

STUDIES ON WILD ORCHIDS OF ASSAM

Under the Research and Developmental Cell, B.N. College, Dhubri



Submitted by
The Students of B. Sc. 4th Semester (Honours)
Department of Botany
B.N. College, Dhubri



Under the Supervision:
Dr. Puranjoy Mipun
Dr. N. Basumatary
Ms. Lily Terangpi



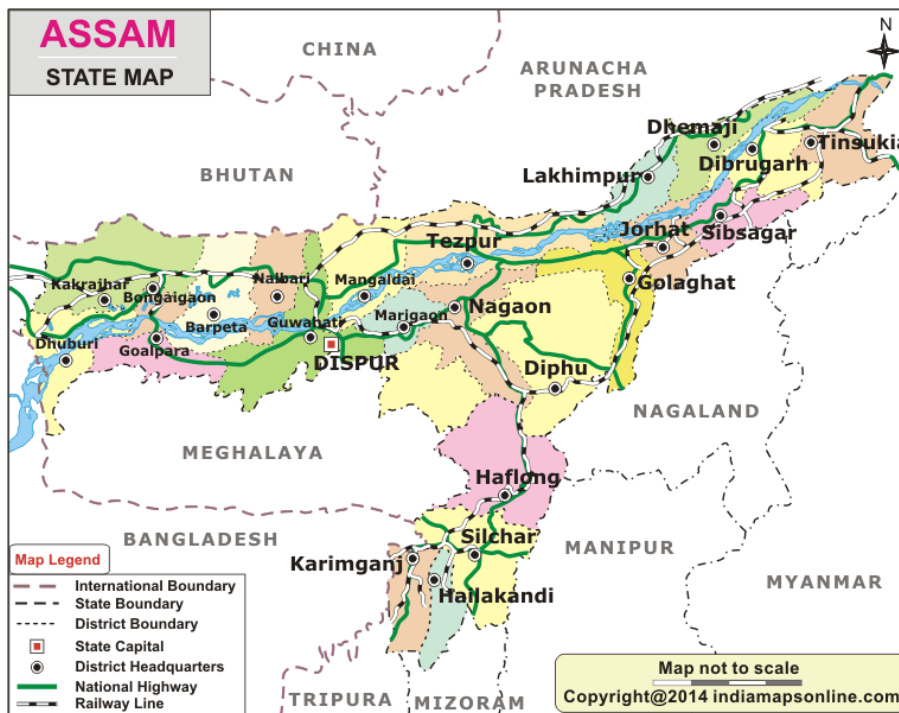
Research Period: April – June, 2022

Introduction:

Orchids belong to the family Orchidaceae is considered to be the most highly evolved in the floral specialization and diversified form among the monocotyledons. In India, Orchids from 9% of our flora and are the largest and highly advanced botanical family of higher plants. It is estimated that at about 25,000-35,000 species with 800-1,000 genera are distributed throughout the world. About 1331 species with 184 genera of Orchid species are found in India with temperate Himalayas as their natural home. North-East India constitutes an orchid hotspot, with nearly 70 percent of the total Orchids found in India are found in this region and Assam is the second largest state of North East India and is a rich storehouse of Indian Orchids. The forests of Assam possess a large number of beautiful important Orchids. The total number of Orchid species may be around 193 under 71 genera out of which 27 are endemics (Gogoi et al., 2013). With the pace of industrialization, pressure on lands and natural resources have been drastically increased. As a result, large-scale deforestation and degradation of the natural habitats are posing a significant hazard, leading to loss of bioresources from its natural habitats. Moreover, the indigenous flora of region today is mostly confined to the native forests found in the protected areas such as National Parks, Biosphere Reserves, Wildlife Sanctuaries, etc. Even these protected areas are under tremendous anthropogenic pressure, and several floristic elements including various wild orchids face threat of extinction (Mipun et al., 2019). So, considering the increased threats from large-scale deforestation and degradation of natural habitat, it is essential to develop some appropriate management strategies and effective plans for conservation of wild orchids species before it is lost forever.

Study Area:

Assam is a state in northeastern India, south of the eastern Himalayas along the Brahmaputra and Barak River valleys. Assam covers an area of 78,438 km². The state is bordered by Bhutan and Arunachal Pradesh to the north; Nagaland and Manipur to the east; Meghalaya, Tripura, Mizoram and Bangladesh to the south; and West Bengal to the west via the Siliguri Corridor, a 22 km wide strip of land that connects the state to the rest of India. Orchids are known for their beauty, displayed in homes around the world. In Assam, this appreciation of orchids stems back centuries and is deeply integrated in their culture. The foxtail orchid, *Rhynchostylis retusa*, plays a special role in Assamese culture, which is helping to shape conservation efforts in the Indian state of Assam. India is home to over 1,300 species of orchids. The Northeast of the country, Assam State, is an orchid hotspot, hosting 72% of India's total orchid diversity.



Map1: Study area.

Materials and Methods:

All the species were collected from The Orchid Society of Eastern Himalaya (TOSEHIM). TOSEHIM collect orchids from entire north eastern parts of India. Department of Botany B.N. College, Dhubri and TOSEHIM have an agreement to share wild orchid species for research purpose . All the collected species are grown in the green house for further study. Study of different orchid varieties has been done by the morphological sectioning of the species. The morphological study has been done by differentiating different flower parts and observing minutely all the flower parts and measurement has been done by using scale.

Normally, 2-3 specimens of each species in flowering stagewere collected and life form photographs were prepared. The specimens were identified, described and nomenclature checked with the help of the various published literature. The recent ‘International Code of Botanical Nomenclature’ (2006) and other recent monograph and revisionary works on various taxa were consulted for the up to date nomenclature in the present flora. Moreover, many websites such as International Plant Name Index (IPNI, 2020), Plants of the World Online (POWO, 2022), The Plant List, Tropicos, etc. were consulted for the current nomenclature of the taxa. Moreover, the global and native distribution of each species was recorded from POWO.

Results and Discussion:

A total of eight orchids species namely *Aerides multiflora*, *Arundina graminifolia*, *Cymbidium aloifolium*, *Dendrobium aphyllum*, *Micropera pallida*, *Papilionanthe teres*, *Spathoglottis plicata* and *Vanda cristata* have been studied details with dissection, measurement of all the floral parts, photography, correct nomenclature and details descriptions. Moreover, their native areas were mentioned with its Global map.

Aerides multiflora Roxb



Image 1: *Aerides multiflora*



Native to:

Andaman Is., Assam, Bangladesh, Cambodia, East Himalaya, India, Laos, Myanmar, Nepal, Thailand, Vietnam, West Himalaya.

Source: <https://powo.science.kew.org/>

Description:

Habit & Habitat: Herbaceous, Plants epiphytic, autotrophic.

Pseudobulb: Ovoid, bilaterally flattened, 3-6(-10) × 2.5-4 cm, usually enclosed in leaf bases.

Leaf:- 4 or 5, lorate, 40-90 × 1.5-4(-6) cm, thickly leathery, articulate 8-16 cm from base, apex obtuse and unequally 2-lobed.

Inflorescence: Arising from within sheaths at base of pseudobulb, pendulous, 20-60 cm; rachis (20-)25-35-flowered; floral bracts 2-5 mm.

Flower: Slightly fragrant, medium-sized; pedicel and ovary 12-20 mm; sepals and petals pale yellow to cream-yellow, with a broad, central maroon-brown stripe; lip white or cream-colored, with dense, maroon venation on lateral lobes and longitudinal maroon stripes on mid-lobe. Sepals spreading, narrowly oblong to narrowly elliptic, 15-20 × 4-6 mm, apex obtuse. Petals narrowly elliptic, 14-18 × 4-6 mm, apex obtuse to acute; lip subovate, 13-20 mm, not fused to basal margins of column, base slightly saccate, 3-lobed; lateral lobes acute.

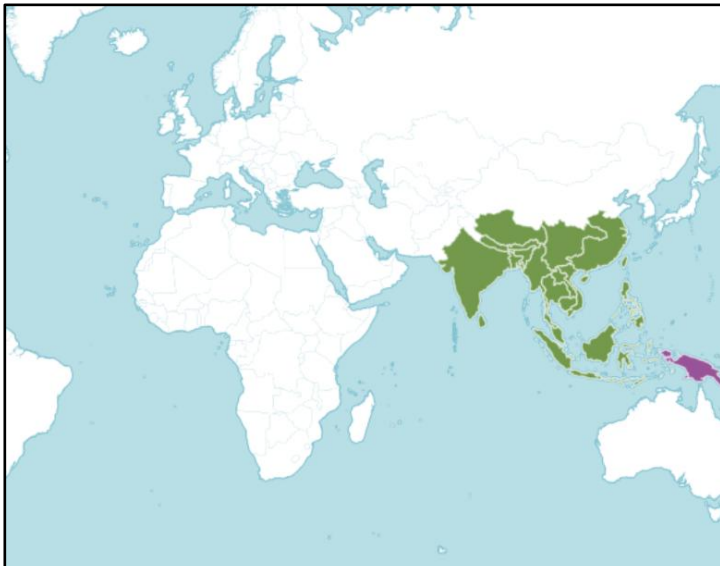
Column: 10-12 mm; pollinia 2. Capsule oblong-ellipsoid, 35-65 × 20-30 mm.

Flowering and fruiting: Apr – Jun.

***Arundina graminifolia*(D. Don) Hochreutiner, Bull.**



Image 2: *Arundina graminifolia*



Native to:

Assam, Bangladesh, Borneo, Cambodia, China South-Central, China Southeast, East Himalaya, Hainan, India, Jawa, Laos, Lesser Sunda Is., Malaya, Maluku, Myanmar, Nansei-shoto, Nepal, Philippines, Sri Lanka, Sulawesi, Sumatera, Taiwan, Thailand, Tibet, Vietnam.

Source: <https://powo.science.kew.org>

Description:

Habit & Habitat: Herbaceous, epiphytic.

Stem:-Rigid, enclosed by leaf sheaths.

Leaves:-Numerous, 8-20 × 1-2 cm, leathery or papery, apex acuminate; sheaths 2-4 cm

Inflorescence:-2-20 cm long, racemose or 1- or 2-branched at base and paniculate, 2-10-flowered, flowers opening in succession; floral bracts broadly ovate-triangular, 3-5 mm, sheathing at base.

Flower:-White or pink, sometimes slightly tinged with purple; pedicel and ovary 1.5-3 cm. Sepals narrowly elliptic to narrowly elliptic-lanceolate, 25-40 × 7-9 mm. Petals ovate-elliptic, 25-40 × 13-15 mm; lip 25-40 × 12-24 mm, apical margin undulate; lateral lobes incurved, embracing column, rounded; mid-lobe sub square, 8-16 × 10-16 mm, apex shallowly divided; disk with 3 (rarely 5) lamellae.

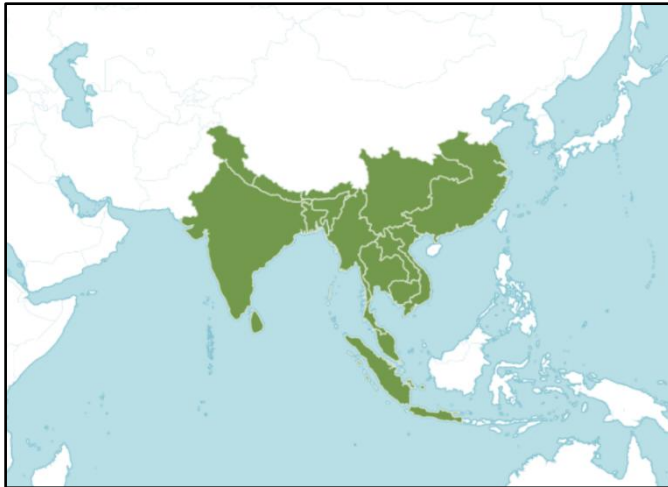
Column:-Slightly arcuate, 20-25 mm. Capsule 28-35 × 8-15 mm.

Flowering and fruiting:- Jun-Nov, sometimes Jan-Apr

Cymbidium aloifolium (Linnaeus) Swartz



Image 3: *Cymbidium aloifolium*



Native to: Himalaya to W. Malesia.

Source: <https://powo.science.kew.org/>

Description:

Habit & Habitat: Herbaceous, Plants epiphytic, autotrophic. Pseudobulbs ovoid, bilaterally flattened, 3-6(-10) × 2.5-4 cm, usually enclosed in leaf bases.

Leaves: 4 or 5, lorate, 40-90 × 1.5-4(-6) cm, thickly leathery, articulate 8-16 cm from base, apex obtuse and unequally 2-lobed.

Inflorescence: Arising from within sheaths at base of pseudobulb, pendulous, 20-60 cm; rachis (20-)25-35-flowered; floral bracts 2-5 mm.

Flowers: Slightly fragrant, medium-sized; pedicel and ovary 12-20 mm; sepals and petals pale yellow to cream-yellow, with a broad, central maroon-brown stripe; lip white or cream-colored, with dense, maroon venation on lateral lobes and longitudinal maroon stripes on mid-lobe. Sepals spreading, narrowly oblong to narrowly elliptic, 15-20 × 4-6 mm, apex obtuse. Petals narrowly elliptic, 14-18 × 4-6 mm, apex obtuse to acute; lip subovate, 13-20 mm, not fused to basal margins.

Column: Slightly arcuate, 10-12 mm; pollinia 2.

Capsule: oblong-ellipsoid, 35-65 × 20-30 mm.

Flowering and fruiting: Apr – May.

Dendrobium aphyllum (Roxb.) C.E.C.Fisch.



Image 4: *Dendrobium aphyllum*



Native to:

Andaman Is., Assam, Bangladesh, Cambodia, China South-Central, China Southeast, East Himalaya, Laos, Malaya, Myanmar, Nepal, Thailand, Vietnam.

Source: <https://powo.science.kew.org/>

Description:

Habit & Habitat: Herbaceous, epiphytic, stems pendulous, cylindrical, 30-60(-90) cm, slender, 4-7(-10) mm in diam., fleshy, unbranched, with many nodes, internodes 2-3.5 cm.

Leaves: lanceolate or ovate-lanceolate, 6-8 × 2-3 cm, leathery, base sheathing, apex acuminate; leaf sheath pale white when dry, papery, sheath mouth open cupular.

Inflorescences: multiple, on deciduous or leafy old stems, very short, 1-3-flowered; peduncle 2-5 mm; basal sheaths 3 or 4, 2-3 mm, membranous; floral bracts pale white, ovate, ca. 3 mm, membranous, apex acute. Pedicel and ovary deep brown, tinged with green, 2-2.5 cm.

Flowers: Spreading, pendulous; sepals and petals white tinged with pale purplish red or distal part pale purplish red, lip with purplish red striation on both sides at base, pale yellow above middle, pale pink below middle, column white with red stripes on both front sides, anther cap white. Column: ca. 3 mm; anther cap subconic, densely finely papillate-hairy, front margin broadly emarginate.

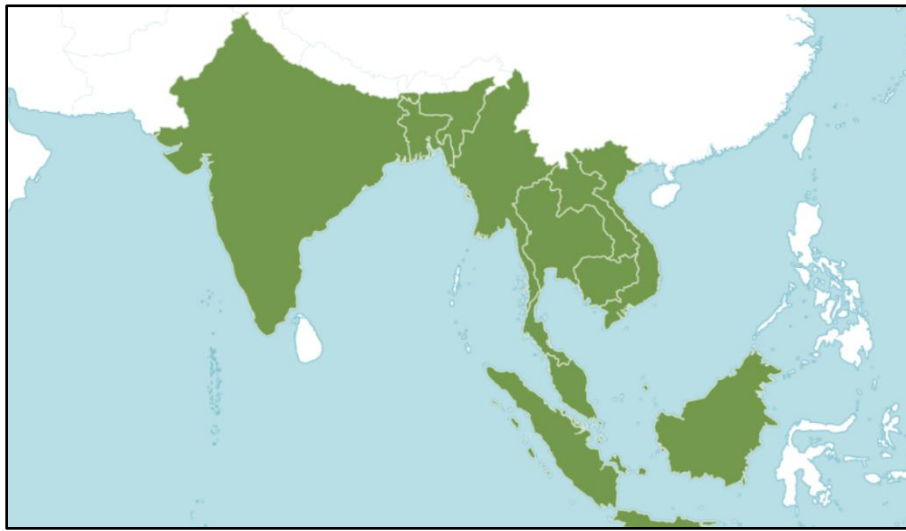
Capsule: Narrowly obovoid, ca. 4 × 1.2 cm, with a stalk 1-1.5 cm

Flowering and fruiting: Apr – May.

Micropera pallida (Roxb.) Lindl.



Image 5: *Micropera pallida*



Native to: Assam, Bangladesh, Borneo, Cambodia, India, Jawa, Laos, Malaya, Myanmar, Sumatera, Thailand, Vietnam

Source: <https://powo.science.kew.org/>

Description:

Habit & Habitat: Herbaceous, epiphytic, clambering, monopodial. Stems long, with many long roots and leaves.

Leaves: Flat, fleshy, oblong to linear, with sheathing base, jointed. Inflorescence often borne opposite leaves, rather long, racemose, many flowered.

Flowers: Small or medium-sized, not resupinate. Sepals and petals free, similar; lip conspicuously spurred or saccate, 3-lobed; lateral lobes broad, erect; mid-lobe smaller, fleshy; spur often ornamented at its entrance, commonly with a longitudinal septum inside.

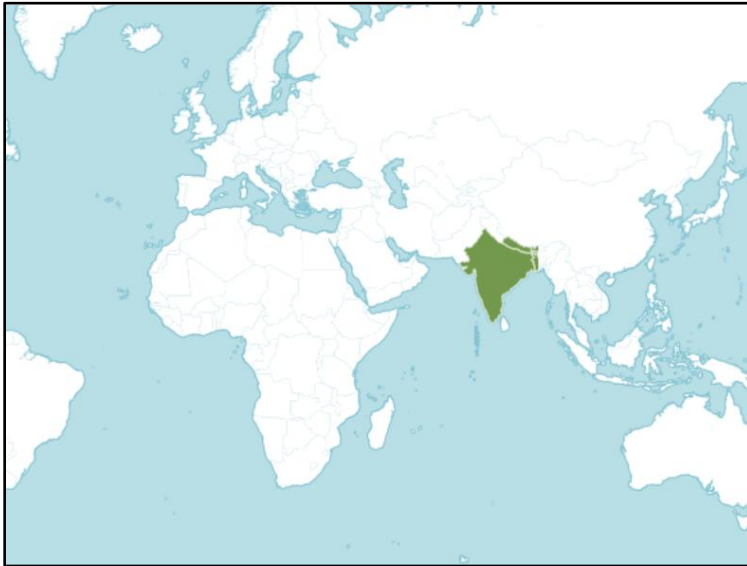
Column: Short, lacking a foot; rostellum projection prominent, beaked; pollinia 4, in 2 subequal pairs on a common long stipe; viscidium very small.

Flowering and fruiting: Feb. – May.

Papilionanthe teres (Roxburgh) Schlechter



Image 6: *Papilionanthe teres*



Native to:

Andaman Is., Assam, Bangladesh, China South-Central, East Himalaya, India, Laos, Myanmar, Nepal, Thailand, Vietnam

Source: <https://powo.science.kew.org/>

Description:

Habit & Habitat: Herbaceous, epiphytic, scrambling, terete, usually to 1 m, stout, branching.

Leaves:- well spaced, terete, 8-18 cm × 4-5 mm, fleshy, obtuse.

Inflorescence:- Slightly longer than leaf, laxly 2-5-flowered; peduncle stout, with 3 or 4 membranous sheaths; floral bracts broadly ovate, 4-6 mm, slightly fleshy, obtuse.

Flower:- Opening widely, 4-10 cm in diam., thinly textured, sepals and petals white, tinged with pink or purplish, lip deep purple-red, spur yellowish brown; pedicel and ovary white, 2-3 cm.

Dorsal sepal:- Broadly elliptic, ca. 2.5 × 2 cm, obtuse-rounded; lateral sepals obliquely ovate-oblong, ca. 3 × 2 cm, base adnate to column foot, apex obtuse. Petals suborbicular, large, ca. 3 × 2.7 cm, obtuse; lip spurred, 3-lobed.

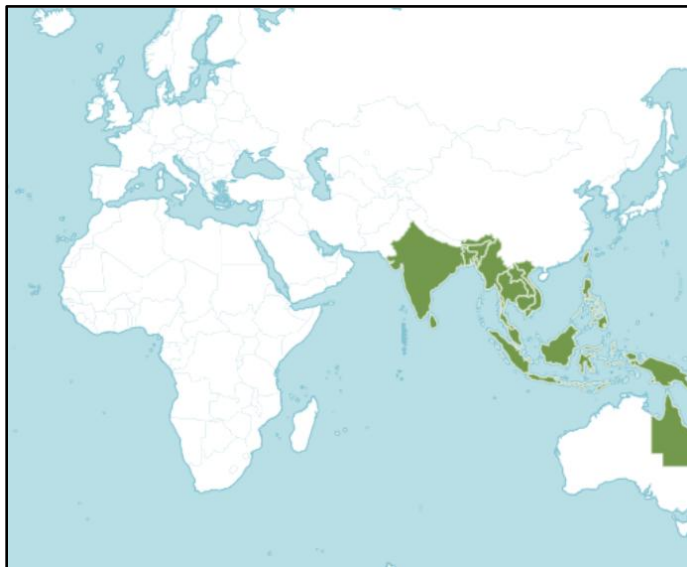
Column:- ca. 5 mm, foot ca. 5 mm.

Flowering and fruiting:- May – Jun.

Spathoglottis plicata Blume



Image 7: *Spathoglottis plicata*



Native to:

Andaman Is., Assam, Bangladesh, Bismarck Archipelago, Borneo, Cambodia, Caroline Is., Cook Is., East Himalaya, Fiji, India, Jawa, Laos, Lesser Sunda Is., Malaya, Maluku, Marianas, Myanmar, Nansei-shoto, New Caledonia, New Guinea, Nicobar Is., Niue, Philippines, Queensland, Samoa, Santa Cruz Is., Solomon Is., Sri Lanka, Sulawesi, Sumatera, Taiwan, Thailand, Tonga, Vanuatu, Vietnam,

Source: <https://powo.science.kew.org/>

Description:

Habit and Habitat: Herbaceous, epiphytic

Leaf blade:- linear-lanceolate, 30-80 × 5-7 cm, petiole-like stalk 10-20 cm.

Inflorescence:- 100 cm, with many tubular sheaths; rachis 8-15 cm, 9-16-flowered; floral bracts reflexed, purple, ovate, ca. 1.5 cm.

Flower:- opening successively, purple; pedicel and ovary purplish, 25-35 mm.

Sepals:-ovate, concave, 15-17 × ca. 9 mm, sparsely pubescent, apex acute; lateral sepals oblique. Petals subelliptic, ca. 18 × 13 mm, apex acute; lip 3-lobed, 16-23 mm, with 2 small, triangular, pubescent auricles at base of claw; disk with 2 short.

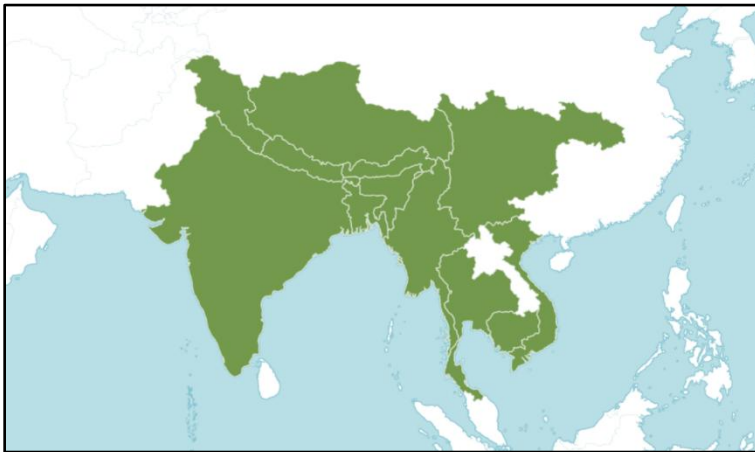
Keels :- arising from base of lip; lateral lobes falcate, ca. 6 × 3 mm, apex dilated and truncate; mid-lobe dilated toward apex and flabellate, ca. 10 mm, apex subtruncate and often shallowly 2-lobed.

Flowering and fruiting: Jan-Dec.

***Vanda cristata* Wall. ex Lindl.**



Image 8: *Vanda cristata*



Native to:

Assam, Bangladesh, Cambodia, China South-Central, East Himalaya, India, Myanmar, Nepal, Thailand, Tibet, Vietnam, West Himalaya

Source: <https://powo.science.kew.org/>

Description:

Habit & Habitat: Herbaceous, epiphytic, stems 6-18 cm, 0.6-0.8 cm in diam.

Leaves: Leaf blade 7.5-15 × 0.6-1.8 cm, thickly leathery, apex praemorse.

Inflorescences: 2 or 3, 3-4.5 cm, 1- or 2-flowered; peduncle 2-3.5 cm; rachis weakly zigzag, 0.5-5 cm; floral bracts broadly ovate, 4-6 × 2-4 mm, apex obtuse-acute.

Flowers: thickly textured, widely opening, 3.5-5 cm in diam.; pedicel and ribbed ovary yellowish green, 1.5-3 cm; sepals and petals yellowish green, not tessellated. Dorsal sepal oblong-spatulate, 20-30 × 5-9 mm, base cuneate, apex obtuse-acute; lateral sepals lanceolate, 20-30 × 5-10 mm, base cuneate, apex obtuse. Petals falcate-oblong, 18-28 × 2-5 mm, base contracted, apex acute; lip golden yellow to white, striped with violet-purple to red-brown, ca. as long as or longer than sepals, fleshy, spurred.

Column: White, 4-8 mm; anther cap yellow, 3-3.5 mm wide.

Flowering and fruiting: Jan – May.

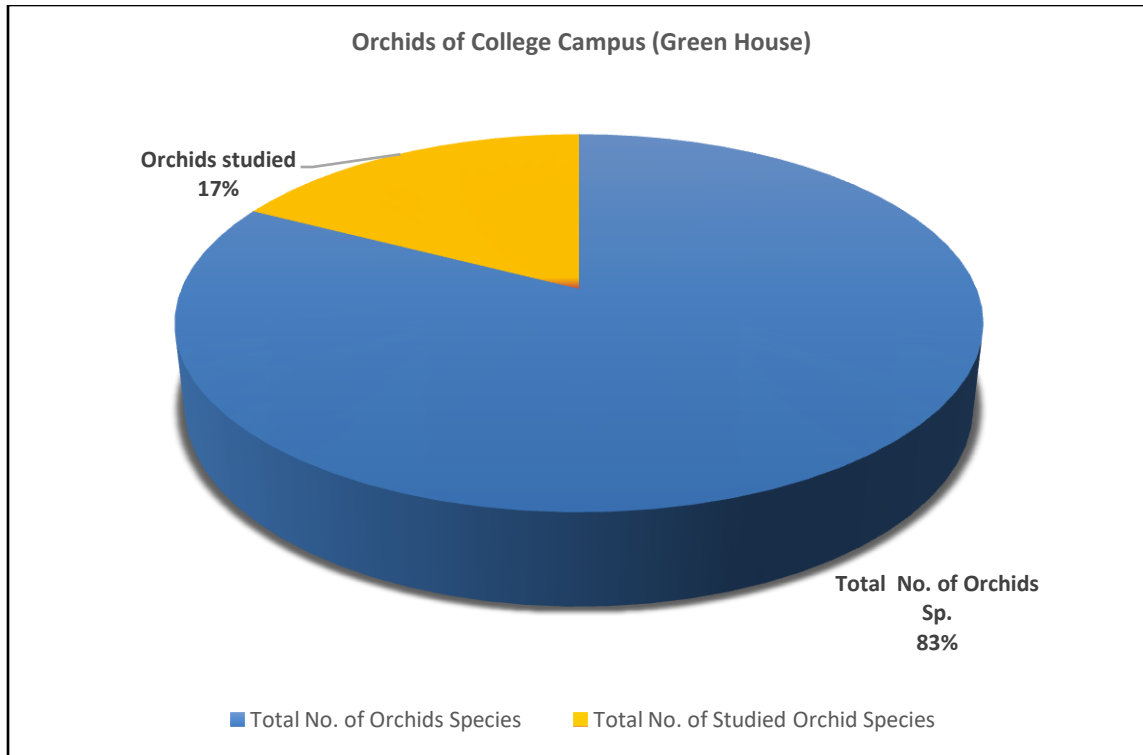


Fig.1: Total No. of Studied Orchids Species from the Green House of College Campus



Green House of College Campus



Orchids propagation inside Green House



Green House Plant Collection



Floriculture inside Green House



4th Semester Students Dissecting Orchids for Research



Photography of the Dissecting orchids sample

For the details study of any plant species their flowering stage is of utmost important. The reason for studying of only 8 species (17%) out of 56 (83%) species is due to that aforesaid cause, as all the different species have their own flowering and fruiting timing. Such study can significantly enhance the hands on knowledge cum training in the study of plant species especially orchids and moreover, orchids being the most advance family in angiosperms their flower are very complication. So, such study can be helpful for future research programme in any taxonomic fields.

Conclusion:

Orchids being the most advance family in angiosperms, their flower are very complicated for studies. Details study on orchids species such as dissection, measurement of all the floral parts, photography for assessment, correct nomenclature, details descriptions, native areas, etc. can significantly enhance the hands on knowledge cum training in the study of plant species especially orchids. Therefore, such study can be helpful for future research programme in any taxonomic fields.

Reference:

- Gogoi K, Borah RL, Sharma GC (2013). Orchid flora of Joypur Reserve Forest of Dibrugarh district of Assam, India. *Pleione* 3 : 135—147.
- Mipun P, Adhikari D, Bora A, Kumar Y (2019). Species Distribution Modelling Of *Brucea mollis* Wall. Ex Kurz In Northeast India for Its Conservation. *Plant Archives* 19:2, 3191-3196.
- <https://powo.science.kew.org/>
- <https://www.ipni.org/>

Departmental Research Cell
Department of Biotechnology, B.N. College,
Dhubri

1. Name of the Project : “Morphological and Biochemical analysis of Bacteria Isolated from Water sources of B. N. College, Dhubri, Assam”
2. Date : 17/05/2022 to 25/06/2022
3. In connection with observation of :
..... Day (If any)
4. Organized by : Department of Biotechnology
5. Name of Resource person/judges : Mr. Shahi Rizbi (HOD).
Mr. Nazmus Sadad Ahmed.
Dr. Arjina Parbin Sarkar.
6. Number of participants/students : 9
7. Name, Class, Roll no of the Participants : B. Sc. 4th Semester-
Jaman Mahabub Alom (201)
Mostofa Ahmed (53)
Rehena Nasrin (60)
Bornita Sarma (269)
Mamoni Khatun (187)
Reshmina Khatun (62)
Jyoti Baidya (144)
Umme Mehejibin Ahmed (136)
Selima Aktar (228)
8. A brief write up of the programme (with web snaps/photos):

A project on “Morphological and Biochemical analysis of Bacteria Isolated from Water sources of B. N. College, Dhubri, Assam” has done by the B.Sc. 4th Semester students from 17th of May 2020 till 25th of June 2022 under the Department of Biotechnology, B.N. College, Dhubri. Students have collected the samples from different sites of B.N. College, they have performed serial dilution, pour plating method and isolated the pure culture of Bacteria. Then bacteria were identified using Gram’s Staining and Capsule Staining techniques and Biochemical analysis such as MR test and Catalase test were done. Also they determined the growth dynamics of bacterial strains.

Here results observed as both Gram Positive, Gram Negative, Rod and Cocci shape Bacteria were found. Which were viz. D1, D2, P1, P2 Gram positive Bacteria and D3, P3 Gram Negative Bacteria. Among these, D1 and P3 were found rod shaped and the remaining samples were cocci shaped. Capsule staining results indicated that in unfavourable condition Sample D2, D3, P1, P2 were form capsulated. On the other hand, sample D1 and P3 were not form capsulated. And the Biochemical results i.e. MR test indicated that all the samples were found Negative and Catalase test indicated that D1, D3, P3 samples were positive and the other samples D2, P1, P2 were negative. For growth dynamics analysis it was observed that the bacterial strains of each sample was slightly different, but the average lag phase of bacterial strain was 0 hrs – 4 hrs and Log Phase was 4 hrs – 14 hrs. From this study it was concluded that this is an initial study of bacterial analysis which can be used as a reference work for future researchers.

Outcome: Student participated with great enthusiasm. The project was very much interactive. The overall outcome of the project was productive. Remarkable development in instrument handling skill was observed.



Department of Economics

B.N. College, Dhubri

Name of the Programme **One Day Hands on Training on Data Analysis Using SPSS**

Date 29th May 2022

Resource Person Mr. Sumit Dey, Assistant Professor, Department of Economics

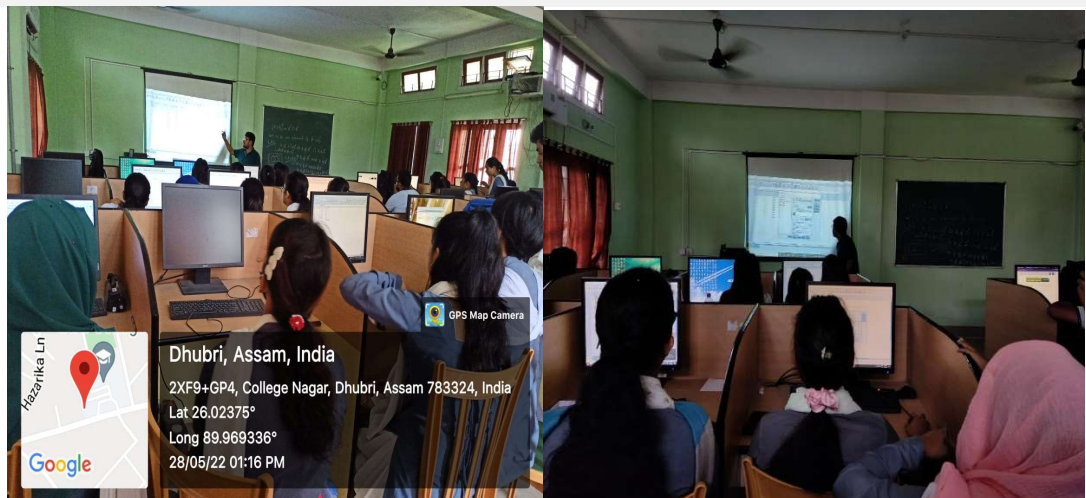
Total Number Students : 28

Participants Faculty :03

Brief description of the Programme The Department of Economics, B.N. College, Dhubri organized a one day hands on training programme on Data analysis using SPSS on 29th of May 2022 for the 6th semester (Honors) students. Mr. Sumit Dey, Assistant professor, department of Economics, B.N. College Dhubri was the resource person for the programme. The main objective of the programme is to acquaint the students with the SPSS software, a statistical software package to perform various statistical and econometric tests. The programme is expected to bring the interest of the students to explore their career opportunities in the field of Data Science. Total of 28 students and all the three faculty members of the department have participated in the programme.

Video Link of the Programme <https://drive.google.com/file/d/1d5JyG24XwutsceUEXByikRRR1LJWb-Tw/view?usp=sharing>

Some Snap shots from the Programme



List of the Faculty participated

1. Prof Abu Taherul Hoque
2. Prof. Abdul Awal Sarkar
3. Prof. Sumit Dey

List of the Student participants:

1. Sankar Shill
2. Kandarpa Roy
3. Anushree Roy
4. Sajeda Khatoon
5. Rokeya Siddika
6. Samsun Nehar
7. Shreya Rana
8. Sujan Ahmed
9. Afsana Parveen
10. Ozufa Khatoon
11. Nandini Karmakar
12. Nitumoni Dutta
13. Alifa Parbin'
14. Masuma Begum
15. Jenifa Ahmed
16. Forida Yeasmin
17. Jerin Ahmed
18. Shahid Islam
19. Monowar Ali Sk
20. Jumi Khatoon
21. Umme Salma Begun
22. Afsana Zaman
23. Debopriya Saha
24. Sofique Uddin Ahmed
25. Rakibul Islam
26. Shirina Parbin
27. Jenifa Sarkar
28. Muklisa Begom Prodhani

Attendance of the Student

Participants of Hands on Training Programme (SPSS)

No	Name	Class	Roll No
1.	Ahsana Fatima	D.A 6 th Sem	75
2.	Ozma Khatun	B.Sc 6 th sem	236
3.	Nandini Karmakate	B.A. 6 th Sem	04
4.	Nitumoni Dutta	B.A. 6 th Sem	674 378
5.	Alifa Parbin	B.A 6 th Sem	108
6.	Masuma Begum	B.Sc 6 th sem	81
7.	Jenifa Ahmed .	B.A. 6 th Sem	134
8.	Fareida Eyastronin	B.Sc 6 th Sem	54
9.	Terin Ahmed	B.A 6 th Sem	145
10.	Shahid Islam	B.A 6 th Sem	147
11.	Monowar Ali Sheikh.	B.A 6 th sem	323
12.	Srobkar Shilpi	B.A 6 th Sem	50
13.	Shamsun Nebar	BA 6 th sem	123
4.	Shreya Rana	B.A 6 th Sem	117
5.	Jumi Khatun	B.A 6 th sem	340

SL NO	Name	Class	Roll NO
16	Umme Salama Begum	B.A. 6th sem	56
17	Afsana Laman	B.Sc 6th Sem	202
18	Rokeya Siddika	B.A 6th Sem	122
19.	Debariya Saha	B.A 6th Sem	145 175
20.	Sujan Ahmed	B.A 6th Sem	63
21.	Amishree Roy	B.A. 6th sem	21
22.	Sofique Uddin Ahmed	B.Sc 6th sem	53
23.	Rakibul Islam	B.A 6th Sem	113
24.	Sazeda Khatun	B.A 6th SEM	60
25.	Shirina parveen	B.A 6th SEM	29
26	Jenifa Sarekar	B.A 6th Sem	27
27.	Mukhlisa Begum Prodhami	B.A 6th sem	05
28	Kandarpa Roy	B.Sc 6th sem	61

Department of English

B. N. College, Dhubri

Report

16-07-2022

Name of activity: Writing a seminar paper

Date: 05-07-2022

Name of the faculty: Dr. Noor Hussain

On 5th July, 2022, a special class was taken by Dr. Noor Hussain on how to write a seminar paper. Nearly all the students were present and actively participated in the class. A number of questions were raised and Dr. Hussain cleared all the doubts. He began the class by showing them how to frame the body of a seminar paper. He provided the students with ample examples from reliable sources like JSTOR in how to write a good seminar paper. He also taught the students how to cite in proper format from various sources, both online and offline, as well as primary and secondary.

Snapshots of the class:




Departmental Research Cell
Department of Physics, B.N. College,
Dhubri

1. Name of the Program: **Two Days Workshop on LaTeX**
2. Date: **14.06.2022-15.06.2022**
3. In connection with observation of: **N/A**
4. Organized by: **Departmental Research Committee, Department of Physics in collaboration with Department of B.VOC (IT), B. N. College, Dhubri**
5. Name of Resource persons/judge:
 - **Dharitri Sarkar**
Assistant Professor, Department of B.VOC (IT), B. N. College
 - **Dr. Dipangkar Borah**
Assistant Professor, Department of Physics, B. N. College
6. Number of participants/students: **32 only**
7. **A brief write up of the program (with web snaps, if any):**

A “Two Days Workshop on LaTeX” is jointly organized by the Departmental Research Cell, Department of Physics, B. N. College, Dhubri and Departmental Research Cell, Department of B.VOC (IT), on 14th-15th June, 2022. The 2nd and 4th semester students from both the departments have participated in the program. In the workshop, the basic syntax of LaTeX as well as the scientific report writing using LaTeX is discussed. Once the training is completed, the students are provided a sample document and they are asked to produce the replica of the same with LaTeX, which is considered as the eligibility criterion to get the participation certificate. The program was ended with a vote of thanks.

Banner of the program:

TWO DAYS WORKSHOP ON LATEX



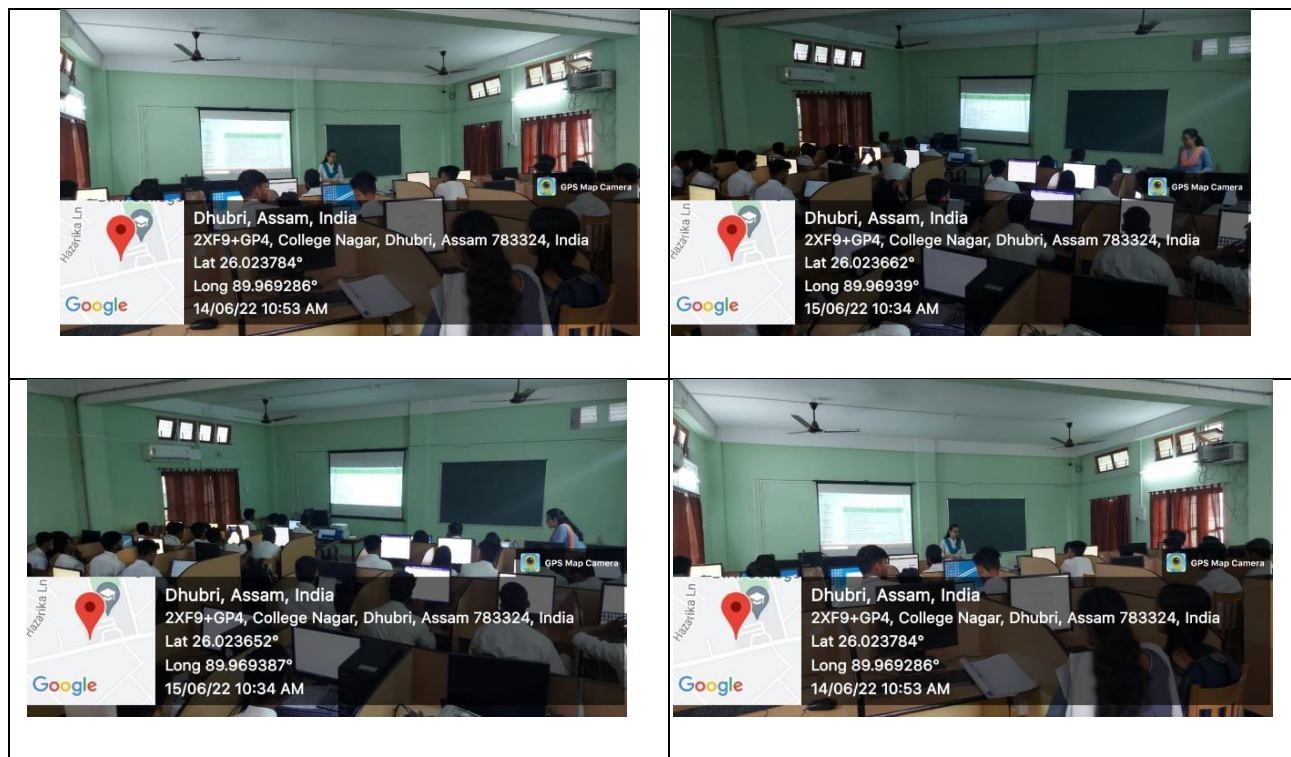
Organized By:
Departmental Research Cell,
Department of Physics, B. N. College, Dhubri

In Collaboration :
Departmental Research Cell,
Department of B. VOC (IT), B. N. College, Dhubri

Date: 14.06.2022-15.06.2022
Time: 10.00AM-1.00PM

Venue: Computer Lab
Department of B.VOC (IT)

Banner of the program



Photograph during the program

Departmental Research Cell
Department of Sanskrit, B.N.
College, Dhubri

2022

REPORT OF THE IN-HOUSE LECTURE PROGRAMME
ON
HOW TO CITE REFERENCES IN A RESEARCH PAPER IN SANSKRIT

- 1. Name of the Programme:** In- house Lecture Programme on **How to Cite References in a Research Paper in Sanskrit.**
- 2. Date:** 06. 06. 2022
- 3. Organised By:** Departmental Research Committee, Deptt. of Sanskrit, B. N. College, Dhubri, Assam.
- 4. Number of Participants:** 27 No. of students.

5. A Brief Write-up of the Programme:

An In-house Lecture was arranged by the Departmental Research Committee of Sanskrit Deptt, B. N. College on **06. 06. 2022** for all the Honours students of Sanskrit. In that Special Lecture Dr. Chandra Shekhar Upadhyaya, Asstt. Professor, Deptt. of Sanskrit gave his presentation on the Topic entitled '**How to Cite References in a Research Paper in Sanskrit.**' Dr.Mausumi Bhattacharjee, the H. O. D. of Sanskrit was also present in the programme. Altogether 27 Honours students of the Department attended the programme. **To enlighten the students about the techniques of citing references in a research paper and thereby to encourage them towards research was the main purpose** of organising this special Lecture. After the lecture a few students interacted with the teacher. At last Dr.Mausumi Bhattacharjee offered Vote of thanks to Dr. ChandraShekhar Upadhyaya and the students for their whole- hearted support and after that the programme came to an end.



Dr. Chandra Shekhar Updhyaya delivering his Lecture



Students of Sanskrit Honours attending the Lecture

Departmental Research Cell

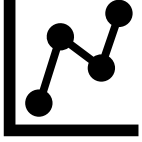
Department of Statistics,

B.N. College, Dhubri.

Time Period: Months of May & June, 2022.

- 1) **Name of the activity:** Preparation of Survey Report on “Socio-Economic condition of the Potter Community of Asharikandi” in Dhubri District, Assam.

- 2) **Prepared by:** Student of 4th Semester (Hon’s) class.



BHOLANATH COLLEGE, DHUBRI



STUDY ON SOCIO-ECONOMIC CONDITION OF THE
POTTER COMMUNITY OF ASHARIKANDI IN
DHUBRI DISTRICT.

PERIOD – MONTHS OF MAY & JUNE, 2022.

A SURVEY
REPORT

PREPARED BY
THE STUDENTS OF B.Sc 4th SEMESTER (HONS)
DEPARTMENT OF STATISTICS,
B.N COLLEGE, DHUBRI.

UNDER THE SUPERVISION OF
Dr. BRAJENDRA KANTA SARMAH AND
Dr. NITYANANDA BARMAN.



SOCIO-ECONOMIC SURVEY (MEANING): -

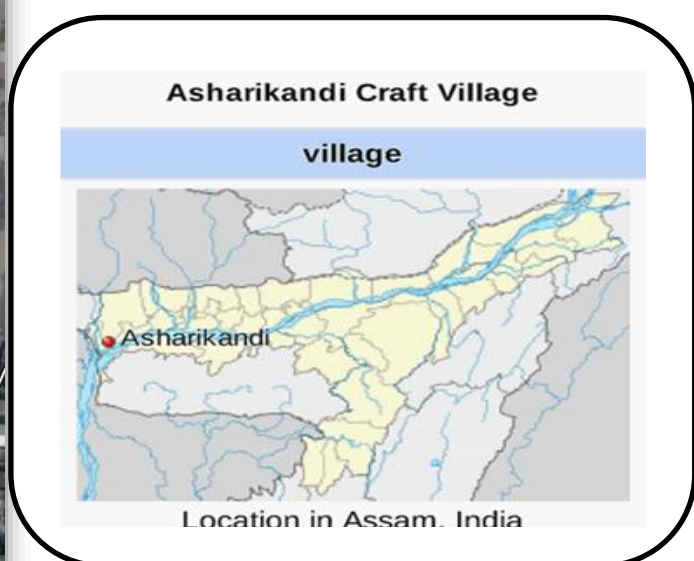
Socio-economic (also known as social economics) is the social science that studies how economic activity affects and is shaped by social processes. In general, it analyses how modern societies progress, stagnate, or regress because of their local or regional economy, or the global economy.

Socio - Economic survey is an important part of education to know the status of the people of various society. The sole aim of the Socio-Economic planning of our country is to transform the socio -economic condition of the people living in the rural areas. Since the independence of our country.

STUDY AREA: -

A small cluster where male and female, young and old of altogether eighty families are always busy to shape and create a range of fascinating terracotta and pottery items is **Asharikandi** craft village under **Devitola Development Block** of Dhubri district of Assam.

The village is located at ~14 kilometers distance east of **Dhubri** town and ~190 kilometers west of the state capital **Guwahati** and Borjhar Airport.



The village is famous for its traditional crafts, **Terracotta** and **Pottery**. It is one of the largest clusters of Terracotta and Pottery in India. Originally, in early 19th century, a cluster of families of pottery community migrated from *East Bengal* (now *Bangladesh*) to Asharikandi and maintained their profession with innovation. Thus the *Assamese terracotta* art and culture took its birth at Asharikandi through a few cluster of pottery families.

At present, the pottery in Asharikandi is practiced by households of five villages: Paulpara, Baganpara, Bogurapara, Madiakhali, and Sikhasipara.

Traditionally most of these families belong to 'Paul' community of **Bengali** ethnicity. In Assam '*Paul*' means *Kumar* (that is, potter). These days Dhubri district has acquired a pivotal position in the terracotta and pottery markets in India and abroad. Among the numerous artisans of Asharikandi cluster, late Sarala Bala Devi, who bagged the national award on *Terracotta craft* in 1982 for her innovative masterpiece - **HATIMA** doll, a lovely female figure with a child on her lap - brought name and fame to the craft village. Dharendra Nath Paul, a son of Sarala Bala Devi, is nationally and internationally acclaimed master craftsman on Terracotta. Mahadev Paul is one of the senior craftsmen of this cluster. He bagged the state award on Terracotta for his excellent masterpiece *Ganesh*. Gokul Paul and Ashwini Paul are some young upcoming talents of this cluster.



HATIMA PUTUL (Doll)

WELCOME PUTUL (Doll)



GANESH PUTUL (Doll)



Present status and government initiative- NECARDO- North East Craft and Rural Development Organization, an NGO that works for the preservation and promotion of the traditional craft and welfare of the craft persons claims that Asharikandi is one of the largest clusters of Terracotta and Pottery in the North East India. ENVIRON have been entrusted by Indian Institute of Entrepreneurship for carrying out soft intervention of cluster development activities in Terracotta at Asharikandi, Dhubri, sponsored by Development Commissioner Ministry of Micro Small & Medium Enterprises, Govt. of India. The activities were started from 13th July, 2012.

OBJECTIVE OF THE STUDY: -



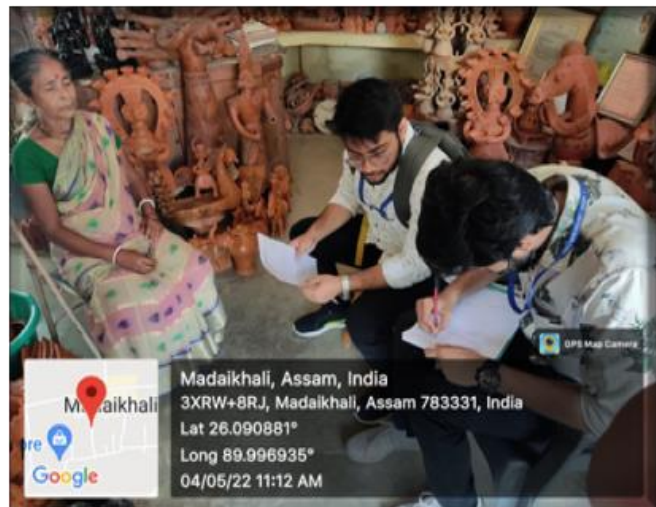
The main objective of the study is to highlight the socio-economic condition of the families of pottery community (Potters/Kumar) of the village of Asharikandi (Madiakhali, Paulpara). Data for the study are collected by Interview method and data which we had collected all are primary form of data.

Some main points that are included in the survey as follows: -

- I. To study demographic composition of the village (mainly within the region of Madiakhali and Paulpara region).
- II. To study the educational qualification, Religion, Mother tongue, age, sex, occupation of the population,
- III. To study the monthly income of the households,
- IV. Types of dwelling house of the villagers,
- V. Source of lighting in the village,
- VI. To study homestead land and cultivated land,
- VII. To study whether the household receive any benefits from Govt. or taken loan of any kind from financial institutions,
- VIII. To study the health care facility, food and nutrition, Covid-vaccination of the children,
- IX. To study the assets possessed by the villagers,
- X. To study about media and communication facility.

Methodology: -

This study was conducted by interview method. Keeping in view the objectives in mind, a structured schedule was designed using the MS Word to collect data from the respondents. The schedule contains various questions related to their socio-economic condition. There are 80 families, in our study area, out of which 30 household were selected by using systematic random sampling technique. Data were analyzed by using different statistical tools like mean; S.D; etc.



Survey design: -

The study was limited to the villagers of Asharikandi, Assam (India). Therefore, the survey of the study was designed to assess & interpret the socio-economic condition of the potter community of the village. Several types of questions were included in the schedule. Before beginning the actual interview, we convinced the villagers and felt them free to communicate with us to collect some general information such as age, gender, monthly income, etc. are mentioned above.

Data Analysis: -

Analysis of data is the ultimate step in the research process. It is the link between raw data and significant results leading to conclusions. After the data collection is over from the finalize 30 schedules, the data cleansing process was performed with the help of spreadsheet software (MS Excel) for enhanced visualization. The data were then analyzed according to various parameters set to meet the main objectives of the study.

Data analysis and interpretation: -

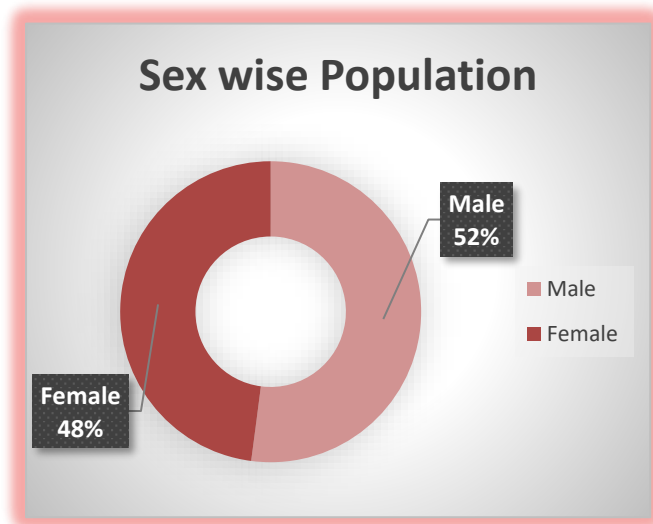


➤ **The analysis and interpretation of the data collected through this survey at Asharikandi is as follows:**

Demographic composition of the village: -

Table(a) : Sex wise Population:

Sex	Number of villagers
Male	52 %
Female	48 %



From the above figure, it is found that 52% of the respondents belong to the male category and 48% of the respondents are of the female category.

Table(2): Age wise Population:

Age (in year)	Number of villagers
Below 20	28%
20-40	33%
40-60	23%
Above 60	16%

Most of the villagers i.e., 61% of the villagers are from the age groups below 20 & 20-40 years followed by 33% of the population who are from the age group 20-40 years. 28% of the Population are from the age group of below 20 years.

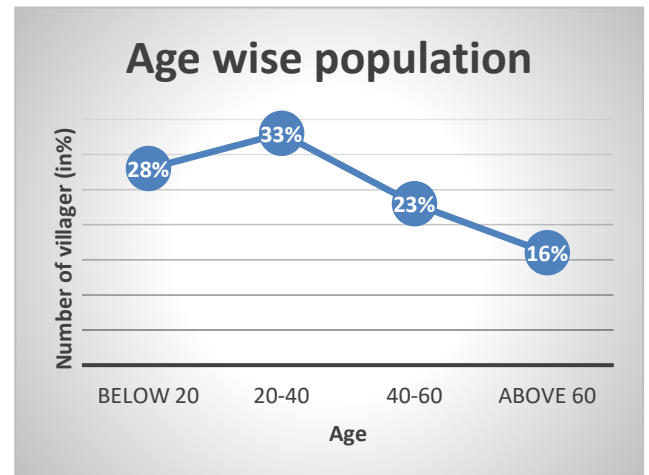
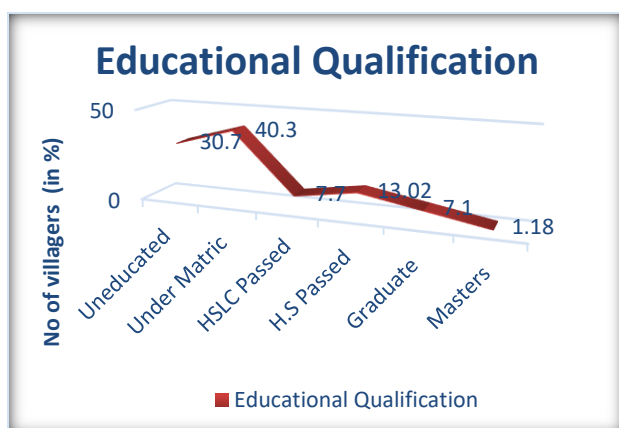


Table (3): Educational qualification:

Educational Qualification	Number of villagers
Uneducated	30.7%
Under Matric	40.3%
H.S.L.C Passed	7.7%
H.S Passed	13.02%
Graduate	7.1%
Masters	1.18%



The above data reveal that a major portion of the population under on study i.e., 30.7% are uneducated and it reflect a very serious picture in case of education. On the other hand, 69.3% population are found to be educated of which 1.18% are masters.

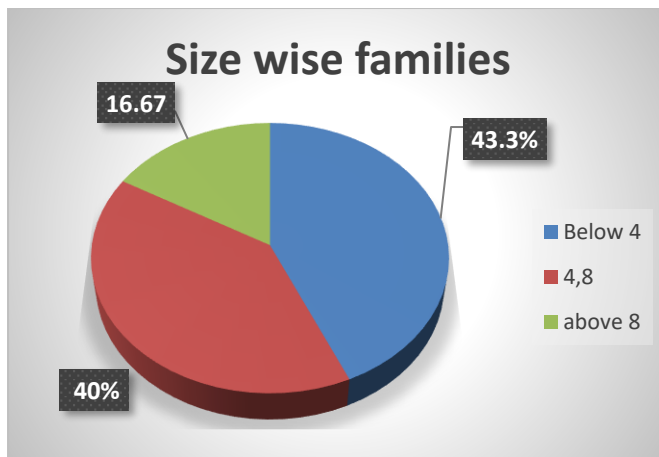
Table (4): Occupation of population:

Occupation	Number of villagers
Business (Pottery business)	48.5%
Service	4.7 %
Agriculture	2.4 %
Others	44.3%

From this survey it is revealed that 48.5% of the population are in Potter business for living, 2.4% are in Agriculture, 4.7% are in service and 44.3% of the population are student, housewife, etc, also associated in their family potter business.

Table (5): Size wise family:

Family size	Number of family
Below 4	43.3%
4-8	40%
Above 8	16.67%

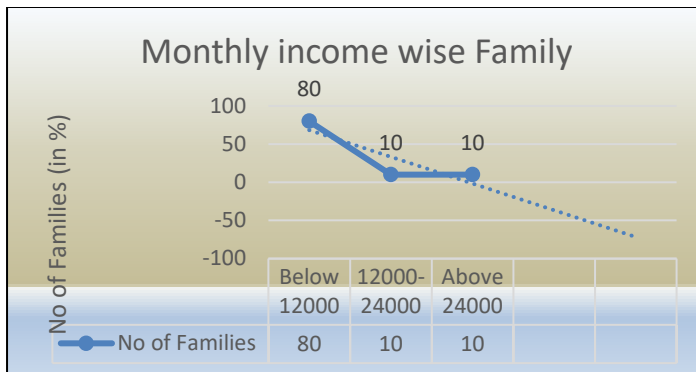


The above table indicate that 43.3% family are nuclear family, 40% family contains 4-8 members and 16.67% family has more than 8 members.



Table (6): Monthly income:

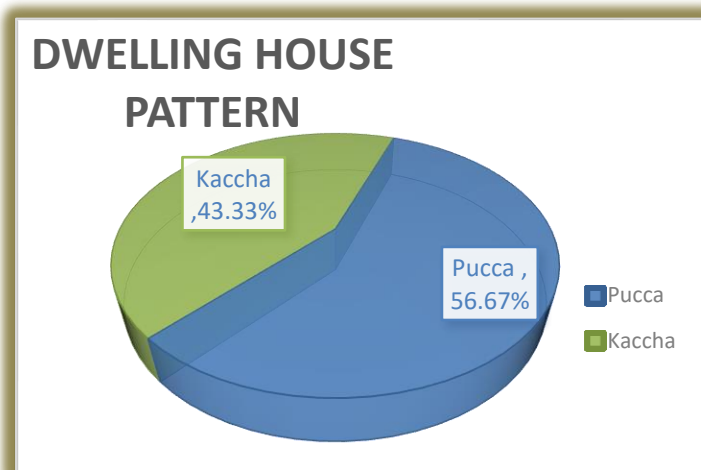
Monthly income (in Rs)	Number of families.
Below 12000	80%
12000-24000	10%
Above 24000	10%



This table revealed that the economic condition of the population is not so good because 80% family's monthly income is below Rs 12,000/-

Table (7): Dwelling house pattern:

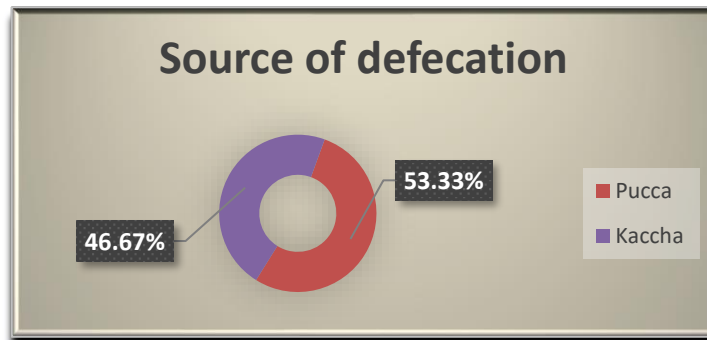
Types of dwelling house	Number of houses
Pacca House	(56.67%)
Kaccha House	(43.33%)



From the study it is reveal that 56.67% households live in Pucca House of which major position is of Govt. Scheme house and 43.33% live in Kaccha house. These shows that the economic condition is not so good.

Table (8): Source of Defecation:

Types of Defecation	Number of defecations
Pucca	(53.33%)
Kaccha	(46.67%)



This data show as 53.33% of household has pucca toilet for defecation and 46.67% has Kaccha toilet for defecation. These data are almost similar to the data of dwelling house that means those have pucca house are also have Pucca toilet for defecation.

Table (9): source of Fuel:

Types of Fuels	Number of Household
Solid fuel (wood; coal)	0%
Liquid Fuel (LPG; diesel)	100%
Gaseous Fuel (Hydrogen; CNG)	0%



According to the study 100% household of the study area, use LPG as their source of fuel.

Table (10): Source of lighting:

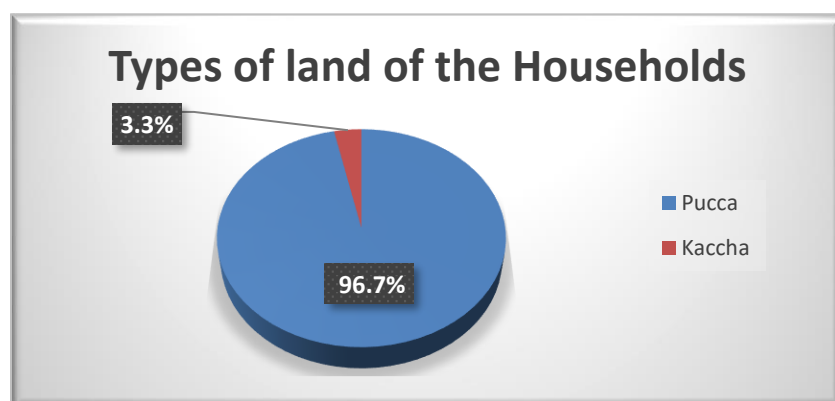
Sources of lighting	Number of households
Electricity	100%
Fire Lamp	0%
Solar	0%
Others	0%

From the study it is observed that almost all the households use electricity as their source of lighting.



Table (11): Types of land:

Types of land	Number of families.
Homestead land	96.7%
Cultivated land	3.3%

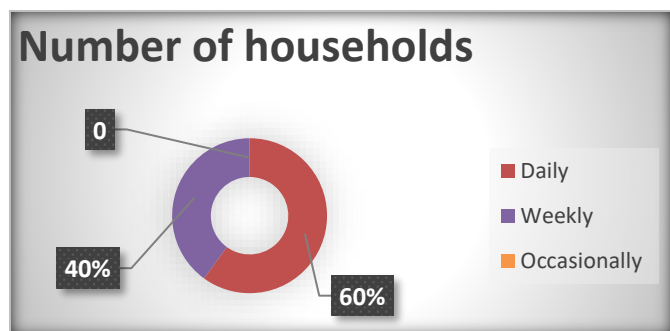


From this taste it is found that 96.7% families have only homestead land and only 3.3% families have both homestead and cultivated land.

Table (12): Food habit of the villagers:

1) Milk:

Habits of consumption	Number of households
Daily	60%
Weekly	40%
Occasionally	0%



From the above table we have got that the 60% population consume milk daily and 40% are in weekly.

2) Vegetables:

Habits of consumption	Number of households
Daily	100%
Weekly	0%
Occasionally	0%

From this data we can say that the almost all the families consume Vegetables daily.

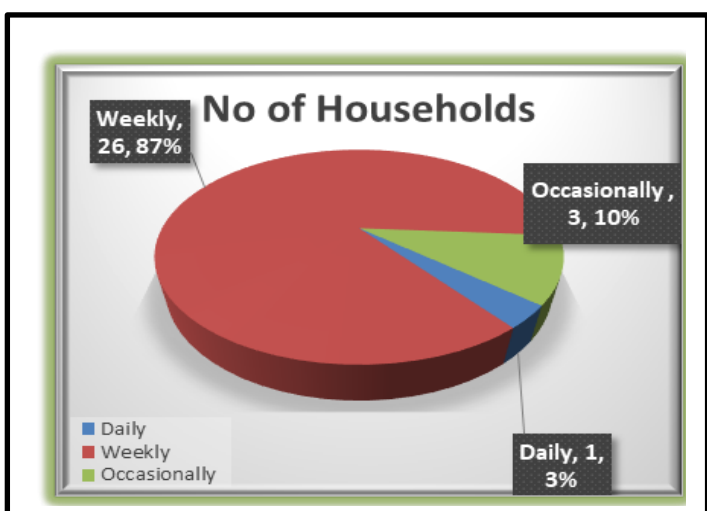
3) Pulses:

Habits of consumption	Number of households
Daily	100%
Weekly	0%
Occasionally	0%

From this data we can say that the almost all the families consume Pulses in daily manner.

4) Meat/Fish/Egg:

Habits of consumptions	Number of households
Daily	3%
Weekly	87%
Occasionally	10%



These data reveal that almost 87% of the households consume Meat/Fish/Egg in Weekly. 10% of the households consume in occasionally and 3% households consume daily.

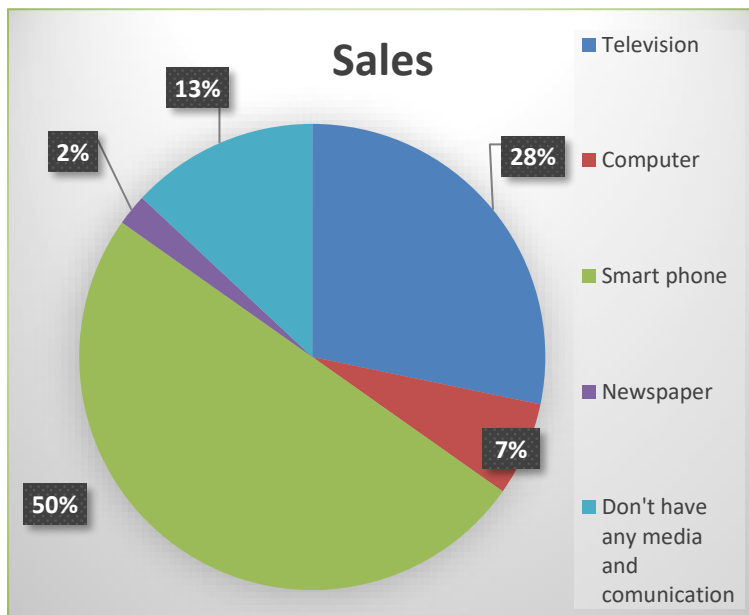
Table(13): Mother Tongue of the villagers:

Mother Tongue	Number of households
Bengali	90%
Assamese	6%
Bhojpuri	4%

From the survey we have got that almost 90% population belong to the Bengali community and 6 % are Assamese and 4 % are Bhojpuri.

Table(14): Media and communication used by the villagers:

Media and communication	Number of households
Television	28.26%
Computer	7%
Smart phone	50%
Newspaper	2.17%
Don't have any media and communication.	13%

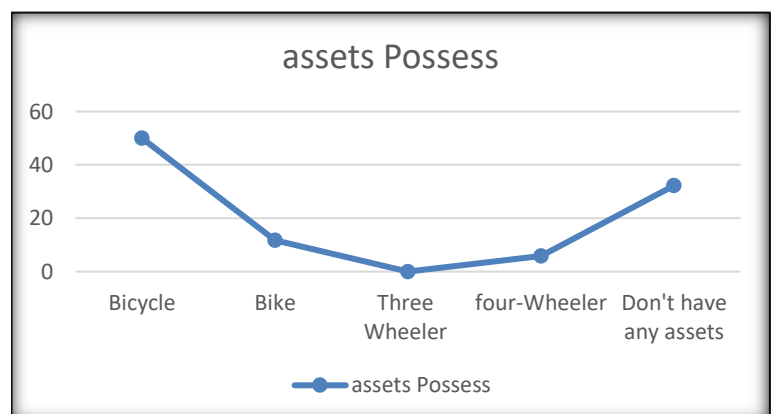


From the survey it is obtained that 50% of population have Smartphone for media and communication and 28.3% is Television. 13% of the villagers don't have any media and communication.

Table(15): Assets proposed by households:

Assets	Bicycle	Bike	Three-wheeler	Four-Wheeler	Don't have any assets
No of households	50%	11.7%	0%	5.8%	32.3%

It is found that 50% of the population in our study area uses Bicycle, 11.7% uses Bike (Motor Cycle); 5.8% has Four-Wheeler and 32.3% of the population do not have any kind of assets.



Table(16): Most selling Product:

Product:	No of the Potter Families
Flower vase	85.16%
Hatima Doll	7.4%
Toilet Ring	7.4%



From the data we can say that the most selling product of them is Flower Vase. But Hatima Doll and welcome Doll is the most popular product of the village.

Table (17): Method of selling the Products to Customers:

Method of selling	Number of potter families
Wholesale	76.7%
Retail	23.3%
Both	0%

From the survey we get that almost 76.7% of the families are sold their product in wholesale while the other terracotta show piece or terracotta dolls are sold in retail method.



Some points regarding their Potter business: -

❖ Employees hired them for their business –

They prefer Employees during seasonal period of time, here seasonal period means when their business is in high peak.

❖ Raw material used to make the Terracotta products: -

Hira Matti (special kind of soil for asharikandi's terracotta work); water; Daish for flower vase; clay mix machine; Chak (Chakki); Bhati-Ghar; etc.



➤ **Government facilities: -**

Table (18): - Number of households obtained benefits from the government:

Benefits obtained	Number of households
Yes	50%
No	50%

As per survey 50% of the villagers Receive benefits of different scheme of government and other 50% do not received any benefits of any scheme of govt.

Table (19): Loan taken in any form:

Loan taken	Number of households
Yes	13.33%
No	86.67%

It is found from the study that maximum of the respondents wants to carry their life without any burden of taking loans.

Table (20): Covid – Vaccination and Health Facilities:

i. Covid-Vaccination:

Covid-Vaccination	Children	Adults
Yes	0	100%
No	100%	0

ii. Health Facilities:

Health facilities	Children	Adults
Yes	0	0
No	100%	100%

From the above tabulated data of Covid-Vaccination and Health Facilities, it is found that there is no Government hospital as well as private hospital in the village. There is one private clinic in the village and 100% of the adult villagers are covid-vaccinated but the children are not covid-vaccinated. So, we can assume that the health care facilities of this village are not so good.

Findings: -

The findings of the study show that out of total Respondents 52% of the respondents are male and rest are female. According to our survey all the potter community of the Asharikandi are of Hinduism. 61% of the total villagers are below the age of 40 Years. 30.8% of the population are uneducated and it reflect a very serious picture in case of education. On the other hand, 69.3% population are found to be educated of which 1.18% are masters. In our study area, 48.5% are in Pottery business for living, 22.5% are student, 11.24% are housewife and 4.7% are in service. There are 43.3% of the families having less than 4 members in their house. 40% of the families having 4-8 member in their house and 16.67% of the families having more than 8 members in their house. The maximum of the families of the village are found to be poor condition. From the study it is reveal that 56.67% households are living in Pucca House and 43.33% are living in Kaccha house and 53.33% of households have pucca toilet for defecation and 46.67% have Kaccha toilet for defecation. According to the study 100% households, use LPG as their source of fuel; use Electricity as their source of lighting. 96.67% of households have homestead land and only 3.33 % have both homestead as well as cultivated land. 60% out of population consume milk in daily manner and 40% are in weekly manner; almost all the families consume Vegetables and pulses in daily manner; and almost 87% of the households consume Meat/Fish/Egg in Weekly manner and 10% of the households consume occasionally. 90% of the villagers of the study area are belong to the Bengali community and 6 % are Assamese and 4 % are Bhojpuri. And most of the villagers use smartphone for Media and entertainment. 50% of the villagers Possess Bicycle, 11.7% possess Bike (Motor Cycle); 5.8% has Four-Wheeler and 32.3% of the villagers do not have any kind of vehicle. From the survey data we can say that the most selling product of them is Flower vase as well as Hatima Doll and Ganesh Doll. Almost 74% of the villagers are sold their product in wholesale system and Hira Matti (special kind of soil for asharikandi's terracotta work); water; Daish for flower vase; clay mix machine; Chak (Chakki); Bhati-Ghar; etc are to make their terracotta items. As per survey 50% of the respondents receive benefits from different scheme of government and other 50% do not received any benefits of any scheme of

govt. It is found from the survey report that maximum of the villagers is like to carry their life without any burden of taking loans. It is also found that there is no Government hospital as well as private hospital in the study area. There is one private clinic in that area as the source of health care and 100% of the adult peoples are covid-vaccinated but the children are not covid-vaccinated. So, we may say that the health care facilities of this village are not so good.

Conclusion: -

The village Asharikandi, is located about 14km away from Dhubri town. Although this village is very near to the Gouripur Town, yet it is very backward both economically and socially and also backward with respect to health care facilities because there is no Government hospital as well as private hospital in the village of Asharikandi.

Suggestion: -

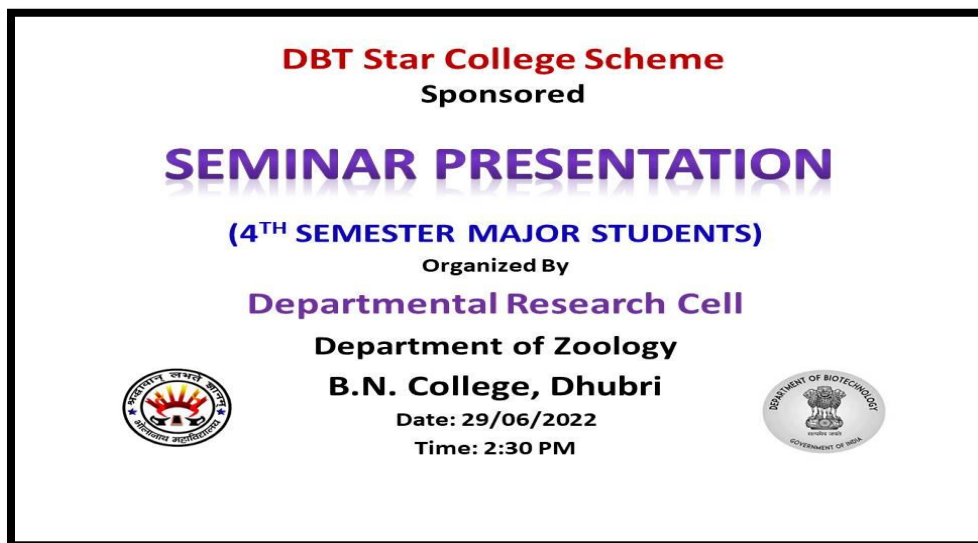
The survey further reveals the fact that the villagers need some important amenities in the village like *market complex, waiting shed, Bhatti Ghar* for baking the pottery items, *Hira Matti (Chikna Matti)* to continue their terracotta trade, *pension schemes* for the artisans and traders. They also sought cooperation from other departments for safe drinking water facility, healthcare, rural connectivity, welfare scheme without these would not meet its objective of showcasing and trading rural terracotta craft to tourists nationally as well as internationally and improving rural lifestyle. Therefore, we would like to suggest the state government as well as central government and different NGOs for taking necessary *steps* to meet their essential needs express by the potter community.



References: -

1. Fundamental of Applied Statistics by Kapoor and Gupta,
2. Applied statistics by Parimal Mukhopadhyay,
3. Survey Design by Singh and Chaudhari,
4. Sampling theory abd method by N.N. Murthy,
5. Socio-Economic And Demographic Behavior of the People of Char Area of Dhubri district, Assam. This UGC MRP was Conducted by Dr. Brajendra Kanta Sarmah.
6. https://r.search.yahoo.com/_ylt=AwrPqjgU3r5io38Iqx27HAX.;_ylu=Y29sbwNzZzMEcG9zAzEEdnRpZAMEc2VjA3Ny/RV=2/RE=1656704661/RO=10/RU=https%3a%2f%2fen.wikipedia.org%2fwiki%2fAsharikandi/RK=2/RS=MXmFO6fqBN76KnVDj6Ma.NoAhc-.

Report on Seminar Presentation on Government Schemes on Fisheries Development



A Seminar Presentation for the 4th Semester Honours (Zoology) students was organized on 29th June 2022 at 2:30 PM. There were three presentations in the programme. The programme was inaugurated by Dr. Susmita Sen Gupta, Coordinator, DBT Star College Scheme of the college in presence of Mrs. Mitali Ghosh Paul, Head of Department, Zoology and Dr. Samuel Sheikh, Assistant Professor, Department of Zoology. A total of 23 numbers of students reviewed the scopes of various Governmental Schemes provided for the development of the Fishery Sector of the state and submitted their report. They presented their findings in the seminar.



Mrs. Mitali Ghosh Paul
Head
Department of Zoology