক) ইত্যাদি।

(খ) সম্বন্ধবাচক শব্দৰ প্ৰয়োগৰ ক্ষেত্ৰত বাংলা ভাষাত কিছুমান সুকীয়া বিশেষত্ব পৰিলক্ষিত হয়। অৰ্থাৎ, বাংলা ভাষাত ককা আৰু আইতা বুজোৱা দুটাকৈ সম্বন্ধবাচক শব্দ পোৱা যায়। বাংলা ভাষাত ককা বুজাবলৈ দাদু (মাতৃপক্ষৰ) আৰু ঠাকুৰদা (পিতৃপক্ষৰ) এই দুটা শব্দৰ প্ৰয়োগ হয়। সেইদৰে আইতা বুজাবলৈ দিদা বা দিদিমা (মাতৃপক্ষৰ) আৰু ঠাকুৰমা (পিতৃপক্ষৰ) এই দুটা শব্দ পোৱা যায়। আকৌ বাংলা ভাষাত স্বামীৰ বায়েকক বুজাবলৈ ননাইশ্ আৰু পত্নীৰ বায়েকক বুজাবলৈ জেবাইশ্ শব্দৰ ব্যৱহাৰ হোৱা দেখা যায়।

(গ) বাংলা ভাষাত ব্যৱহৃত সম্বন্ধবাচক শব্দৰ আন এটা বৈশিষ্ট্য হ'ল— এই ভাষাত পেহী, মাহী, মামা, খুৰা, বৰদেউতা আদিৰ ল'ৰা-ছোৱালী (ককাই-ভাই, বাই-ভনী আদি) ৰ সম্বন্ধ বুজাবলৈ কিছুমান সম্বন্ধবাচক শব্দ ব্যৱহাৰ কৰা হয়। নিদৰ্শন স্বৰূপে—

পিস্ততু বোন / ভাই / দিদি / দাদা,

মেস্ততু বোন / ভাই / দিদি / দাদা,

মামাতু বোন / ভাই / দিদি / দাদা,

কাকাতু বোন / ভাই / দিদি / দাদা,

জেঠততু / বোন / ভাই / দিদি / দাদা ইত্যাদি।

বাংলা ভাষাত ব্যৱহৃত সম্বন্ধবাচক শব্দসমূহ বিশ্লেষণ কৰিলে দেখা যায় যে বাংলা সমাজত 'তালৈ' আৰু 'মাইও' এই দুটা সম্বন্ধবাচক শব্দ পোৱা যায় যি দুটা শব্দই কেতবোৰ বিশেষ সম্বন্ধক বুজায়। অৰ্থাৎ, বাংলা ভাষাত ককাই-ভাই, বাই-ভনীৰ শহুৰেকক বুজাবলৈ 'তালৈ' সম্বন্ধবাচক শব্দ ব্যৱহাৰ কৰা হয় আৰু ককাই-ভাই, বাই-ভনীৰ শাহুৰেকক বুজাবলৈ 'মাইও' শব্দ ব্যৱহাৰ কৰা হয়।

বৰ্তমান আমাৰ সমাজৰ পৰিয়াল ব্যৱস্থাৰ তুলনাত আগৰ পৰিয়াল ব্যৱস্থাৰ যথেষ্ট পাৰ্থক্য আছিল। আজি-কালি দুই এটা ল'ৰা-ছোৱালীৰ সৈতে একক পৰিয়ালৰ ঠাইত

আগৰ কালত যৌথ পৰিয়াল ব্যৱস্থাত ল'ৰা-ছোৱালীৰ সংখ্যা বেছি আছিল আৰু সেই অনুযায়ী কিছুমান সম্বন্ধবাচক শব্দ গঢ়ি উঠিছিল। বাংলা ভাষাত কেইবাগৰাকী বায়েক-ভনীয়েকৰ মাজৰ সম্বন্ধ বুজাবলৈ ক্ৰমে বড়দি / মেজদি / সেজদি / ছোড়দি আদি সম্বন্ধবাচক শব্দ প্ৰয়োগ কৰা হৈছিল। আকৌ কেইবাজনো ককাই-ভাইৰ মাজৰ সম্বন্ধ বুজাবলৈ বড়দা / মেজদা / সেজদা / ছোড়দা আদি সম্বন্ধবাচক শব্দ প্ৰয়োগ কৰা দেখা যায়। অতি আদৰ অৰ্থত সৰু ল'ৰা-ছোৱালীক বুজাবৰ বাবে বাংলা ভাষাত খোকা, খুকী, খুকুন আদি সম্বন্ধবাচক শব্দ ব্যৱহাৰ কৰা হয়।

অসমীয়া ভাষাৰ দৰে বাংলা ভাষাৰো কিছুমান সম্বন্ধবাচক শব্দ পুংলিঙ্গবাচক আৰু কিছুমান সম্বন্ধবাচক শব্দ স্ত্ৰীলিঙ্গবাচক। নিদৰ্শন স্বৰূপে— বাবা, দাদু, ছেলে, কাকা, দেওৰ, মামা, শ্বশুৰ, ভাশুৰ, জামাই, দাদা, শালা, বিয়ান, সমস্কী ইত্যাদি শব্দই পুংলিঙ্গ বুজায় আৰু মা, দিদিমা, পিসি, বোন, কাকীমা, ননন্দ, শ্বাশুৱী, দিদি, মাসী, জেঠীমা, বৌদি, শালী আদি শব্দই স্ত্ৰীলিঙ্গ নিৰ্দেশ কৰে।

তুলনা :

অসমীয়া আৰু বাংলা ভাষাত ব্যৱহৃত সম্বন্ধবাচক শব্দসমূহৰ বিষয়ে আলোচনা কৰিলে দেখা যায় যে দুয়ো ভাষাতে যথেষ্টসংখ্যক সম্বন্ধবাচক শব্দৰ প্ৰয়োগ ঘটিছে। দুয়ো ভাষাত ব্যৱহৃত সম্বন্ধবাচক শব্দসমূহৰ মাজত কিছুমান দিশত সাদৃশ্য আৰু কিছুমান দিশত বৈসাদৃশ্য পৰিলক্ষিত হয়। সেইবোৰ হ'ল—

সাদৃশ্য :

(ক) অসমীয়া আৰু বাংলা এই দুয়ো ভাষাতে ব্যৱহৃত সম্বন্ধবাচক শব্দসমূহৰ কিছুমান সংস্কৃতমূলীয় আৰু কিছুমান অনা-সংস্কৃতমূলীয়।

(খ) দুয়ো ভাষাতে বয়সত ডাঙৰ-সৰু বুজাবলৈ ভিন ভিন সম্বন্ধবাচক শব্দ ব্যৱহাৰ কৰা হয়।

(গ) অসমীয়া আৰু বাংলা এই দুয়ো ভাষাৰে কিছুমান সম্বন্ধবাচক শব্দ পুংলিঙ্গবাচক, কিছুমান সম্বন্ধবাচক শব্দ স্ত্ৰীলিঙ্গবাচক আৰু দুই-এটা সম্বন্ধবাচক শব্দ লিঙ্গনিৰপেক্ষ ৰূপত পোৱা যায়।

(ঘ) গঠনৰ ফালৰ পৰা দুয়ো ভাষাৰে কিছুমান সম্বন্ধবাচক শব্দ মৌলিক আৰু কিছুমান যৌগিক।

বৈসাদৃশ্য :

অসমীয়া আৰু বাংলা ভাষাৰ সম্বন্ধবাচক শব্দসমূহৰ মাজত কিছুমান ক্ষেত্ৰত সাদৃশ্য থাকিলেও অধিক ক্ষেত্ৰত বৈসাদৃশ্য দেখিবলৈ পোৱা যায়। এই বৈসাদৃশ্যবোৰ হ'ল—

(ক) গাঁথনিক দিশৰ ফালৰপৰা অসমীয়া আৰু বাংলা ভাষাৰ সম্বন্ধবাচক শব্দসমূহৰ বৈসাদৃশ্য পৰিলক্ষিত হয়। অসমীয়া ভাষাত সম্বন্ধবাচক শব্দত পুৰুষ অনুসৰি বিভক্তি সংযোগ হোৱাৰ যি স্বকীয় বৈশিষ্ট্য পোৱা যায় সেই বৈশিষ্ট্য বাংলা ভাষাত দেখিবলৈ পোৱা নাযায়।

(খ) সেইদৰে অসমীয়া আৰু বাংলা ভাষাত বয়স অনুসৰি ডাঙৰ-সৰু বুজাবলৈ বেলেগ বেলেগ সম্বন্ধবাচক শব্দৰ প্ৰয়োগ হয় যদিও অসমীয়া ভাষাত ব্যৱহৃত মাহী-জেঠাই, পেহী-জেঠাই, মোহা-জেঠো আদি সম্বন্ধ বুজোৱা ৰূপবোৰ বাংলা ভাষাত পোৱা নাযায়।

(গ) আকৌ বাংলা ভাষাত ককা-আইতা বুজাবলৈ দুটা সম্বন্ধবাচক শব্দৰ প্ৰয়োগ পোৱা যায় যিটো অসমীয়া ভাষাত পোৱা নাযায়।

(ঘ) বাংলা ভাষাত মাহী, পেহী, মামা, খুৰা আদিৰ ল'ৰা-ছোৱালীক বুজাবলৈ কিছুমান সম্বন্ধবাচক শব্দৰ ব্যৱহাৰ আছে। কিন্তু অসমীয়া ভাষাত তেনে শব্দ পোৱা নাযায়।

(ঙ) অসমীয়া আৰু বাংলা দুয়ো ভাষাতে কেইবাগৰাকী বাই-ভনী বা ককাই-ভাইৰ মাজৰ সম্বন্ধ বুজাবলৈ বেলেগ বেলেগ সম্বন্ধবাচক শব্দ ব্যৱহাৰ কৰা হয় যদিও বাংলা ভাষাত মাজু আৰু সৰুৰ মাজৰ সম্পৰ্ক বুজাবলৈ ব্যৱহাৰ কৰা 'সেজদি' আৰু 'সেজদা' সম্বন্ধবাচক শব্দ দুটা অসমীয়া ভাষাত দেখিবলৈ পোৱা নাযায়।

(চ) অসমীয়া ভাষাত সম্বন্ধবাচক শব্দবোৰ দুই ধৰণে প্ৰয়োগ হয়। কিছুমান সম্বন্ধবাচক শব্দ নিৰ্দেশৰ ক্ষেত্ৰত আৰু কিছুমান সম্বন্ধবাচক শব্দ সম্বোধনৰ ক্ষেত্ৰত প্ৰয়োগ হয়। কিন্তু বাংলা ভাষাত নিৰ্দেশৰ ক্ষেত্ৰত সম্বন্ধবাচক শব্দৰ প্ৰয়োগ পোৱা নাযায়।

(ছ) অসমীয়া ভাষাত দেউতাকৰ সখীয়েকৰ সম্বন্ধ বুজোৱা 'তাই' আৰু 'আমৈ' শব্দ দুটা বাংলা ভাষাত পোৱা নাযায়। সেইদৰে বাংলা কথিত ভাষাত ব্যৱহৃত ককাই-ভাই, বাই-ভনীৰ শব্দ-শাছক বুজোৱা 'তালৈ' আৰু 'মাইও' সম্বন্ধবাচক শব্দ অসমীয়া ভাষাত পোৱা নাযায়।

(জ) অসমীয়া ভাষাত পত্নীৰ ভায়েক - ভনীয়েক বুজোৱা লিঙ্গনিৰপেক্ষ 'খুৰশালী'

শব্দৰ বিপৰীতে বাংলা ভাষাত পুংলিঙ্গবাচক 'শালা' আৰু স্ত্ৰীলিঙ্গবাচক 'শালী' শব্দৰ প্ৰয়োগ পোৱা যায়।

(ঝ) অসমীয়া ভাষাত স্বামী আৰু স্ত্ৰীৰ বায়েকৰ সম্বন্ধ বুজাবলৈ এটা মাত্ৰ 'জেশাহ' শব্দৰ ব্যৱহাৰ পোৱা যায়। কিন্তু বাংলা ভাষাত স্বামীৰ বায়েকক বুজাবলৈ 'ননাইশ' সম্বন্ধবাচক শব্দ ব্যৱহাৰ কৰা হয় আৰু পত্নীৰ বায়েকক বুজাবলৈ 'জেবাইশ' সম্বন্ধবাচক শব্দৰ ব্যৱহাৰ পোৱা যায়।

পৰিশেষত ক'ব পাৰি যে অসমীয়া আৰু বাংলা ভাষাত যথেষ্টসংখ্যক সম্বন্ধবাচক শব্দ পোৱা যায় যদিও বৰ্তমান ইংৰাজী 'Uncle' আৰু 'Aunt' শব্দৰ প্ৰয়োগে দুয়ো ভাষাৰে বহুকেইটা সুন্দৰ সম্বন্ধবাচক শব্দৰ ব্যৱহাৰ নাইকিয়া কৰি পেলাইছে। অৱশ্যে, চহৰ অঞ্চলৰ তুলনাত গ্ৰাম্যাঞ্চলত এতিয়াও এই শব্দবোৰৰ ব্যৱহাৰ যথাযথভাৱে পোৱা যায়। সম্বন্ধবাচক শব্দৰ প্ৰয়োগৰ ক্ষেত্ৰত অসমীয়া আৰু বাংলা ভাষাত কিছুমান সুকীয়া বৈশিষ্ট্য পৰিলক্ষিত হয়। দুয়ো ভাষাতে যথেষ্টসংখ্যক সম্বন্ধবাচক বিশেষ্য শব্দৰ ব্যৱহাৰ পোৱা যায় যদিও এই শব্দসমূহৰ গঠন আৰু প্ৰয়োগৰ ক্ষেত্ৰত কিছুমান নিজস্ব বৈশিষ্ট্য দেখা যায়। এই বৈশিষ্ট্যবোৰে দুয়ো ভাষাকে স্বকীয় ৰূপ প্ৰদান কৰিছে। সম্বন্ধবাচক শব্দৰ ক্ষেত্ৰত অসমীয়া আৰু বাংলা ভাষাৰ মাজত সাদৃশ্যতকৈ বৈসাদৃশ্যই অধিক দেখিবলৈ পোৱা যায়। গাঁথনিক দিশত বাংলা ভাষাৰ তুলনাত অসমীয়া ভাষাত এনে কিছুমান বিশেষ বৈশিষ্ট্য দেখা যায় যিবোৰ বৈশিষ্ট্যই অসমীয়া ভাষাক আন নব্যভাৰতীয় আৰ্যভাষাৰ পৰা পৃথক কৰি তুলিছে। অসমীয়া ভাষাৰ বিভিন্ন দিশত আৰ্য-ভিন্ন ভাষাৰ প্ৰভাৱ লক্ষ্য কৰা যায়। সম্ভৱতঃ আৰ্য-ভিন্ন ভাষাৰ প্ৰভাৱৰ বাবেই গাঁথনিক দিশত অসমীয়া সম্বন্ধবাচক শব্দত কিছুমান স্বকীয় বৈশিষ্ট্য গঢ়ি উঠিছে বুলি ক'ব পাৰি। অৰ্থাৎ, আৰ্য, অষ্ট্ৰিক আৰু তিব্বত-বৰ্মী, এইকেউটা ভাষা-ভাষীৰ সংস্পৰ্শৰ ফলত অসমীয়াত এনেধৰণৰ সম্বন্ধবাচক শব্দ গঢ় লৈ উঠিছে।^৪ সেইদৰে বাংলা ভাষাতো সম্বন্ধবাচক শব্দৰ প্ৰয়োগৰ ক্ষেত্ৰত অসমীয়া ভাষাত নোহোৱা এনে কিছুমান সুকীয়া বৈশিষ্ট্য পোৱা যায় যিবোৰে বাংলা ভাষাক স্বকীয়ত্ব প্ৰদান কৰিছে। গতিকে অসমীয়া আৰু বাংলা ভাষাৰ ৰূপতাত্ত্বিক দিশৰ আলোচনাত সম্বন্ধবাচক শব্দসমূহৰ এক বিশেষ গুৰুত্ব আছে। □

৪. বৰা শইকীয়া, লীলাৱতী : অসমীয়া ভাষা আৰু আৰ্যভিন্ন ভাষা (অসমীয়া ভাষাত জনগোষ্ঠীয় ভাষাৰ উপাদান), পৃ. ১১৫

গ্রন্থপঞ্জী :

অসমীয়া :

◆ ফুকন পাটগিৰি, দীপ্তি : অসমীয়া, বাংলা আৰু উড়িয়া ভাষা : তুলনামূলক অধ্যয়ন, ২০০৪, বনলতা, গুৱাহাটী।

◆ ফুকন পাটগিৰি, দীপ্তি : ভাষা সাহিত্য জিজ্ঞাসা, ২০০৯, পূৰ্বাঞ্চল প্ৰকাশ, গুৱাহাটী।

◆ বৰা শইকীয়া, লীলাৱতী : অসমীয়া ভাষাৰ ৰূপতত্ত্ব, ২০০৬, বনলতা, গুৱাহাটী।

◆ শৰ্মা, অপূৰ্ব : অসমীয়া ভাষাত জনগোষ্ঠীয় উপাদান, ২০০২, নগাঁও ছেৱালী কলেজ, নগাঁও।

বাংলা :

◆ গোস্বামী, কৃষ্ণপদ : বাংলা ভাষাতত্ত্বৰ ইতিহাস, ২০০১, কৰুণা প্ৰকাশনী, কলকাতা।

English :

◆ Grierson, G. A., *Linguistic survey of India*, Vol. IV, 1966 (2nd Edn.), Motilal Banarsidass, Delhi.

◆ Kakati, B., *Assamese, its Formation and Development*, 1995(Fifth Edition), L B S Publication, Gauhati.

কাৰ্বি জনগোষ্ঠী আৰু চমাংকান উৎসৱ

ৰেখা কলিতা

ভাৰতবৰ্ষৰ উত্তৰ-পূব প্ৰান্তত অৱস্থিত অসম বিভিন্ন জাতি-জনজাতিৰ লোকৰ আবাসস্থল। ইতিহাসে ঢুকি নোপোৱা কালৰে পৰাই বিভিন্ন প্ৰান্তৰ পৰা বিভিন্ন প্ৰজাতিৰ লোক এই ভূ-খণ্ডলৈ প্ৰব্ৰজন ঘটিকে আৰু কালক্ৰমত বৃহৎ অসমীয়া জাতি গঠিত হৈছে। অতীজৰে পৰা অসমত অষ্ট্ৰিক, দ্ৰাৱিড়, মংগোলীয় আৰু আৰ্য ভাষা-সংস্কৃতিৰ ধাৰক তথা বাহকসকলে বসবাস কৰি আহিছে। এই আটাইবোৰ ভাষাগোষ্ঠীৰ সংমিশ্ৰণৰ ফলস্বৰূপে অসমৰ ভাষা-সংস্কৃতিয়ে বিচিত্ৰৰূপ পৰিগ্ৰহ কৰিছে। এই বিচিত্ৰ ভাষা-সংস্কৃতিৰ পথাৰখনত থকা অসমৰ এটি অন্যতম খিলঞ্জীয়া জনগোষ্ঠী হ'ল কাৰ্বি। কাৰ্বিসকল পৃথিৱীৰ দ্বিতীয় বৃহৎ চীন তিব্বতীয় ভাষা পৰিয়ালৰ অন্তৰ্গত তিব্বতবৰ্মী শাখাৰ অন্তৰ্ভুক্ত। নৃতাত্ত্বিক দৃষ্টিকোণৰ পৰা কাৰ্বিসকল মংগোলীয় প্ৰজাতিৰ লোক।

নিজকে 'আৰলেং' বুলি পৰিচয় দি ভালপোৱা কাৰ্বিসকল পূৰ্বতে 'মিকিৰ' নামেৰে জনাজাত আছিল। 'মি' মানে মানুহ আৰু 'কিৰ' মানে ভয়াতুৰ। মিকিৰসকল প্ৰকৃততে ভয়াতুৰ। শান্তিপ্ৰিয় স্বভাৱৰ বাবে তেওঁলোক ভয়াতুৰ হ'ল। ৰাজমোহন নাথে 'মিকিৰ' শব্দটোৰ সন্দৰ্ভত এইদৰে লিখিছে—“The word Mikir may have originated from Mi-Kiri, meaning hill people” Edward stack ৰ মতে “The name Mikir is that given to the race by the Assamese; its origin is unknown They call themselves Arleng, which means man in general.” সম্প্ৰতি মিকিৰসকল 'কাৰ্বি' নামেৰে জনাজাত। এই 'কাৰ্বি' নামটোৰ উৎপত্তি সম্পৰ্কে বহুমত পোৱা যায় যদিও 'মে আকাৰ বি' বাক্যাংশৰ পৰা 'কাৰ্বি' শব্দটোৰ সৃষ্টি হৈছে বুলি দিয়া মতটো প্ৰাধান্যযোগ্য। এই বাক্যাংশৰ অৰ্থ অগ্নিপূজক।

১. সন্দিকৈ, বলীন (সম্পা) : এনাজৰী, পৃ. ৬৬

২. ৰাভা, মলিনাদেৱী (সম্পা) : অসমৰ জনজাতি আৰু সংস্কৃতি, পৃ. ২৩৬

কাৰ্বিসকল পাহাৰীয়া জনগোষ্ঠীৰ লোক। তেওঁলোকৰ আদি বাসস্থান দক্ষিণ পূব এচিয়া। বৰ্তমান কাৰ্বি আংলং আৰু উত্তৰ কাছাৰ পাৰ্বত্য জিলা দুখনৰ উপৰি নগাঁও, দৰং, কামৰূপ, লক্ষ্মীমপুৰ, গোলাঘাট জিলাত কাৰ্বিলোকৰ বসতি। অসমৰ এই অঞ্চলবোৰৰ উপৰি মেঘালয়ৰ নংপু অঞ্চলকে ধৰি জয়ন্তীয়া পাহাৰৰ ঠাই বিশেষে আৰু অৰুণাচল প্ৰদেশৰ কোনো কোনো অঞ্চলত কাৰ্বি জনগোষ্ঠীৰ লোকে বাস কৰি আছে। কাৰ্বিসকল যে উত্তৰ-পূৰ্বাঞ্চলৰ বিভিন্ন ঠাইত বসতি কৰি আছে সেই সম্পৰ্কে “A Dictionary of Mikir Language” নামৰ গ্ৰন্থত জি. ডি. ওৱাকাৰে উল্লেখ কৰিছে—“.... The Mikirs are among the more numerous of the Assam frontier races, and that they are scattered over wide area, from Golaghat to Kamrup, the Khasi Hills beyond Gauhati, and from the Cachar plains near Silchar to the forest north of Bishanath in Darang, the language is practically one and the same throughout.”^৩

কাৰ্বিসকল হিন্দু ধৰ্মাৱলম্বী লোক। তেওঁলোকে অসংখ্য দেৱ-দেৱতাৰ পূজা পাতে। তেওঁলোকে বিশ্বাস কৰে, ‘তেপ্লংইছি মূৰ্তি এদন, খেংপি এৰং আৰণাম এনুত’ অৰ্থাৎ টিলাই টিলাই দেৱতা, গছে গছে ভূত-প্ৰেত। প্ৰকৃতিৰ সকলো বস্তু, উদ্ভিদ আৰু প্ৰাণীতে ভগৱানৰ অংশ নিহিত হৈ থকা বুলি তেওঁলোকে বিশ্বাস কৰে। সহজ-সৰল আৰু কষ্ট-সহিষ্ণু কাৰ্বিসকলৰ বিশ্বাস, সামাজিক ৰীতি-নীতি আৰু জীৱন ধাৰণৰ প্ৰণালী আপেক্ষিকভাৱে পাহাৰীয়া জীৱনৰ কঠোৰতাৰ ওপৰত গঢ় লৈ উঠিছে।

পূৰ্বজন্মৰ কৰ্মফলত বিশ্বাসী কাৰ্বিসকলৰ আটাইতকৈ গুৰুত্বপূৰ্ণ আৰু ব্যতিক্ৰমধৰ্মী উৎসৱ হৈছে চমাংকান। চমাংকান হৈছে তেওঁলোকৰ মৃতকৰ আত্মাৰ সদগতিৰ অৰ্থে পালন কৰা উৎসৱ। কাৰ্বি জনবিশ্বাসত আত্মা অবিনশ্বৰ। সেয়েহে সাধাৰণ অৰ্থত কাৰ্বিসকলে মৃত্যুক ‘আৰেংকাচেরই’ অৰ্থাৎ স্ব-গাঁৱলৈ প্ৰত্যৱৰ্তন বুলি কয়; অথবা ‘চাংতেত কাচ’ এনদাম’ অৰ্থাৎ খাদ্যসংগ্ৰহৰ বাবে স্ব-গৃহলৈ প্ৰত্যৱৰ্তন কৰা আদি বাক্য মৃত্যু শব্দৰ পৰিৱৰ্তে ব্যৱহাৰ কৰা দেখা যায়। আত্মাৰ এই প্ৰত্যৱৰ্তনৰ সময়খিনি কাৰ্বিসমাজে এটা নিৰ্দিষ্ট ৰীতি বা প্ৰথাৰ দ্বাৰা সম্পন্ন কৰে। ইয়াক ‘থিৰেং ৱাৰেং আজুটাং’ বুলি কোৱা হয়।

চমাংকান উৎসৱৰ মাধ্যমেদি মৃতকৰ আত্মাই দুখ-ক্লেশ, পাপ-তাপ আদিৰ পৰা

৩. ভট্টাচাৰ্য, প্ৰমোদ চন্দ্ৰ (সম্পাদিত) : অসমৰ ভাষা পৰিচয়, পৃ. ১০৪

মুক্তি পায় বুলি কাৰ্বিসকলে বিশ্বাস কৰে। চমাংকানৰ প্ৰকৃত অৰ্থ হৈছে খাচীয়া নৃত্য। খাচীয়াসকলৰ প্ৰথাৰে মৃতকৰ শ্ৰাদ্ধ অনুষ্ঠান নৃত্যসহ পালন কৰা কাৰ্যই হ’ল চমাংকান আৰু এই ৰীতিৰে শ্ৰাদ্ধ কৰাক কাৰ্বিসকলে ‘আৰলেং কাৰহি’ বোলে। চমাংকান উৎসৱ সাধাৰণ মৃত্যু আৰু অপমৃত্যু উভয়ৰে ক্ষেত্ৰতে পালন কৰা হয়।

কাৰ্বিসমাজত একোটা পৰিয়ালত মৃত্যু হোৱা লোকৰ সংখ্যা অনুযায়ী চমাংকান পালন কৰা হয়। কোনো এটা কাৰ্বি পৰিয়ালে এই উৎসৱ পালন কৰিবলৈ হ’লে পৰিয়ালটোত পূৰ্বতে মৃত্যু হোৱা লোকসকলক স্মৰণ কৰিবলগীয়া হয়। যদিও পূৰ্বতে মৃত্যু হোৱা লোকসকলৰ শ্ৰাদ্ধ কৰা হোৱা নাই; তেন্তে সকলো মৃতকৰ শ্ৰাদ্ধ একেলগে কৰা হয়। এইক্ষেত্ৰত ঘৰৰ বংশ-পৰিয়ালৰ লগতে গাঁৱৰ লোকসকলেও সহযোগিতা আগবঢ়ায়। এইয়েহে চমাংকান উৎসৱ পালন কৰিবলৈ হ’লে ‘চাৰ্থে’ (মুখিয়াল)ৰ সৈতে আলোচনাত মিলিত হৈ উৎসৱৰ যা-যোগাৰ কৰে।

চমাংকান উৎসৱ তিনি প্ৰকাৰে পালন কৰা হয়—

- (ক) কানফ্লাফা বা সাধাৰণ চমাংকান,
- (খ) লাংটুক বা মজলীয়া আকৃতিৰ চমাংকান,
- (গ) হাৰ্নে বা উচ্চখাপৰ চমাংকান।

কানফ্লাফা বা সাধাৰণ চমাংকান সমাজত আৰ্থিকভাৱে দুৰ্বল শ্ৰেণীৰ লোকে পালন কৰে। গৃহস্থৰ ঘৰৰ সন্মুখৰ চোতালখনকেই চমাংকানৰ থলী ৰূপে ব্যৱহাৰ কৰি এই উৎসৱ পাতে।

লাংটুক চমাংকান মৃতকজনৰ সামাজিক মৰ্যাদা আৰু মৃতকৰ পৰিয়ালৰ আৰ্থিক মানৰ ওপৰত নিৰ্ভৰ কৰি পালন কৰে। এইবিধ চমাংকান ঘৰৰ পৰা নিলগত মুকলি ঠাইত পতা হয়। উৎসৱস্থলীত এটা কুঁৱা খান্দি কুঁৱাটোৰ পূবে মৃতকৰ প্ৰতিকৃতি ৰূপত ‘লংএ’ (দীঘল শিল) আৰু ‘লংপাক’ (বহল-চেপেটা শিল) মৃতকৰ সংখ্যানুযায়ী স্থাপন কৰে। শিলবোৰত পুৰুষ-স্ত্ৰী চিনিবৰ বাবে সাজপাৰেৰে অলংকৃত কৰি ৰাখে। কুঁৱাটোৰ মাজত ‘পিৰচিক’ (পতাকা)ৰ আৰ্হিৰে আগ নকটা এডাল দীঘল বাঁহ পোতা হয়। কুঁৱাৰ চৌপাশে ধনেশ, ময়ূৰ, শালিকা আদি চৰাইৰ প্ৰতীক কাঠেৰে সাজি নাদমুখি কৰি বেঢ়ি থকা কাঠডালত বহুৱাই ৰখা হয়। শিলবোৰৰ পিছফালে মদাৰ গছ এজোপা ৰোৱা হয়। নাদটোৰ তলীৰ পৰা প্ৰতিকৃতিৰ কাষলৈ এডাল জখলা নিৰ্মাণ কৰি দিয়া

হয়। ইয়াৰ তাৎপৰ্য এয়ে যে পাতালৰ পৰা পৃথিৱীলৈ যোগসূত্ৰ স্থাপন কৰা। তদুপৰি ইহলোকৰ লগত যমপুৰীৰ লোকৰ মিলনৰ বহস্য উদ্‌ঘাটন কৰা তত্ত্বও নিহিত হৈ আছে।

চমাংকানৰ আটাইতকৈ পয়োভৰপূৰ্ণ শ্ৰেণীটো হৈছে হাৰ্ণে চমাংকান। সমাজ স্বীকৃত ব্যক্তিৰ মৃত্যুৰ ক্ষেত্ৰতহে হাৰ্ণে চমাংকান পতা হয়। এইবিধ চমাংকানতো এটা কুঁৱা খান্দি তাৰ চাৰিওফালে নাদমুখি কৰি ৰং-বিৰঙৰ প্ৰতীক ছবি আৰু 'লংএ' শিল স্থাপন কৰে।

কাৰ্বিসকলৰ এই তিনিওবিধ চমাংকানেই চাৰিদিন ধৰি পালন কৰা হয়। উৎসৱৰ প্ৰথম দিনটোক 'ৰু-কেছম' বোলে। সেইদিনা গাঁৱৰ বংশ-পৰিয়ালে ঢোলৰ বিভিন্ন চেওত হাতত ঢাল-তৰোৱাল লৈ নাচি নাচি 'থিৰি' (শ্মশানখলী) লৈ গৈ মৃতকৰ 'অস্থি' সংগ্ৰহ কৰি নিৰ্দিষ্ট ৰীতিৰে বোকোচাত ঘৰলৈ কঢ়িয়াই আনে। অস্থিডোখৰ মৃতকৰ প্ৰতিকৃতিৰ (ধান-খেৰেৰে সজোৱা) ভিতৰত সুমুৱাই থয়। চমাংকান উৎসৱ শেষ নোহোৱা পৰ্যন্ত বৰঘৰৰ কোঠালিত ৰাখি যথা সময়ত ৰীতি-নীতি অনুসাৰে আহাৰ-পানী যোগান ধৰি থকা হয়। উৎসৱৰ দ্বিতীয় দিনাক 'কানছ' অৰ্থাৎ সৰু নাচ আৰু তৃতীয় দিনাক 'কানপি' বা 'আৰংকেথন' অৰ্থাৎ বৰনাচ বুলি কোৱা হয়। উৎসৱৰ শেষৰ অৰ্থাৎ চতুৰ্থ দিনটোক 'থেকুপ কাৰ্কক' বোলা হয়। সেইদিনা মৃতকৰ অস্থি পুনৰ শ্মশানখলীত সৎকাৰ কৰি চমাংকান উৎসৱৰ সামৰণি মাৰে। চমাংকানৰ আৰম্ভণিৰ পৰা অন্তলৈকে এগৰাকী চমাংকানৰ নিয়ম জনা 'ওচেপীয়ে (গায়িকা) মৃত ব্যক্তিৰ জীৱিত কালৰ গুণানুকীৰ্তন কৰণ সুৰেৰে বৰ্ণনা কৰে।

কাৰ্বিসকলে চমাংকানত ব্যৱহাৰ কৰা আহিলা-পাতিসমূহ হৈছে— চেংপি (মাদল), চেং ছ' (সৰু ঢোল), বানজাৰ (বাঁহেৰে সজা এবিধ সঁজুলি), মিৰং ৰাং (আইনা), চং (ঢাল), নক (তৰোৱাল) আৰু জাম্বিলি আখন। চমাংকানত ব্যৱহৃত সা-সঁজুলিৰ ভিতৰত 'জাম্বিলি আখন' অন্যতম। ই কাৰ্বিসকলৰ জাতীয় প্ৰতীকৰূপেও পৰিগণিত হৈ আহিছে। উল্লেখযোগ্য যে 'জাম্বিলি আখন' যমপুৰীৰ চিত্ৰকল্পৰূপত উৎসৱখলীত ব্যৱহাৰ কৰে।

চমাংকান উৎসৱত নৃত্য-গীতৰ পয়োভৰ পৰিলক্ষিত হয়। এই উৎসৱত কাৰ্বিসকলে বিভিন্ন প্ৰকাৰৰ নৃত্য, যেনে— নিমছ'কেৰুং, চংকেদাম, কেংতিৰ কেকান, বানজাৰ কেকান আদিৰ লগতে বিভিন্ন ধৰণৰ গীত-মাত পৰিবেশন কৰে। ডেকাসকলে 'কাপাএৰ'গীত, মহিলাসকলে 'কাৰ্চাহে লোক গীত' আৰু আদহীয়া মহিলাসকলে

'মিৰিংকং' গীতৰ উপৰি মৃতকক বিদায় জনোৱা আদি বিভিন্ন গীত গায়।

চমাংকান মূলতঃ পাৰলৌকিক বিশ্বাসৰ ভিত্তিত গঢ়ি উঠা উৎসৱ। ইয়াত দুটা দিশ পৰিলক্ষিত হয়— ডেকা-গাভৰুৰ যৌন আবেদনমূলক উল্লাস আৰু বিদেহী আত্মাৰ সৈতে সম্পৰ্কৰ বাবে দাৰ্শনিক কৰ্মকাণ্ড। ইয়াত কোনো লোকদেৱতাৰ উপাসনা কৰা নহয়, ই সম্পূৰ্ণ প্ৰেতঃকাৰ্য। মুঠতে পৰম্পৰাগত ৰীতি-নীতি আৰু জনবিশ্বাসৰ আধাৰত পালিত হোৱা চমাংকানক কাৰ্বি কৃষ্টি-সংস্কৃতিৰ প্ৰাণ বুলিব পাৰি। □

গ্ৰন্থপঞ্জী :

অসমীয়া গ্ৰন্থ :

◆ কাকতি, বাণীকান্ত : *পুৰণি কামৰূপৰ ধৰ্মৰ ধাৰা*, পাঠশালা, বাণীপ্ৰকাশ মন্দিৰ, কামৰূপ, প্ৰথম সংস্কৰণ, ১৯৫৫

◆ গগৈ দেৱেন (সম্পা) : *কাৰ্বি আংলঙৰ সাহিত্য সংস্কৃতিৰ এচেৰেঙা*, প্ৰকাশক : কৰুণাকান্ত ভড়ালী, ডিফু সাহিত্য সভা, ৰাংছিনা ভৱন, প্ৰথম প্ৰকাশ, ১৯৯১

◆ টেৰণ, লংকাম : *কাৰ্বি জনগোষ্ঠী, এটি চমু পৰিচয়*, প্ৰকাশক : নগেন শইকীয়া, প্ৰধান সম্পাদক অসম সাহিত্য সভা

◆ টেৰণ, লংকাম : *মিকিৰ জনজাতি*, প্ৰকাশক : মহেশ্বৰ নেওগ, প্ৰধান সম্পাদক, অসম সাহিত্য সভা, চন্দ্ৰকান্ত সন্দিকৈ ভৱন, যোৰহাট, অসম

◆ তালুকদাৰ, ধ্ৰুৱকুমাৰ : *অসমৰ বিভিন্ন জনগোষ্ঠীৰ লোক-উৎসৱ*, বনলতা, পাণবজাৰ, গুৱাহাটী, দ্বিতীয় সংস্কৰণ, ২০১১

◆ তেৰাং, ৰংবং (সম্পা) : *কাৰ্বি সংস্কৃতিৰ ৰূপৰেখা*, প্ৰকাশক : পৰমানন্দ ৰাজবংশী, প্ৰধান সম্পাদক, অসম সাহিত্য সভা, চন্দ্ৰকান্ত সন্দিকৈ ভৱন, যোৰহাট, প্ৰথম প্ৰকাশ, নৱেম্বৰ, ২০১০।

◆ তেৰাং, ৰংবং : *সমন্বয় প্ৰবাহ*, বং-এ পাব্লিকেছন, হিলছ ডিউ কটেজ, থানা ৰোড, ডিফু, কাৰ্বি আংলং, অসম, প্ৰথম প্ৰকাশ, ১৯৮৯

◆ দাস, শৈলেন : *কাৰ্বি সংস্কৃতিৰ প্ৰবাহ*, অসম জাতি আৰু অনুসূচিত জাতি গৱেষণা

প্রতিষ্ঠান, জবাহৰনগৰ, গুৱাহাটী, প্ৰথম প্ৰকাশ, ২০০৩

◆ নাথ, প্ৰফুল্ল কুমাৰ (সম্পা) : *অসমৰ জনগোষ্ঠীয় ঐতিহ্য : সাংস্কৃতিক বিনিময় আৰু সংহতি*, বুকলেণ্ড, পাণবজাৰ, গুৱাহাটী, প্ৰথম প্ৰকাশ, ২০০৯

◆ পাদুন, নাহেন্দ্ৰ : *অসমীয়া সংস্কৃতিতলৈ জনজাতীয় বৰঙণি*, জনজাতি গৱেষণা প্ৰতিষ্ঠান, অসম, ১৯৮৮

◆ পাটগিৰী, জগদীশ, কাকতি, গণেশচন্দ্ৰ (সম্পা) : *পূৰ্বাঞ্চলৰ ভাষা সাহিত্য আৰু সংস্কৃতি*, অসম জাতি আৰু অনুসূচিত জাতি গৱেষণা প্ৰতিষ্ঠান, জবাহৰনগৰ, গুৱাহাটী, প্ৰথম প্ৰকাশ, ২০০৬

◆ বৰদলৈ, নিৰ্মলপ্ৰভা : *কাৰ্বি সমাজ আৰু সংস্কৃতিৰ এচেৰেঙা*, অসম সাহিত্য সভা, ১৯৮২

◆ বৰুৱা, প্ৰদীপ : *চিত্ৰ-বিচিত্ৰ অসম*, জ্যোতি প্ৰকাশন, পাণবজাৰ, গুৱাহাটী, দ্বিতীয়, সংস্কৰণ, অক্টোবৰ, ২০১১

◆ বৰুৱা, সুৰেন্দ্ৰ : *কাৰ্বি লোক-সমাজ-সাহিত্য সংস্কৃতিত এভূমুকি*, অসম জাতি আৰু অনুসূচিত জাতি গৱেষণা প্ৰতিষ্ঠান, গুৱাহাটী, প্ৰথম প্ৰকাশ, ১৯৮৮

◆ ভট্টাচাৰ্য, প্ৰমোদচন্দ্ৰ : *অসমৰ জনজাতি*, লয়াৰ্ছ বুক ষ্টল, গুৱাহাটী, দ্বিতীয় সংস্কৰণ, ১৯৯১

◆ ভট্টাচাৰ্য, প্ৰমোদচন্দ্ৰ (সম্পা) : *অসমৰ ভাষা পৰিচয়*, প্ৰকাশক : জগদীশ পাটগিৰী, প্ৰধান সম্পাদক, অসম সাহিত্য সভা, চন্দ্ৰকান্ত সন্দিকৈ ভৱন, যোৰহাট, প্ৰথম প্ৰকাশ, ১৭ ফেব্ৰুৱাৰী, ২০০৫

◆ বাভা, মলিনা দেৱী (সম্পা) : *অসমৰ জনজাতি আৰু সংস্কৃতি*, প্ৰকাশক : পৰমানন্দ ৰাজবংশী, প্ৰধান সম্পাদক, অসম সাহিত্য সভা, চন্দ্ৰকান্ত সন্দিকৈ ভৱন, যোৰহাট, প্ৰথম প্ৰকাশ, ২০১১

◆ লেখাৰু, জিতু কুমাৰ : *অসমৰ লোক-উৎসৱ আৰু লোক-সংস্কৃতি*, প্ৰকাশক : ৰফিকুজ্জামান, অসম প্ৰকাশন পৰিষদ, গুৱাহাটী, প্ৰথম প্ৰকাশ, ডিচেম্বৰ, ২০০৮

◆ শৰ্মা, হেমন্ত কুমাৰ : *অসমৰ জনগোষ্ঠী আৰু সমন্বয়ৰ সংস্কৃতি*, চন্দ্ৰ প্ৰকাশ,

পাণবজাৰ, গুৱাহাটী, প্ৰথম প্ৰকাশ, ২০০৯

সমল ব্যক্তি :

- ১। লুপ্ৰে তিমুং (৭৩) লুৰলাংচু, ডিফু, কাৰবি আংলং
- ২। ধনচিং তেৰাং (৭৫) ধনচিং তেৰাং গাওঁ, ডিফু, কাৰবি আংলং
- ৩। জয়া তেৰাংপি (৪০) ধনচিং তেৰাং গাওঁ, ডিফু, কাৰবি আংলং

GM CROPS AND FOOD SECURITY

জিনীয়ভাৱে পৰিৱৰ্তিত শস্য আৰু খাদ্যৰ নিৰাপত্তা

কাকলি তালুকদাৰ

আজিকালি বিভিন্ন কাৰণে, যেনে— প্ৰদূষণ, পানীৰ অভাৱ, পুষ্টিগত বস্তুৰ অভাৱত প্ৰাকৃতিকভাৱে উৎপাদিত খাদ্যত প্ৰয়োজনীয় পুষ্টিৰ অভাৱ হৈছে। তদুপৰি বিভিন্ন ধৰণৰ বাসায়নিক সাৰৰ প্ৰয়োগ ইত্যাদিও ইয়াৰ এক প্ৰধান কাৰণ। ফলত উন্নতমানৰ শস্যৰ উৎপাদনত অসুবিধা। সেয়েহে বৰ্তমান সময়ত উন্নতমানৰ শস্য পোৱাৰ বাবে বিজ্ঞানসন্মত প্ৰক্ৰিয়াৰে জিনীয়ভাৱে পৰিৱৰ্তিত শস্যৰ উৎপাদন কৰা হয় আৰু এই প্ৰকাৰৰ শস্য উৎপাদনত বিভিন্ন ধৰণৰ প্ৰযুক্তি ব্যৱহাৰ কৰা হয়। এই প্ৰযুক্তিৰ ভিতৰত এক প্ৰকাৰৰ প্ৰযুক্তি হ'ল জিনীয়ভাৱে পৰিৱৰ্তিত শস্য বা Genetically modified crop। উক্ত প্ৰক্ৰিয়াত বংশনিৰ্ণায়ক জিনমত কৃত্ৰিমভাৱে এক প্ৰকাৰৰ উদ্ভিদৰ DNA চিকুৱেঞ্চ (Sequence) সুমুৱাই দিয়া হয় আৰু কৃত্ৰিম প্ৰযুক্তিৰে উৎপাদিত শস্যৰ প্ৰজনন ঘটাই উৎপাদন কৰা হয়। জিনীয়ভাৱে পৰিৱৰ্তিত শস্যই প্ৰাকৃতিকভাৱে পৰিৱৰ্তিত শস্যৰ পৰিবেশ, নিম্ন মানৰ পুষ্টিৰ যোগান আদিতো সহজে উন্নতমানৰ শস্যৰ উৎপাদন বৃদ্ধি কৰিব পাৰে। এই কৃত্ৰিমগত প্ৰজনন প্ৰক্ৰিয়া ১৬ বছৰ আগৰ পৰাই বাণিজ্যিকভাৱে ব্যৱহৃত হৈ আহিছে। ইয়াক বিভিন্ন নামেৰে জনা যায়, যেনে — জেনেটিক ইঞ্জিনিয়াৰিং ট্ৰান্সজেনিক, বা বংশাৱলীকৰণ বা জৈৱ প্ৰযুক্তিগত শস্য। ইয়াক জিনীয়ভাৱে পৰিৱৰ্তিত অংগ বা Genetically modified organism বা GMO বুলিও জনা যায় আৰু ইয়াক পোন প্ৰথমবাৰৰ বাবে ইউৰোপত ব্যৱহাৰ কৰা হৈছিল।

২০১০ চনৰ সমীক্ষামতে, বাণিজ্যিক ক্ষেত্ৰত জিনীয়ভাৱে পৰিৱৰ্তিত বা GM শস্য মূলত ২৯ খন দেশত খেতি কৰি ইয়াৰ উৎপাদন বৃদ্ধি কৰা হয়। ইয়াৰ ভিতৰত ইউৰোপৰ ৮ খন, এছিয়াৰ ৫ খন আৰু আফ্ৰিকাৰ ৩ খন। পৃথিৱীৰ মাটিৰ প্ৰায় ১০ (দহ) শতাংশ শস্য খেতি কৰা হয়। GM শস্য মুখ্যতঃ চাৰি প্ৰকাৰৰ শস্যৰ ক্ষেত্ৰত

প্ৰয়োগ কৰা হয়। চয়াবিন, কপাহ, মাকৈ, তেলৰ বীজ ইত্যাদি প্ৰধান। মূলতঃ তিনি প্ৰকাৰৰ শস্যৰ চৰিত্ৰগত লক্ষণৰ ওপৰত গুৰুত্ব দি খেতি কৰা হয়। যেনে —

IR - Insect Resistance (কীট-পতঙ্গনাশক) : গম আৰু কপাহৰ বাবে প্ৰযোজ্য।

HT - Herbicide tolerance (তৃণভোজী নিয়ন্ত্ৰণ) : ওপৰত উল্লিখিত চাৰিও প্ৰকাৰৰ শস্যৰ বাবে প্ৰযোজ্য। তদুপৰি বিটপালেং, আলফা আদিতো প্ৰয়োগ কৰা হয়।

VR- Virus Resistance (ভাইৰাছনাশক) : অমিতা, স্কোৱাছ, জালুক আদিৰ ক্ষেত্ৰত প্ৰয়োগ কৰা হয়।

কৃষি অৰ্থনীতিত, HT, IR আৰু VR প্ৰকাৰৰ চাৰিত্ৰিক লক্ষণযুক্ত শস্য, যিয়ে শস্যৰ পৰিচালন প্ৰকাৰ আৰু শস্যৰ উৎপাদনত উন্নত মানৰ খেতি কৰি খেতিয়কৰ লাভ কৰে। ইয়াৰ উপৰি আন কিছুমান চৰিত্ৰ, যেনে— গ্ৰাহকৰ চকুত মূল্যবৃদ্ধি আৰু শস্যত থকা শ্বেতসাৰৰ মান উন্নত কৰা ইত্যাদিত গুৰুত্ব প্ৰদান কৰা হয়।

HT আৰু IR যুক্ত শস্যৰ পৰিৱেশৰ ওপৰত প্ৰভাৱ মান জোখাটো কঠিন য'ত গুণগত প্ৰভাৱ জড়িত ফল জীৱ বৈচিত্ৰ্যৰ ওপৰত মাটিৰ ব্যৱহাৰ, পানীৰ ব্যৱহাৰ আৰু সেউজগৃহ গেছৰ উৎপত্তি আৰু কিছুমান তৃণযুক্ত আৰু কীটযুক্ত প্ৰাণী পৰোক্ষভাৱে ইয়াৰ লগত জড়িত। ইয়াৰ প্ৰভাৱ বা ফল বিভিন্ন শস্যৰ প্ৰজাতি আৰু খেতি প্ৰক্ৰিয়াৰ মাজত বেলেগ বেলেগ হয়, আৰু ই নিৰ্ভৰ কৰে জিনীয়ভাৱে পৰিৱৰ্তিত শস্যৰ পৰিকল্পনাৰ ওপৰত, সিহঁতৰ প্ৰক্ৰিয়া আৰু সামৰণিৰ ওপৰত। United Kingdom ত গঠিত GMO ত য'ত বিধানসভা অনুসৰি পৰিৱেশীয় সতৰ্কতা অভিযানত এটা সংবাদ আগবঢ়াইছিল যে তুলনামূলক পৰিৱেশীয় অভিযান সকলোবোৰ কৃষিগত পদ্ধতিৰ ওপৰত কৰা হৈছিল। এই অভিযানক The Advisory Committee for Releases into the Environment (ACRE) বুলিও জনা যায়। এটা মনত ৰাখিবলগীয়া কথা যে, GM শস্যসমূহ বোৱঁতী জিনৰ প্ৰভাৱ। এইবোৰ হ'ল সিঁচৰতি বংশানুৰিত জিনৰ পৰা স্বয়ংক্ৰিয় শস্য বা পৰাগযোগৰ দ্বাৰা হোৱা বন্যসম্বন্ধীয় শস্য। সম্ভৱতঃ ই নিৰ্ভৰ কৰে শস্য আৰু ইয়াৰ প্ৰভাৱ জিনীয়ভাৱে পৰিৱৰ্তিত চৰিত্ৰৰ ওপৰত আৰু ই ইউৰোপৰ GM শস্যৰ স্বত্বাধিকাৰীসকলৰ বাবে পৰিৱেশ সম্বন্ধীয় সতৰ্কতা অভিযানে কঢ়িয়াই আনে কিছুমান কাৰক।

GM শস্যসমূহ বিভিন্ন ধৰণৰ কীটনাশক, পতঙ্গভোজী আদিৰ ক্ষেত্ৰত ৰোধক

হিচাপে কাম কৰে। কিছুমান লক্ষণীয় ঘাঁহ, বন, কীট-পতঙ্গই প্ৰায়েই তৃণভোজী বা পতংগভোজীসমূহলৈ বাধাৰ সৃষ্টি কৰে। আমেৰিকা যুক্তৰাষ্ট্ৰৰ বিভিন্ন অংশত তৃণভোজী ৰোধযুক্ত ঘাঁহ-বনে এক অসুবিধাৰ সৃষ্টি কৰি আহিছে। সকলোবোৰ ৰোধকে HT প্ৰকাৰৰ শস্যৰ লগত জড়িত নহয় কিন্তু এক প্ৰকাৰ তৃণভোজীৰ বৃহৎসংখ্যক ব্যৱহাৰে এক অসুবিধাৰ সৃষ্টি কৰে। সেয়েহে এই ঘাঁহ-বনসমূহৰ উৎপত্তিত বাধা দিবৰ বাবে অন্য উপায় যেনে— অন্য প্ৰকাৰৰ তৃণভোজী যিবোৰে অকল ঘাঁহ-বন উৎপাদনত বাধা দিব পাৰে। আকৌ এই ৰোধকসমূহৰ বৃদ্ধিৰ উৎপত্তিত বাধা দিবলৈ অন্য এক উপায় অৱলম্বন কৰা হয়। এইবোৰৰ ভিতৰত মিশ্ৰিত তৃণভোজী, য'ত এই প্ৰকাৰ ঘাঁহ-বনসমূহে এক নিৰ্দিষ্ট তৃণভোজী প্ৰাণীৰ প্ৰতিৰোধ ক্ষমতাৰ সম্ভাৱনা কমাই দিয়ে। গতিকে এনেধৰণৰ ৰোধকসমূহক বাধা দিবৰ বাবে কিছুমান উক্ত উল্লিখিত প্ৰাৰম্ভিক উপায় অৱলম্বন কৰা হয়।

Bt যুক্ত কপাহৰ ক্ষেত্ৰত প্ৰয়োগ কৰা লক্ষণীয় কীট-পতঙ্গ ৰোধক শস্যসমূহত বৃদ্ধি হৈ গৈ থাকে, কিয়নো Bt যুক্ত নোহোৱা কপাহ শস্যসমূহত কীট-পতঙ্গ ৰোধক বিকাশৰ সম্ভাৱনা কমি যায়। আকৌ আন প্ৰকাৰৰ কীটনাশকৰ প্ৰয়োগে গৌণ কীট-পতঙ্গসমূহক নিয়ন্ত্ৰণ কৰে। ইয়ে অকল Bt কে লক্ষ্য নকৰি ইয়াৰ প্ৰভাৱ এক মিশ্ৰিত হৈ আন কীটনাশকত ব্যৱহাৰ কৰা হয় যিয়ে Bt যুক্ত কপাহসমূহত ৰোধক হিচাপে নিয়ন্ত্ৰিত কৰে। আকৌ চীনত কমসংখ্যক কীটনাশক বৃহৎ অংশত প্ৰয়োগ কৰাৰ ফলত গৌণ কীট-পতঙ্গৰ উপদ্ৰৱ বাঢ়ি যায়। সেয়েহে সঠিক উপায়েৰে কীট-পতঙ্গ বাধা দিয়া প্ৰক্ৰিয়া অভিযোজন কৰি ল'ব লাগে। তদুপৰি খেতিয়কসকল শিক্ষিত হোৱাটো প্ৰয়োজনীয়।

ইয়াৰ উপৰি জিনীয়ভাৱে অপৰিৱৰ্তিত শস্যৰ উৎপাদন মাত্ৰা উন্নত মানৰ প্ৰজনন প্ৰক্ৰিয়াৰে বৃদ্ধি কৰিব পৰাৰ সম্ভাৱনা থাকে। উক্ত নিৰ্বাচিত প্ৰজনন প্ৰক্ৰিয়াত বিভিন্ন শস্যৰ জিনৰ মিশ্ৰণ কৰি সেই শস্যৰ মাজত আন্তঃ প্ৰজনন ঘটোৱা হয় আৰু এইদৰে সৃষ্টি হোৱা উদ্ভিদৰ পুলিসমূহ প্ৰয়োজনীয় চৰিত্ৰৰ সৈতে আকৌ প্ৰজনন ঘটোৱা হয়। শেষৰ দুটা দশকত উদ্ভিদৰ বংশগতিৰ উন্নত জ্ঞান আৰু কম মূল্যৰ প্ৰমাণে নিৰ্বাচন প্ৰক্ৰিয়া উন্নত কৰে আৰু ইয়ে চিহ্নিত সহযোগী নিৰ্বাচন (Marker Assisted Selection বা MAS) ৰ বিকাশ ঘটায়। MASৰ জৰিয়তে পৰীক্ষাগতভাৱে কিছুমান প্ৰয়োজনীয় চৰিত্ৰই সিহঁতৰ চিহ্নিত জিনৰ লগত সংযোগ ঘটায় আৰু ইয়াৰ ফলত তৎক্ষণাত আৰু

নিখুঁতভাৱে নিৰ্বাচন কৰে। MAS প্ৰক্ৰিয়াত যদিও সকলোবোৰ শস্যৰ ক্ষেত্ৰত বিকাশ ঘটোৱা হয়, তথাপি ই মুখ্যতঃ ধান আৰু গোমধানৰ ক্ষেত্ৰত প্ৰয়োগ কৰা হয়। MAS কেৱল জিনগত জ্ঞান থকা শস্যৰ ক্ষেত্ৰত নিপুণভাৱে খেতি কৰা হয়, কিন্তু যিবোৰ শস্যৰ প্ৰজাতিৰ ক্ষেত্ৰত সীমিত জ্ঞান থাকে, তেনেকুৱা শস্যৰ বিকাশৰ ক্ষেত্ৰত খৰছ বৃদ্ধি পায়। কিছুমান শস্যত GM আৰু MAS দুয়োটা প্ৰক্ৰিয়া একেলগে ব্যৱহাৰ কৰা হয়। উদাহৰণস্বৰূপে, GM প্ৰক্ৰিয়াত এক বিশেষ জিন এক বিশেষ প্ৰক্ৰিয়াৰে সুমুৱাই দিয়া হয়, পিছত MAS প্ৰক্ৰিয়াত বিভিন্ন প্ৰকাৰৰ GM গত শস্য প্ৰজনন ঘটাই উৎপাদন কৰা হয়।

ইউৰোপীয় সংযোগ ভিত্তিত বাণিজ্যিকভাৱে GM প্ৰকাৰৰ শস্যক ইউৰোপত স্বাধীনভাৱে কৃষি কৰিবৰ বাবে কাৰ্যকৰী সমিতিয়ে অনুমতি প্ৰদান কৰে। ইউৰোপে GM যুক্ত শস্য উৎপাদনত সাৱধানী মুখ্যনীতি অভিযোজন কৰে। এই উপদেশে এক নতুন প্ৰযুক্তি উৎপাদনত ভূমিকা গ্ৰহণ কৰে। GMO ৰ ওপৰত ভিত্তি কৰি স্বাস্থ্য আৰু পৰিৱেশ ৰক্ষাৰ বাবে ইউৰোপে সতৰ্কতা অভিযান আৰম্ভ কৰে। ইয়াৰ ওপৰত ভিত্তি কৰি ইউৰোপীয় কমিটিয়ে এই প্ৰকাৰৰ শস্যৰ কৃষিৰ ক্ষেত্ৰত অনুমতি বা বিনা অনুমতি আৰ্জিৰ বাবে মন্ত্ৰীসভাই বাছনি কৰা এক প্ৰস্তাৱ আগবঢ়াইছিল। 'House of Lords EU Select Committee' এ 'Innovation in EU Agriculture' এ এক বাৰ্তা আগবঢ়াইছিল যে ইউৰোপে জোৰ দিয়ক GM ক, ইয়ে বিশ্বৰ খাদ্য নিৰাপত্তা সম্ভাৱনাৰ ওপৰত প্ৰভাৱ পেলাওক আৰু ইয়াৰ ভয়াৱহতাৰ বিষয়ে সতৰ্ক কৰি তোলাক। সেয়েহে নতুন GM জাতীয় শস্যক যোৱা ১৩ বছৰে খেতি কৰাৰ বাবে অনুমতি দি আহিছে।

বাণিজ্যিক ক্ষেত্ৰত ইউৰোপে বৃহৎসংখ্যক GM জাতীয় শস্যৰ আমদানি কৰে। UK আৰু ইউৰোপে ঘৰচীয়া জীৱ-জন্তুৰ প্ৰযুক্তিৰ ওপৰত নিৰ্ভৰ কৰি খাদ্য শস্যৰ ৯০ শতাংশ ব্ৰাজিল আৰু আৰ্জেণ্টিনাৰ পৰা আমদানি কৰা হৈছিল, য'ত ইয়াৰ উৎপাদন ক্ৰমে ৬৯ শতাংশ আৰু ৯৯ শতাংশ (২০০৯ চনত)। বৃহৎ পৰিমাণত বিভিন্ন প্ৰকাৰৰ GM জাতীয় আৰু GM যুক্ত নোহোৱা শস্য ৰপ্তানি কৰাত অসুবিধা। ইউৰোপৰ খাদ্য ৰক্ষাৰ কাৰ্যবাহিকা অনুসৰি, ইউৰোপৰ ৯১৯/২০১১ ৰ নিয়মমতে বৰ্তমান সংহতি মৰ্মে জন্তুৰ খাদ্য আমদানি কৰা হয় য'ত কোনো ধৰণৰ ক্ষতিৰপৰা অসুবিধা পোৱা নাযায় আৰু বাণিজ্যিক ক্ষতি আৰু নিম্নমানৰ উপস্থিতিৰ ঘটনাই ভৱিষ্যতে GM শস্যৰ সন্মতি সংখ্যা আৰু ইয়াৰ মানদণ্ড পৃথিৱী জুৰি বৃদ্ধি হোৱাত সহায় কৰিব।

ইয়াৰ উপৰি Co-Existence হ'ল কিছুমান GM আৰু GM যুক্ত নোহোৱা শস্যৰ মাজত সামঞ্জস্যতাৰ অনুমতি, পৃথকীকৰণৰ মান, বোৱঁতী জিনৰ নিম্নতাৰ প্ৰয়োজন হয়। সামঞ্জস্যতাৰ প্ৰয়োজন হয় আকৌ কিছুমান বস্তুৰ সম্পূৰ্ণ উৎপাদন, শৃংখলাৰ পৃথকীকৰণত। ইয়াৰ ভিতৰত সাঁচতীয়া প্ৰণালী আৰু পৰিবহণেই মূল। GM আৰু জ্ঞানসম্বন্ধীয় সম্পত্তিৰ ক্ষেত্ৰত জিনৰ পেটেণ্টৰ ব্যৱহাৰ বিবাদ সম্বন্ধীয়। বীজ উদ্যোক্তাসকলে কম বজাৰ মূল্যৰ সাধাৰণ শস্যৰ বৃদ্ধি হ্রাস কৰি স্ব-ইচ্ছাৰ শস্যৰ প্ৰকাৰৰ বিকাশ ঘটাই আৰু ফলত সাধাৰণ শস্যৰ জ্ঞানসন্মত সম্পত্তিগত অধিকাৰ দুৰ্বল হয় পেটেণ্টৰ লগত জড়িত GM শস্যৰ তুলনাত। সেয়েহে GM যুক্ত শস্যৰ চাহিদা বজাৰত দিনক দিনে বৃদ্ধি পাইছে।

নতুন GM প্ৰযুক্তি আৰু ইয়াৰ ব্যৱহাৰৰ ক্ষেত্ৰত উদ্ভিদৰ বংশান্তৰিত প্ৰযুক্তিত জিনমত DNA সুমুৱাই দিয়া হয় আৰু এই প্ৰক্ৰিয়া ২০ বছৰ আগৰ পৰাই প্ৰয়োগ কৰি আহিছে। এই প্ৰযুক্তি ব্যৱহাৰ কৰি বৃহৎসংখ্যক GM প্ৰকাৰ বাণিজ্যিকভাৱে উৎপাদন বিকাশত ব্যৱহাৰ কৰা হয়, কিন্তু এই প্ৰক্ৰিয়া GM শস্যৰ মসৃণতা আৰু সঠিকতা বৃদ্ধিৰ ক্ষেত্ৰত বিকাশ ঘটোৱা হয়। GM প্ৰযুক্তি মতে, কিছুমান প্ৰামাণিক বংশান্তৰিত উদ্ভিদ নহ'বও পাৰে আৰু ইয়াৰ সম্ভাৱনা প্ৰকাশ নকৰিবও পাৰে। গতিকে, উদ্ভিদসমূহত প্ৰয়োগ কৰা সূত্ৰসমূহ আৰু ইয়াৰ ব্যৱস্থাগত প্ৰচেষ্টা ইউৰোপত বৰ্তমানো আলোচনাৰ বিষয় হৈ আছে।

GM শস্যৰ ক্ষেত্ৰত বজাৰৰ দিশত চাবলৈ গ'লে চমুকৈ GM ৰ উন্নতিত শস্য উৎপাদনৰ লক্ষ্যৰ ভিতৰত VR, IR, HT আদি চৰিত্ৰৰ শস্যৰ বিস্তাৰ ঘটোৱা হয় আৰু এই বিশাল শস্যৰ প্ৰকাৰ বিভিন্ন বেমাৰ ৰোধ কৰাত ব্যৱহাৰ কৰা হয়। ইয়াৰ কিছুসংখ্যক বিকাশৰ মূল্য ৰাইজৰ সংস্থাসমূহৰদ্বাৰা, যদিও নিম্নমানৰ প্ৰয়োজনীয়তাখিনিৰ মান পূৰণ হয় বাণিজ্যিকভাৱে কিছুমান ৰাইজৰদ্বাৰা অনুমোদিত প্ৰজেক্টৰ জৰিয়তে। GM শস্যৰ বিকাশ মুখ্যত IR আৰু HT প্ৰকাৰতহে কৰে বিভিন্ন উদ্যোগসমূহৰ দ্বাৰা সিহঁতৰ নিজা আৰু মিশ্ৰিত চৰিত্ৰৰ ওপৰত। ই হ'ল এক মিশ্ৰিত চৰিত্ৰৰ এক প্ৰকাৰ। এক সময়ত এক প্ৰকাৰ বংশগত জিন সুমুৱাই দি বৃহৎসংখ্যক GM প্ৰকাৰ উদ্ভিদ উৎপন্ন কৰা হয় কিন্তু এই সংযোগে স্বয়ংক্ৰিয়ভাৱে প্ৰজনন ঘটোৱা বিভিন্ন প্ৰকাৰৰ উদ্ভিদৰ ভিতৰত IR যুক্ত প্ৰ'টিন বা HT আৰু IR প্ৰকাৰেই প্ৰধান।

শস্য উৎপাদনত, বিভিন্ন চৰিত্ৰ একেলগে বিকাশ ঘটাই উন্নত মানৰ মুখ্য কৃষিগত

শস্যৰ সৃষ্টি কৰিব পাৰে আৰু এই শস্যই নিম্নমানৰ প্ৰয়োজনীয়তা যেনে— চেলেঞ্জযুক্ত পৰিৱেশ বিশেষকৈ অনাবৃষ্টি, কম খনিজ লৱণ, পুষ্টিগত অনুদান ইত্যাদি পূৰাব পাৰে। এই প্ৰকাৰ শস্য হ'ল কিছুমান যৌগিক চৰিত্ৰৰ সমাহাৰ, য'ত বিভিন্ন উদ্ভিদ উন্নীতকৰণ আৰু বিভিন্ন জিনৰ পৰিৱৰ্তন ঘটোৱা হয়। এনেকুৱা চৰিত্ৰৰ বিকাশ MAS আৰু GM প্ৰক্ৰিয়াৰদ্বাৰা ঘটোৱা হয়। অনাবৃষ্টিৰ ক্ষেত্ৰত চাউলৰ তুলনাত য়েঁহৰ উৎপাদন বৃদ্ধিত অসুবিধা হয়। আকৌ খনিজ লৱণৰ সহিষ্ণুতা আৰু পুষ্টিৰ ব্যৱহাৰে কাৰ্যদক্ষতা বিকাশত মান হ্রাস কৰে। উদাহৰণস্বৰূপে, অনাবৃষ্টিৰ সহিষ্ণু য়েঁহৰ প্ৰকাৰে যেতিয়া পানী বেছিকৈ পায় তেতিয়া ইয়াৰ উৎপাদন কমি যায়।

গতিকে ওপৰৰ আলোচনাৰ পৰা এইটোৱে গম পোৱা যায় যে GM প্ৰযুক্তিৰ কৃষি পদ্ধতিৰ পুৰণি স্বৰূপ সম্পূৰ্ণৰূপে সলনি কৰি দিব পাৰি। GM পদ্ধতিৰ দ্বাৰা এক আদৰ্শমানৰ প্ৰকাৰ বিকাশ কৰিব পাৰি। মুখ্য শস্য যিবোৰ বছৰেকীয়াভাৱে খেতি কৰিব পাৰি, যেনে— মাহজাতীয় শস্যসমূহৰ টেমুনাট নাইট্ৰ'জেন স্থিৰ কৰা হয় যাৰ ফলত নাইট্ৰ'জেন সাৰৰ প্ৰয়োজন নোহোৱাকৈ উন্নতমানৰ সালোক সংশ্লেষণ প্ৰক্ৰিয়াৰে শস্যৰ বিকাশ ঘটাব পাৰি। এই প্ৰকাৰ চৰিত্ৰৰ বিকাশ আৰু বাণিজ্যিকতাত দশক পাৰ হৈ গ'ল কিন্তু এই উদ্ভিদসমূহে গৱেষণা ক্ষেত্ৰত চালক হিচাপে ভূমিকা গ্ৰহণ কৰিছে আৰু GM শস্যৰ বিকাশ আৰু উৎপাদনত কম সময়ৰ আৰু কম মানৰ বিকাশৰ জ্ঞান উদ্ভৱ কৰিছে। তদুপৰি কিছুমান NGO ৰ সহায়ত কৃষিগত বিকাশত কিছুমান কল্পনাগত গৱেষণা যিবোৰৰ কিছুমানত প্ৰযুক্তি প্ৰয়োগ কৰা হয়। যাৰ কিছুমান প্ৰকাশত ব্যৰ্থ হয় আৰু এইবোৰত অৰ্থ যোগান ধৰে কিছুমান কৃষি অৰ্থনীতি প্ৰচেষ্টাই যেনে - Integrated Pest Management (POST NOTE 336), যিবোৰ সংস্থাই নিম্নমানৰ অৰ্থ আৱণ্টণিৰপৰাই যোগান ধৰে। □

অসমৰ সমন্বয় প্ৰক্ৰিয়াত 'ভোগালী'ৰ ভূমিকা

জয়শ্ৰী গোস্বামী

বিভিন্ন নৃ-গোষ্ঠীৰ সংশ্লেষণ প্ৰক্ৰিয়াৰ পৰিণতিত জন্ম লাভ কৰা অসমীয়া জাতিৰ 'বিহু' প্ৰাণৰো প্ৰাণৰ উৎসৱ; হিয়াৰ আমঠু। জাতীয় জীৱনৰ স্বৰূপ প্ৰকাশৰ ক্ষেত্ৰত বিহু উৎসৱৰ আছে এক গুৰুত্বপূৰ্ণ ভূমিকা। ৰঙালী বিহুৰ দৰেই মাঘবিহু বা ভোগালী বিহুৰো আছে সামগ্ৰিক ৰূপ আৰু তাৰ মাজতেই লুকাই আছে আঞ্চলিক অথবা প্ৰজাতিগত স্বৰূপ। এই আঞ্চলিক তথা প্ৰজাতিগত ৰূপবোৰৰ সংমিশ্ৰণৰ ফল অসমীয়াৰ ভোগৰ উৎসৱ ভোগালী।

মাঘৰ বিহু বা দোমাহী বা ভোগালী বিহু পুহ মাহৰ শেষৰ দিনটোত অনুষ্ঠিত হয়। বৈদিক পৰম্পৰাতো ভোগালী বিহুৰ অনুৰূপ পৰম্পৰাৰ উল্লেখ পোৱা যায়। শীতৰ কঠোৰতা দূৰ কৰিবৰ নিমিত্তে মকৰ সংক্ৰান্তিৰ অনুষ্ণংগত অনুষ্ঠিত হৈছিল 'মহাব্ৰত' উৎসৱ। এই উৎসৱত শীত নিবাৰণৰ অৰ্থে বসন্ত ঋতুক আহুন জনাই সূৰ্যদেৱতাক উপাসনা কৰা হৈছিল।

ভোগালী বিহুৰ কৃত্যসমূহৰ ভিতৰত অগ্নিপূজা অন্যতম। মেজি, পূজি, ভেলাপূজি, ভেলাঘৰ দাহন আদি মাঘ বিহুৰ অন্যতম কৃত্য; যাৰ লক্ষ্য অগ্নিসেৱা। প্ৰাচীন অগ্নিপূজা পৰম্পৰাৰ ধাৰক আৰু বাহক ৰূপে আজিও যেন ভোগালী বিহুৰ মেজি, ভেলাপূজি আদিয়ে ভূমিকা গ্ৰহণ কৰি আহিছে। গ্ৰাম্যকেন্দ্ৰিক অসমীয়া সমাজত প্ৰবীণসকলৰ কণ্ঠত নিগৰিত হোৱা —

“অগ্নিং প্ৰজ্বলিতং ৰন্দে চতুৰ্বেদহুতাশনম্।

সুৰ্ণৰ্ণমমলং জ্যোতিৰূপায় তে নমঃ ॥”

মন্ত্ৰধ্বনিয়ে যেন তাৰেই সাক্ষী বহন কৰে।

আবহমান কালৰে পৰা অসম আৰু অসমীয়া জাতিৰ লগত বিহু উৎসৱ অঙ্গাঙ্গীভাৱে জড়িত হৈ আহিছে। জাতি-বৰ্ণ নিৰ্বিশেষে পাহাৰ-ভৈয়ামৰ সকলো অসমীয়াই প্ৰাণৰ সমস্ত হেঁপাহেৰে পালন কৰি আহিছে ভোগৰ উৎসৱ ভোগালী। পুহৰ শেষ পষেকৰ পৰাই গাঁৱলীয়া অসমীয়া ডেকাসকল ব্যস্ত হৈ পৰে পথাৰত নৰা কটা, বাৰীৰ বাঁহ, কল-চোঁচনি গোটোৱা আদি বিভিন্ন কামত। মেজি, মঠ, ভেলাঘৰ বান্ধিবলৈ ইখন-সিখন গাঁৱৰ ডেকাসকলৰ মাজত প্ৰতিযোগিতা চলে। পথাৰৰ লখিমী ঘৰ চাপে; ভোগৰ সম্ভাৰ গোট খায়। লখিমী আৰু বাইজৰ মৰম শলাগৰ বিনিময়ত শীতৰ প্ৰচণ্ড শীতলাক নেওচি আৰম্ভ হয় উৰুকাৰ প্ৰস্তুতি।

টেকী শালৰ শব্দত মুখৰিত হৈ উঠে অসমৰ আকাশ-বতাহ, ঘৰৰ জীয়াৰী-বোৱাৰীৰ ৰঙিয়াল কথা-বতৰাই প্ৰাণময় কৰি তোলে টেকী শালৰ চৌদিশ। অসমীয়া গাভৰুহঁতৰ লিহিৰী হাতৰ পৰশত তৈয়াৰ হয় পিঠাগুৰি, চিৰা, সান্দহ আদি ভোগালীৰ বিবিধ উপকৰণ।

আনফালে ডেকাসকলৰ নেতৃত্বত আৰম্ভ হয় উৰুকাৰ আয়োজন। মুকলি পথাৰৰ ভেলাঘৰত আয়োজন কৰা লগভাত বা দলভাতৰ প্ৰস্তুতিয়ে যেন আজিও সৰুসৰু য়ায় মাৰ বান্ধি থিয় হোৱা অসমীয়াৰ সমন্বয়ৰ ইতিহাস। মাছ-কাছ, পাৰ, আলু-দাইল-কণী, শাক-পাচলি আদিৰ অপৰ্যাপ্ত আয়োজনে আমাক যেন পুনৰ সোঁৱৰাই দিয়ে সাহিত্য সন্মতি বেজবৰুৱাদেৱৰ ভাষা — “আমি অসমীয়া নহওঁ দুখীয়া, কিহৰ দুখীয়া হ'ম।”

উৰুকাৰ উজাগৰী নিশাৰ অন্তত, অৱশেষত এপষেক জোৰা কষ্টেৰে নিৰ্মাণ কৰি উলিওৱা মেজি আৰু ভেলাঘৰসমূহক বাইজৰ মঙ্গলার্থে অগ্নি দেৱতাক অৰ্পণ কৰাৰ মুহূৰ্ত আহি পৰে। তিল-মাছ ছটিয়াই, অগ্নিক সেৱা কৰি, হৰিধ্বনি দি, শংখ-বৰকাঁহ, তাল-খোল আদি বাদ্য বজাই জুই দি বৰ অসমীয়াই শীতৰ পৰিসমাপ্তি কামনা কৰে। মেজিৰ ৰঙাকৈ জ্বলা জুইৰ উত্তাপত মুকলি পথাৰত মুকলি মন লৈ আনন্দত বিভোৰ হৈ পৰে প্ৰতিজন অসমীয়া।

ভোগালীৰ ৰং ৰহইচৰ লগত জড়িত হৈ আছে অসমৰ বিভিন্ন অঞ্চলত বিভিন্ন খেলৰ পৰম্পৰা। সেইবোৰৰ ভিতৰত আঁহতগুৰি, কলিয়াবৰৰ বালিটীকা চিলাবন্ধা আদিৰ ম'হ যুঁজ অন্যতম। এই ম'হ যুঁজ চাবলৈ বিভিন্ন ঠাইৰ ডেকা-বুঢ়া, জীয়াৰী-বোৱাৰী, ল'ৰা-ছোৱালী আহি পথাৰৰ কাষে কাষে গোট খায় আৰু যুঁজৰ আনন্দ উপভোগ

কৰে। যুঁজত নিজৰ ম'হটো জিকা-নিজিকাৰ লগতেই যেন জড়িত হৈ থাকে সন্মান আৰু মৰ্যাদাৰ প্ৰশ্ন। বিজেতাৰ বুকু গৰ্বিত হয় যুদ্ধ জয়ৰ আনন্দত; আনহাতে ব্যৰ্থজনে পুনৰ মাৰ বন্ধাৰ সংকল্প গ্ৰহণ কৰে অহা বছৰৰ যুঁজখনলৈ।

প্ৰথম বিহুৰ বুলবুলি চৰাইৰ যুঁজ হাজো অঞ্চলৰ ভোগালী বিহুৰ এক উল্লেখযোগ্য পৰম্পৰা। সাম্প্ৰদায়িক সম্প্ৰীতিৰ পুণ্যতীৰ্থ স্বৰূপ হাজো অঞ্চলৰ জাতি-ধৰ্ম নিৰ্বিশেষে সকলো অসমীয়াৰ বাবে এই যুঁজ এক আকৰ্ষণীয় অনুষ্ঠান। ইয়াৰ উপৰি ভোগালী বিহুৰ দিনকেইটাত এই অঞ্চলৰ বিভিন্ন স্থানত কণীযুঁজ, নাৰিকল যুঁজ, কড়ি খেল আদিও অনুষ্ঠিত হয় যথেষ্ট উৎসাহেৰে।

দক্ষিণ কামৰূপৰ কোনো কোনো অঞ্চলত মাঘ বিহুৰ ৰাতি গাভৰুসকলে অনুষ্ঠিত কৰে এক অভিনৱ অনুষ্ঠান — “জালি পুতুলী”ৰ বিয়া। এই অনুষ্ঠানক এক প্ৰকাৰৰ ‘ছদ্মবিবাহ’ আখ্যা দিব পাৰি। সাধাৰণতে কৃষি-কৰ্মৰ অন্তত মাঘ বিহুৰ আৰম্ভণিতেই অসমীয়া সমাজৰ আৰম্ভ হয় বিয়াৰ বতৰ। সেয়ে বিহুৰ প্ৰথম দিনাই ছদ্মবিয়া পাতি গাভৰুবোৰে নিজৰ মনোবাঞ্ছিত দৰা কামনা কৰে। এয়া যেন তেওঁলোকৰ মনৰ অভিলাসৰে প্ৰতীকী প্ৰকাশ। জনবিশ্বাস মতে, ভেলাঘৰৰ পৰা আধাপোৰা বাঁহ আনি ৰভা সাজিলেহে বিয়া ফলপ্ৰসূ হয় বুলি গাভৰুসকলে ভাবে।

অসমৰ অন্য প্ৰান্তৰ দৰে ভোগালীৰ আনন্দত প্ৰাণ পাই উঠে অসমৰ ডিমৰীয়া অঞ্চলো। ৰজাদিনীয়া পৰম্পৰা অক্ষুণ্ণ ৰাখি ডিমৰীয়া অঞ্চলৰ বিলসমূহত উৰুকাৰ দিনা অনুষ্ঠিত হয় সমূহীয়াভাৱে মাছ মৰা প্ৰথা। জালিমৰা, পাৰশালি, বমানী আদি বিলসমূহ ঢোল-ডগৰৰ শব্দত প্ৰাণ পাই উঠে। ‘লালিলাং’ গীত আৰু নৃত্যৰ আনন্দই মুখৰিত কৰি তোলে বিলসমূহৰ পাৰ। পূজা আগ নবঢ়োৱালৈকে বিলত নামিবলৈ বৈ থকা ৰাইজৰ সমূহীয়া দলবদ্ধতাৰ ছবিয়ে আমাক যেন সোঁৱৰাই দিয়ে সামাজিক বান্ধোনৰ প্ৰতি থকা দায়বদ্ধতাক।

ভোগালীৰ বতৰত অসমীয়া প্ৰাণৰ বিনিময় চিন্তাৰ সাক্ষী হৈ আজিও চলি আছে ‘জোনবিল মেলা’। মৰিগাঁও জিলাৰ অন্তৰ্গত বৃহত্তৰ তিৱা জনজাতিৰ পৰম্পৰা ৰক্ষাৰ প্ৰতীক স্বৰূপে জোনবিলত অনুষ্ঠিত এই মেলাত আজিও অংশ গ্ৰহণ কৰে ‘গোভা’ ৰাজ্যৰ ৰজাই। বস্ত্ৰৰ বিনিময়ত বস্ত্ৰ প্ৰদানৰ ধাৰণাক ৰক্ষিত কৰি এই মেলাখনে যেন বৰ্তমানৰ ভোগবাদী অৰ্থনীতিৰ বিপৰীত বিন্দুত অসমীয়া চহা প্ৰাণৰ সৰলতাৰ প্ৰতীক ৰূপে বটবৃক্ষৰ দৰে থিয় হৈ আছে নিজৰ বুকুত বহু ইতিহাস সামৰি।

অসমৰ আন আন জনগোষ্ঠীৰ দৰে অভিবাসী মুছলমানসকলেও বিহুক অসমৰ জাতীয় উৎসৱৰ মৰ্যাদা দি আহিছে। এক বিশেষ পৰম্পৰাৰে অভিবাসী মুছলমান সমাজেও ভোগৰ উৎসৱ ভোগালী উদ্‌যাপন কৰে। সমাজৰ সকলো স্তৰৰ লোকৰ ঘৰত বিহুৰ সময়ত ‘মাগন’ মাগি ধান-চাউল গোটাই অভিবাসী মুছলমান সমাজৰ ডেকা ল’ৰাবোৰেও ভোগালীৰ ভোজ ভাত খায়। অকল সেয়ে নহয়, মাঘৰ বতৰত তেওঁলোকে অনুষ্ঠিত কৰে এক অভিনৱ উৎসৱ ‘সখি পতা উৎসৱ’। পুহ-মাঘ মাহৰ সংক্ৰান্তিত অনুষ্ঠিত হোৱা এই আমোদজনক উৎসৱত অসমীয়া সমাজৰ কোনো ডেকা ল’ৰাৰ সৈতে অভিবাসী মুছলমান সমাজৰ কোনো ডেকাৰ বন্ধুত্ব গঢ়ি উঠিলে তেওঁলোকে ‘সখিত্ব’ স্থাপন কৰে। ইজনে সিজনক গামোছা পিন্ধাই নতুন ধানৰ চিৰা, মুড়ী আদিৰ টোপোলাৰে আদৰি আদৰি তেওঁলোকে আনুষ্ঠানিকভাৱে ঘোষণা কৰে নিজৰ সখিত্বৰ সম্পৰ্ক। শংকৰ-আজানৰ দেশত যেন পুনৰবাৰ প্ৰমাণিত হয় সাম্প্ৰদায়িক সম্প্ৰীতিৰ অনুপম আদৰ্শ।

ব্ৰহ্মপুত্ৰ উপত্যকাৰ দৰেই বৰাক উপত্যকাতো মহা পয়োভৰেৰে পালিত হয় ভোগৰ উৎসৱ ভোগালী। গাঁৱে গাঁৱে অনুষ্ঠিত হয় নানা খেল-ধেমালি। ‘তিল-সংক্ৰাইন’, ‘পৌৰ পাৰ্বন’, পৌষ সংক্ৰান্তি’, ‘সংগ্ৰাইন’, ‘বুচু’ আদি নামেৰেও তেওঁলোকৰ মাজত জনাজাত ভোগালী বিহুত ঠায়ে ঠায়ে বৰাক উপত্যকাবাসীয়ে মেলা-উৎসৱ আদিও অনুষ্ঠিত কৰে। অনেকে আকৌ বিহুৰ দিনা নিজৰ পুৰুষসকলক স্মৰণ কৰি তেওঁলোকৰ উদ্দেশ্যে পিঠা-পনা আদিৰে কলপাতত ভোগদানো কৰে। বৰাকবাসী মহিলাসকলে তিলপিঠা, ঘিলাপিঠা, বকফুল পিঠা, চুঙাপিঠা আদি কিমান জাতৰ পিঠা তৈয়াৰ কৰি ভোগালীক আদৰাৰ য়ে প্ৰস্তুতি চলাই তাৰ অন্ত নাই।

উদং পথাৰত হাড়-কঁপোৱা জাৰ খেদিবলৈ আহোমসকলে অনুষ্ঠিত কৰিছিল ‘মাই-ক-চুম-ফাই’ উৎসৱ। ‘লজি জুই বিহু’ ৰূপে পালন কৰা উৎসৱত ‘মেজি’ ঘৰক তেওঁলোকে প্ৰদান কৰিছিল জাতীয় আখৰা গৃহৰ মৰ্যাদা। য’ত নিহিত হৈ আছিল টাই আহোম কৃষ্টি-সংস্কৃতিৰ বীজ। মুকলি মনেৰে নানা ধৰণৰ খেল-ধেমালি অনুষ্ঠিত কৰাৰ উপৰিও এওঁলোকে উদং পথাৰতেই আয়োজন কৰিছিল ম’হ, হাতী, কুকুৰা, শেন আদি বিভিন্ন জীৱ জন্তুৰ যুঁজ। তদুপৰি এই অনুষ্ঠানৰ মুখ্য আকৰ্ষণ আছিল ‘মালযুঁজ’। ‘মাই-ক-চুম-ফাই’ অগ্নি উৎসৱৰ এই খেল-ধেমালি আৰু যুঁজসমূহৰ মাধ্যমেদি আহোম ডেকাসকলে সাহসী হোৱাৰ প্ৰেৰণা পাইছিল। তদুপৰি এই উৎসৱতেই ‘ফুৰা-আ-আলঙ’ বা ভগৱানক

পাৰ্থনা জনাই বৰষুণৰূপী বীৰ্যৰ জৰিয়তে পৃথিৱীক সৰ্গভা কৰি তুলিবলৈ অনুৰোধ কৰিছিল।

অসমীয়াৰ প্ৰাণৰ উৎসৰ 'ভোগালী' আচলতে অসমৰ বিভিন্ন জাতি-জনগোষ্ঠীৰ সামাজিক আচৰণৰ যৌগ ৰূপ। বৰ অসমৰ সমন্বয়, সমাহৰণ আৰু সম্প্ৰীতিৰ প্ৰতীক স্বৰূপে 'ভোগালী'য়ে পালন কৰি আহিছে বিস্ময়কৰ ভূমিকা। সৰল সম্প্ৰীতিৰ মাজতেই ৰক্ষিত হৈছে 'ভোগালী'ৰ উদ্দেশ্য আৰু তাৎপৰ্য। বৰ্তমানৰ জটিল যুগসন্ধিত জাতি-বৰ্ণ-ধৰ্ম-সম্প্ৰদায় নিৰ্বিশেষে সকলোৱে ভোগালীৰ ভোগেৰে অনুপ্ৰাণিত হৈ মানৱ কল্যাণত ব্ৰতী হ'ব পাৰিলেই ইয়াৰ উদ্দেশ্য আৰু তাৎপৰ্যৰ সাৰ্থকতা ৰক্ষিত হ'ব। স্বৰূপাৰ্থত ভোগালী বিহুৰ ভোগ সামাজিক ঐক্যৰ আধাৰতহে প্ৰতিষ্ঠিত। হিংসা আৰু সন্দ্বাস মুক্ত তথা শান্তিযুক্ত সমাজহে এই উৎসৱৰ প্ৰকৃত ভিত্তি। সামাজিক শান্তিৰ আধাৰতহে নিহিত হৈ আছে ভোগালীৰ ভোগৰ প্ৰকৃত তৃপ্তি। □

বিশেষ কৃতজ্ঞতা ড° নবীন চন্দ্ৰ শৰ্মা

স্ত্ৰী শিক্ষাৰ প্ৰয়োজনীয়তা : এটি আলোচনা

সুনীতি মহন্ত

সুস্থ সমাজ এখনৰ গঠন আৰু বিকাশৰ লগত জড়িত আটাইতকৈ গুৰুত্বপূৰ্ণ কথাটো হৈছে মহিলাসকলক শিক্ষিত কৰি তোলাটো। শিক্ষাৰ দ্বাৰাহে নাৰীসকলে সমাজত প্ৰচলিত অন্ধবিশ্বাস, কু-সংস্কাৰ আদিৰপৰা মুক্ত হ'ব পাৰিব। নাৰী শক্তি এক বৃহৎ শক্তি, নাৰী শক্তিৰ বিকাশেহে দেশ এখনক উন্নতিৰ শিখৰলৈ নিব পাৰে।

১৯২৬ চনত ইংৰাজসকলৰ আগমনে অসমলৈ আধুনিক শিক্ষাৰ বতাহ কঢ়িয়াই আনে। ইয়াৰ কেইবছৰমান পিছত অৰ্থাৎ ১৯৩৬ চনত অসমলৈ অহা খ্ৰীষ্টান মিছনেৰীসকলৰ যত্নত অসমৰ শৈক্ষিক জগতত এটা নতুন বাতাবৰণৰ সৃষ্টি হয়। এই মিছনেৰীসকলে অসমত মহিলাসকলৰ শিক্ষাৰ বাবেও বিশেষ প্ৰচেষ্টা হাতত লৈছিল। এই প্ৰচেষ্টাৰ ফলস্বৰূপে ১৮৩৯ চনত প্ৰথমবাৰৰ বাবে অসমত ছোৱালীৰ বাবে শিক্ষানুষ্ঠান স্থাপন কৰা হয়।

আমাৰ দেশত প্ৰাপ্তবয়স্ক লোকৰ নিৰক্ষৰতা বুলিলে আমি বিশেষভাৱে মহিলাসকলৰ নিৰক্ষৰতাকেই বুজোঁ। এই অজ্ঞাত আৰু নিৰক্ষৰতাই তেওঁলোকক স্বাভাৱিকতেই পুৰুষৰ তুলনাত সকলো দিশত সাধাৰণভাৱে অনগ্ৰসৰ কৰি ৰাখিছে। এই অনগ্ৰসৰতাই দেশৰ সামগ্ৰিক ৰূপত জাতীয় বিকাশত প্ৰধান অন্তৰায় ৰূপে দেখা দিছে।

সেয়েহে স্ত্ৰী শিক্ষাৰ প্ৰয়োজনীয়তাৰ দিশত পোন প্ৰথমে সোঁৱৰাই দিব লাগিব যে মহিলাসকলৰ শিক্ষাৰ অবিহনে দেশ আৰু সমাজৰ সামগ্ৰিক বিকাশ সম্ভৱপৰ নহয়। দ্বিতীয়তে পাৰিবাৰিক জীৱনৰ সুখ-সমৃদ্ধি আৰু স্থিৰতা মহিলাসকলৰ শিক্ষাৰ ওপৰত একান্তভাৱে নিৰ্ভৰ কৰে। সুখী পৰিয়ালৰ ধাৰণা আমি এই শিক্ষাৰ যোগেদিহে বাস্তৱত পৰিণত কৰি তুলিব পাৰোঁ। শিক্ষিত মহিলাই হৈছে একোটা পৰিয়ালৰ সুখ-শান্তিৰ প্ৰধান গুৰিয়াল। তেওঁলোকে পৰিয়ালৰ প্ৰতিজন লোকক মৰম-চেনেহৰ আবেগিক

বান্ধোনেৰে বান্ধি ৰাখিব পাৰে।

তৃতীয়তে, বৰ্তমান সময়ত জনসংখ্যাৰ বিশ্লেষণ ৰোধকৰণৰ দিশত শিক্ষিতা মহিলাই গুৰুত্বপূৰ্ণ ভূমিকা পালন কৰিব পাৰে। পুৰণি মনোভাব সলনি কৰি বৰ্তমান পৰিস্থিতিত এক বাস্তৱ আৰু সময়োপযোগী দৃষ্টিভঙ্গীক শিক্ষিতা মহিলাইহে সাৰ্থক ৰূপ দিব পাৰে। নিৰক্ষৰ মহিলাই পৰিয়াল পৰিকল্পনা আঁচনিৰ সফল ৰূপদান দিব নোৱাৰে। চতুৰ্থতে শিশুৰ স্বাস্থ্য ৰক্ষা, শিশুৰ যতন, পুষ্টি সাধন, শিশু শিল্প আদি দিশত বৰ্তমান সচেতন আৰু শিক্ষিত সমাজে অধিক মনোনিবেশ কৰিছে। উন্নত বংশধৰৰ যোগেদিহে দেশৰ আৰু সমাজৰ ভৱিষ্যত উন্নতি ৰচনা কৰিব পাৰি। এনেবোৰ কথাৰ উপলব্ধিয়ে বৰ্তমান শিশুৰ যতন আৰু শিশু মনোবিজ্ঞানক মাতৃৰ বাবে আকৰ্ষণীয় অধ্যয়নৰ বিষয়ত পৰিণত কৰিছে। কিন্তু মহিলাৰ নিৰক্ষৰতাই এনেকুৱা চিন্তা নিৰৰ্থক কৰি তুলিব পাৰে। পঞ্চমতে, বাল্যকাল ছোৱাত শিশুৰ চৰিত্ৰ গঠন আৰু ব্যক্তিত্ব বিকাশৰ প্ৰয়োজনীয় গুণসমূহ গঢ় দি তোলাৰ মুখ্য ব্যক্তি হৈছে - শিক্ষিতা মাতৃ। শিক্ষিতা মহিলাৰ অবিহনে শিশুৰ ব্যক্তিত্ব আৰু সুস্থ মানসিকতা গঢ়াৰ এই গুৰু দায়িত্ব আনে পালন কৰিব নোৱাৰে।

স্বাধীনতাৰ লগে লগে নাৰী শিক্ষাৰ দিশটোৰ প্ৰতি দেশ অধিক সচেতন হৈ উঠে। স্বাধীন ভাৰতৰ সৰ্বপ্ৰথম শিক্ষা আয়োগে নাৰী শিক্ষাৰ প্ৰয়োজন সম্বন্ধে মন্তব্য কৰোঁতে কয় যে যদিহে শিক্ষা কেৱল পুৰুষ বা নাৰীৰ বাবে আচুতীয়া কৰা হয় তেন্তে শিক্ষাৰ সুবিধা নাৰী সকলেহে পাব লাগিব। কিয়নো, এনে হ'লে সেই শিক্ষা নিশ্চিতভাৱে উত্তৰ পুৰুষে লাভ কৰিব পাৰে।

বৰ্তমানৰ সামাজিক, অৰ্থনৈতিক আৰু ৰাজনৈতিক সকলো পৰিবেশতে আৰু সকলো ক্ষেত্ৰতে পুৰুষৰ সমানে সমানে নাৰী সকল আগবাঢ়ি যোৱা যদিও সম্ভৱ হোৱা নাই তথাপিও ভৱিষ্যতলৈ এনে সমতা আনিবৰ বাবে এতিয়াৰে পৰা প্ৰস্তুত হ'বলৈ লোৱাটো অতি প্ৰয়োজনীয় কথা। এনে প্ৰস্তুতিত একমাত্ৰ উপযুক্ত শিক্ষাইহে প্ৰকৃত সহায় আগবঢ়াব পাৰিব। এনে কাৰণতে নাৰী শিক্ষাৰ উপযুক্ত পাঠ্যক্ৰম প্ৰস্তুত কৰোঁতে বিশেষ যত্ন অৱলম্বন কৰাৰ প্ৰয়োজন।

জনসাধাৰণৰ মাজত স্ত্ৰী শিক্ষাৰ প্ৰয়োজনীয়তা সম্বন্ধে সচেতনতা জাগ্ৰত কৰি তুলিবৰ কাৰণে চৰকাৰী, বে-চৰকাৰী তথা কল্যাণমূলক অনুষ্ঠানৰ সহযোগত বিশেষ প্ৰচাৰ অভিযান আৰম্ভ কৰিব লাগে। যাতে বিদ্যালয়ত ছাত্ৰীৰ নাম ভৰ্তি সংখ্যা বৃদ্ধি হয়। সামাজিক শিক্ষা সংগঠিকা, গ্ৰামসেৱিকা, মহিলা সংঘ, পৰিয়াল পৰিকল্পনা, মহিলা স্বাস্থ্য

ৰক্ষক, মহিলা সম্প্ৰসাৰণ সমিতি আদিৰ সৈতে সহযোগিতামূলকভাৱে স্ত্ৰী-শিক্ষাৰ আঁচনি ফলৱতী কৰা প্ৰয়োজন।

সামৰণিত এই কথা অনস্বীকাৰ্য যে শিক্ষিতা মহিলাইহে তেওঁলোকৰ অৰ্থনৈতিক স্বাধীনতা আৰু স্বাৱলম্বিতা লাভ কৰি উঠি নাৰী মুক্তি আৰু তেওঁলোকৰ সামাজিক অধিকাৰ সাৰাস্ত কৰি তুলিব পাৰে। শিক্ষাই তেওঁলোকক অৰ্থনৈতিক আত্মনিৰ্ভৰশীলতা আনি দিব পাৰে আৰু ইয়াৰ যোগেদি তেওঁলোকৰ ওপৰত চলা পুৰুষ শাসন, দমন, উৎপীড়ন আদিৰ অন্ত পেলাই আত্ম প্ৰকাশ আৰু বিকাশৰ সুবিধা দিব পাৰে।

এনেবোৰ কথাৰ বিবেচনাই স্ত্ৰী শিক্ষাৰ প্ৰয়োজনীয়তা স্পষ্ট কৰি তুলিব পাৰে। □

গ্ৰন্থ পঞ্জী :

◆ বৰুৱা, যতীন : আধুনিক ভাৰতৰ শিক্ষাৰ ইতিহাস আৰু সমস্যাবলী।

◆ বৰুৱা, যতীন : আধুনিক ভাৰতীয় শিক্ষা।



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