



KRISHNACHURA

Vol. 9 :: June 2022-December 2023

কৃষ্ণচূড়া

A Multilingual Annual Publication of SOFEC



SOCIETY FOR ENVIRONMENTAL CONSERVATION (SOFEC)

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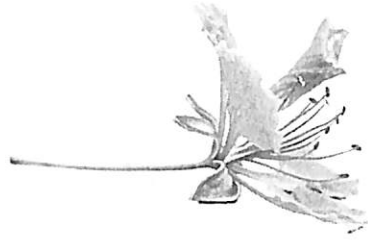
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অধ্যক্ষৰ কাৰ্যালয়

ডিব্ৰুগড় হনুমানবক্স সুৰজমল কানৈ মহাবিদ্যালয়

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অধ্যক্ষ

ডিঃ হঃ সুঃ কানৈ মহাবিদ্যালয় (ম'বাইল নং : ০৩৭৩-২৩২৪১০৫)



শুভেচ্ছা বাণী

পৰিৱেশৰ প্ৰতি দায়বদ্ধতা তথা সুন্দৰ বৃক্ষৰে মহাবিদ্যালয় চৌহদ গঢ়ি তোলাৰ ক্ষেত্ৰত ডিব্ৰুগড় হনুমানবক্স সুৰজমল কানৈ মহাবিদ্যালয়ৰ 'ছ'ফেক' অনুষ্ঠানে যি এক গুৰুত্বপূৰ্ণ ভূমিকা পালন কৰি আহিছে তাৰ বাবে অনুষ্ঠানটিৰ সমূহ কৰ্মকৰ্তালৈ আন্তৰিক ধন্যবাদ আৰু কৃতজ্ঞতা জ্ঞাপন কৰিলোঁ। ছ'ফেকৰ দ্বাৰা প্ৰকাশিত 'কৃষ্ণচূড়া' আলোচনীখনৰ নৱম সংখ্যাটি প্ৰকাশ পাব বুলি জানিব পাৰি মহাবিদ্যালয়খনৰ অধ্যক্ষ হিচাপে মই অত্যন্ত আনন্দিত হৈছোঁ। মহাবিদ্যালয়খনৰ এক সুন্দৰ পৰিৱেশ গঢ়ি তোলাৰ ক্ষেত্ৰত নিৰৱে কাম কৰি অহা এই অনুষ্ঠানটোৰ দ্বাৰা অধ্যাপিকা কল্যাণী দাসৰ সম্পাদনা আৰু অধ্যাপিকা উৰ্মিলা বামছিয়াৰীৰ সহ সম্পাদনাত প্ৰকাশ পাবলগীয়া 'কৃষ্ণচূড়া'ই সমাজক সঠিক দিশত আগুৱাই নিয়াৰ লগতে স্বচ্ছতাৰ দিশত সমাজখনক প্ৰতিফলিত কৰিব পাৰে তাৰেই কামনা কৰিলোঁ। 'কৃষ্ণচূড়া' আলোচনীখনে পাঠক সমাজৰ বিপুল সমাদৰ লাভ কৰিব বুলি আশা কৰি আন্তৰিক শুভেচ্ছা জ্ঞাপন কৰিলোঁ।

(ড° শশীকান্ত শইকীয়া)

অধ্যক্ষ

ডিঃ হঃ সুঃ কানৈ মহাবিদ্যালয়

From the President.....



Dear Colleagues,

In a world that is ever-changing, we remain dedicated to preserving our natural environment. As custodians of this planet, we have a responsibility not only to our current generation but also to those who will come after us. It is with this sense of duty and optimism that I address you in our "Krishnachura" (An Multilingual Annual Publication of Society for Environmental Conservation).

Our planet faces unprecedented environmental challenges, such as climate change, habitat destruction, pollution, and the loss of biodiversity, all of which disturb the delicate balance of life on Earth. As a global community, we must acknowledge the urgency of these issues and take decisive action.

The beauty and complexity of the natural world have always inspired humanity, from the vast oceans to towering mountains, lush forests to arid deserts. We must recognize our moral obligation to protect and preserve this delicate tapestry of life, considering the consequences of our actions and inactions.

To fulfil this commitment, we must first appreciate the role of science and technology in understanding and addressing these environmental challenges. We need to invest in sustainable, innovative solutions, utilise clean energy sources, and promote eco-friendly practices in our daily lives. Education and awareness are powerful catalysts for change. Within our communities, schools, and homes, we must instil a love for the natural world and a sense of responsibility for its preservation. Knowledge is the foundation

of meaningful action, empowering individuals to make sustainable choices.

This magazine is a testament to our shared dedication to the environment and conservation. It serves as a platform for sharing knowledge, a source of inspiration, and a call to action. Together, we can embark on a journey towards a sustainable and harmonious future. Remember that we do not own the Earth; we are merely its inhabitants. Safeguarding our home planet is both a privilege and a duty.

As we stand at this critical point, let our commitment to environmental conservation unite us in purpose, propelling us towards a future where all living beings can thrive. The work of SOFEC isn't just important; it's absolutely vital. Your efforts, whether through grassroots campaigns, scientific research, or educational outreach, have not only raised awareness but have also ignited tangible action. The passion, enthusiasm, and tireless pursuit of sustainability displayed by the members of SOFEC have elevated the organisation into a new height.

I want to express my heartfelt gratitude to all the respected members of SOFEC for their exceptional contributions to environmental conservation.

With determination and hope, and regards.

Dr. Anup Jyoti Bharali
President

Society for Environmental Conservation,
DHSK College.



Editorial.....



*madhu vātā ṛtāyate madhuṣaranti sindhavaḥ /
mādvīrnaḥ santauṣadhīḥ.....(RV 1.90)*

"May the winds blow sweetly, May the rivers flow sweetly, May the herbs be sweet and beneficial to us."

The environment is an integral part of our life, without which the living organisms cannot survive on Earth. To conserve the environment and to create awareness among the students of the college and the public regarding various environmental issues, SOFEC (Society for Environmental Conservation) was established in the year 2002 under the association of some nature lover of DHSK College family and till now it is serving its best to the environment.

The annual multilingual magazine of SOFEC 'NATURE' was first published in the year 2012. But a few years later it was renamed as 'KRISHNACHURA'.

The magazine has brought together different ideas and perspective of the people associated with it regarding the environment and has been doing its best to maintain the environment.

I feel proud to present the 9th volume of the magazine. I would like to thank to all the authors for giving their valuable time by contributing their articles for the magazine. Without their writings it was not possible.

I express my gratefulness to Principal Dr. S.K.Saikia Sir for his support and co-operation. I would like to thank Dr. Anup Jyoti Bharali and Dr. Nirmali Pegu, honoured President and Secretary of SOFEC

respectively for their assistance and suggestions. I would also like to thank all the members of the Editorial Board for their co-operation. Last but not the least I would like to thank Ms. Urmila Ramchiary, assistant editor, without her help it will be not possible. My special thanks to Debajit Bora of Jeet Print Soft for publishing this magazine within a short period.

Kalyani Das

Editor

Krishnachura

2022-23 (Vol 9)

Contents

• কানৈ মহাবিদ্যালয়ত 'সেউজ মূল্যায়ণ'	ড° শশীকান্ত শইকীয়া	৯
• বহনক্ষম উন্নয়ন আৰু পাৰিপাৰ্শ্বিক সুৰক্ষা	ড° নিতুমণি শইকীয়া	১৩
• মহাকবি কালিদাসৰ শাকুন্তলম আৰু প্রকৃতি	ড° চয়নিকা গোস্বামী	১৬
• Soiless Growth in Plants	Dr. Alakananda Baruah	১৮
• Nano Seed Priming: Enhancing Plant Growth And Performance	Ambarish Bhuyan	২০
• Celebrating 20 Years of Environmental Conservation: The Journey of SOFEC	Dr. Lamkholal Doungel	২৬
• Environmental Ethics Depicted In The Vedas	Bini Saikia	৩০
• A Treatise on Some Wild Edible Fruits of Assam Not Found in Market	Rajib Lochan Borah	৩২
• Liquid Tree: An innovation worthwhile	Dinalisha Bora	৩৪
• How far down the Scoville scale can you go?	Dr. Anisha Dutta	৩৭
• Importance of solid waste segregation in household level	Gitamani Dutta	৪০
• Music for change: Majuli	Dr. Lakhima Deori	৪৩



কানৈ মহাবিদ্যালয়ত 'সেউজ মূল্যায়ণ'

ড° শশীকান্ত শইকীয়া
অধ্যক্ষ, ডি.হ.সু কানৈ মহাবিদ্যালয়

'গ্ৰীণ অডিট' বা সেউজ মূল্যায়ণ মানেনো কি? সমগ্ৰ বিশ্বতে চৰ্চিত এই শব্দ দুটাক লৈ বিভিন্ন দেশে যথেষ্ট চিন্তা-চৰ্চা কৰা পৰিলক্ষিত হৈছে। গ্ৰীণ অডিট বা সেউজ মূল্যায়ণ হ'ল পৃথিৱীক জীয়াই থকাৰ এক সঞ্জীৱনী শক্তি। পৃথিৱী জীয়াই থাকিবলৈ হ'লে, পৃথিৱীক ৰক্ষা কৰিবলৈ হ'লে মাথোঁ এটাই উপায় আছে সেয়া হ'ল 'গ্ৰীণ অডিট' বা 'সেউজ মূল্যায়ণ'। পৃথিৱী প্ৰাণী কুলৰ বাবে উপযোগী হৈ থাকিব পাৰিব যদিহে পৃথিৱীখন প্ৰাণীকুলৰ বাবে উপযুক্ত কৰি ৰখা হয়। জীৱ জীয়াই থাকিবলৈ পৰিৱেশৰ প্ৰয়োজন। পৰিৱেশ ধ্বংস হোৱাৰ লগে লগেই জীৱকুলৰো মৃত্যু অৱশ্যাস্তাৱী। সাম্প্ৰতিক সময়ত পৃথিৱীৰ পৰিৱেশ বিনষ্ট হোৱাৰ প্ৰতি লক্ষ্য ৰাখি গ্ৰীণ অডিট বা সেউজ মূল্যায়ণৰ ভূমিকা সৰ্বাধিক আলোচনাৰ বিষয় হৈ পৰিছে। গ্ৰীণ অডিট বা সেউজ মূল্যায়ণ হ'ল এনে এটা প্ৰক্ৰিয়া যাৰ দ্বাৰা অন্যান্য ব্যৱস্থাসমূহৰ ওপৰত পৰীক্ষা কৰি পৰিৱেশৰ ওপৰত ইয়াৰ প্ৰভাৱৰ মূল্যায়ণ কৰা। ফলত সম্পদৰ ব্যৱহাৰ, আৱৰ্জনা উৎপাদন, পৰিৱেশৰ নীতি-নিয়ম মানি চলাৰ মূল্যায়ণ জড়িত হৈ পৰে। পৃথিৱীখন জীয়াই ৰাখিবলৈ সকলো সম্পদৰ বহন ক্ষমতাৰ অধ্যয়ন, সম্পদৰ দক্ষতা, পৰিৱেশৰ দায়বদ্ধতাৰ কেতবোৰ ক্ষেত্ৰ চিনাক্ত কৰি লোৱাৰ প্ৰয়োজন। জীৱকুলৰ বাবে পৰিৱেশ অনুকূল হৈ থাকিলে পৃথিৱী ধ্বংস হোৱাৰ পৰা ৰক্ষা পাব অন্যথা এই সুন্দৰ জীৱকুলৰ উপযোগী হৈ থকা পৃথিৱীখন নিশ্চিতভাৱে মানৱকুলৰ অত্যাচাৰৰ বাবেই এদিন নষ্ট হৈ যাব। প্ৰকৃততে এই পৃথিৱীখন জীৱকুলৰ বাবে উপযোগী হৈ আছেনে নাই তাক পৰীক্ষা কৰিবলৈ গ্ৰীণ অডিট বা সেউজ মূল্যায়ণ কৰা হয়।

গ্ৰীণ অডিট বা সেউজ মূল্যায়ণৰ ইতিহাস আছে। যেতিয়াৰ পৰাই জীৱকুলৰ ওপৰত পৰিৱেশৰ ঋণাত্মক প্ৰভাৱ পৰিবলৈ ধৰে, তেতিয়াৰ পৰাই গ্ৰীণ অডিট বা সেউজ মূল্যায়ণৰ প্ৰয়োজনীয়তাৰ কথা অনুভৱ কৰে। কুৰি শতিকাৰ শেষৰ ফালৰ পৰা অনুসন্ধান কৰি জানিব পৰা গৈছে যে পৰিৱেশৰ বহন ক্ষমতা ভাৰসাম্যহীনভাৱে আগুৱাই গৈছে। যেতিয়াই পৰিৱেশৰ বহনক্ষমতা বিষয়টোৱে গুৰুত্ব পাবলৈ ধৰে, তেতিয়াই পৃথিৱীৰ উদ্যোগিক, ব্যৱসায়িক, অৰ্থনৈতিক

কাম-কাজৰ পদ্ধতিসমূহৰ ওপৰত অনুসন্ধান চলিবলৈ ধৰে। সেই অনুসন্ধানসমূহত দেখা পোৱা গ'ল যে উদ্যোগীক আৰু ব্যৱসায়িক কেতবোৰ প্ৰতিষ্ঠানে পৰিৱেশৰ ওপৰত প্ৰভাৱ পেলাব পৰাকৈ কাম-কাজ সংঘটিত কৰিছে। তেতিয়াই সেউজ মূল্যায়ণ বা গ্ৰীণ অডিটৰ প্ৰসংগতো মনলৈ আহে। ১৯৮০ আৰু ১৯৯০ দশকটোৰ মাজত পুঁজিপতি গোষ্ঠীয়ে সামাজিক দায়বদ্ধতা প্ৰসংগতো যেতিয়াৰ পৰাই সামৰি ল'বলৈ ধৰিলে, তেতিয়াৰ পৰাই গ্ৰীণ অডিট বা সেউজ মূল্যায়ণ প্ৰসংগটো চৰ্চালৈ আহে। সময়ৰ লগে লগে সেউজ মূল্যায়ণ বা গ্ৰীণ অডিটে বিভিন্ন উদ্যোগ, ব্যৱসায়ি খণ্ডক সামৰি লৈ আই এছ অ'ৰ দৰে আন্তঃৰাষ্ট্ৰীয় মানদণ্ডৰ পৰিৱেশ ব্যৱস্থাপনাৰ বাবে এক ব্যৱস্থা গঢ়ি তোলে। পৰৱৰ্তী সময়ত গ্ৰীণ অডিট বা সেউজ মূল্যায়ণক বিভিন্ন দেশৰ চৰকাৰৰ লগতে অন্যান্য প্ৰশাসনিক গোটসমূহেও অগ্ৰাধিকাৰ ভিত্তিত আঙুৰাই নিবলৈ ধৰে। বিশ্বত গ্ৰীণ ৰিভলিউশ্যন বা সেউজ বিপ্লৱ নামেৰে এটা নতুন বিপ্লৱ আৰম্ভ হয়। দৰাচলতে ১৯৭০ চনৰ পৰা বিভিন্ন পৰ্যায়ত আহি আজি এই পৰ্যায়ত উপনীত হৈছে। ১৯৭০ চনত কোনো কোনো ব্যৱসায়িক প্ৰতিষ্ঠান আৰু উদ্যোগৰ কাৰ্যকলাপ নিৰীক্ষণ কৰিবলৈ অথবা চিনাক্ত কৰিবলৈ ব্যৱস্থা লৈছিল। পৰিৱৰ্তীত পৰিস্থিতিত জলবায়ুৰ পৰিৱৰ্তন, সেউজ পৰিৱেশৰ উন্নতি, প্ৰদূষণমুক্ত ইত্যাদি কাৰণ বিলাকত জীৱকুল সংকটৰ সন্মুখীন হোৱা বুলি অনুভৱ কৰি গ্ৰীণ অডিট বা সেউজ মূল্যায়ণৰ প্ৰক্ৰিয়া আৰম্ভ কৰিছিল। এই প্ৰক্ৰিয়াত পৰিৱেশ বিনষ্ট হ'ব পৰা উপাদানসমূহৰ পদ্ধতিগত চিনাক্তকৰণ, পৰিমাণ নিৰ্ণয়, জোখ নিৰ্ণয় প্ৰতিবেদন আৰু বিশ্লেষণ আকাৰে প্ৰস্তুত কৰা হৈছিল। যিবোৰ প্ৰতিষ্ঠানে জীৱকুলৰ ধ্বংস কঢ়িয়াই আনিব অথবা ভাবুকি কঢ়িয়াই আনিব পাৰে বুলি সন্দেহ কৰি সেই প্ৰতিষ্ঠানসমূহ পৰিদৰ্শন আৰু জীৱকুল ৰক্ষাৰ উদ্দেশ্যে ইয়াক আৰম্ভ কৰা হৈছিল।

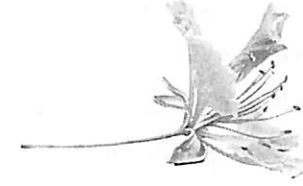
গ্ৰীণ অডিট বা সেউজ মূল্যায়ণৰ প্ৰয়োজনীয়তা সাম্প্ৰতিক সময়ত এনেদৰে বৃদ্ধি পাইছে যে সেই বিষয়টো শিক্ষানুষ্ঠানসমূহলৈও বিয়পি গৈছে। কেৱল উদ্যোগৰ মাজতে সীমাবদ্ধ হৈ থকা নাই। এতিয়া প্ৰত্যেকটো ব্যৱসায়িক প্ৰতিষ্ঠানৰ লগতে শিক্ষানুষ্ঠানসমূহেও গ্ৰীণ অডিট বা সেউজ মূল্যায়ণ কৰাটো সামাজিক দায়বদ্ধতাৰ মাজত সোমাই পৰিছে। বিশেষকৈ গ্ৰীণ অডিট বা সেউজ মূল্যায়ণৰ ফলত পৰিৱেশ সুৰক্ষা নিশ্চিতকৰণ, সম্পদৰ ব্যৱহাৰ হ্রাস, সম্পদৰ দক্ষতা বৃদ্ধি, আৱৰ্জনা হ্রাস কৰা, উদ্যোগসমূহৰ সামাজিক দায়বদ্ধতা পালন কৰা, বিপদৰ ব্যৱস্থাপনা কৰা, সকলোৰে মাজত পৰিৱেশ সুৰক্ষাৰ সজাগতা বৃদ্ধি কৰা, প্ৰক্ৰিয়া আৰু প্ৰযুক্তিৰ উদ্ভাৱনক অধিক পৰিৱেশ অনুকূল কৰি তুলিবলৈ উৎসাহিত কৰা, পৰিৱেশ সজাগতা বৃদ্ধি কৰা ইত্যাদি কাৰণত গ্ৰীণ অডিট বা সেউজ মূল্যায়ণ কৰাৰ প্ৰয়োজন হৈ পৰিছে। এখন শিক্ষানুষ্ঠানত পৰিৱেশ সজাগতা বৃদ্ধি হোৱাৰ ফলত শিক্ষাৰ্থীসকলে পাঠ্যক্ৰমৰ শিক্ষাৰ উপৰিও পৰিৱেশ শিক্ষাৰ ওপৰত ইতিবাচক জ্ঞান লাভ কৰে। পৰিৱেশ শিক্ষাই শিক্ষাৰ্থীক পৃথিৱীখনৰ প্ৰতি তেওঁলোকৰ দায়বদ্ধতা, তেওঁলোকৰ কৰ্তব্য বৃদ্ধি কৰাত সহায় কৰে। প্ৰত্যেকজন মানুহে পৃথিৱীত জন্ম গ্ৰহণ কৰাৰ লগে লগে পৃথিৱীখনক সুৰক্ষা দিয়াৰ দায়িত্বও আহি পৰে। পৃথিৱী জীয়াই থাকিলে মানৱকুল, জীৱকুল জীয়াই থাকিব। সেই ধাৰণা শিক্ষাৰ্থীসকলক সৰুৰে পৰাই দিয়াৰ প্ৰয়োজন। পৃথিৱীখনৰ বাবে কৰিবলগীয়া কামসমূহৰ ভিতৰত ভৱিষ্যতৰ মানৱ সমাজ কোনো হানি-বিঘিনি নোহোৱাকৈ কেনেকৈ পৃথিৱীত বসবাস কৰিব পাৰিব সেই বিষয়ে গ্ৰীণ অডিট বা সেউজ মূল্যায়ণে শিক্ষাৰ্থীসকলক জ্ঞান দিয়ে। পৃথিৱীৰ ভৱিষ্যত নিৰ্ভৰ কৰে পৃথিৱীখনক কেনেকৈ মানৱকুলে সুৰক্ষা দিব পাৰে সেইটোৰ ওপৰত। এইটো দেখা গৈছে যে পৃথিৱীত দৈনিক কোটি কোটি মানুহৰ জন্ম হয়। মানুহৰ জন্ম হোৱাৰ লগতে পৰিৱেশৰ প্ৰতিও সমানে ভাবুকিৰ সৃষ্টি হয়। কেৱল জন্ম হৈ থাকিলেই নহ'ব। পৃথিৱীৰো এটা আকাৰ আছে সেই আকাৰৰ মাজতে

আমি মানুহৰ লগতে জীৱকুল জীয়াই থাকিব লাগিব। কিন্তু পৃথিৱীখনক জীয়াই ৰখাৰ স্বার্থত যদিহে কোনো কাম কৰা নহয়, তেন্তে এদিন মানুহৰ অত্যাচাৰৰ ফলত এই সুন্দৰ পৃথিৱীখন ধ্বংস হৈ যোৱাতো নিশ্চিত। সেয়ে শিক্ষানুষ্ঠানৰ শিক্ষাৰ্থীসকলে পৃথিৱীখনক ৰক্ষণা-বেক্ষণ দিয়াৰ দায়িত্ব সৰুৰে পৰাই অনুভৱ কৰিলেহে ভৱিষ্যতে একো একোজন সু-নাগৰিক হৈ ভৱিষ্যতে পৃথিৱীখন ৰক্ষা কৰিব পাৰিব। শিক্ষাৰ্থীসকলৰ মাজত পৰিৱেশ সজাগতা প্ৰসাৰিত কৰাৰ লগতে বহনক্ষম পদ্ধতিসমূহক উৎসাহিত কৰি হাতে-কামে শিকাৰ অভিজ্ঞতা প্ৰদান কৰি শিক্ষাৰ্থীক উপকৃত কৰিব পাৰি।

ছাত্ৰ-ছাত্ৰীসকলক পৰিৱেশৰ ওপৰত তেওঁলোকৰ কাৰ্যৰ প্ৰভাৱ বুজিবলৈ সহায় কৰাৰ উদ্দেশ্যে গ্ৰীণ অডিট বা সেউজ মূল্যায়ণ কৰাৰ প্ৰয়োজন। শিক্ষাৰ্থীসকলক বহন ক্ষমতাৰ প্ৰতি দায়বদ্ধতাৰ জগাই তোলা, পৰিৱেশক বন্ধু বুলি গ্ৰহণ কৰা, পৰিৱেশক সমালোচনাত্মক দৃষ্টিৰে বিচাৰ কৰা, সমস্যা সমাধানৰ পদক্ষেপ গ্ৰহণ কৰা, অভিজ্ঞতা ভিত্তিক শিক্ষা ব্যৱস্থা কাৰ্যকৰী কৰা, পৰিৱেশ পৰিচালনাৰ মানসিকতা গঢ়ি তুলিবলৈকে সকলো শিক্ষানুষ্ঠানত সেউজ মূল্যায়ণ বা গ্ৰীণ অডিটৰ প্ৰয়োজন আছে। দেখা গৈছে সেউজ মূল্যায়ণ কৰাৰ উদ্দেশ্যে পৰিৱেশ সজাগতা বৃদ্ধি কৰা হৈছে। পৰিৱেশ সজাগতাৰ অবিহনে পৃথিৱীৰ ভৱিষ্যত অনিশ্চিত হৈ পৰিব। সাঁচা অৰ্থত ক'বলৈ গ'লে পৃথিৱীৰ ওপৰত মানৱ সমাজে যিদৰে অত্যাচাৰ কৰিছে, সেইদৰে কোনো জীৱকুলে বা কোনো জীৱই অত্যাচাৰ কৰা নাই। মানুহে অস্বাভাৱিকভাৱে গছ-গছনি কাটি ধ্বংস কৰিছে। পৰ্যাপ্ত, ভাৰসাম্যহীনভাৱে প্লাষ্টিক-পলিথিন ব্যৱহাৰ কৰি ভূমি, পানী, বতাহৰ ক্ষতি কৰিছে। পেলনীয়া সামগ্ৰী জৰ্ধে-মৰ্ধে, য'তে-ত'তে পেলাই পৃথিৱীখন ধ্বংস কৰিছে, প্ৰদূষণৰ মাত্ৰা বৃদ্ধি কৰিছে। ব্যাপক সজাগতাৰ বাবে কিছু পৰিমাণে সামাজিক সুৰক্ষা, পৰিৱেশ সুৰক্ষা ক্ৰমাধৰয়ে হ্রাস পোৱা দেখা গৈছে। প্ৰকৃততে সেউজ মূল্যায়ণৰ ফলত ভৱিষ্যতৰ পৃথিৱীখনলৈ কিছু আশাৰ সঞ্চাৰ কঢ়িয়াই আনিছে। অত্যাধিক কাৰ্বন জাতীয় সামগ্ৰী ব্যৱহাৰে পৰিৱেশ বিনষ্ট কৰাৰ পিছত বৰ্তমান ব্যাপক সজাগতাৰ ফলত এনে অপ্ৰয়োজনীয় সামগ্ৰীৰ ব্যৱহাৰত কিছু সুফল পোৱা গৈছে। জলবায়ুৰ পৰিৱৰ্তন কিছু হ্রাস হৈছে। বিশ্বব্যাপী চলি থকা সেউজ মূল্যায়ণৰ আন্দোলনৰ ফলত সম্প্ৰতি পৰিৱেশ সুৰক্ষাৰ বাবে মানুহ জপিয়াই পৰিছে। এনে সজাগতাৰ প্ৰয়োজন আছে আৰু ভৱিষ্যতেও অধিক সজাগতা বৃদ্ধিৰ প্ৰয়োজন হৈ পৰিছে। যিমনেই পৰিৱেশ সুৰক্ষা আন্দোলন বৃদ্ধি পাব, সিমনেই মানুহ পৃথিৱীত জীয়াই থকাৰ নিৰাপত্তা সুনিশ্চিত কৰিব। মানুহ পৃথিৱীৰ বাবে উপযোগী জীৱ হৈ থাকিবগৈনে নাথাকে সেয়া নিশ্চিত কৰিব সেউজ মূল্যায়ণ বা গ্ৰীণ অডিটৰ ফলাফলে। শিক্ষানুষ্ঠান সমূহতো গ্ৰীণ অডিট বা সেউজ মূল্যায়ণ ব্যৱহাৰ কৰি তোলা হৈছে। বিদ্যুৎ ব্যৱহাৰৰ মিতব্যয়িতা, পেলনীয়া খাদ্য সামগ্ৰী হ্রাস, পেলনীয়া আৱৰ্জনা হ্রাস, পানীৰ উপযুক্ত ব্যৱহাৰ, হাইব্ৰীড বাহনৰ ব্যৱহাৰ ইত্যাদিৰ ফলত পৰিৱেশ সুৰক্ষা অধিক নিশ্চিত হৈ পৰিব। তেনে শিক্ষা প্ৰদান কৰিবলৈকে শিক্ষানুষ্ঠানসমূহত সেউজ মূল্যায়ণৰ প্ৰয়োজন আছে।

যি দেখা গৈছে শিক্ষানুষ্ঠানৰ কণ কণ ছাত্ৰ-ছাত্ৰীৰ পৰা বিশ্ববিদ্যালয় পৰ্যন্ত শিক্ষাৰ্থীলৈ চৰকাৰসমূহে সেউজ মূল্যায়ণত সজাগতা সৃষ্টিৰ বাবে বৃক্ষ ৰোপনকে ধৰি পৰিৱেশ সুৰক্ষাৰ কাৰ্যসূচী গ্ৰহণ কৰিছে। এনে ব্যৱস্থাৰ স'তে যিসকলে একাত্ম হ'ব নোৱাৰে, যিসকলে পৰিৱেশ সুৰক্ষাৰ বিষয়ে মুঠেই উদাসীন, যিসকলে পৃথিৱীয়ে লৈ থকা বোজা অনুভৱ নকৰে, সেইসকলে বৃক্ষ ৰোপনকে ধৰি অন্যান্য পৰিৱেশ সুৰক্ষাক কেতিয়াও সহায়ৰ হাত আগবঢ়ায়। এক কথাত সেউজ মূল্যায়ণে সম্পদৰ দক্ষতা, আৱৰ্জনা হ্রাস, বহনক্ষম পদ্ধতিৰ ক্ষেত্ৰসমূহ চিনাক্ত কৰাত সহায় কৰে। উদ্যোগ প্ৰতিষ্ঠানসমূহক উদ্যোগ তথা ব্যৱসায় প্ৰতিষ্ঠানসমূহৰ পৃথিৱীখনৰ প্ৰতি থকা দায়বদ্ধতা সম্পৰ্কে অনুপ্ৰাণিত কৰা।

সামাজিক দায়িত্ব বৃদ্ধি কৰি খৰছ বাহি কৰাৰ সম্পৰ্কে পথ নিৰ্দেশনা দিয়া। সেয়ে অনুভৱ কৰিব পাৰি শিক্ষানুষ্ঠানসমূহে সেউজ মূল্যায়ণৰ অৰ্থ শিক্ষার্থীক সুন্দৰকৈ বুজাই দিয়া বা শিক্ষার্থীক পৃথিৱীখনৰ বোজা অনুভৱ কৰোৱা। পৃথিৱীখন সেউজীয়া কৰি ৰখাটো কিয় প্ৰয়োজন সেয়া শিক্ষার্থীসকলে বুজি পোৱাৰ লগতে হাতে-কামে সেই কামত জড়িত হৈ পৰিলেহে পৃথিৱী জীয়াই থাকিব, প্ৰাণী, জীৱ, মানুহ বাছি থাকিব। সেই বাবেই সেউজ মূল্যায়ণ শিক্ষানুষ্ঠানৰ বাবে বাধ্যতামূলক হৈ পৰিছে। ডি এইচ এছ কানৈ মহাবিদ্যালয়ত সেউজ মূল্যায়ণৰ কাৰ্যকৰী ব্যৱস্থা গ্ৰহণ কৰা হৈছে। বোধকৰো কানৈ মহাবিদ্যালয়ে প্ৰথমখন মহাবিদ্যালয় যিখন মহাবিদ্যালয়ত মাটি, পানী, বায়ু প্ৰদূষণৰ প্ৰতিৰোধ ব্যৱস্থা গ্ৰহণ কৰা হৈছে। প্ৰত্যেক বছৰে মহাবিদ্যালয়খনৰ মাটি, পানী, বায়ু, শব্দ প্ৰদূষণৰ মাত্ৰা জোখা হয়। নিশ্চিতভাৱে প্ৰতি বাৰৰ ফলাফলত ইতিবাচক ফলাফল দেখা পোৱা গৈছে। এক সেউজ পৰিৱেশ গঢ়ি তোলাৰ বাবে প্ৰয়াস কৰা হৈছে। বিভিন্ন প্ৰজাতিৰ গছ-গছনি, ফল-মূল, ফুল ৰোপন কৰি পৰিৱেশ প্ৰদূষণৰ পৰা চৌহদটো মুক্ত কৰি ৰখা হৈছে। বিনা অনুমতিত মটৰচাইকেল, গাড়ী আদি প্ৰৱেশত বাধা আৰোপ কৰা হয় মহাবিদ্যালয় চৌহদত। প্ৰত্যেক দিনা পুৱাই প্ৰদূষণ মুক্ত কৰাৰ স্বাৰ্থত মহাবিদ্যালয়খনৰ চৌহদ পৰিষ্কাৰ কৰা হয়। পুৱা ৫ বজাৰ পৰাই চলে এনে কাম-কাজ। এই লেখা প্ৰস্তুত কৰালৈকে ২০১৫ চনৰ জুন মাহৰ পৰা মহাবিদ্যালয়খনৰ চৌহদ পৰিৱেশ নিকাকৰণ কৰি এক অনন্য উদাহৰণ দাঙি ধৰিছে। এই ক্ষেত্ৰত মহাবিদ্যালয়খনৰ গ্ৰীণ ক্লাবৰ সদস্যসকলৰ লগতে ছাত্ৰাৱাস-ছাত্ৰীনিৱাস, এন চি চি আদিৰ নাম ল'বই লাগিব। মহাবিদ্যালয়খনৰ সেউজ মূল্যায়ণত সেইসকলে অহৰহ প্ৰচেষ্টা চলাই আছে। ৰ'দ-বৰষুণ, ধুমুহা, ভূমিকম্প আনকি ক'ৰণাইও ৰোধ কৰিব পৰা নাই কানৈ মহাবিদ্যালয়ৰ পৰিৱেশ নিকাকৰণ কাৰ্যসূচী। অসমৰ স্বচ্ছ মহাবিদ্যালয়, দেশৰ স্বচ্ছ মহাবিদ্যালয়ৰ দৰে একাধিক সন্মান লাভ কৰিবলৈ সক্ষম হৈছে কানৈ মহাবিদ্যালয়। ডিব্ৰুগড় বিশ্ববিদ্যালয়ৰ ভিতৰত শ্ৰেষ্ঠ শৃংখলাবদ্ধ মহাবিদ্যালয় হিচাপেও তিনিবাৰকৈ গৌৰৱ কঢ়িয়াই আনে কানৈ মহাবিদ্যালয়ে। ইয়াৰ আঁৰতো আছে মহাবিদ্যালয়খনৰ স্বচ্ছতাৰ বিপ্লৱ, পৰিৱেশ বিপ্লৱ। পৰিৱেশক জনমুখী কৰাৰ ক্ষেত্ৰত কানৈ মহাবিদ্যালয়ে দেশৰ ভিতৰত এক গুৰুত্বপূৰ্ণ ভূমিকা পালন কৰিছে। আশা আৰু সপোনৰ মাজেৰে মহাবিদ্যালয়খনে এনে কাম কৰি দেশ আৰু জাতিক সেৱা কৰিছে। নিশ্চিতভাৱে সেয়া ভাল খবৰ। ♦



বহনক্ষম উন্নয়ন আৰু পাৰিপাৰ্শ্বিক সুৰক্ষা

ড° নিতুমণি শইকীয়া

সহকাৰী অধ্যাপিকা, নৃতত্ত্ব বিভাগ

আজিৰ দিনত গড় হিচাপত, আমি প্ৰতিদিনে যিমান পানীৰ অপচয় কৰোঁ সেয়া যদি এই গতিতে চলি থাকে তেন্তে আমি ভৱাতকৈ বহু আগতে পৃথিৱীখনক এক খৰাং গ্ৰহৰ ৰূপত দেখিবলৈ পাম। দিনক দিনে বাঢ়ি অহা গৰম বতৰ তথা ঠায়ে ঠায়ে হোৱা খৰাং পৰিস্থিতিয়ে অন্ততঃ সেয়াই ইংগিত বহন কৰে। এই পৃথিৱী নামৰ গ্ৰহটোত জীয়াই থকা অলেখ অযুত জীৱৰ ভিতৰত মানুহেই এনে এবিধ জীৱ যি নানা প্ৰযুক্তিৰ দ্বাৰা ইয়াৰ সম্পদবোৰ নিজৰ সুবিধাৰ্থে পৰিচালনা কৰি আহিছে। বিশ্ব পৰিস্থিতি তন্ত্ৰৰ এটা সৰু অংশ হোৱাৰ পিছতো নিজৰ প্ৰযুক্তিৰ বলত মানুহে পৃথিৱীৰ বায়ু, পানী, গছ-গছনি, জীৱজন্তু, পাহাৰ-পৰ্বত, সাগৰ-মহাসাগৰকে আদি কৰি ইয়াৰ ভূগৰ্ভত নিহিত হৈ থকা কয়লা, পেট্ৰল আদি নানা বিধ খনিজ সামগ্ৰীৰ ওপৰত নিজৰ একক অধিকাৰ সাব্যস্ত কৰি হকে বিহকে এইবোৰৰ ব্যৱহাৰ কৰি আহিছে। বিকাশ আৰু উন্নয়নৰ নামত মানৱ সমাজে পৃথিৱী আৰু ইয়াৰ সম্পদবোৰ এনেদৰে ব্যৱহাৰ কৰি আহিছে যে ইয়াৰ কুফলে সমগ্ৰ বিশ্ব পৰিস্থিতি তন্ত্ৰটোৰ ভাৰসাম্যত ব্যাঘাত জন্মাইছে। সময় থাকোতেই যদি এই ভাৰসাম্য ৰক্ষাৰ যত্ন কৰা নহয় তেন্তে ইয়াৰ কুফলে সমগ্ৰ জীৱকুলৰ প্ৰতি ভাবুকি সৃষ্টি কৰি এই গ্ৰহত জীৱৰ আয়ুস ক'মাই আনিব।

পৰিৱেশ সচেতনতাৰ ধাৰণাটো মানুহৰ মাজত বেদ, উপনিষদ আদি যুগৰ পৰাই প্ৰচলিত থকাৰ উমান পোৱা যায় যদিও যোৱা ১৭ৰ পৰা ১৮ শতিকাৰ পৰাহে ইয়াৰ বিজ্ঞানভিত্তিক অধ্যয়ন আৰম্ভ হয়। ১৯৭২ চনত ছুইডেনৰ ষ্টকহোমত অনুষ্ঠিত ৰাষ্ট্ৰসংঘৰ অধিবেশনখন পৰিৱেশৰ সমস্যাক লৈ হোৱা ৰাষ্ট্ৰসংঘৰ প্ৰথমখন ডাঙৰ অধিবেশন। ইয়াৰ ২০ বছৰৰ পিছত, ১৯৯২ চনত ৰাষ্ট্ৰসংঘৰ ব্ৰাজিলৰ ৰিও ডি জেনেৰ'ত হোৱা অধিবেশনে পৰিৱেশ সুৰক্ষা আৰু উন্নয়নৰ লগত জড়িত সমস্যাবোৰ আলোচনাৰ দ্বাৰা তিনিটা প্ৰধান চুক্তি গ্ৰহণ কৰে। ভৱিষ্যত উন্নয়ন আৰু সমগ্ৰ বিশ্বৰ অৰণ্য ব্যৱস্থাপনাৰ বাবে নীতি নিৰ্দেশনা থকা এই চুক্তি বিশ্বৰ ১৭০ খন দেশে গ্ৰহণ কৰে। এই অধিবেশন খনক “Earth Summit” বুলি জনা যায়। ৰাষ্ট্ৰসংঘৰ ২০১২ চনৰ ৰিও অধিবেশনৰ মূল বিষয় আছিল বহনক্ষম উন্নয়ন। আৰু এই

অধিবেশনে পৰিবেশ সম্বন্ধীয় সিদ্ধান্ত গ্ৰহণকাৰী সৰ্বোচ্চ সংস্থা ৰাষ্ট্ৰসংঘৰ পৰিবেশ আয়োগ (United Nations Environment Assembly) গঠন হয়। ইয়াৰ তিনি বছৰৰ পিছত, ২০১৫ চনত ৰাষ্ট্ৰসংঘই ২০৩০ চনৰ ভিতৰত কাৰ্যত পৰিণত কৰাৰ লক্ষ্য বান্ধি লৈ বহনক্ষম উন্নয়নৰ ১৭টা প্ৰধান লক্ষ্য স্থিৰ কৰিছে। ইয়াক “United Nation’s Sustainable Development Goals” বুলি জনা যায়। এই লক্ষ্যৰ সামূহিক উদ্দেশ্য হৈছে সমগ্ৰ বিশ্বত শান্তি আৰু সুৰক্ষা প্ৰতিস্থা কৰা; বহনক্ষম উন্নয়নৰ দ্বাৰা গোটেই পৃথিৱীলৈ এক ৰূপান্তৰ অনা। গতিকে এই ১৭টা লক্ষ্যক গোলকীয় লক্ষ্য বা Global Goals বুলিও কোৱা হয়।

ৰাষ্ট্ৰসংঘৰ মতে বহনক্ষম উন্নয়নৰ অৰ্থ হৈছে ভৱিষ্যত প্ৰজন্মৰ প্ৰয়োজনীয়তাৰ সৈতে আপোচ নকৰাকৈ বৰ্তমানৰ প্ৰয়োজনীয়তা পূৰণ কৰা। অৰ্থাৎ, আমি আজিৰ প্ৰয়োজনীয়তা খিনি পূৰণ কৰিবলৈ যাওঁতে লক্ষ্য ৰাখিব লাগিব যাতে আমাৰ ভৱিষ্যত প্ৰজন্মৰ বাবে সম্পদবোৰ কমি নাযায়। ইয়াত সম্পদবোৰৰ দ্বাৰা বিভিন্ন প্ৰাকৃতিক সম্পদৰ লগতে বায়ু, পানী, মাটি আদিকে ধৰি গোটেই পৃথিৱীখনৰ কথাই কোৱা হৈছে। পৃথিৱীক জীৱন্ত কৰি ৰাখিবলৈ বৰ্তমানৰ প্ৰজন্মই নিজৰ বিকাশ আৰু উন্নয়নৰ হকে কাম কৰোঁতে বহনক্ষম ধাৰণাটোত গুৰুত্ব দিব লাগিব। বহনক্ষম উন্নয়নৰ লগত ওতঃপ্ৰোতভাৱে জড়িত হৈ থকা বিষয়টো হ’ল পাৰিপাৰ্শ্বিক সুৰক্ষা। পাৰিপাৰ্শ্বিক সুৰক্ষা অবিহনে বহনক্ষম উন্নয়নৰ কথা ভাবিবই নোৱাৰি। কাৰণ বহনক্ষম উন্নয়নৰ তিনিটা মূল ভেটি - সামাজিক সমতা, অৰ্থনৈতিক সাৰ্থকতা আৰু পাৰিপাৰ্শ্বিক সুৰক্ষা; ইয়াৰে প্ৰথম দুটা প্ৰতিস্থাৰ বাবেও পাৰিপাৰ্শ্বিক সুৰক্ষা নিশ্চিত কৰাটো অত্যাৱশ্যকীয়। পাৰিপাৰ্শ্বিক ন্যায়, সম্পদ সুৰক্ষা, মানৱ স্বাস্থ্য, প্ৰাকৃতিক সম্পদ একাউণ্টিং, যোগান আৰু চাহিদা আদিবোৰ পাৰিপাৰ্শ্বিক সুৰক্ষা সুনিশ্চিতৰ দ্বাৰাহে সম্ভৱ। পাৰিপাৰ্শ্বিক সুৰক্ষাৰ বাবে আকৌ পাৰিপাৰ্শ্বিক স্থিৰতা বৰ্তাই ৰখাটো অতিকৈ প্ৰয়োজন। ৰাষ্ট্ৰসংঘৰ বিশ্ব পৰিবেশ আৰু উন্নয়ন আয়োগৰ মতে পাৰিপাৰ্শ্বিক স্থিৰতা হ’ল এনেদৰে জীয়াই থকা যাতে ভৱিষ্যত প্ৰজন্মৰ বাবে বৰ্তমান প্ৰজন্মতকৈ ভাল, বা কমেও সমান, প্ৰাকৃতিক সম্পদ উপলব্ধ থাকে। ইয়াৰ লগত মানৱ কল্যাণ, এক পৰিষ্কাৰ আৰু স্বাস্থ্যকৰ পৰিবেশ, আৰু প্ৰাকৃতিক সৌন্দৰ্য আৰু বন্যপ্ৰাণী সুৰক্ষা আদি কথাবোৰো জড়িত হৈ আছে।

পাৰিপাৰ্শ্বিক স্থিৰতাক প্ৰভাৱিত কৰা বিভিন্ন কাৰক যেনে জলবায়ু পৰিৱৰ্তন, পৰিবেশ, উদ্ভাৱন, প্ৰযুক্তি, নৈতিকতা আদিত সচেতনতা অৱলম্বন কৰিলেহে পাৰিপাৰ্শ্বিক সুৰক্ষা নিশ্চিত হ’ব। সকলো চৰকাৰী তথা বেচৰকাৰী সংস্থাৰ লগতে ব্যক্তিগত ভাৱেও আজিৰ প্ৰজন্মই কিছুমান ক্ষেত্ৰত সচেতনমূলক ব্যৱস্থা গ্ৰহণ কৰাতো বাঞ্ছনীয়। এই ক্ষেত্ৰত লবলগীয়া কিছু সচেতনতা এনেধৰণৰ হ’ব পাৰে-

- জলবায়ু পৰিৱৰ্তন ৰোধ কৰিবলৈ প্ৰয়োজন হোৱা পদক্ষেপ যেনে জীৱাশ্ম ইন্ধনৰ বিকল্পৰ সন্ধান কৰি সেইবোৰৰ ব্যৱহাৰ অন্তৰ্ভুক্ত থকা সকলো কাৰ্যকলাপৰ বাবে নৱীকৰণযোগ্য শক্তিৰ উৎস বাছনি কৰা,
- প্ৰাকৃতিক সম্পদৰ অনিয়ন্ত্ৰিত ব্যৱহাৰ হ্রাস কৰা যাতে সেইবোৰ আগন্তুক প্ৰজন্মৰ বাবে উপলব্ধ হয়,
- নতুন বিকাশ আৰু উদ্ভাৱনবোৰৰ বাবে পৰিবেশ প্ৰদূষিত নকৰাকৈ আৰু জলবায়ুৰ অধিক ক্ষতি নকৰাকৈ প্ৰাকৃতিক সামগ্ৰী বা স্থানীয়ভাৱে প্ৰস্তুত কৰি লোৱা উৎসৰ সামগ্ৰী ব্যৱহাৰ,
- পৃথিৱীক জীৱন্ত কৰি ৰাখিবলৈ, আমি আমাৰ জীৱনশৈলী সলনি কৰিব লাগিব আৰু অধিক বহনক্ষম আৰু পৰিবেশ অনুকূল ভাৱে কেনেদৰে জীয়াই থাকিব লাগে শিকিব লাগিব,

- ব্যক্তিগত পৰ্যায়ত, এক বহনক্ষম আহাৰ অনুসৰণ কৰা, বহনক্ষম ফেশ্বন কৰা, আৰু জীৱাশ্ম ইন্ধন আৰু সেইবোৰৰ সামগ্ৰীৰ নিম্নতম ব্যৱহাৰ নিশ্চিত কৰা,

তাৰোপৰি, বহনক্ষম কৃষি পদ্ধতি যেনে- খেতিপথাৰে যাতে দীৰ্ঘম্যাদী শস্য উৎপাদন কৰে আৰু কৃষি পদ্ধতি আৰু পশুধনে পৰিবেশত নেতিবাচক প্ৰভাৱ পেলাব নোৱাৰে তাক নিশ্চিত কৰা, বহনক্ষম নিৰ্মাণ, অৰ্থাৎ পৰিবেশৰ ওপৰত নিম্নতম প্ৰভাৱ পেলাৱা নৱীকৰণযোগ্য আৰু পুনৰ ব্যৱহাৰযোগ্য নিৰ্মাণ সামগ্ৰী আৰু সম্পদৰ সৈতে গাঁথনি নিৰ্মাণ কৰা, বহনক্ষম বনাঞ্চল, অৰ্থাৎ অৰণ্যৰ জৈৱ গুণাগুণ ৰক্ষণাবেক্ষণ, পুনৰ্গঠন আৰু ব্যৱস্থাপনা আদিৰ লগতে দক্ষ আৱৰ্জনা ব্যৱস্থাপনা, বহনক্ষম পানী ব্যৱস্থাপনা, আৰু বহনক্ষম শক্তিউৎস আদি আজিৰ মানৱ সমাজৰ দৈনন্দিন কাম-কাজৰ অংশ কৰি ল’ব পাৰিলেহে পৃথিৱীৰ পাৰিপাৰ্শ্বিক স্থিৰতা নিশ্চিত হ’ব। জীৱাশ্ম ইন্ধনৰ লগতে আন আন অ-নৱীকৰণযোগ্য শক্তিৰ উৎস বিকল্প নৱীকৰণযোগ্য শক্তি উৎপাদনৰ উৎস যেনে বায়ু শক্তি, সৌৰ শক্তি, ভূ-তাপীয় শক্তি, জলবিদ্যুৎ আদিৰ সৈতে সলনি কৰিব লাগিব যাতে আগন্তুক প্ৰজন্মৰ বাবে কিবা বাকী থাকে।

পৰিস্থিতিবিজ্ঞান, জলবায়ু, সামাজিক প্ৰণালী, আৰু ব্যৱসায়িক পদ্ধতি বোৰ দেশভেদে পৃথক হয়, সেয়েহে পৰিবেশৰ স্থিৰতা নিশ্চিত কৰিবৰ বাবে দেশ অনুসৰি নিজৰ নিজৰ নীতি নিয়ম আছে যিবোৰৰ উলংঘনক এক গুৰুতৰ অপৰাধ বুলি ধৰা হয়। সমগ্ৰ বিশ্বতে পাৰিপাৰ্শ্বিক আইন উলংঘনক জৰিমনা, প্ৰবেচন, কাৰাগাৰ, বা এই দুটা বা তিনিওটাৰ সংমিশ্ৰণৰ সৈতে বগা-কলাৰ (White-collar Crime) অপৰাধ বুলি গণ্য কৰা হয়। ♦



মহাকবি কালিদাসৰ শাকুন্তলম আৰু প্ৰকৃতি

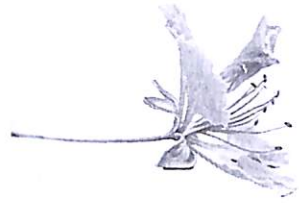
ড° চয়নিকা গোস্বামী
সহকাৰী অধ্যাপিকা, সংস্কৃত বিভাগ

সাহিত্যত প্ৰকৃতিৰ উপস্থাপন বা চিত্ৰন কোনো আজৰ বিষয় নহয়। ই তেনেই স্বাভাৱিক আৰু সাধাৰণ। কিন্তু সংস্কৃত সাহিত্যত বিশেষকৈ ভৱভূতি আৰু কালিদাসৰ কাপত প্ৰকৃতি প্ৰাণৰন্ত চৰিত্ৰ। এইক্ষেত্ৰত মহাকবি কালিদাসৰ কথাই সুকীয়া। কবি কালিদাসে শব্দৰ জালেৰে আঁকি দেখুৱাইছে প্ৰকৃতি অহিবনে মানুহৰ জীৱন অসম্ভৱ। প্ৰকৃতিৰ মনোৰম কোলা আইৰ কোলাৰ দৰেই মনোহৰ আৰু অপূৰ্ব। প্ৰকৃতিৰ চিত্তাকৰ্ষক ছবিয়ে কঠুৱা হৃদয়ো বিগলিত কৰাৰ ক্ষমতা ৰাখে। কবি কালিদাসৰ শাকুন্তলমত প্ৰকৃতি সম্পৰ্কে ৰবীন্দ্ৰনাথে মন্তব্য কৰিছে যে - অভিজ্ঞান-শকুন্তলম নাটকত অনসূয়া, প্ৰিয়ম্বদা, কন্ব আদিৰ দৰে প্ৰকৃতিও এক বিশেষ পাত্ৰ।

নাটকৰ মুঠ ৭ টা অংকৰ ৫ম অংকলৈ বাদ দি বাকী আটাইকেইটা অংকৰ পটভূমি প্ৰকৃতিৰ শ্যামল কোলা। নাটকৰ প্ৰথম অংকৰ পৰাই মানুহ আৰু প্ৰকৃতিৰ সহায়স্থানৰ ছবিখন দৰ্শকৰ / পাঠকৰ চকুত ভাঁহি থাকে। ১ম অংকত শৰ গাত পৰাৰ ভয়ত ডিঙি বেঁকাকৈ বজাৰ আগে আগে প্ৰাণটাকি লৰি পলোৱা মৃগৰ বৰ্ণনাৰ পৰা প্ৰকৃতিৰ খেল আৰম্ভ। গছৰ ওপৰৰ পক্ষীৰ বাঁহৰ পৰা সিঁচৰিত হৈ পৰা নীৰাৰ ধানৰ বৰ্ণনা, আশ্ৰমবাসিনী তাপস কন্যাসকলৰ অপৰিসীম প্ৰকৃতিপ্ৰেম, ২য় অংকৰ মালিনী নৈৰ পাৰৰ ডাঠ ছাঁ থকা ছবিখন, বনৰীয়া মহাবিলাকৰ নৈত গা ধোৱা ছবি, কদমৰ ছাঁৰ তলত মৃগৰ ঘাঁহ পাণ্ডলা দৃশ্য, বোকাত লেটি লোৱা বৰাহৰ বৰ্ণনা অতি জীৱন্ত। ঠিক সেইদৰে ৩য় অংকৰ পটভূমি মালিনী নৈৰ পাৰৰ কুলু কুলু কলৰেৰে গুঞ্জিত মৃদু সমীৰণ প্ৰৱাহিত এক লতাকুঞ্জ। চতুৰ্থ অংকৰ প্ৰকৃতি আকৌ অনন্য। ইয়াত প্ৰকৃতিৰ সহায়স্থান, আনুগত্যৰ এই ছবি অন্যত্ৰ সাধিত হৈছে নে নাই সন্দেহ। অনুভৱ হয় যে যিদৰে প্ৰকৃতি অহিবনে জীৱন অকল্পনীয় ঠিক সেইদৰে মানুহৰ বিৰহতো প্ৰকৃতি জয় পৰি গৈছে। আপোন জ্ঞাতি কুটুমৰ দৰে প্ৰকৃতিয়ে বিদায় বেলাত শকুন্তলাক উপহাৰেৰে ওপচাই পেলাইছে। যদিও কিছু অতি প্ৰাকৃতিক ঘটনাও চিত্ৰিত হৈছে, কবিৰ মনোৰম বৰ্ণনা চাতুৰ্য্যই তাক সাঁচা ছবি এখনৰ দৰে তুলি ধৰিছে। গছৰ ডালত পৰি নায়িকা শকুন্তলাক কুলি চৰায়ে

যছা বিদায় সন্তাষণ হৃদয় বিদাৰক। শকুন্তলাৰো প্ৰকৃতিলৈ যি নিঃস্বার্থ প্ৰেম তাক তেওঁৰ বিদায় বেলাত পিতৃৰ বচনেৰে স্পষ্ট হৈছে। তেওঁ গছবিলাকক উদ্দেশ্য কৰি কৈছে যে প্ৰাতঃকালত সিহঁতে (গছ) পানী নোখোৱাকৈ যিয়ে পানী খাবলৈ মন নকৰে, সাজোন-কাচোন প্ৰিয় হ'লেও তেওঁলোকৰ (গছ) মৰমত যিয়ে পাত এটিও নিছিঙে। তেওঁলোকৰ প্ৰথম ফুল ফুলাৰ সময়ত যাৰ উৎসৱ হয়, সেইজনী শকুন্তলা আজি পতিগৃহলৈ যাব ওলাইছে গতিকে তেওঁলোকে অৰ্থাৎ গছবোৰে সন্মতি দিব লাগে। প্ৰথম অংকটো এনে অলেখ উদাহৰণ আছে য'ত এই কথা স্পষ্ট হৈছে যে শকুন্তলাৰ বাবে প্ৰকৃতি প্ৰাণতকৈও অধিক প্ৰিয়। অনসূয়াই যেতিয়া শকুন্তলাক গছৰ গুৰিত পানী দিয়াৰ দৰে বৰ টান কাম এটা পিতৃ কন্বই দিছে বুলি কৈছে তেতিয়া প্ৰত্যুত্তৰত শকুন্তলাই কৈছে যে সেই কৰ্ম তেওঁৰ বাবে আদেশ পালন মাথোঁ নহয়। সিহঁতৰ প্ৰতি তেওঁৰ আছে ভগ্নীসুলভ চেনেহ। আকৌ একেটা অংকতে আন এটি প্ৰসংগত নায়িকাই নিজে নাম খোৱা বনজ্যোৎস্নাক পানী দিবলৈ পাহৰিলা নেকি বুলি সোধাত প্ৰত্যুত্তৰ দিছে - 'তদাঘ্নানমপি বিস্মবিষ্যামি।' তেনেহ'লে নিজকো পাহৰি যাম।' প্ৰকৃতিৰ সৈতে শকুন্তলাৰ নিবিড় একাত্মবোধ ৬ষ্ঠ অংকটো চিত্ৰিত হৈছে। ৭ম অংকত সিংহ পোৱালীটোৰ সৈতে সৰ্বদমন অৰ্থাৎ শকুন্তলাৰ পুত্ৰৰ ধেমালি মানুহ আৰু প্ৰকৃতিৰ পৰস্পৰ সহায়স্থানৰ অন্যতম উদাহৰণ। মাৰীচৰ আশ্ৰমো প্ৰকৃতিৰ বিনন্দীয়া ওমলা ভূমি। নায়ক দুযন্তই পত্নী পুত্ৰক ওভতাই পাইছে প্ৰকৃতিৰ এক বিনন্দীয়া পৰিৱেশত।

শকুন্তলা নাটকত তপোবনৰ তপস্বীসকলৰ সৈতে কিছুদিন থকাত নায়ক দুযন্তৰ দৰে মৃগয়াসক্ত ৰজাও প্ৰকৃতিৰ প্ৰতি সহনশীল হৈ উঠিছে। বনৰীয়া মহক মুক্তমনে গা ধুবলৈ দিছে, শকুন্তলা আৰু মৃগ পোৱালীৰ মাজৰ আনুগত্য উপলব্ধি কৰিব পাৰিছে। আনহাতে, নায়িকা শকুন্তলা মাথোঁ নায়িকা নহয়। সীতা-সাৱিত্ৰীৰ দৰে মহাসতীৰ গুণৰ সমাহাৰ ঘটাই, কাপে গুণে অতুলনীয় সহনশীলতাৰ প্ৰতিমূৰ্তি। তেওঁৰ নাটকত অন্যতম লক্ষণীয় দিশটোৱেই হৈছে গছ-লতিকালৈ আকৃষ্ট প্ৰেম আৰু জীৱ-জন্তু তেওঁৰ সহচৰ। বিদায়ৰ সময়ত শকুন্তলাই পিতৃক অধিক উৎকণ্ঠিত হ'বলৈ বাধা দিয়াত তেওঁ কৈছে - 'বাচা, তুমি পখীবিলাকক খাবলৈ দিয়া নীৰাৰ পৰি কুটীৰৰ সমুখত গঁজা ধান গছবোৰ দেখিনো মোৰ শোক কেনেকৈ জুৰাব? ♦



SOILLESS GROWTH IN PLANTS

Dr. Alakananda Baruah
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The practice of growing plants in nutrient-enriched water without soil is called as soilless growth or hydroponics (Gericke, 1937). However, the term hydroponics is now being applied to plants rooted in sand, gravel or other similar matter such as vermiculite or expanded clay (i.e. kitty litter) which is soaked with a recycling flow of nutrient-enriched water.

(Vermiculite is a group of low grade micas which expand and exfoliate on heating to a light water absorbent material. In exfoliated form, vermiculite is used in industries as heat and sound insulating material. It is also used in hydroponics as special "soil to sustain plants rooting system").

The plants are grown in large tanks containing nutrient solution and are supported by wire netting. The tanks are provided with the solution-regulating and pumping system and are placed in green houses under controlled environment.

After about a month in the greenhouse when the plants flower, they are further supported by strings attached to the greenhouse roof. Because the plants are grown in large tanks, this process of soilless cultivation is also known as tank farming. Hydroponics has achieved success in experimental stations around the world and is gradually coming into commercial use in countries like United States, Abu Dhabi etc.

According to a United Nations report on hydroponics: 'In large areas of the tropics, water deficiency is the limiting factor in crop production, and it is in these regions that the soilless methods hold out much promise because of the more economical use of such water as is available'.

The report adds: "In some areas, lack of fertile soil or very thin soil layers may also make soilless methods worth serious consideration'. Besides these, the other advantages of growing cucumbers, egg plants, peppers, lettuces, spinach and other vegetables hydroponically under controlled environment are:

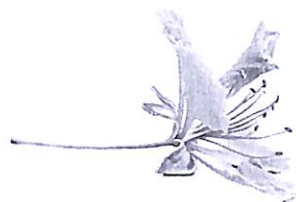
- (i) The regulation of nutrients
- (ii) Control of pests and diseases,
- (iii) Reduction of labour cost and
- (iv) Sometimes, quicker yield.

But there are two main drawbacks of hydroponics farming. Firstly, the cost of setting up the system is very high. A typical hydroponics unit including the environmental control equipment and which encompasses three quarters of an acre costs lakhs of rupees. Secondly, it requires skill and knowledge for its operation.

The UN report says : To make a real success of the method, it is necessary to have some knowledge of plant physiological principles and even of elementary chemistry as well as sound knowledge of how to grow the crop'. However, the future of growing crops under unfavorable conditions hydroponically seems to be promising.

In recent years, two other alternatives to grow plants hydroponically have been developed. One such alternative hydroponic system is the nutrient film growth system in which plant roots lie on the surface of a slanting trough and the nutrient solution is pumped as a thin film over the roots. This system ensures adequate supply of oxygen to roots and the composition and pH of the nutrient solution can automatically be controlled. This technique is often used in commercial production.

The second alternative is the aeroponic growth system (or aeroponics) in which plant roots are suspended over the nutrient solution in a nutrient mist chamber. With the help of a motor driven rotor, the nutrient solution is whipped into a mist that is continuously sprayed on the plant roots. Although in this technique gaseous environment around the roots can easily be manipulated, but due to greater requirement of nutrients and other technical difficulties, aeroponics is not used widely. ♦



NANO SEED PRIMING: ENHANCING PLANT GROWTH AND PERFORMANCE

Mr. Ambarish Bhuyan

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Introduction

India is an agricultural country. Most of the population depends upon agriculture and its associated sectors for their livelihoods. The Green Revolution has led to expansive improvement in food grain production with the acquisition of modern approaches such as high-yielding varieties, agrochemicals and intensified farming (Akhilash and Kavitha, 2020). However, due to environmental pollution and soil degradation, there is a profound negative effect on the agriculture sector. Farmers are adopting eco-friendly and economical techniques such as seed priming to curtail the effects of continuous cultivation practices under fragile ecosystems (Rakshit and Singh, 2018; Sarkar *et. al.* 2020). The seed priming technique emerged as a promising tool for mitigating the consequences of contemporary agriculture, as it protects plants against both biotic and abiotic stresses (Sarkar *et. al.* 2018). Under difficult situations, such as fragile ecosystems, the absolute performance of seed priming is more pronounced than under favourable conditions (Parera and Cantliffe, 1994).

Seeds are remarkable repositories of life, encapsulating the genetic potential of plants within their tiny structures. However, this potential is often held in abeyance until favourable conditions for germination and growth are met. Seed priming, a technique that involves the controlled hydration and drying of seeds before planting, has emerged as an innovative method to enhance germination,

seedling vigour, and overall plant performance. By exploiting the physiological and biochemical processes that occur during seed priming, agricultural practices can be optimized for better yields, resource efficiency, and sustainable crop production.

The Science Behind Seed Priming:

Seed priming capitalizes on the concept of controlled hydration, where seeds are exposed to a precise amount of water for a specific period, followed by a drying phase. During hydration, the seed begins to activate various metabolic processes, including the repair of damaged membranes, mobilization of stored nutrients, and activation of enzymes that are crucial for germination. The subsequent drying phase halts these processes before actual germination begins, maintaining the seed's viability.

Benefits of Seed Priming:

Enhanced Germination: Primed seeds tend to germinate faster and more uniformly than non-primed seeds. This can be particularly advantageous in situations where timely and uniform emergence is crucial, such as in regions with short growing seasons.

1. **Improved Seedling Vigour:** Primed seedlings often exhibit increased vigour, which translates to healthier and more robust plants. This vigour can contribute to better root establishment, early growth, and overall stress tolerance.
2. **Resource Efficiency:** Priming allows seeds to use stored nutrients more efficiently during germination, reducing the demand for external inputs like fertilizers. This efficiency aligns with sustainable agriculture practices by minimizing resource wastage.
3. **Stress Tolerance:** Primed seeds are better equipped to withstand environmental stressors such as drought, salinity, and temperature fluctuations. The priming process induces the synthesis of protective compounds and stress-responsive proteins.

Nano-Priming:

Seed nano-priming is a new approach for seed priming that employs nanomaterials, primarily nanoparticles (Mahakham *et. al.* 2017; Kasote *et. al.* 2019; Shukla *et. al.* 2019). There is a significant difference between seed priming and seed nano-priming since conventional seed priming mostly uses water (hydropriming) or solutions containing chemicals that adsorb on the seed and can result in seed coating (Acharya *et. al.* 2019). The media employed in seed nano-priming are

suspensions or nanoformulations in which the nanoparticles may or may not be taken up by the seedlings. Even when nanoparticles are absorbed, most of them remain on the seed surface as a coating (Savassa *et. al.* 2018; Duran *et. al.* 2017). This type of seed coating can be used with fungicides or bactericides to protect against diseases in the field or during storage (Gross *et. al.* 2020).

Nano-priming involves the application of nanoparticles, which are minute particles with dimensions at the nanometre scale, to seeds. These nanoparticles can be engineered from various materials, including metals, metal oxides, and polymers. When applied to seeds, nanoparticles interact with the seed coat and can even penetrate the seed, exerting profound effects on germination, growth, and stress response mechanisms.

Key Benefits Of Nano-Priming:

Nano priming, the application of nanotechnology-based treatments to seeds, offers several potential benefits in agriculture. These benefits are derived from the unique properties of nanomaterials and their interactions with plant physiology (Devika *et. al.* 2021)

1. **Enhanced Germination and Seedling Growth:** Nano-priming accelerates germination and enhances seedling vigour. The interaction between nanoparticles and the seed surface triggers specific biochemical and physiological changes, promoting faster and more uniform emergence.
2. **Stress Tolerance:** One of the most remarkable aspects of nano-priming is its ability to confer stress tolerance. Nanoparticles can act as carriers for bioactive compounds, such as antioxidants and growth regulators, which help seeds and seedlings withstand environmental stresses like drought, salinity, and temperature extremes.
3. **Nutrient Uptake:** Nano-primed seeds have been shown to exhibit improved nutrient uptake and utilization. Nanoparticles can enhance nutrient availability in the soil and facilitate their absorption by plants, leading to improved nutrient use efficiency.
4. **Reduced Environmental Impact:** Nano-priming can potentially reduce the need for agrochemical inputs like fertilizers and pesticides, contributing to environmentally friendly and sustainable agricultural practices.

Applications of Nano-Priming:

Nano priming has shown the potential to improve seedling vigour, stress tolerance, nutrient

uptake, and overall crop productivity.

1. **Precision Agriculture:** Nano-priming aligns with the principles of precision agriculture by offering tailored solutions for specific crop requirements. Nanoparticles can be designed to carry nutrients or compounds that address particular deficiencies or stresses in a given area.
2. **Organic Farming:** Nano-priming has the potential to complement organic farming practices by reducing the reliance on synthetic chemicals while enhancing yield and quality.
3. **Hydroponics and Controlled Environment Agriculture:** In controlled environments like hydroponic systems or vertical farms, where resource efficiency is crucial, nano-priming can enhance nutrient uptake and plant growth, optimizing production.

Challenges And Ethical Considerations:

It's important to note that while nano seed priming holds promise, there are also challenges and considerations:

1. **Regulatory Concerns:** The use of nanomaterials in agriculture raises questions about potential environmental and health impacts. Regulation and guidelines are needed to ensure the safe application of nanotechnology in farming.
2. **Environmental Fate:** The behaviour of nanomaterials in the environment, including their potential accumulation in soil and water, is an area of ongoing research.
3. **Consistency:** The effectiveness of nano seed priming can vary based on factors such as plant species, nanomaterial type, concentration, and application method. Ensuring consistent results across different conditions is essential.
4. **Cost-Benefit Analysis:** The economic viability of nano seed priming needs to be evaluated, as the cost of nanomaterials and application methods could impact its adoption, especially in resource-limited agricultural systems.

Conclusion:

Nano-priming stands at the forefront of innovation in seed priming technology, offering a game-changing approach to enhance crop productivity and sustainability. By harnessing the unique properties of nanoparticles, this technique addresses some of the most pressing challenges in

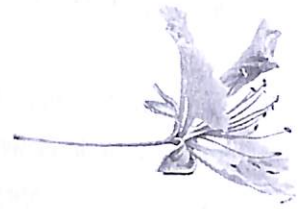
agriculture, from unpredictable climate conditions to resource constraints. However, the responsible development and deployment of nano-priming technology require a multidisciplinary approach that encompasses scientific rigour, ethical considerations, and regulatory oversight. As this technology continues to advance, it holds the potential to reshape the way we cultivate and nourish our planet, fostering a more resilient and productive agricultural future. ♦

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CELEBRATING 20 YEARS OF ENVIRONMENTAL CONSERVATION: THE JOURNEY OF SOFEC

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Introduction

In the bustling world of higher education, where academics and examinations often take precedence, the birth of the Society for Environmental Conservation (SOFEC) at our college in 2002 was a testament to the power of an idea and the commitment of a few individuals. In the hallowed Teachers' Common Room of the then Anthropology department at our college, an idea was born over a cup of tea on August 12, 2002. This idea was to create an association dedicated to environmental conservation, a dream nurtured by passionate individuals who understood the pressing need to protect our planet. This humble beginning gave rise to the Society for Environmental Conservation (SOFEC), which has since evolved and flourished into a force to be reckoned with in the realm of environmental advocacy. As we celebrate our 20th anniversary, it's a perfect time to reflect on our journey and the impact we have made on the world surrounding us.

The Founding Vision

On that memorable day, the 12th of August 2002, SOFEC was born. I had the privilege of being one of the members present at that casual group conversation that gave birth to SOFEC.

The seed of idea conceived was at once sown in the fertile soil of Kanoi College that germinated well and fast grown into maturity. Under the attentive care of enthusiastic individuals the Society endeavored towards the goal it envisaged, and the responsibility shouldered upon to attend to environmental issues of the time and contribute to their solutions. I vividly remember those days of preliminary activities and the foundational works we laid. I also had once paid a visit to Dr. Bharati Dutta at her quarters at Dibrugarh University after we were entrusted for drafting the constitution of the fledgling Society. So, together with Madam Dutta, we diligently drafted the constitution of the society. It was a significant step that laid the groundwork for the society's future activities. In all earnestness, the Society started its awareness campaigns by organizing talks, plays, lectures, seminars, and visiting local schools to disseminate and sensitize environmental awareness, particularly among the students. In our first ever program organized, we invited our very own Mr. Sumodeep Dutta, Director of Nature's Beacon, as resource person to deliver talk. So, from the very beginning, the Society for Environment Conservation was a symbol of hope, a commitment to safeguarding our environment for future generations, and a dedication to raising awareness about the pressing ecological challenges we faced.

Twenty Years of Impact

Over the past two decades, SOFEC has grown from its infancy into a robust and active organization. The society has consistently focused on its core mission of environmental conservation, awareness, and education. As we celebrate our 20th birthday, we look back on the remarkable milestones we have achieved:

1. Tree Plantation: As an integral part of our vision, SOFEC members have actively



participated in tree plantation drives, contributing to the growth of green spaces within our college campus and beyond. These trees stand as symbols of our commitment to the environment.

'Nature' has now become our 'Khrishnasura'



Editorial

Though we couldn't make it being on time, I am glad that we could once again come out with the second issue of Nature. As the old saying goes it is better late than never. In fact, it is an achievement for SOFEC in its own right. Today, in spite of having at our disposal the latest machines and state of the art technology to make life easy, there is no second opinion that we have never being so much besetted with so many problems. We are ever busy and bog down by loads of work and duties. We seem to have more problems than ever with no relief at sight. I think it is because materialism and selfishness have become our ethos. So we have virtually become insensitive and callous creatures. Least bothered about...

On the latest SOFEC, along with the rest of the world observed World Environment Day on the 5th June 2023 with the most appropriate theme "Planet. People. Prosperity". The day's program was marked by distribution of trees and a visit to two local schools for being awareness on environment. The 117th foundation Day of the SOFEC was also observed on the most bustling occasion on the 27th August 2023 in which Dr. A. Ahmed, Vice-Chancellor of the College, granted the Distinguished Lecture on Ecology, had delivered his motivating lecture on species diversity on the 27th September 2023. SOFEC observing the World Biosphere Day, SOFEC organising the National Environmental Awareness Competition on students of the College and well respected SOFEC is also contemplating for observe Wildlife Week on 17th week of October 2023.

2. Outreach Efforts: SOFEC has always believed in the power of outreach. One of our significant endeavors has been our partnership with local schools. Commemorating this year's, the 20th birth anniversary of the Society we have visited Nandeswar Chakraborty High School, Dibrugarh. So, through our collaboration with other educational institutions we have educated and inspired young minds about conservation of environment, nurturing the next generation of eco-warriors.
3. Awareness Campaigns: The society has been consistently engaged in creating awareness about environmental issues among students and teachers alike. Workshops, seminars, and awareness campaigns have been integral to our efforts.
4. Sustainability Initiatives: SOFEC has also taken steps to make our college campus more sustainable. We've advocated for recycling, waste reduction, and energy conservation, setting an example for others to follow.

Looking Ahead: As we stand on the threshold of our third decade, SOFEC is committed to redoubling its efforts in the fight for environmental conservation. We understand that the challenges facing our planet have become more complex and urgent. Climate change, biodiversity loss, and pollution require collective action and steadfast commitment.

In the coming years, we plan to expand our reach, engage in more impactful projects, and collaborate with like-minded organizations and individuals. We believe in the power of unity, and together, we can make a difference.

Conclusion:

The journey of the Society for Environment Conservation (SOFEC) from its inception in

2002 to its 20th anniversary in 2022 is a testament to the power of a shared vision and a united effort. Our commitment to environmental conservation, education, and outreach remains unwavering. As we celebrate this milestone, we invite all members and supporters, past and present, to join us in our ongoing mission to protect and preserve the environment for future generations. Together, we can create a brighter and more sustainable future for all. ♦

The Latest SOFEC News

STATE

Virtheswar Hazarika: The man who first hoisted the Tricolour in N Lakhimpur

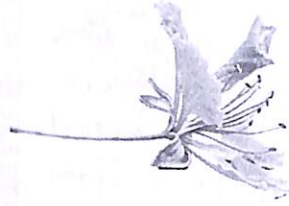
Frees on fighter Malakanta Das remains lost in the mists of time

WNU College's environmental conservation society celebrates 20 years anniversary

Talk on 1-day organised at North Gauhati College

Rich tributes paid to Dr Pranshuwati Chetia

RIII holds 4th regional research conference on climate change



ENVIRONMENTAL ETHICS DEPICTED IN THE VEDAS

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The nucleus of the Vedas is pregnant with various types of knowledge. Though the Vedas are primarily religious in content, but they embody a large number of references related to environmental ethics. Since the time immemorial man knew the importance of nature. Vedic people knew if we want to progress further we would require the things of natural world. So the sages used to relate the nature to god and then gradually it became a practice. Thus Vedic gods are recognized personification of different powers or agents of nature. Gods like Agni, Vayu and Surya contribute everything which is necessary for sustaining life on earth. Yaska, an etymologist, states that human, animals and the gods residing on the earth from a single community, by virtue of fact that they all have a common habitat. This community is capable of sustaining itself without depending on any external source of matter and energy, barring the sun which belong to heavenly region.

The Vedas follow the certain laws of nature i.e. *rita* which means absolute truth. The solar god Varuna is recognized in the Vedas as the master of *rita*. In the Rigveda it is clearly stated that when man follows as straight path of action, then and then only the environment of the *prithivi* remains pure and pleasant. The *Rigvedic* seers pray for making the air, the sun and its rays pleasant for man.

The teachings of the Vedas are universal. The Vedas described the diversified range of flora and fauna and urge the human being to protect, preserve, nurture and nourish the environment

and natural world. For the benefit of human being along with other living organism the Vedas prescribed a pleasant environment consists of sweet breeze, sweet flowing rivers, beneficial herbs, sweetness of earth particles, sweet fruit bearing trees, beneficial sun etc. Vedic literature has given stress on the habitats which should be protected. Plants were compared by them with mother, friends and deities.

Although the Vedic seers were not acquainted with ecology, one of the branches of modern science which studies natural history of environment yet they had well aware with the understanding of the workings of nature. They had respect for everything on earth and they understood the interdependence of various natural phenomena in sustaining the living world. This idea of interdependence keeps us bonded with nature. Vedas provide a median for the ethics of the environment. Atharvaveda states that the earth was revealed to mankind for bless.

The knowledge about the origin and significance of plants can be traced out from Vedic literature. It should be mentioned here that *Vrikshayurveda* of Surapala is one of them where so many ideas are given to the Vedic student regarding plants, preparation of soil, watering in the plants, diseases and the remedies of the plants, planting procedure etc. In the Rigveda there is a hymn called *Aranyani sukta* where the deity of forest is addressed. *Aranyani* i.e. the queen of the forest received high praise from the seer as she gifts man. In the Rigveda it is instructed that the forest should not be destroyed. It is also instructed that if one wants to enjoy the fruits and forests should not be destroyed. It is also instructed that if one wants to enjoy the fruits and happiness of life for thousand and hundred years then one has to take up systematic planting of trees. There is an another hymn called *Oshadhi sukta* in the Rigveda where seer addresses the medicinal plants and vegetables as mother. This entire hymn devoted to their praise, especially with reference to the healing properties of the medicinal herbs. It is noteworthy that in the Rigvedic age tree worship was quite popular and universal.

Plants were considered as a part of the environment in the Vedic hymn poetry and their protection was the prime concern of the Vedic seers. Vedic traditions teach us to live in peace and harmony with nature and to conserve it. As we all are creatures of one creator therefore, we don't have any right to harm anybody and anything. It was regarded a sacred of every person to protect the environment. The Vedic seers also know that mountains cause rains and fresh air and also they provide medicines. Therefore, they gave importance to save mountain and suggested that it is better to live in the forests or mountains than the villages. Thus the Vedic seers have always had a respect for nature. ♦



A TREATISE ON SOME WILD EDIBLE FRUITS OF ASSAM NOT FOUND IN MARKET

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From time immemorial fruits are part of diet among various aboriginals around the world. Human race was once hunter-gatherer before becoming cultivators. When cultivation became organised, the fruits also became crops and are cultivated not for only eating but for selling & utilizing as commercial products in business. When people left jungle and civilizations become rural to urban, some fruits gained more popularity than others, though initially all of the fruits were wild.

Therefore, some fruits remained as wild and not cultivated and still collected from jungles for eating purposes by mostly the tribal people around the world. In the state of Assam, India, also there are such fruits which were consumed from time immemorial, which have local names also. An account of some such fruits are tried to be presented here with their Assamese names, English names, Scientific names & Families, so that they remain in our memories & future researchers may find out their potential in terms of nutritional qualities & commercial viability.

Assamese name	English name	Scientific name (Species)	Family
1. Dimoru	<i>Fig</i>	a. <i>Ficus racemosa</i> b. <i>Ficus auriculata</i>	Moraceae
2. Gorokhis	<i>Mock strawberry</i>	<i>Potentilla indica</i> = Synonym = <i>Fragaria indica</i>	Rosaceae
3. Helos	<i>Tassel berry</i>	a. <i>Antidesma acidum</i> b. <i>Antidesma bunious</i> c. <i>Antidesma ghaesambella</i>	Phyllanthaceae
4. Jetuli poka	<i>Raspberry</i>	<i>Rubus alceifolius</i>	Rosaceae
5. Kaath lichu	<i>Longan/Dragon's eye</i>	<i>Democarpus longan</i>	Sapindaceae
6. Kuji thekera	Unknown	<i>Garcinia morella</i>	Clusiaceae
7. Bor thekera	Unknown	<i>Garcinia pedunculata</i>	Clusiaceae
8. Rupohi thekera	Unknown	<i>Garcinia lanceifolia</i>	Clusiaceae
9. Laskosi	Black nightshade	<i>Solanum nigrum</i>	Solanaceae
10. Mirika tenga	Wild olive	<i>Elaeagnus caudata</i>	Elaeagnaceae
11. Pokmou	Native gooseberry	<i>Physalis minima</i>	Solanaceae
12. Thereju	Unknown	<i>Prunus jenkinsii</i>	Rosaceae
13. Tepor tenga	Unknown	<i>Garcinia xanthochymus</i>	Clusiaceae

The list is not conclusive one. There are many wild edible fruits in different localities of Assam. It is a minor presentation of some of the wild edible fruits which are in use, but not sold in the market in general.

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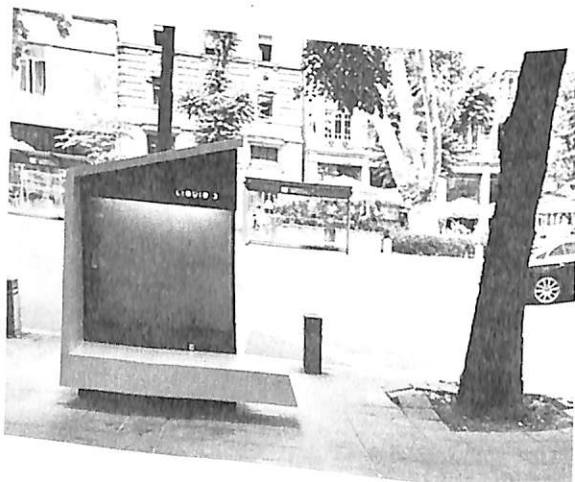


LIQUID TREE: AN INNOVATION WORTHWHILE

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Trees are nature's great air filters. They take in Carbon dioxide and give out Oxygen, a process which has kept us all alive. They are the strongest tool to fight climate change, environmental pollution and pollution-related disease. Trees are essential to improve the air quality in areas with significant air pollution. But there are some settings where planting a tree isn't the best course of action. Urban settlements barely have any space for plantation of trees. These are also the areas with maximum air pollution. Air pollution is a growing concern in urban areas worldwide, with dire consequences for human health and the environment. It is estimated that cities are the source of as much as 75% of total CO2 emissions in the world, of which the largest percentage comes from traffic and cooling and heating in buildings. The toxic fumes from exhaust pipes, construction sites and factories have been filling up the lungs of the urban population bringing down the quality of life. An effective and alternate air purification system is a need of the hour in these urban settlements.

A group of Serbian scientists has come up with an ingenious solution: a **liquid tree**.



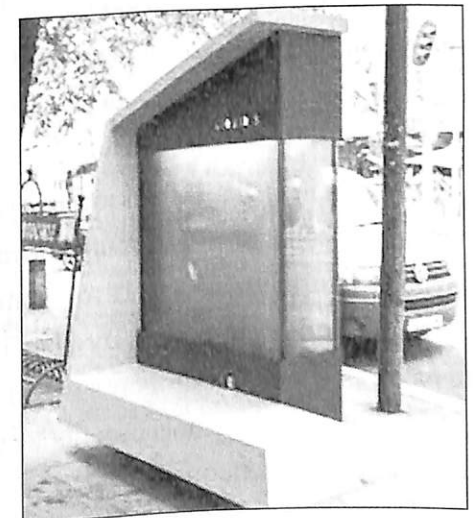
The creators call it **LIQUID 3**. Liquid 3 is a concept created for cities with a limited area of high air pollution with fewer trees. It is an urban photo-bioreactor, designed to address the issue of greenhouse gas emissions and improve air quality in densely populated areas.

The LIQUID 3 system, designed by researchers at the Institute for Multidisciplinary Research at the University of Belgrade, consists of a 600-liter tank of water with a microalgae that takes in carbon dioxide and produces oxygen through photosynthesis much like trees do, but anywhere from 10 to 50 times more efficiently. A single tank can yield as much O2 as two decade-old trees or 200 square meters (2,150 square feet) of grass.



This innovative green idea has come from Serbian biophysical scientist Dr. Ivan Spasojevic and the project's authors from the Institute for Multidisciplinary Research at the University of Belgrade. 'Liquid 3' is a photo-bioreactor made using microscopic fibres in plant cell walls called cellulose nanofibres. Scientists have processed these fibres into a liquid form and made out a substance with equivalent properties to natural wood, including high strength and toughness. Tanks are filled with six hundred litres of water and microalgae. These microalgae convert carbon dioxide into pure oxygen through photosynthesis.

The algae that have been used are single-celled freshwater algae that can be locally found in ponds and lakes. They are resilient to the conditions of a city, being able to grow in tap water and weather high and low temperatures. The tanks also don't require much maintenance, with the extra algae being created by the growing algal bloom only needing to be removed around every 45 days, followed by adding fresh water and minerals. The excess algae can also be used as fertilizer, in wastewater treatment, or for biofuel production. Photosynthetic efficiency is higher in algae than in higher plants, because of a wide range of pigments to harvest



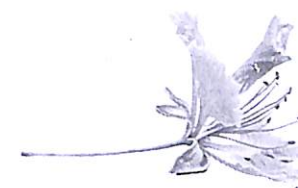
more solar energy and a variety of carbon dioxide-concentrating systems further enhancing the efficiency of the system.

The goal of the liquid tree, however, is not to replace forests but to fill urban pockets where there is no space for planting trees. The liquid tree offers a novel and efficient solution for sequestering greenhouse gases in the most polluted urban areas. It is a way to create green spaces in urban areas without taking up too much space. While not intended to replace natural forests, liquid trees can fill the void in urban pockets where planting trees is not feasible. As the world seeks innovative solutions to combat climate change and improve air quality, the liquid tree offers a glimpse of a cleaner, greener future for our urban environments.

Because of its creative, practical, and innovative design, LIQUID 3 was awarded one of the 11 best innovative and climate-smart solutions by the Climate Smart Urban Development project, created by the UNDP, the Ministry of Environmental Protection, and sponsored by the Global Environment Facility (GEF).

Many cities throughout the world have dangerously low levels of air quality. India is home to 39 of the world's 50 most polluted cities. Areas of lower income tend to have the worst air quality and lack room for trees, which take years to reach maturity. "Liquid trees" like LIQUID 3 can be a game changer in combating air pollution in these polluted cities. The innovation seems particularly relevant for India. This biotechnological innovation can work well for India as our cities no more have open land for trees shrubs and grass to fight air pollution. India is at a crossroads, facing the challenge of balancing rapid urbanization with the need for environmental sustainability. As cities grow and expand, the demand for land and resources continues to rise, leading to a range of environmental issues, including air pollution. However, innovative solutions such as liquid trees could provide a way forward for India, helping to improve air quality and create more sustainable, liveable cities.

To sum it up, liquid trees indeed make for an innovative and highly promising solution for tackling air pollution in India's urban areas. These trees offer numerous benefits, including space-saving design, low maintenance requirements, and the potential to produce biofuels and contribute to renewable energy sources. By adopting innovative solutions such as liquid trees, India could improve air quality, create more sustainable and help to mitigate the impact of urbanization on the environment. The potential benefits are vast, and it is time for India to embrace these innovative solutions for the betterment of the country and the planet. However, its feasibility much depends on the possibility and cost of technology transfer, production, and other ground realities. ♦



HOW FAR DOWN THE SCOVILLE SCALE CAN YOU GO?

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Peppers can be found in a variety of dishes from salsa to salads, and they are known for adding flavour and often a kick of heat. It's not real heat but instead a burning sensation in the mouth. The level of "heat" depends on the type of pepper that is used. Peppers range from mild to very hot: The pimento and poblano peppers have small kicks, while the Dragon's Breath and Pepper X are currently the two hottest reported peppers.

How can you tell how hot a pepper is without eating it first? A family of chemical compounds called capsaicinoids create the hot, burning feeling in your mouth and are mostly concentrated in the white lining of a pepper. The most abundant member of this family that is found in hot peppers is a compound called capsaicin. When you bite into a hot pepper or eat spicy foods, the capsaicin attaches to heat-sensing receptors in the mouth, releasing chemical messengers known as neurotransmitters that travel to the brain. These neurotransmitters trigger a false alarm that your mouth is on fire. It's a bodily response that can produce sweating and watery eyes but does not cause physical harm.

Capsaicin is a chemical irritant and triggers the same response if it comes into contact with your skin, eyes or hands. But it can also have beneficial effects when used as pain relief in creams. Capsaicin reduces the sensation of pain by interacting with neurotransmitters and blocking their ability to send more pain signals to the brain.

If we look on the back of a bottle of hot sauce, you may find its spiciness measured in Scoville Heat Units. Here's a quick guide to the Scoville scale, its history, and how it ranks a variety of hot peppers.



What is the Scoville Scale?

The Scoville scale is a tool for measuring the spiciness or pungency of hot peppers. The scale measures the amount of capsaicin (the chemical compound that causes spicy heat) in a pepper and assigns it a number rating in Scoville Heat Units (SHUs).

The Origins of the Scoville Scale

American pharmacist Wilbur Scoville invented the Scoville scale in 1912. Scoville created the scale by way of his Scoville Organoleptic Test, which he used to measure a pepper's heat level. When conducting his test, Scoville mixed an alcohol-based extract of capsaicin oil from a pepper into a solution of sugar water and placed the solution onto the tongues of taste testers. Little by little, he diluted the solution with more water until his taste testers told him that it no longer tasted hot.

Scoville then assigned a number rating to that pepper based on how many times he had to dilute the solution to eliminate the heat. Jalapeño peppers, for instance, have a Scoville rating of 10,000, which means a jalapeño solution would have to be diluted 10,000 times before the heat was neutralized.

Modern Use of the Scoville Scale

Today, in order to obtain more accurate results, scientists use a technique called High-

Performance Liquid Chromatography (HPLC) to determine the exact concentration of capsaicin in a pepper.

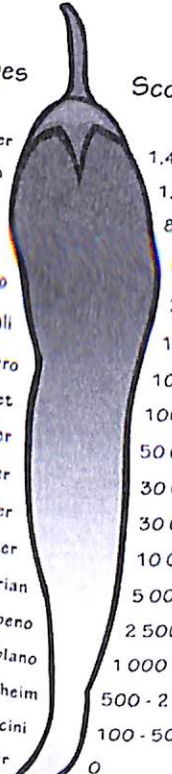
HPLC technique measures the pungency of a pepper in American Spice Trade Association (ASTA) Pungency Units. This number can be plugged into a formula that converts it to Scoville Units. Even though the process has changed since Wilbur Scoville's time, we continue to use his Scoville scale to measure the heat of peppers.

18 Types of Peppers Ranked on the Scoville Scale

The Scoville scale provides a way to compare the world's hottest peppers with everyday varieties, measuring their pungency in Scoville Heat Units. ♦

Scoville Scale

Pepper types	Scoville heat units
Carolina Reaper	1,400,000 - 2,200,000
Trinidad Scorpion	1,200,000 - 2,000,000
Ghost Pepper	855,000 - 1,041,427
Chocolate Habanero	425,000 - 577,000
Red Savina Habanero	350,000 - 577,000
Fatali	125,000 - 325,000
Habanero	100,000 - 350,000
Scotch Bonnet	100,000 - 350,000
Thai Pepper	50,000 - 100,000
Cayenne Pepper	30,000 - 50,000
Tabasco Pepper	30,000 - 50,000
Serrano Pepper	10,000 - 23,000
Hungarian	5,000 - 10,000
Jalapeno	2,500 - 8,000
Poblano	1,000 - 1,500
Anaheim	500 - 2,500
Pepperoncini	100 - 500
Bell Pepper	0





IMPORTANCE OF SOLID WASTE SEGREGATION IN HOUSEHOLD LEVEL

Dr. Gitamani Dutta
Assistant Professor, Department of Botany

Solid waste is any undesirable or pointless solid stuff that results from human activity in a home, commercial, or industrial setting. Solid waste can be divided into three categories: (i) biodegradable waste or organic waste (food and kitchen waste, green waste vegetables, flower, leaves, fruits and paper, etc.), (ii) inert and non-biodegradable waste (construction and demolition waste, dirt, debris, etc.) and (iii) recyclable waste (plastic, paper, bottles, glasses, etc.). A higher percentage of recyclable garbage can be recovered and used when waste is separated at the source. Dry waste contains several components, such as plastic bags, bottles, glasses, shredded paper and textiles.

According to the World Bank Report 2018, there are over 2 billion tonnes of urban garbage produced annually globally, with a per-capita rise predicted to be around 20% by the year 2100. As a result, municipal solid waste is considered a significant issue worldwide. Solid waste production, particularly in developing countries, is experiencing a significant increase that exceeds the capacities of cities and municipalities in terms of removal and recycling. In these countries, the waste collection rates are 70% lower than the generation rates, and over 50% of the collected waste is disposed of in uncontrolled landfills or open dumpsites, often without adequate recycling measures (UNDESA, 2012). The waste management is easy for limited population; however, in India due to rapid increase in population together with modern urbanization the lifestyle has also

been simultaneously changed. In turn, this leads to amplification of solid wastes.

Solid waste segregation plays a critical role in effective waste management; however, the practice remains at a low level in developing countries. Effective solid waste management is crucial in minimizing health and environmental risks associated with waste in urban areas, particularly in the developing world.

Developed countries have recognized the importance of waste segregation and recycling in improving solid waste management, leading them to implement various approaches such as the 3Rs (Reduce, Reuse, and Recycle) policies, legislations, and strategies. Source segregation of waste ensures that it is less contaminated and can be collected and transported for further processing. It also optimizes waste processing and treatment technologies, resulting in a higher quantity of segregated materials that can be recycled and reused, thus reducing the need for virgin materials (Ministry of Indian Urban Development, 2016).

Waste segregation during or before collection improves efficiency and reduces costs by minimizing the labour and infrastructure required for segregating mixed wastes. However, in many developing countries, regular solid waste segregation is not practiced by users at the source, making the collection of segregated waste challenging in urban areas. This may be attributed to factors such as a lack of public awareness, limited investment in recycling facilities, and slow adoption of solid waste segregation practices.

As per the report published by India Today magazine in July 2023 that just 30 % of the 75 % of recyclable waste is recycled in India. The main cause is that individuals, including you and I, do not separate household waste. Every waste management system may become more effective by not separate household waste. Every waste management system may become more effective by performing the straightforward duty of sorting waste at its source in various coloured bins, both at home and in public areas. If we don't segregate trash when we throw it out, machines or workers will have to sort it, which will take more time.

Electronic waste, also known as "e-waste," is one of the solid wastes produced daily at a staggering rate in the age of globalisation and rapid living. E-waste is being produced in such large quantities as a result of outdated electrical and electronic equipment. Rapid technological obsolescence shortens the lifespan of electrical and electronic products, which in turn causes a rapid rise in the volume of e-waste. Hexavalent chromium (PVV), acids, and polychlorinated biphenyls are only a few of the harmful substances found in e-waste.

These poisonous substances' contamination of the food chain has a negative impact on the

human health and ecosystem. These could result in lung cancer, liver and kidney damage, as well as bronchial illnesses. Several heavy metals, including lead, mercury, cadmium, and arsenic, are found in e-waste and have a negative impact on the immune and central nervous systems of humans. These wastes could harm children and spread a number of diseases if they contaminate groundwater.

Lack of awareness and insufficient modern facilities of proper waste management can cause serious health issues and environmental impact. ♦



MUSIC FOR CHANGE: MAJULI

Dr. Lakhima Deori

Assistant Professor, Dept. of Hindi

Majuli Music Festival: Majuli Music Festival is a 3-day festivity of music. Its main objective is to create a community; a sense of belonging for artists everywhere - right in Majuli. The festival seeks to promote a sense of co-habiting, by bringing cultures together. Majuli was formally declared the first Island district of India on 8th September 2016. The river island once over 1200 sq. km is now reduced to just 350 sq. km. The primary reason for this is the constant floods and heavy rains, along with man-made construction activities that have led to erosion. The erosion ruined one-third of the Island's landmass over the years. In Majuli, flood and soil erosion during the monsoon has made the lives of farmers vulnerable. With this in mind, the festival is designed keeping sustainability at its core. The stages and decor are made with locally-sourced bamboo from the village and the installations are created using recycled materials. This Festival brings together Indian and global music, art and culture, local food and traditionally brewed rice beer tasting for everyone. It promotes rural tourism and boost the local economy of Majuli.

The aim and objective of this event is the overall development of Majuli, particularly to promote the tourism sector in Majuli and strengthen the rural economy. There is a lot of potential in the tourism sector in Majuli. Since ancient times Majuli has been a major tourist destination. Majuli is known as the largest river island in the world. Moreover, Majuli has a unique identity as a place of spirituality and a mosaic of different ethnic cultures. Natural beauty, the diverse lifestyle of riverine people, food habits, traditional architecture, clothing etc. also attract tourists to Majuli. The Mask making craft of Chamguri Satra is world famous. Beside these musical journey, there

are other activities too like Village Cycling Expedition, Boating Competition in Kherkotiya river etc. The Majuli Music Festival has a positive impact on such a potential tourist destination. Since its beginning, the Majuli Music Festival has attracted 20,000 to 25,000 domestic and foreign tourists every year. It has always emphasized promoting local products like traditional clothing, food etc. It has also played a special role in strengthening the rural economy through homestay facilities, resorts, hotels etc. The Jengramukh area is bustling with excitement as only a few days are left for the music festival. Villagers are ready to welcome the festival and tourists. Local food items, clothing etc. are being prepared for the stalls. Each person in the area is getting their house ready to welcome and accommodate tourists. Also, the Majuli music festival hopes to gain the attention of UNESCO, in a bid to raise awareness about its failing condition and become a candidate for a 'World Heritage Site'. The upcoming edition of the festival will be held between 21-24 November 2023. It is a remarkable achievement how a music festival is saving its culture and an island from extinction. ♦

FOUNDER MEMBERS OF SOFEC (Estd. 12th August, 2002)

1. Late Dr. Santanu Sengupta, Dept. of Political Science (Founder President)
2. Dr. Moromi Talukdar, Dept. of Anthropology (Founder Secretary)
3. Prof. Subarna Bhuyan, Dept. of Botany (Retd.) (Founder Vice-President)
4. Dr. Bharati Dutta, Dept. of Geography (Retd.) (Founder Vice-President)
5. Dr. Anup Jyoti Bharali, Dept. of Anthropology (Founder Assistant Secretary)
6. Dr. Uttam Bathari, Dept. of History (Transferred) (Founder Assistant Secretary)
7. Dr. Lamkholal DOUNGEL, Dept. of Political Science (Treasurer)
8. Prof. Kalpana Sengupta Baruah, Dept. of Hindi (Retd.)
9. Dr. Sikhamoni Sarmah, Dept. of Chemistry
10. Dr. Meetali Chaliha, Dept. of Geography
11. Dr. Jyoti Prasad Phukan, Dept. of Physics
12. Prof. Rajib Lochan Borah, Dept. of Botany
13. Prof. Sudakshina Das, Dept. of Zoology (Retd.)
14. Prof. Tikendrajit Gogoi, Dept. of Zoology (Retd.)
15. Prof. Dhani Ram Baro, Dept. of Anthropology (Transferred)

PATRONS OF THE FOUNDER COMMITTEE

1. Late Dr. Shiva Prasad Dutta, Principal of that period
2. Prof. Alaka Baruah, Vice Principal (Retd.) of that period
3. Late Khirod Mohan Rabha, Dept. of Anthropology
4. Prof. Dhiren Boruah, Dept. of Physics (Retd.)
5. Prof. Sayera Khatun, Dept. of Zoology (Retd.)

**LIST OF MEMBERS OF THE SOFEC, DHSK COLLEGE
(ESTABLISHED 12TH AUGUST, 2002)**

ANTHROPOLOGY

1. Dr. Moromi Talukdar
2. Dr. Anup Jyoti Bharali
3. Dr. Nitumoni Saikia
4. Dr. Sunanda Sahu
5. Dr. Bhaskar Das
6. Dr. Dhani Ram Baro (Transferred)

ASSAMESE

7. Mr. Ananta Teron
8. Mr. Anjumoni Phukan
9. Mrs. Sikhamoni Koch Dewri
10. Dr. Monmi Baruah

BENGALI

11. Ms. Kumkum Chakraborty (Retd.)
12. Dr. Reeta Poddar

BOTANY

13. Mr. Rajib Lochan Borah
14. Dr. Alakananada Baruah
15. Mrs. Dinalisha Bora
16. Mr. Ambarish Bhuyan
17. Dr. Gitamoni Dutta
18. Dr. Bhaswati Kakoti (Transferred)
19. Prof. Subarna Bhuyan (Retd.)
20. Dr. Nirmali Bhuyan (Retd.)

CHEMISTRY

21. Dr. Sikhamoni Sarmah (Retd.)
22. Dr. Dipankoj Gogoi
23. Dr. Anisha Dutta

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25. Ms. Mayuri Dutta
26. Ms. Pollypriya Buragohain

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29. Mrs. Juri Baruah
30. Mr. Vijoy Kumar Verma (Retd.)
31. Dr. Bharati Dutta (Retd.)
32. Mrs. Smritirekha Bhattacharjee (Retd.)
33. Mr. Narendra Mahela (Retd.)
34. Late Hemanta Temsena

HINDI

35. Mrs. Kalpana Sengupta Baruah, (Retd.)
36. Mr. Krishna Kanta Bordoloi
37. Dr. Lakhima Deori

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38. Dr. Chandana Goswami
39. Mr. Deimun Shang Doungel

40. Dr. Uttam Bathari (Transferred)
41. Mrs. Rita Choudhuri Thakuria (Retd.)
42. Mrs Jyotimanjuri Kalita

MATHEMATICS

43. Dr. Priyadev Goswami

PHILOSOPHY

44. Mrs. Rama Kanti Das
45. Mrs. Urmila Ramchiary
46. Mrs. Hiramoni Lalung
47. Dr. Mauchumi Hazarika

PHYSICS

48. Dr. Jyoti Prasad Phukan
49. Mr. Aditya Dahal
50. Dr. Ranjan Changmai (Transferred)
51. Mr. Anshuman Borthakur
52. Dr. Porag Jyoti Chutia

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53. Dr. Lamkholal Doungel
54. Dr. Nirmali Pegu
55. Dr. Biraj Dutta
56. Late Titus Bhengra
57. Late Dr. Santanu Sengupta

SANSKRIT

58. Mrs. Kalyani Das
59. Mrs. Bini Saikia
60. Dr. Sayanika Goswami

STATISTICS

61. Dr. Nazimuddin Ahmed

ZOOLOGY

62. Dr. Sanchita Boruah
63. Dr. Rajesh Kumar Shah
64. Mrs. Sudakshina Das (Retd.)
65. Mr. Tikendrajit Gogoi (Retd.)
66. Dr. Sultana Hazarika (Retd.)

LIST OF PRESIDENTS AND SECRETARIES OF SOFEC IN DIFFERENT PERIODS

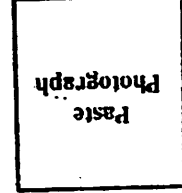
President	Secretary	Duration
Dr. Santanu Sengupta	Dr. Moromi Talukdar	2002-2003
		2003-2004
Prof. Subarna Bhuyan	Prof. Anup Jyoti Bharali	2004-2005
		2005-2006
		2006-2007
		2007-2008
Dr. Nirmali Bhuyan	Dr. Lamkholal DOUNGEL	2008-2009
		2009-2010
Dr. Bharati Dutta	Dr. Chandana Goswami	2010-2011
Prof. Titus Bhengra	Dr. Meetali Chaliha	2011-2012
Prof. Kalpana Sengupta Baruah	Dr. Sunanda Sahu	2012-2013
Prof. Tikendrajit Gogoi	Dr. Alakananda Baruah	2013-2014
Prof. Sudakshina Das	Prof. Ramakanti Das	2014-2015
Dr. Moromi Talukdar	Prof. Anjumoni Phukan	2015-2016
Dr. Sikhamoni Sarmah	Dr. Nitumoni Saikia	2016-2017
Dr. Lamkholal DOUNGEL	Prof. Sikha Moni Koch Deori	2017-2018
		2018-2019
Dr. Anupjyoti Bharali	Dr. Nirmali Pegu	2019-2020
		2020-2021
		2022-2023

GLIMPSE OF EVENTS DURING 2022-23

1. Foundation Day of SOFEC was celebrated at Madhupur Middle English School, Dibrugarh on 12-08-2022. The event was attended by Dr. Anup Jyoti Bharali, President SOFEC, Dr. Nirmali Pegu, Secretary, Dr. Alakananda Baruah, Dr. Chandana Goswami, Prof. Urmila Ranchiary and Dr. Sultana Hazarika (former member SOCEF). The President of School management committee, teachers, parents and students were participated in the event.
2. On occasion of World Environment Day celebration a drawing competition was organised at Kuhipat Library of Tengakhat (an adopted village of DHSK College) among the students of three Primary Schools on 4th June, 2023. The event was attended by Dr. Anup Jyoti Bharali, Dr. L. DOUNGEL, Dr. Nitumoni Saikia and Dr. Lakhima Deori.
3. On 5th June, 2023, relating to the World Environment Day celebration a plantation programme was held within the College Campus followed by a lectured delivered by Dr. Moromi Talukdar on topic : Environmental Consiousness, living and sustainable development.
4. On 12th August, 2023, an environmental awareness programme was held at Nandeswar Chakraborty High School, Dibrugarh on occasion of Foundation Day of SOFEC. A lecture was delivered by Dr. Sikhamoni Sharma, former member of SOFEC. The event was attended by Dr. L. DOUNGEL, Dr. Nirmali Pegu, Dr. Nitumoni Saikia and Dr. Anisha Dutta.
5. On 21st September, 2023, a spot essay writing competition was held among the students of DHSK College, Dibrugarh relating to the celebration of World Biosphere Day.

OFFICE OF THE
SOCIETY FOR ENVIRONMENTAL CONSERVATION
DHSK COLLEGE, DIRRUGARH

MEMBERSHIP REGISTRATION FORM



Please neatly and legibly fill up in your own handwriting

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- Father's/Husband's Name :
- Present Address :
- Permanent Address :
- Ph. No. Mobile No.....
- Date of Birth :
- Sex M/F Blood Group.....
- Specialization/Field of Interest :

Declaration

I hereby declared that the particulars furnished in the above are true to the best of my knowledge and belief, I have read the Constitution and agreed to abide and adhere to the rules and regulations of the organization and in my own capacity shall endeavor to achieve its objectives. In the event of my noncompliance with working of the system and nonrenewal of membership my membership may automatically stand terminated.

Date :
Place: Applicant's Signature

Verified	Accepted/Rejected	Registration Fee	Signature of President/Secy.
Yes /No	Accepted/Rejected	Paid / Not paid	

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ମେସା ଆସାର ଅନେକ ପଦକ (SOFEC)

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ମାଟ୍ରିକେସନ ଅଧିକାରୀ

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ଫରମ୍ବର ମୂଲ୍ୟ

ମେସା ଆସାର ଅନେକ ପଦକ (SOFEC)

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ସମତ ଆଇଡି ଫରମ୍ବ

ମାଟ୍ରିକେସନ ଅଧିକାରୀ

କାମ କରା ଯୋଗ୍ୟ ସଭା,

ସ୍ଥିରେ ସାର ଆସାର

ମେସା ଆସାର ଅନେକ ପଦକ (SOFEC)

ମାଟ୍ରିକେସନ କାର୍ଯ୍ୟ ଆରମ୍ଭ
ଅଧିକାରୀ କଲେଜ ସଭା

BEAUTIFUL THOUGHTS ON ENVIRONMENT

- *daśakūpasamā vāpī daśavāpīsamā hradah /*
- *daśahradah samah putro daśaputrasamo drumah // (Matsya. P. 512)*
- “Ten wells equal a stepwell. Ten stepwells equal a tank. Ten tanks equal a son. Ten sons equal a tree.”
- *aśvatthamekaṁ picumarddamekaṁnyagrodhamekaṁ daśapuṣpajātiḥ/
dve dve tathā dāḍimamātuliṅge pañcāmraropī narakam na yāti // (Varaha P.172.36)*
- “One who plants a peepal, one neem, one Banyan, two pomegranate, two orange, five mango trees and ten flowering plants or creepers shall never go to hell”.
- *paropakarāya vahanti nadyah/
pavanaḥ duṣṭatām yāti prakṛtivyikṛtāyate //*
- “Due to pollution of our environment, all beings are destroyed, the winds get vicious and the nature becomes hostile.”
- *paropakarāya vahanti nadyah/
pavanaḥ duṣṭatām yāti prakṛtivyikṛtāyate //*
- “Rivers flow for the benefit of others.”
- *paropakarāya phalanti vrkṣah/
pavanaḥ duṣṭatām yāti prakṛtivyikṛtāyate //*
- “Trees bear fruits for others”
- *. mātā bhūmiḥ putro 'ham pṛthivyāḥ / (A.V.12.1.12)*
- “Earth is my mother I am her son.”





Chawolkhwa Charaihabi Gaon, Assam, India
Madhupur Nepali Village, 8QVV+535, Chawolkhwa



Chawolkhwa Charaihabi Gaon, Assam, India



Chawolkhwa Charaihabi Gaon, Assam, India

Madhupur Nepali Village, 8QVV+535, Chawolkhwa
Chawolkhwa
Lat 27.342848



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GPS Map Camera

Chawolkhwa Charaihabi Gaon, Assam, India
Madhupur Nepali Village, 8QVV+535, Chawolkhwa



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Chawolkhwa Charaihabi Gaon, Assam, India



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Madhupur Nepali Village, 8QVV+535, Chawolkhwa
Charaihabi Gaon, Assam 786007, India
Lat 27.342845°



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