NATIONAL MISSION FOR SUSTAINING THE HIMALAYAN ECOSYSTEM (NMSHE)

Strengthening The Arunachal Pradesh State Climate Change Cell
Under NMSHE (SCCC- NMSHE) -phase II

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Annual Progress Report, State Climate Change Cell, Arunachal Pradesh under NMSHE Phase-II FY 2024-25

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V. Details of the Project

1. **Title of the project:** Strengthening the Arunachal Pradesh State Climate Change Cell under National Mission for Sustaining the Himalayan Ecosystem (NMSHE), Phase-II (APSCC-NMSHE) in the State of Arunachal Pradesh
2. **Project ID/Sanction Number:** DST/CCP/NMSHE/SCCC-IHR/Arunachal Pradesh/225/2023(G)
3. **Principal Investigator(s) and Co-Investigator(s):** D. Dohu Robin and Dr. Ganguva Murtem.
4. **Implementing Institution(s) and other collaborating Institution(s):** Arunachal Pradesh State Climate Change Cell, Department of Environment, Forest and Climate Change, Government of Arunachal Pradesh, Itanagar.
5. **Manpower:**

Sl. No.	Name	Post assigned	Email ID	Contact No(s)
1.	Dr. Aribam Rocky Sharma	Project Scientist - I	scientistdoefcc@gmail.com	8258904252
2.	Mr. Rinchin Tsering Gonpapa	Senior Project Associate- I	seniorprojectassociatescccap@gmail.com	8794407927
3.	Ms. Dani Yaming	Project Associate- II	p.associate2doefcc@gmail.com	9760770332
4.	Mr. Dohu Tapuk	Project/ Field Assistant	dohuduitapuk@gmail.com	8259804741

Chapter I

Introduction

1.1 Arunachal Pradesh State Climate Change Cell (APSCCC)

The Arunachal Pradesh State Climate Change Cell was established on 20th October 2010 within the Department of Environment & Forests, Government of Arunachal Pradesh. It was formed under the National Mission for Sustaining the Himalayan Ecosystem (NMSHE) to address the challenges posed by climate change in the state.

Objectives of APSCCC:

1. To assess climate vulnerability and risks at the district level.
2. To undertake studies on the impacts of climate change.
3. To strengthen institutional capacity and promote research and development for generating databases and information, in alignment with the State Action Plan on Climate Change (SAPCC) and NMSHE.
4. To organize training programmes for stakeholders such as government officials, community-based organizations, media personnel, and others.
5. To promote awareness and sensitization through educational institutions and community outreach programmes.

Key Activities of APSCCC:

- Preparation of concept notes for accessing various climate change adaptation funds.
- Execution of research and assessment studies related to climate change.
- Implementation of awareness and sensitization initiatives.

Chapter II

Activities/Technical Outcome in the FY 2024-25 as per Objectives in NMSHE II DPR

2.1 OBJECTIVE: ASSISTING STATE GOVERNMENT CLIMATE CHANGE POLICY AND PROGRAM DEVELOPMENT

To assist the State Government in planning and implementation of the adaptation related climate actions proposed in "***Pakke Declaration 2047 for Climate Resilient Arunachal Pradesh"***, with technical assistance and provision of data and information.

2.2 OBJECTIVE: KNOWLEDGE GENERATION ON CLIMATE CHANGE

Inclusion of Wetlands chapter in the draft State Action Plan on Climate Change (SAPCC 2.0).

2.3 OBJECTIVE: CAPACITY DEVELOPMENT IN THE STATE ON CLIMATE CHANGE

2.3.1 Mission Life Awareness & Sensitization Programme on International Day of Climate Action- Outreach in Itanagar Schools:

- To observe the International Day of Climate Action on 24th October 2024, the State Climate Change Cell in collaboration with the Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP PC-Hub) Centre, Arunachal Pradesh, organized awareness and sensitization programmes at Little Flower School, Lower Chimpu and Gellam Memorial High School Chandranagar of Itanagar Capital Region (ICR).

  As part of the Mission LiFE (Lifestyle for Environment) initiatives, the programme aimed to encourage students to take small steps towards an eco-friendlier lifestyle.
- **No of participants** - 100 students, 87 students including teachers & officials.

Figure 2.1 Awareness & Sensitization Programme on International Day of Climate Action, 24th October 2024.

2.3.2 Awareness on Sustainable Development Goal (SDGs) and plantation Drive under Mission LiFE:

- The SCCC, along with EIACP PC-Hub, Arunachal Pradesh, held an awareness programme on SDGs at Little Flower School, Lower Chimpu. The event also included a

  plantation drive and was part of Mission LiFE.
- **No. of Participants**- 87 students including teachers & officials.

Figure 2.2 Awareness programme cum plantation activity with teacher & students under Mission Life in Little Flower School, Chimpu on 28.11.2024.

2.3.3 Awareness cum cleanliness drive:

- An awareness-cum- cleanliness drive was organised on 2nd October 2024, by the SCCC in collaboration with EIACP Centre. The drive took place at Itanagar Biological Park, Zoo Road & Ganga Lake, with active support from Safai Karamcharis. The programme aimed to spread awareness about keeping natural spaces clean and protecting the environment.
- **No. of Participants**- Around 50 participants including officials, Safai Karamcharis and villagers.

Environment & Climate Change Director leads Safai Abhiyan

NAHARLAGUN, Oct 02: On the occasion of Gandhi Jayanti, a Safai Abhiyan was conducted today by the officers and staff of the Director, Environment & Climate Change, focusing on the theme Swachhata Hi Seva.

This initiative brought together a diverse group of participants dedicated to promoting cleanliness and environmental awareness at various locations.

The Environmental Information, Awareness Capacity Building and Livelihood Programme (EIACP) team took the lead in Sanglo Putung and Biological Park Enclosures, collaborating closely with local villagers and forest officials. Together, they worked to clean and maintain the enclosures, emphasizing the importance of preserving natural habitats and fostering community involvement in environmental initiatives.

The State Climate Change Cell spearheaded cleaning the Ganga Lake premises under the NMSHE programme, along with the Deputy Chief Wildlife Warden and his staff. This effort aimed to enhance the cleanliness and ecological health of the Ganga Lake area, promoting awareness.

The Swachhata Hi Seva cleanliness initiative was expertly coordinated by Dobu Robin, Director, Environment & Coordinator, NMSHE/EIACP.

He was supported by a dedicated team, including Dr. Laxmi Linggi, Rinchin Tsering Gonpapa, Dani Yaming, and Dohu Tapuk from the Climate Cell and Punyo Tanya and Tarh Robin from the Environment cell, DoEF&CC.

Their focus on wetland areas highlighted the importance of preserving these vital ecosystems for both wildlife and community well-being.

In the Biological Park area and along the approach road, the cleanliness drive was bolstered by the efforts of Dr. Anjan Chamuah, Tanu Siram, Vishak, and Ani Dai from the EIACP team and Joram Reshma, Yalar Dulom from the Environment cell, DoEF&CC.

Their commitment ensured that these public spaces were not only cleaned but also maintained in a way that supports e going ecological health.

The drive culminated i collaborative gathering Ganga Lake, where be teams came together to c ebrate their efforts.

The event was graced the presence of PC (Wildlife & Biodiversit Ngilyang Tam, who a knowledged the hard wo of all participants and e phasized the importance such initiatives in fosteri a cleaner and more susta able environment.

This collective effort flects the commitment various participants to u hold the values of clean ness and environment stewardship, inspired the ideals of Mahatr Gandhi.

Figure 2.3 (L-R) Awareness cum cleanliness drive in Biological Park, Zoo Road & Ganga Lake, 2nd October 2024, Newspaper clip from the Arunachal Front.

Chapter III

Other Activities/Technical Outcome in the FY 2024-25

3. 1 Exploring Collaboration with Under2 Coalition Network:

- The first round of discussion between Climate Group (Under2 Coalition Network, New Delhi) and the Government of Arunachal Pradesh was held on 30th May 2024, to explore potential collaboration opportunities for climate action in the state. The meeting focused on knowledge sharing and technical support for strengthening climate initiatives.
- The process for signing the Memorandum of Understanding (MoU) is currently underway for the onboarding process to become a member of the Under2 Coalition.

3.2 Collaboration with Wetland International South Asia (WISA):

- A two-days "**State Level Training Workshop on Wetlands Conservation and Wise Use**" in Arunachal Pradesh conducted by the Wetlands International South Asia (WISA), New Delhi in collaboration with the State Wetland Authority (SWA), Government of Arunachal Pradesh on 30th-31st July 2024 at Itanagar (Fig. 3.1). The workshop aimed to build capacity and share knowledge on sustainable wetland management in the state.
- An MoU with Wetland International South Asia, New Delhi as Knowledge partner to support the efforts of wetlands conservation of Arunachal Pradesh has been signed with the State Wetland Authority (SWA), Arunachal Pradesh on 30th July 2024.
- **No. of Participants** - 28.

MoU signed between Wetlands Int'l South Asia & State Wetland Authority

2-day workshop highlights integrated management of wetlands in Arunachal

By Our Reporter

ITANAGAR, Jul 30: The Arunachal Pradesh State Wetlands Authority in collaboration with the Wetlands International South Asia organised a two-day workshop on integrated management of wetlands.

The workshop is being held to update the knowledge and need of technology intervention in the case study.

Principal Chief Conservator of Forests (Environment, Forests & Climate Change) and Head of the Forest Force, Environment, Forest and Climate Change, P. Subramanyam inaugurated the workshop here at DK Convention Centre.

Addressing the inaugural session, PCCF Subramanyam called on the officers including the wetland managers and other officials dealing with wetland in Arunachal Pradesh to design and implement evidence-based management, connecting societal aspirations with the goals of ecosystem integrity.

He emphasised that the workshop will help the officers and wetland managers to understand the problems and challenges and opportunities so that more knowledge and technological intervention required may also be understood.

Wetlands International South Asia President Dr Sidharth Kaul, who was present as the (Cont. P.6)

Figure 3.1 MoU with Wetland International South Asia, New Delhi, at Itanagar, 30th-31st July 2024

3.3 Training in Carbon Accounting, Auditing and Trading:

- A four-day training programme on Carbon Accounting, Auditing and Trading was attended at Anil Agarwal Environment Training Institute (AAETI), Nimli Rajasthan, from 9th to 13th September 2024 (Fig. 3.2). The training focused on enhancing understanding of carbon markets, emission tracking, and reporting mechanisms to support effective climate action.

Figure 3.2 NMSHE staff with other delegates at AAETI, 9th -13th September 2024, at AAETI.

3.4 Plantation at PCCF Office, Itanagar premises on the occasion of Ek ped Maa K Naam:

- A plantation drive was conducted on the occasion of *Ek Ped Maa Ke Naam* at the PCCF Office premises in Itanagar on 4th October 2024. The event was led by the Director of Environment & Climate Change, Shri D. Dohu Robin, Director (Env) & (P.I NMSHE) in the presence of officials from the State Climate Change Cell, EIACP, and other members of the Department of Environment, Forest & Climate Change, Government of Arunachal Pradesh (Fig. 3.3).
- Participants – 2 officials.

Figure 3.3 Plantation drive on *Ek Ped Maa Ke Naam* at the PCCF office, Itanagar.

3.5 Attended workshop on *Conservation & Wise Use of Wetland*:

- Attended 2 days regional workshop on *Conservation & Wise Use of Wetland under Sahbhagita Mission* for North-Eastern States on 14th & 15th November 2024 at Sikkim. The event brought together stakeholders and experts from across the region to discuss strategies for sustainable wetland management, share best practices, and enhance regional collaboration (Fig. 3.4).

Figure 3.4 The Director-cum- Principal Investigator and Project Scientist (NMSHE), with delegates from various states of India.

3.6 Attended workshop on Inventory and Assessment of Peatlands:

Attended workshop on '**Inventory and Assessment of Peatlands** in India held on to 10th December 2024 at MoEFCC, New Delhi.

3.7 Collaboration with the Climate Group as knowledge partner:

Secretariat Under 2 Coalition Network as knowledge partner to the Environment & Climate Change wing of the Department of the Environment, Forest & Climate Change and Pakke Secretariat, Govt. of Arunachal Pradesh to support in climate finance, hazard and risk vulnerability analysis, carbon markets and carbon credits, net zero vision policy, adaptation and resilience roadmap, etc. (Fig. 3.5).

Figure 3.5 A round table meeting with the Under 2 Coalition Network as knowledge partner to the Environment & Climate Change wing and Pakke Secretariat, Govt. of Arunachal Pradesh.

3.8 MoU with Carbon Market Association of India, New Delhi:

Conducted working group meeting on the Carbon Credit Market chaired by CCF (Env & CC) dated 26th November 2024 - A Working Group was constituted under the approval of the PCCF & HoFF. A three-tier Committee was proposed from various sectors for the State to develop and trade carbon credits.

3.9 Awareness cum interactive programme on Mission LiFE and Sustainable Developments Goals SDGs:

The State Climate Change Cell, in collaboration with the EIACP hub, conducted an awareness-cum-interactive programme on Mission LiFE and SDGs 17th March 2025. Shri. Rinchin T. Gonpapa, Senior Project Scientist (NMSHE), delivered a presentation on the impacts of climate change on Himalayan ecosystem (Fig. 3.6). The session also encouraged students to adopt simple, mindful lifestyle changes that can collectively contribute to environmental sustainability.

Figure 3.6 Awareness cum interactive programme, Don Bosco College, Jollang, 17th March 2025.

3.10 Cleanliness cum plantation drive:

- The State Climate Change Cell in collaboration with the EIACP hub conducted a cleanliness and plantation drive on 27th March 2025, at Don Bosco College, Jollang with active participants of students of the Green Alliance Club, Eco Club along with Principal and faculty member cum Club coordinator (Fig. 3.7).
- **No. of participants**: 50 students and 10 faculty members

Figure 3.7 Plantation cum cleanliness drive at on Bosco College on 27.03.2025 by the student's active participation.

- A cleanliness cum plantation drive was successfully conducted on 28th February 2025 at the Health & Wellness Sub-Centre and Anganwadi Centre in Yadang Village, Papum Pare District, Arunachal Pradesh (Fig. 3.8). The drive was carried out to promote cleanliness and hygiene in essential public facilities as well as under the 'Ek Ped Maa Ke Naam' campaign in alignment with Mission LiFE goals.
- **No. of participants**: 15 villagers & 5 officials

Figure 3.8 Cleanliness-cum-plantation drive at Yadang village on 28th February 2025.

Chapter IV

Activities with respect to State Wetlands

4.1 A chapter on Wetlands has been included in SAPCC 2.0:

Working on finalizing the revised State Action Plan on Climate Change (SAPCC 2.0) documents in alignment with Pakke Tiger Reserve Declaration, 2047.

4.2 Field Visit to Wetlands in Arunachal Pradesh:

- A field trip was conducted on 1st August 2024, to Pare Reservoirs, Panyor Reservoir, and Boda lake (Kimin), as part of ongoing efforts to understand and promote wetland conservation. The visit aimed to observe ecological conditions and gather better planning management (Fig. 4.1).
- **No. of Participants**- 11.

Figure 4.1 (From L-R**)** Panyor river water testing, Pare reservoir, NEEPCO Dam, Boda lake at Kimin, Team NMSHE (SCCC) and Wetlands International South Asia (WISA) and 1st August 2024.

4.3 Field Visit to Wetland Management Site:

- A field visit was conducted to Balijan wetland on 29th August 2024 to assess its current ecological condition and explore its potential for conservation and wise use (Fig. 4.2). The visit aimed to support informed planning for future wetland management activities in the state.
- **No. of Participants** – 5.

Figure 4.2 Field visit to Balijan wetland.

4.4 Integrated Management Plans (IMPs) and Ramsar Designation Proposal to submitted to MoEFCC:

Two IMPs under NPCA scheme have been approved and one proposed wetland (Glaw Lake) to MoEFCC for its designation as RAMSAR site is still under process (Table 4.1).

Table 4.1 List of Wetlands approved by the MoEFCC, GoI under NPCA scheme and proposed wetland for Ramsar site designation

Sl. No.	Name of wetlands
1.	Yabik Sinyig Takar Lake, Kurung Kumey District
2.	Nikpu Yabik Sinyig Lake, Kurung Kumey District
3.	Glaw Lake, Kamlang Wildlife Sanctuary

4.5 Ground-Truthing (GR) and demarcation of wetlands of Arunachal Pradesh:

The State Climate Change Cell (SCCC), in coordination with the State Wetland Authority (SWA), and in collaboration with various Divisional Forest Officers (DFOs), undertook the GR and demarcation of 1,431 (one thousand four hundred and thirty-one) wetlands across the state. The exercise is currently ongoing, with progress delayed in certain areas due to challenging weather conditions and difficult terrain. The detailed status report is enclosed as Table 4.2.

Table 4.2 Detailed status on Ground truthing and demarcation of wetlands of Arunachal Pradesh

SL	FOREST DIVISION	NUMBER OF WETLAND (As per SAC Data)	No. of Wetlands inaccessible presently - mention wetland codes & cite reasons	No. of wetlands - Ground Truthing done	Remarks
1	ALONG	58	58(code- 1103/1106)/ inaccessible due to high altitude, incessant rainfall, snow-covered and remoteness etc.		
2	ANINI	59	59 (Code - 1103, Reason due to heavy rainfall, snowfall, remoteness, etc.)		Will be done when the weather permits and the wetlands become accessible
3	ANJAW	449			
4	BANDERDEWA	16			
5	BOMDILA	32			To be carried out when weather conditions allow and wetland becomes accessible
6	CHANGALANG	2			
7	DAPORIJO	73			
8	DEOMALI	3			
9	D' ERING WLS	2		2	Completed
10	LOWER DIBANG VALLEY	24	A. 12 wetlands are accessible {8 wetlands having Code:1106, 3 wetlands having Code:1202 & 1 wetland having code:1102}. B. 11 wetlands are inaccessible due to road connectivity and high altitude {6 wetlands having code:1103 & 5 wetlands having code: 1106). C. 1 wetland (code: 1101) falls within Mehao Wildlife Sanctuary Division, Roing.	10	Ground truthing conducted at 10 (Ten) wetlands out of the 12 (Twelve) accessible wetlands. Ground truthing for the remaining 2 (Two) wetlands could not be carried out due to objections raised by the concerned public during field visit.
11	DIBANG WLS	310	310 (Code - 1103, Reason due to heavy rainfall, snowfall, remoteness, etc.)		Will be done when the weather permits and the wetlands become accessible
12	EAGLE NEST WLS	1			
13	HAPOLI	6	Wetland 4 having code 1106 are partially accessible, KML and Survey sheet along with photos mailed and 2 nos. inaccessible due to bad weather and bad road condition	4	2 nos. inaccessible due to road connectivity

14	KAMLANG WLS	6	5 (2 wetlands having code: 1103 & 3 wetlands having code: 1106)	1	2 Wetlands are inaccessible and in high altitude. Extreme terrains and weather constraints makes it inaccessible throughout year.
15	KHELLONG	5			
16	PAKKE WLS/TR	6		6	Completed
17	KHONSA	2			
18	KRA-DAADI	7	(code-1103) The two wetlands lie on extreme border, inaccessible due to high altitude and snowfall. Code (1106) the wetland is currently dry, hence effective ground truthing is impossible.	0	will be done when weather permits and it becomes accessible.
19	KURUNG KUMEY	23	21 (1103-18 wetlands & 1106-3 wetlands; inaccessible due to snow-covered, high altitude and remoteness)	2	GR and demarcation will be carried out when weather conditions allow and wetland becomes accessible. The survey of riverine wetlands ongoing.
20	LIKABALI	10			
21	LOHIT	10			
22	KANUBARI	2			
23	MOULING NP	2	2 (code: 1106)- currently both the wetlands are inaccessible due to heavy rainfall as during this period flash floods occur suddenly. Ground truthing will be done as soon as the weather permits.	2	Completed
24	MEHAO WLS	4	Ground Truthing completed in all 04 listed wetlands during Feb 2025. Corrected KML and Survey Sheets to be submitted in coming weeks		
25	NAMDAPHA NP	6	3 (1103-2 high altitude lakes and 1106-1 inaccessible due to inaccessible terrain & rain currently)	3	
26	NAMPONG	18	No such cases, all accessible.	18	Completed
27	NAMSAI	21		1	Will be done once the weather is stable
28	PASIGHAT	20			

29	SAGALEE	3		2	Overlapping of polygons resulted to 3 nos. of wetland in the division.
30	SEPPA	29	26 - (code-1103) The wetlands lie in areas covered under snow right now.	3	Survey of the 26 high altitude wetlands will be done when the weather permits and the wetlands become accessible. Further the survey of riverine wetlands will be concluded soon.
31	SHERGAON	2			
32	TAWANG	168	155 (Code -1103, Reason - Due to snowfall, remoteness, etc.)	16	Note: One of the wetlands needs correction so it should be 16 not 17.
33	YINGKIONG	52	52 (Code-2 nos. of 1106 and 50 nos. of 1103, Reason- due to high altitude, steep terrain, snowfall etc,)		Ground Truthing of the Wetlands couldn't do as all the wetlands falls under high altitude area which are inaccessible due to heavy rainfalls, Snow cover, steep terrain etc. Through internet the boundary of the wetlands could not traced as the area is covered with snow.
	TOTAL	**1431**		**70**	

Department of Science & Technology
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Wetlands INTERNATIONAL
Wetlands International South Asia

Field Trip Report

Wetland Management in Arunachal Pradesh

Field Trips to Wetlands in Arunachal Pradesh

Day 1 Participants list to Ganga Lake (Gekar Sinyig) on 31st July 2024.

	NMSHE 2.0 Team on behalf of State Wetland Authority, Arunachal Pradesh
1.	Dr. D Dohu Robin, Director (Environment)
2.	Dr Laxmi Linggi, Project Scientist
3.	Mr. Rinchin Tsering Gonpapa, Senior Project Associate
4.	Ms. Dani Yaming, Project Associate-II
5.	Mr. Dohu Tapuk, Field Assistant
	Wetlands International South Asia (WISA), New Delhi Team
1.	Mr. Arghya Chakrabarty, Technical Officer
2.	Ms. Apoorva Thapa, Technical Officer
3.	Ms. Tuheina Thakur, Technical Officer
	Wetland Managers
1.	Mr.Hiba Taji Dy. Chief Wildlife Warden (Ganga Lake) Govt. of Arunachal Pradesh.
2.	Mr. G Padu DFO Aalo/Shi Yomi, Govt. of Arunachal Pradesh.
3.	Mr. Dogey Basar, DFO Kurung Kumey, Govt. of Arunachal Pradesh.
4.	Mr. Nabum Takam, RFO Poma Wildlife/Banderdewa, Govt. of Arunachal Pradesh.
5.	Mr. Lichi Karlo, RFO Nampong, (Preetnagar lake), Govt. of Arunachal Pradesh.
	Other Research Organisations and stakeholders
1.	Mr. Keerthi Prosad Nath, Senior Research Fellow, Zoological Survey of India.
2.	Dr Althaf Ahmed Kabeer, Scientist E, Botanical Survey of India.
3.	Tolum Taker, Wetland Mitra, Kurung Kumey wetlands.

Day 2 Field Trip Participants list to 3 wetlands on 1st August 2024,

	NMSHE 2.0 Team on behalf of State Wetland Authority, Arunachal Pradesh

1.	Dr Laxmi Linggi, Project Scientist.
2.	Ms. Dani Yaming, Project Associate-II
3.	Mr. Dohu Tapuk, Field Assistant
	Wetlands International South Asia (WISA), New Delhi Team
1.	Mr. Arghya Chakrabarty, Technical Officer.
2.	Ms. Apoorva Thapa,
3.	Ms. Tuheina Thakur, Technical Officer
	Wetland Managers
1.	Ms. Neelam Shumpi Nabam, Range Forest Officer, Hoj, Govt. of Arunachal Pradesh.
2.	Mr. L Tagur, Range Forest Officer, Kimin, Govt. of Arunachal Pradesh.

Table of Contents:

1. Introduction

A Two-Day State Level Workshop on Wetlands Conservation and Wise-use in Arunachal Pradesh was conducted by the Wetlands International South Asia (WISA), New Delhi in collaboration with the State Wetland Authority (SWA) Government of Arunachal Pradesh on 30th-31st July 2024 at 10:00 hrs at the D. K Convention Hall, Itanagar. The workshop concluded with a field visit to Ganga Lake (Gekar Sinyig) in Itanagar on the 2nd day and to Pare Reservoir in Toru, Panyor Reservoir in Yazali and Boda lake in Kimin on 3rd day.

2. Objectives of the Field Trip

- To train the wetland managers in collecting baseline data.
- To identify floral and faunal diversity in the wetland ecosystem.
- To test the water quality of the wetland.
- To know about the benefits gained from the wetlands.

3. Observations & Activities

3.1 Ganga Lake (Gekar Sinyig) in Itanagar

A field visit to Ganga Lake (Gekar Sinyig) in Itanagar was conducted on 31st July 2024, where participants examined the wetland's biodiversity and its surrounding temperate moist deciduous forests. They were introduced to water sampling techniques using a Hannah Water testing kit, and soil sampling methods were demonstrated. Participants also observed aquatic vegetation and species during a boat excursion and took water samples.

Table 1. Results of the water quality test for Ganga Lake (Gekar Sinyig)

Parameters	Value
mVpH	28.7
pH	6.48
mVORP	133.0
%DO	5.2
ppmDO	0.38
µ (EC)	17
µ	19
MΩ.cm	0.0588

PPM tds	9
PSU	0.01
°C	29.67
psi	14.191

Fig. 1 Participants in Geker Sinying (Ganga lake), Itanagar, Arunachal Pradesh.

Fig. 2. Water testing for various parameters using Hannah Water testing kit at Gekar Sinyig (Ganga Lake) on 31st, July 2024.

Fig. 3. Soil sample collection from Gekar Sinyig (Ganga Lake) on 31st, July 2024.

Furthermore, during the night survey, a herpetofauna survey was conducted, documenting species such as Cope's Assam Forest Frog (*Hylorana leptoglossa*), Indian softshell turtle, keeled box turtle, and terai tree frog.

Fig. 4 Fauna species assessment at Gekar Sinying (Ganga Lake), Itanagar, Arunachal Pradesh a) Cope's Assam Forest Frog (Hylorana leptoglossa) b) Moth c) Centipede d) Bird.

Table 2. Various Faunal sightings

Genus	Species	Common Name	IUCN Status
Hylarana	*leptoglossa*	Cope's Assam Frog	LC
Nilssonia sp.		Indian softshell turtle	EN
Polypedates sp.		Tree frog	LC
Euphlyctis sp.		Skipper frog	LC

3.2 Location: Pare Reservoir

A field trip to Pare reservoir was conducted on 1st August 2024. The Pare Hydro Electric Project (HEP) with a capacity of 110 MW has been in operation since May 2018. It is currently owned by North Eastern Electric Power Corporation Ltd (NEEPCO). The Pare HEP is located on Dikrong river/basin which is a tributary of Brahmaputra River in the Papum Pare District of Arunachal Pradesh.

The Pare HEP is a run-of-river project with a pondage scheme. The Pare reservoir capacity is 19.425 million cubic meters. The project utilizes the water from river Dikrong and tail race discharge of Panyor HEP, which is located about 5.0 km upstream from the dam site of the project. Heavy rainfall and landslides in the upstream region of the Pare reservoir led to the accumulation of debris within the reservoir. Consequently, the water in the reservoir became turbid. The water testing was done at the upstream stretch of the Pare reservoir (Fig. 5).

Fig. 5 1st, August 2024, Pare reservoir, NEEPCO Dam: lake facing pollution from accumulated debris due to heavy rain & landslides upstream (L); Cleaning efforts by the Department underway (R).

Table 3. Results of the water quality test for Pare reservoir

Parameters	Value
mVpH	-48.1
pH	7.89
mVORP	135.4
%DO	47
ppmDO	3.71
μ (EC)	43
μ	44
MΩ.cm	0.0233
PPM tds	22
PSU	0.02
σt	0
°C	26.15
psi	14.268

3.3 Location: Panyor River (source of the Panyor Reservoir)

A field trip to Panyor river was conducted on 1st August 2024. The Panyor River in its upstream reaches is one of major tributaries of the Brahmaputra River with highly dependable flows. It originates from the Nilam, Marta and Tapo mountain ranges in Arunachal Pradesh.

The Panyor sub-basin spreads for about 2384.65 sq. km across the Lower Subansiri and Papum-Pare districts in Arunachal Pradesh, and Lakhimpur district of Assam where it joins the Subansiri-Brahmaputra River system at Khichikagaon.

The Panyor Hydro Electric Project (HEP) is in the Lower Subansiri District of the State of Arunachal Pradesh in the Panyor basin and the adjoining Dikrong basin. This Project with a capacity of 405 MW has been in operation since February 2001. It is currently owned by North Eastern Electric Power Corporation Ltd (NEEPCO). The beneficiary states include Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura.

The Panyor Hydro Electric Project (HEP) is a run-of-river with pondage project. Run-of-the-river power plants may have no water storage at all or a limited amount of storage, in which case the storage reservoir is referred to as *pondage*. Run-of-the-river, or ROR, hydroelectricity

is considered ideal for streams or rivers that can sustain a minimum flow or those regulated by a lake or reservoir upstream.

The Panyor reservoir has a live storage capacity of 21.28 MCM (Million Cubic Meters) at FRL (Full Reservoir Level). The MDDL (Minimum Drawdown Level) of the dam is at 560m. The minimum drawdown level has been kept at an appropriate height to sustain freshwater supply for the local communities. Monsoon rains cause significant silt deposition in the downstream reaches of the Panyor Hydroelectric Project (HEP), resulting in the submergence of the original riverbed in several stretches. This silt accumulation turns the Panyor River into a muddy torrent, leading to fish mortality and carcasses washing up on the riverbanks downstream [2]. The water testing was done at the upstream stretch of the Panyor reservoir (Fig. 6).

Table 4. Results of the water quality test for Panyor reservoir

Parameters	Value
mVpH	-30.6
pH	7.57
mVORP	184.9
%DO	48.6
ppmDO	3.78
μ (EC)	30
μ	30
MΩ.cm	0.0333
PPM tds	15
PSU	0.01
σt	0
°C	25.18
psi	13.759

Fig. 6 Panyor river water testing by the NMSHE, SWA Arunachal Pradesh & WISA team on 1st August 2024.

3.4 Location: Boda Lake

Boda Lake, a revered water body perched atop a hill in Kimin town, Arunachal Pradesh, is undergoing rapid and detrimental transformation. Once held sacred by the local community, the lake is now marred by active construction activities. Three concrete huts have already been erected on its pristine waters, posing a severe threat to its ecological balance and spiritual significance.

Once a vital lifeline for the region's biodiversity, the lake supported a thriving ecosystem. Aquatic life, including fish, has been observed within its waters. Before the onset of recent development, the lake served as a crucial water source for iconic local fauna such as Mithun and deer. The ecological integrity of the surrounding area is further compromised by the installation of gym equipment on an adjacent hill. This incongruous addition not only detracts from the natural beauty of the landscape but also poses potential risks to the lake's ecosystem through increased human activity and waste generation.

To exacerbate the situation, one side of the lake has been fortified with concrete embankments, disrupting the natural contours of the water body. Our visit witnessed the construction of concrete pavements, further encroaching upon the lake's delicate ecosystem (Fig. 6).

These intrusive developments being carried out by the Urban Development Department not only desecrate the lake's religious importance but also risk irreversible damage to its aquatic life and overall environmental integrity. Urgent intervention is imperative to protect this invaluable natural and cultural heritage.

Boda Lake's future hangs in balance as conflicting interests converge. According to the Range Forest Officer of Kimin, multiple meetings have been held to determine the lake's jurisdiction.

While some local communities seek to exploit the lake for their own gain, others advocate for its conservation and preservation under the Forest Department's stewardship, with a focus on generating sustainable income for the community. The water samples were also tested for quality check (Fig.7).

Table 5. Results of the water quality test for Boka wetland

Parameters	Value
mVpH	-4.9
pH	7.09
mVORP	251.6
%DO	40.9
ppmDO	2.84
μ (EC)	40
μ	45
MΩ.cm	0.025
PPM tds	20
PSU	0.02
σt	0
°C	31.06
psi	14.139

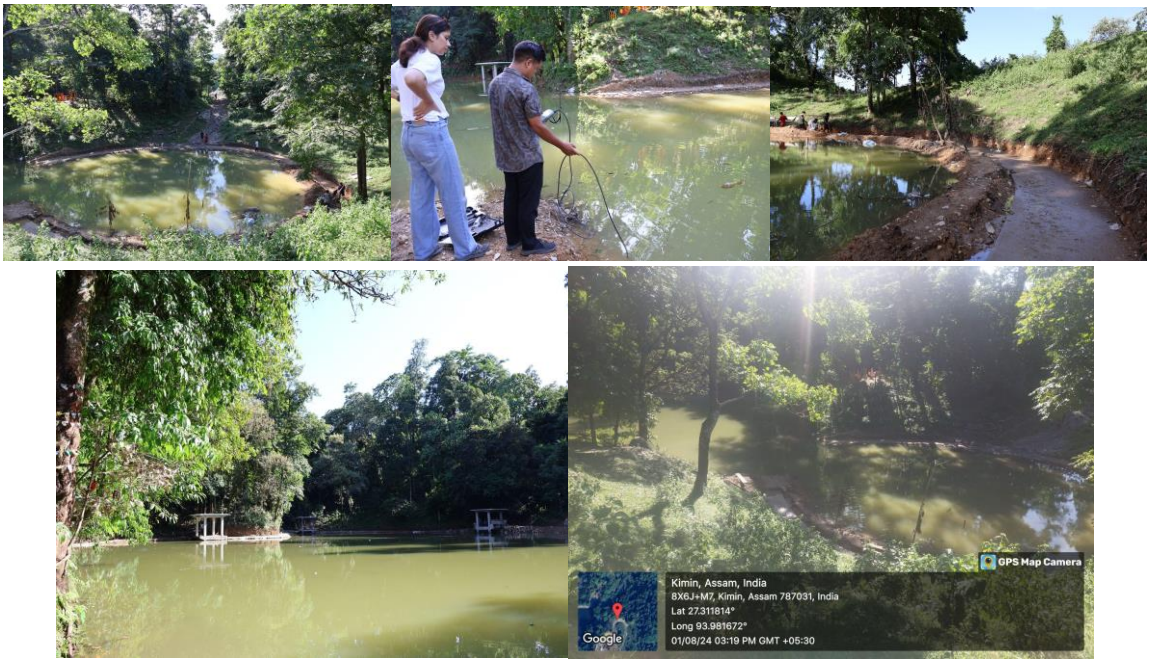

Fig. 7 Walkway construction in progress & Water testing for various parameters in Boda lake at Kimin on 1st August 2024.

Fig. 8. Participants in Boda Wetland, Kimin, Arunachal Pradesh.

3.5 Satajaan Beel (Wetland)

On our way back from Boda lake in Kimin to Itanagar, we came across Satajaan wetland, in North Lakhimpur district of Assam, which is home to habitat of residential and migratory birds. The infamous wetland situated adjacent to the Pahumara-Kimin state highway and National Highway 15 is one of the last surviving wetlands of the region hosting enormous bird species every year. Being aside the river Ranganadi, the wetland with marshes and dense fringing vegetation receives fresh water recharge every monsoon. According to a research work published in December 2019 by the Department of Botany, Rajiv Gandhi University, Arunachal Pradesh, there are 262 species of vascular plants on the wetland.

Fig. 9. Satajaan Beel wetland, North Lakhimpur, Assam.

On our way back from Boda lake in Kimin to Itanagar, we came across Satajaan wetland, in North Lakhimpur district of Assam, which is home to habitat of residential and migratory birds. The infamous wetland situated adjacent to the Pahumara-Kimin state highway and National Highway 15 is one of the last surviving wetlands of the region hosting enormous bird species every year. Being aside the river Ranganadi, the wetland with marshes and dense fringing vegetation receives fresh water recharge every monsoon. According to a research work published in December 2019 by the Department of Botany, Rajiv Gandhi University, Arunachal Pradesh, there are 262 species of vascular plants on the wetland.

Fig. 10 Satajaan Beel wetland.

When the changing climate is already showing its impact on the ecosystem globally, the health of this wetland has been further challenged by several anthropogenic activities. The locals say that one of the primary reasons for the degradation of the wetland is yearly winter picnic accompanied by littering plastic waste, noise from loudspeakers and clearing bushes for fire. Unfortunately, the time of the year also coincides with the arrival of migratory birds and human activities such as picnics disturb the natural state of avifauna. The wetland, which is claimed to have been created by the devastating earthquake of 1950, has also observed the disturbances caused by sand mining along the river Ranganadi during the non-monsoon season. It is the same river which is already under pressure due to the upstream water infrastructure projects and has observed reduced hydrological flow. Presence of non-insulated high-tension wires around the wetland have added to the threats of lives of these flying birds and frequent cases of electrocution of birds are observed.

During a survey (Gogoi et al., 2019) it was found that annual herbs and therophytes are dominant in Satajaan wetland covering about 54.20% of floristic species. A diverse group of about 22 species of macro invertebrates have also been recorded in the wetland which have also shown a decline due to domestic sewage and fertilizer pollutants (Hazarika, 2015). Fish species also add to the beauty of the Satajaan wetland. About 42 species of fish have been reported from this wetland, among which the family Cyprinidae has dominated the area with about 30.95% of the total species (Hazarika, 2013).

Bird species that have been listed here include common teal, purple moorhen, lesser adjutant stork, gadwall, lesser whistling teal, night heron, ferruginous duck, darter or snakebird, and spotted bill among others [3].

Studies conducted on the water quality of the wetland have suggested the presence of Mg and SO_4 ions in the water which is a major cause of reduction in aquatic vegetation (Bhuyan and Sharma 2022). Various other anthropogenic sources like pollution from industries and households, over exploitation of the wetlands natural resources etc. have been putting continuous pressure on this wetland (Bassi et al., 2014) which needs to be targeted to make the best use of it. The Satajaan wetland is surveyed to provide livelihood to almost all the local peoples dwelling nearby providing ecosystem services (Kakoti et al., 2019).

The Satajaan wetland was protected by gabion wall embankments to safeguard its delicate ecosystem from erosion and flooding, ensuring the preservation of its rich biodiversity.

Table 6. Satajaan Wetland overview Source [4]

Parameters	Explanation
Benefits from the Wetland	Medicinal Plants – 92.30% households (Main), Recognition, Fresh air & Medicinal plants– 16.67%, Beverage making & Medicinal Plants – 10%, Only Recognition – 3.33%, Only Beverage making – 3.33%
Problems Faced Due to the Wetland	36.675 households face problems. The most prominent problem is the 'Road condition'
Conservation Measures Undertaken (If any)	35% of households are involved in undertaking conservative measures. Like – Prohibit fishing, killing of local as well as migratory birds, cutting of trees etc., cleaning the wetland etc.

4. Key Issues and Challenges encountered

- **Anthropogenic Threats:** Boda lake poses a significant risk of increased human activity such as construction of concrete structures and pavements around the lake.
- **Siltation:** Boda lake is facing sedimentation issues, affecting water quality and ecosystem health.
- **Encroachment:** Boda lake faces the threat of encroachment due to its jurisdiction dispute between the communities and the forest authorities.
- **Community Issues:** Boda lake faces challenges due to competing demands from the local community for income generation and the forest authorities demand for its conservation**.**

- **Pollution:** The Pare reservoir faces pollution due to debris from heavy rainfall and landslides in its upstream stretches.

5. Opportunities and Recommendations

The government plays a pivotal role in wetland conservation by establishing and enforcing robust legal frameworks, implementing effective management strategies, and allocating adequate resources for research and monitoring. Key government interventions can include:

- **Research:** In-depth research on flora, fauna, and invasive species is crucial for effective management of all the 4 wetland sites Ganga Lake, Pare reservoir, Panyor reservoir and Boda lake.
- **Tourism Management:** Ganga lake and Boda lakes' potential as a tourist site must be balanced with conservation efforts.
- **Conservation and Livelihood Integration:** Encouraging ecotourism can benefit both the local community and the wetland ecosystem in Boda lake.
- **Monitoring and Enforcement:** Regular monitoring of wetland health and water quality is essential for early detection of problems in all the sites.
    - Establishing regular monitoring programs to assess wetland health, detect threats, and evaluate the effectiveness of conservation measures.
    - Enforcing wetland regulations through strict penalties and deterrents for illegal activities.
- **Wetland Restoration and Rehabilitation:**
    - Investing in programs to restore degraded wetlands and enhance their ecological functions.
    - Promoting the use of ecological engineering techniques to restore wetland hydrology, vegetation, and wildlife habitats.
- **Public Awareness and Education:**
    - Conducting public awareness campaigns to highlight the importance of wetlands and the threats they face.
    - Developing educational programs for schools, communities, and stakeholders to promote wetland stewardship.

Community Engagement: A Groundswell of Support

Community involvement is essential for the successful conservation of wetlands. By empowering local communities and fostering a sense of ownership, it is possible to achieve long-term sustainability. Key community-based initiatives can include:

- **Community-Based Wetland Management:**
  - Establishing community-based wetland management committees to involve local people in decision-making and implementation.
  - Providing training and capacity building to community members on wetland ecology, conservation, and management.
- **Wetland Monitoring and Surveillance:**
  - Engaging community members in wetland monitoring activities to collect data on water quality, biodiversity, and human impacts.
  - Establishing community-based surveillance systems to prevent illegal activities and report environmental violations.
- **Sustainable Livelihoods:**
  - Promoting the development of sustainable livelihood options for local communities that depend on wetland resources.
  - Supporting eco-tourism initiatives that generate income while conserving wetlands.
- **Wetland Education and Awareness:**
  - Organizing community events, workshops, and educational programs to raise awareness about wetland values and conservation.
  - Involving youth in wetland conservation activities to foster a sense of environmental stewardship.

6. Conclusions

Wetlands, often referred to as the kidneys of the Earth, are vital ecosystems that provide a multitude of benefits, including water purification, flood control, habitat for biodiversity, and climate regulation. However, these delicate ecosystems face numerous threats, particularly during the vulnerable winter months when drier conditions and increased recreational activities exacerbate their vulnerability. To ensure the long-term health and sustainability of wetlands, a concerted effort involving both government intervention and community engagement is imperative.

It is crucial to recognize that each wetland is a unique ecosystem with its own specific characteristics, ecological functions, and challenges. Therefore, conservation efforts must be tailored to the specific needs of each wetland. A one-size-fits-all approach is unlikely to be effective. By conducting thorough assessments and developing site-specific management plans, it is possible to protect the unique values of each wetland.

In conclusion, the preservation of wetlands requires a collaborative approach that involves both government intervention and community engagement. By working together, governments and communities can develop and implement effective strategies to protect these invaluable ecosystems for present and future generations.

7. References

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Wetlands International South Asia

WORKSHOP REPORT ON

Two Days State Level Training Workshop on Wetlands Conservation and Wise-use in Arunachal Pradesh

2024

STATE WETLAND AUTHORITY (SWA),

ARUNACHAL PRADESH

Department of Environment, Forest and Climate Change
Government of Arunachal Pradesh

Title of Training Workshop	Two Days State Level Training Workshop on Wetlands Conservation and Wise-use in Arunachal Pradesh
Dates of Training	30th & 31st July 2024,
Venue **of Training**	Dorjee Khandu Convention Hall, Itanagar.
Number of Participants	Day 1-36, Day 2-26. The list of participants on Day 1 and Day 2 are annexed at Annexure I & II respectively.
Profile of Participants	State Wetland Authority Arunachal Pradesh, members from the Wetlands International South Asia (WISA), New Delhi, staff from the Department of Environment Forest & Climate Change, Wetland managers, Stakeholders, ZSI experts, BSI Experts & GBP NIHE Regional Office Scientists.
Resource Persons	1. Dr Kau1, President, Wetlands International South Asia (WISA), New Delhi, 2. Dr. Ritesh Kumar, Director, (WISA), New Delhi, 3. Mr. Arghya Chakrabarty, Senior Technical Officer (WISA), New Delhi. 4. Ms. Apoorva Thapa, Technical Officer (WISA), New Delhi. 5. Ms.Tuheina Thakur, Technical Officer (WISA), New Delhi.
Organizers	1. The Wetlands International South Asia (WISA), New Delhi. 2. The State Wetland Authority (SWA) Government of Arunachal Pradesh.

The Two Days State Level Training Workshop on Wetlands Conservation and Wise-use in Arunachal Pradesh was conducted by the Wetlands International South Asia (WISA), New Delhi in collaboration with the State Wetland Authority (SWA) Government of Arunachal Pradesh on 30th-31st July 2024 at 10:00 hrs. at the D. K Convention Hall, Itanagar. The workshop featured formal addresses from distinguished guests, including Shri P Subramanyam, Principal Chief Conservator of Forests and Head of Forest Force; Shri Samuel Changkija, Member Secretary of the State Wetland Authority & CCF (Env & CC); and Dr Sidharth Kau1, President of Wetlands International South Asia.

Fig. 1 Dignitaries, Organizers, and Participants: Workshop Group Photo.

The summary of the discussions and decisions made is given below:

1 In a significant step towards wetlands conservation and promoting the wise use of wetland resources, a Memorandum of Understanding was signed between the WISA, New Delhi and the SWA, Arunachal Pradesh establishing WISA, New Delhi as the knowledge partner. The agreement formalized their commitment to collaborative efforts, establishing a framework for sustained cooperation and shared objectives in the protection and management of wetland ecosystems.

2. The first technical session focused on the major opportunities and challenges faced by wetland site managers in Arunachal Pradesh, specifically for Sipit Lake, Pasang Sonam Tso Lake, Simu Sile Lake, Glaw Lake, Ganga Lake, and Preet Nagar Lake.

Key Issues and Challenges:-

- **Anthropogenic Threats:** Proposed highways near Sipit and Pasang Sonam Tso lakes pose a significant risk of increased human activity and potential environmental degradation.

- **Siltation:** Lakes in Kurung Kumey, including Preetnagar, are facing sedimentation issues, affecting water quality and ecosystem health.
- Invasive Species: Pasang Sonam Tso Lake, a High-Altitude Wetland (HAW), is particularly vulnerable to invasive species due to its unique ecosystem. The introduction of non-native trout fish by the fisheries department is a prime example.
- **Encroachment:** Preetnagar wetland, located outside the notified forest area, faces the threat of encroachment.
- **Community Issues:** Preetnagar wetland faces challenges due to competing demands from the local community, including water use for irrigation and other purposes.
- **Accessibility:** The Glaw Lake wetland manager emphasized the need for improved accessibility and preliminary infrastructure due to the lake's remoteness.

Opportunities and Recommendations

- **Research:** In-depth research on flora, fauna, and invasive species is crucial for effective management of Pasang Sonam Tso and Glaw lakes.
- **Tourism Management:** Sipit Lake's potential as a Buddhist tourist site must be balanced with conservation efforts.
- **Sustainable** Water **Management:** Identifying sustainable water withdrawal limits and promoting water-efficient agricultural practices can address community needs while protecting Preetnagar wetland.
- **Conservation and Livelihood Integration:** Encouraging organic farming can benefit both the local community and the wetland ecosystem.
- **Monitoring and Evaluation:** Regular monitoring of wetland health and water quality is essential for early detection of problems.

Notable Findings

- Sipit Lake is a vital water source for endangered species and the origin of the Yomge River.
- Pasang Sonam Tso Lake is a glacier-fed HAW with a unique ecosystem.
- Preetnagar wetland is a hotspot for migratory birds, including the rare Lisu bird.

- Overall, the session highlighted the complex challenges faced by wetland managers in the region, including threats from human activities, climate change impacts, and community pressures. The discussions emphasized the importance of research, integrated management, and community engagement for effective wetland conservation and sustainable development.

3. In the second technical session, Dr Kaul, the President of WISA, New Delhi, introduced Integrated Wetland Management, covering key concepts related to high-altitude wetlands and their ecosystem services. The discussion included the religious and cultural significance of wetlands and conservation perspectives from national and international contexts. Dr Kaul stressed the integration of wetlands into formal education, promoting a Wetlands Conservation ethos, and the role of wetlands champions and citizen involvement in conservation efforts. The presentation further delved into wetland evaluation and highlighted the pressing threats to wetland ecosystems, including unregulated tourism, infrastructure development, and climate change. The speaker underscored the importance of baseline data collection, community involvement, and integrating wetland conservation into broader administrative frameworks.

Key points included:

- The interconnectedness of HAWs and lower altitude wetlands
- The prevention of Glacial Lake Outburst Floods (GLOFs)
- The impact of climate change on wetland hydrology
- The significance of wetlands as primary water sources
- The need for practical monitoring parameters for field workers
- The importance of community engagement in wetland management

The session concluded with a group discussion to deepen understanding and explore practical applications of the presented concepts.

4. The PCCF (EFCC) proposed several recommendations:

- **Develop an SOP:** A Standard Operating Procedure (SOP) should be created by the knowledge partner to guide approaches to pristine lakes, particularly High-Altitude Wetlands (HAWs).
- **Sustainable Livelihoods:** Wetlands should be utilized to generate income for local communities without causing harm to the ecosystem.
- **Wetlands in SAPCC 2.0: A** dedicated chapter on wetlands should be included in the revised State Action Plan on Climate Change (SAPCC 2.0).

- **NPCA** Scheme: Riverine wetlands within the state should be identified and proposed for conservation under the National Plan for Conservation of Aquatic Ecosystems (NPCA) scheme.
- **Amrit Sarovar and Vibrant Village Programs:** Conservation proposals for wetlands, especially HAWs, should be integrated into the Amrit Sarovar and Vibrant Village programs, with a focus on community involvement.

5. Shri Samuel Changkija, Member Secretary of the State Wetland Authority highlighted the importance of sustainable wetland use in achieving Sustainable Development Goals and discussed seven proposed wetlands for management in Arunachal Pradesh. He suggested that wetlands should be categorized and prioritized for listing, followed by the development of tailored intervention plans.

6. Shri Arghya Chakrabarty, Technical Officer at Wetlands International South Asia, emphasised the importance of understanding wetlands as open ecosystems, focusing on the relationships between their components, processes, and ecosystem services. He discussed a framework for describing wetland ecosystems based on features, factors, and natural regimes. He highlighted the need to evaluate ecosystems regarding threats, risks of adverse changes, and required management interventions.

7. On the second day, the third technical session began with Dr. Ritesh Kumar, Director at Wetlands International South Asia, facilitating an interactive Q&A session on wildlife disease detection and societal involvement in wetland management and conservation. He provided training on Wetland Management Planning and Monitoring, addressing the purpose, wise use, and principles of wetland management, along with adaptive and integrative management approaches. The training covered threats to species management, including invasive species and tourism, and discussed financing aspects of management plans. Dr. Ritesh emphasized the importance of developing management plans to thoroughly diagnose wetland issues and the need for SMART (Specific, Measurable, Achievable, Relevant, Time-bound) management objectives.

8. This was followed by practical training on the 'Implementation of Wetlands (Conservation and Management) Rules, 2017'. Dr Ritesh began by discussing the origin of these rules under the Environment (Protection) Act of 1986 and detailed the types of wetlands covered, including Ramsar Sites and those notified under the Wetlands Rules, while specifying exclusions. The training outlined the wetland authority's role as the nodal entity for all wetland-related matters within states and UTs, comprising a Technical Committee and a

Grievance Committee. He explained the steps for wetland notification—Wetland Delineation, Zone of Influence Delineation, Brief Document, Draft Notification, and Final Notification—and covered the wise and unwise uses of wetlands, detailing prohibited, regulated, and permitted activities. Emphasis was placed on the critical role of the wetland authority in efficient management planning and implementation for wetland conservation and wise use in the state. The Director WISA emphasized the importance of balancing societal needs with the preservation of wetlands for future generations. He highlighted the significance of catchment management, contingent on the specific drainage basin. Various diagnostic approaches were discussed, including the identification of stakeholders and addressing both the symptoms and root causes of wetland degradation.

Real-world examples from Bharatpur Bird Sanctuary, Saras National Park, and Wular Lake were used to illustrate the impact of factors such as controlled grazing, sustainable fishing, and climate patterns on wetland ecosystems. The Director also showcased the successful integration of other government schemes, like MNREGA, into wetland conservation efforts.

The presentation underlined the substantial benefits of wetland conservation, encompassing water security, habitat preservation, and economic opportunities for local communities.

9. Shri D. Dohu Robin, Director (Environment) emphasized the critical need for establishing baseline data and monitoring stations. Additionally, he highlighted the urgent requirement for wetland notifications, as none have been issued to date. He also suggested incorporating project case studies to facilitate learning and the integration of best practices by the state wetland authority.

10. The Director of WISA, New Delhi, recommended prioritizing wetlands situated in urban areas, such as Ganga and Sally lakes, due to their heightened vulnerability to human-induced threats. He emphasized the necessity of creating detailed maps illustrating wetland zones, sediment distribution, and the presence of glacial lakes for effective wetland listing.

He proposed developing a comprehensive reference Integrated Management Plan (IMP) as a foundational framework for crafting IMPs for other lakes. WISA committed to submitting revised IMPs for the seven wetlands approved by the State Wetland Authority within a three-month timeframe. Additionally, the RSIS form for the Glaw Lake Ramsar site proposal will undergo revisions. The Director advocated conducting statewide wetland assessments and management initiatives.

11. Finally, Certificates of Appreciation were distributed to some of the Wetlands Mitras for their role in protection and conservation of the wetlands in the state.

12. The workshop concluded with a visit to Ganga Lake in Itanagar, where participants examined the wetland's biodiversity and its surrounding temperate moist deciduous forests. They were introduced to water sampling techniques using a Hannah Water testing kit, and soil sampling methods were demonstrated. Participants also observed aquatic vegetation and species during a boat excursion and took water samples. In the evening, a herpetofauna survey was conducted, documenting species such as Cope's Assam Frog, Indian softshell turtle, keeled box turtle, and terai tree frog.

13. In continuation, to the workshop, on the 3rd day i.e 1st August 2024 field visits to Pare Reservoir in Tom, Panyor Reservoir in Yazali and Boda lake in Kimin were conducted.

MoU signed between Wetlands Int'l South Asia & State Wetland Authority

2-day workshop highlights integrated management of wetlands in Arunachal

By Our Reporter

ITANAGAR, Jul 30: The Arunachal Pradesh State Wetlands Authority in collaboration with the Wetlands International South Asia organised a two-day workshop on integrated management of wetlands.

The workshop is being held to update the knowledge and need of technology intervention in the case study.

Principal Chief Conservator of Forests (Environment, Forests & Climate Change) and Head of the Forest Force, Environment, Forest and Climate Change, P. Subramanyam inaugurated the workshop here at DK Convention Centre.

Addressing the inaugural session, PCCF Subramanyam called on the officers including the wetland managers and other officials dealing with wetland in Arunachal Pradesh to design and implement evidence-based management, connecting societal aspirations with the goals of ecosystem integrity.

He emphasised that the workshop will help the officers and wetland managers to understand the problems and challenges and opportunities so that more knowledge and technological intervention required may also be understood.

Wetlands International South Asia President Dr Sidharth Kaul, who was present as the (Cont. P.6)

Fig. 2 MoU signed between Wetlands International South Asia & State Wetland Authority, Arunachal Pradesh, Dept. of Environment, Forest & Climate Change, GoAP. Arunachal Front paper clip, dated 31st July, 2024 (L), Principal Chief Conservator of Forest & HoFF, Chief Conservator of Forest (Env&CC), Dr. Siddharth Kaul, President (WISA) & Dr. Ritesh Kumar, Director (WISA) (R).

Fig.3 Technical sessions - Presentation on conservation and sustainable use of wetlands in Arunachal Pradesh by Ritesh Kumar, Director (WISA) (L), Arghya Chakrabarty, Senior Technical Officer (R).

Fig.4 Discussion with the Wetland Managers of Arunachal Pradesh.

Fig.5 Participants from the workshop with the President & Director Wetlands International South Asia (WISA), Nodal Officer State Wetland Authority (SWA).

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Attendance sheet

Subject	Two Days Training Workshop on Wetlands Management in Arunachal Pradesh
Venue	Papum Hall, Dorjee Khandu Convention Centre, Itanagar.
Date	Day 1- 30th July 2024 at 1000 Hrs

Sl. No.	Name & Designation	Department/ Organization	Official Email ID (for circulation of minutes)	Mobile no.	Signature
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3.	D. Dohu Robin	Dir. Env. DoEFCC	dir.envt@gmail.com	9436041783	[signature]
4.	Debendra Dalai	APCCF and CEO CAMPA		9909729108	[signature]
5.	Dr. Sidharth Kaul, PRESIDENT WISA			9818329366	[signature]
6.	Dr. Ritesh Kumar Director WISA			9871837444	[signature]

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28.	Ms. Apoorva Thapa	Technical Officer	apoorva.thapa@wi-sa.org	7051085466	
29.	Ms. DANI YAMIN	Project Associate	P.associate2.doefcc@gmail.com	9716077103	30/07/24
30.	Arghya Chakrabarty	Technical officer.	arghya.chakrabarty@wi-sa.org	8240949469	30/7/24
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36.	Rinchin Thongdok	11	[illegible]	[illegible]	

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Attendance sheet

Subject	Two Days Training Workshop on Wetlands Management in Arunachal Pradesh
Venue	Papum Hall, Dorjee Khandu Convention Centre, Itanagar.
Date	Day 2- 31st July 2024 at 0900 Hrs

Sl. No.	Name & Designation	Department/ Organization	Official Email ID (for circulation of minutes)	Mobile no.	Signature
1.	Dr. S. Kaul	WISA	[illegible] gmail.com	9818329366	
2.	Dr. Ritesh Kumar	Wetlands International South Asia	ritesh.kumar@wi-sa.org	9871837444	
3.	A. Bali	Forest	dfoyingkiong@gmail.com	7629827263	
4.	Sanjib Bali	Forest	Sanjibali1502@gmail.com	8798477723	
5.	Aditya Das Biologist	Kamlang TR	d.fokamlang@gmail.com	8638606047	
6.	NABAM TAKAM RFO	Forest	[illegible]	8132887141	

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8.	TOLUM TAKAR	WETLAND MITRAS	PTOLUM2@GMAIL.COM	9436041226	
9.	D. Dohu Robin	Env. & CC Wing SWIA, Ar. P	robindohu@gmail.com	8730461874	
10.	Dr. K. Althaf Ahamed Kabeer	Botanical Survey of India APRC, Itanagar	althafgrass@gmail.com	9842771856	
11.	Doge Basar	Forest	doge...257@gmail.com	8974691572	
12.	Lichi Karlo	forest.	...@gmail.com	7085923608	
13.	Dr. S.D. Guru-mayum	ZSI, Manager	santaguru@rediffmail.com	9402889342	
14.	KIRTY PRO SAD NATH	ZSI, APRC, Itanagar	kirtynth.hp@gmail.com	8126286232	
15.	L S KHONGSAI	ZSI, APRC, ITANAGAR	NEILSONKHONGSAI@GMAIL.COM	7005837001	

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Sl. No.	Name & Designation	Department/ Agency	Official Email ID (for circulation of minutes)	Mobile no.	Signature
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17.	Mojik Talit RFO, Paliz	Kra Daadi F.D.	mojiktalit@gmail.com	9436227484	[signature]
18.	Dr. Laxmi Lippi	DoEFCC	scientistdoefcc@gmail.com	8729990505	[signature]
19.	Dr. Anjan Chamuah	DOEFCC, GoAP	anjan.chamuah@gmail.com	8317826505	[signature]
20.	Punyo Tanya	DoEFCC, GoAP.	punyotanya@gmail.com	9856845034	[signature]
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22.	Dohu Tapuk	DoEFCC	dohuduitapuk@gmail.com	8259804741	[signature]
23.	Ani Dai	DoEFCC	aniennis@gmail.com	8794511329	[signature]
24.	Rinchin Tsering Gonpa	DoEFCC	[illegible]@gmail.com	8794407977	[signature]

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27.	Tanu Sirom Information officer	DoEF and CC		7005955435	[signature]
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BY MAIL

Government of Arunachal Pradesh
State Wetland Authority, Arunachal Pradesh
Department of Environment, Forests and Climate Change

O- Point Tinali, Itanagar
PIN 791111

File No.For(ENV)-10/2022/1892-1911
Computer No. 90020

Dated the 29th July, 2024

Invitation

Sub: Two Days Training Workshop on Wetlands Management in Arunachal Pradesh – reg.

Apropos the matter cited above, it is to intimate that **Two Days Training Workshop on Wetlands in Arunachal Pradesh** is to be conducted by the Wetland International South Asia (WISA), New Delhi in collaboration with the State wetland Authority, Government of Arunachal Pradesh to be held on 30th-31st July 2024 at 10:00 hrs at the D.K Covention Hall, Itanagar.

Wetlands managers are invited to attend the workshop to present on the wetlands under their care. Tentative agenda note is enclosed.

Registration Link:
https://docs.google.com/forms/d/e/1FAIpQLScXSS3R9hCgaqLvkuINVFtWL_DlgfUuZK8iUwRwppuI-4svCQ/viewform?vc=0&c=0&w=1&flr=0

For any queries contact: 8729990505, 9760770332.

This issues with the approval of the Competent Authority.

Sd/-
(Samuel Changkija), IFS,
CCF (Environment & Climate Change) &
Member Secretary, State Wetland Authority (SWA),
Arunachal Pradesh.

Distribution:

1. The PA to Addl. PCCF (Conservation), DoEFCC, GoAP & Chairman, Technical Committee (TC), State Wetland Authority (SWA),.
2. The Dy Chief Wildlife Warden, DoEFCC, GoAP & Member, TC, SWA.
3. The Chief Engineer, Water Resources Department, GoAP & Member, TC, SWA.
4. The Chief Engineer, Public Health Engineering Department, GoAP && Member, TC, SWA.
5. The Director, Fishery Development, Arunachal Pradesh & & Member, TC, SWA.
6. The Director, State Forest Research Institute, Itanagar & Member, TC, SWA.

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Department of Environment, Forests and Climate Change
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PIN 791111

7. The Director, Department of Science and Technology, GoAP & Member, TC, SWA.
8. The Director, Planning & Investment, GoAP & Member, TC, SWA.
9. The Scientist in-charge/Engineer, Central Ground Water Board, Naharlagun & Member, TC, SWA.
10. The Member Secretary, AP State Pollution Control Board, Naharlagun & Member, TC, SWA.
11. The Member Secretary, State Biodiversity Board, Arunachal Pradesh & Member, TC, SWA.
12. The Scientist In-charge, Scientist, GBPHESD, NE Unit & Member, SWA.
13. The Scientist-E/Officer In-charge Zoological Survey of India (ZSI), Regional office, Itanagar, Arunachal Pradesh. Email: santaguru@rediffmail.com.
14. The Scientist In-charge, Botanical Survey of India, Arunachal Pradesh Regional Centre, Itanagar.
15. The DFO Shi Yomi/ DFO Yinkiong/ DFO Mehao/ DFO Kamlang/ DFO Kurung Kumey/ DFO Kra Daadi/ DFO Banderdewa/ DFO Jairampur are requested to make presentations concerning the IMPs.

Copy to:

1. The PS to the Hon'ble Minister (EF & CC) & Chairman, State Wetland Authority, Arunachal Pradesh.
2. The PS to PCCF, (E, F & CC), GoAP, Itanagar for kind information.
3. The PA to CCF, (Env. & CC), GoAP, Itanagar for kind information.
4. Dr. Ritesh Kumar, Director, Wetlands International South Asia, New Delhi – 110020, Email:ritesh.kumar@wi-sa.org,suchita.awasthi@wi-sa.org,harsh.ganapathi@wi-sa.or, T: +91 11 46038906; M: +91 9711 544 957.

29/07/2019

(D. Dulu Robin)
Director (Environment) &
Convenor, Technical Committee (TC),
State Wetland Authority (SWA),
Arunachal Pradesh.