

Building capacities among  
AP-PLAT partners in the  
“science of pricing  
ecosystem services” for  
enabling ecosystem-based  
adaptation for sustainable  
future.

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## 1. Summary

The present intervention has built capacities in multi-sectoral stakeholders from AP-PLAT countries viz. India, Bangladesh, Bhutan and Thailand towards pricing of ecosystem services (ESs) using scientific methods and models. Both ecosystem goods and services are nature's capital and support life and livelihood, especially in the context of marginal communities living in rural and as well urban settings. In this climate milieu, communities facing the brunt of climate impact and resource crunch being stuck in poverty-disaster trap are mostly dependent on ecosystem services for survival. Ecosystem services are the in-kind or intangible benefits that people obtain from various ecosystems being within or around it, which otherwise have been a need required to be purchased by the user. Millennium Ecosystem Assessment (MA) 2006, delineated four categories of ESs — supporting, provisioning, regulating, and cultural services. UNEP's Economics of Ecosystems and Biodiversity (TEEB) recoined supporting services as habitat services to avoid double counting in overlaps and defined "ecosystem functions", as a subset of the interactions between ecosystem structure and processes. It is imperative that valuation of these intangible services is important from conservation point of view but monetization of this value is relatively critical. Significance of valuation of ESs in global policy has been evident in Paris Agreement, while it has been strongly emphasized in COP27 for estimating damage and loss, emerging REDD+ and initiatives like Aichi Targets, and as well SDGs have included these methods in assessments and estimations.

This intervention has put forward a science-based approach in considering fundamental plea for plural values of ESs, wherein the valuation languages have been context dependent and special capacities were built among several AP-PLAT (Asia Pacific Climate Change Adaptation Information Platform) stakeholders including policy planners, practitioners, administrators and academia as well to articulate it and facilitate to share advanced scientific climate risk information towards adaptation planning. The intervention has engaged the stakeholders in pricing approaches, methodologies and concept building exercises, as well online machine learning and both virtual and onsite national workshops in all four countries and in-person international workshops in Thailand, India and Bangladesh. It has also undertaken comprehensive and comparative pricing studies on wetland ecosystem services, through Participatory Action Research (PAR) in contrasting socio-ecologies, namely in peri-urban Ramsar wetlands (*East Kolkata Wetlands*) in India, urban wetlands (*Monkey's Cheek*) in Thailand, and coastal wetlands (*Tangaur Haor*) in Bangladesh. The results have augmented regional preparedness by developing capacities in scientific, economic and socio-political scenario planning approaches on pricing of ESs for AP-PLAT partners. Outcomes would now sustain the built capacities in pricing other ESs and as well monitor, model and predict spatio-temporal values of ESs through adaptive learning towards ecosystem-based adaptations in resolving conflicts, assessing damage loss and reverting current linear extractive economic scenario with neo-economic circular conservation paradigms for sustainable future. The outcomes has been consolidated as archived learning resources, as well into a global curriculum for continued capacity building available for free online dissemination globally.

## 2. Objectives

The main objectives of the present intervention are

1. Quantify the economic advantages, evaluate societal dimensions and as well assess the potential risks of monetising ecosystem services in the climate milieu.
2. Acquaint with latest scientific and economic approaches of defining, valuating and pricing ecosystem services in the Asian context through machine learning methods and hands-on field training exposures
3. Develop and validate appropriate framework for incorporating ESs pricing system in EbA approach towards policy implications in government practices and regional platforms through participatory action research (PAR) at community-ecosystem interface.

### 3. Outputs, Outcomes and Impacts

| Outputs   | Outcomes  | Impacts  |
|---|---|--|
| 38 online workshops, 07 national level workshops and 03 international workshops were conducted along with 06 field trips to build capacities in scientific systems of monetising ecosystem services, its advantages in planning and preparedness, as well potential risks of pricing.   | <ol style="list-style-type: none"> <li>1. More than 300 stakeholders including policy planners, politicians, practitioners, administrators and researchers have been inducted to the scientific methods of pricing ecosystem services.</li> <li>2. More than 500 wetlanders in three Asian countries have been sensitized, and their capacities built in evaluating ESs for PAR.</li> </ol> | Built capacities in scientific pricing of ecosystem services will now be sustained through practice and adaptive learning towards conservation of nature services, as well monitor, model and predict spatio-temporal values of ESs towards ecosystem-based adaptations in resolving conflicts, assessing damage loss and reverting current linear extractive economic scenario with neo-economic circular conservation paradigms for sustainable future. The acquired knowledge is bartered through web-based learning and adoption, ensuring equitable access and reciprocity. |
| Provisioning and regulatory services of three socio-ecologically contrasting wetlands in India, Bangladesh and Thailand have been surveyed, evaluated through participatory action research and attempted for scientific pricing.   | <ol style="list-style-type: none"> <li>3. The case studies have been extensively used for two coveted publications in books published by Springer (DoI shared)</li> <li>4. The case studies have been accepted in the national wetland policy making workshop by Govt. of India. (Workshop report attached).</li> </ol>   |  |
| A detailed course curriculum on scientific pricing of ecosystem services has been developed through multistakeholder consultation workshop with Asian Institute of Technology, Thailand, BBSMR Agril. University Bangladesh and Central Agroforestry Research Institute India, Jadavpur University and Calcutta University Kolkata India. | <ol style="list-style-type: none"> <li>5. The curriculum has been launched through a dedicated open access worldwide website for further studies and continued adaptive learning universally.</li> <li>6. All concerned resources on concept, methods and scientific evaluations of ecosystem services have been made available in the website for further reading and learning.</li> </ol> |  |

### 4. Key facts/figures

1. 38 online workshops, 10 in-person workshops and 06 field visits conducted in four Asian countries.
2. Capacities built in 200 Asian policy stakeholders and academia and 300 marginal community members currently using ecosystem services have been sensitized in understanding and evaluating the wetland ecosystem services being used by them.
3. 03 international workshops in AIT Thailand, BSMR Agril University Gazipur Bangladesh & Stadel Campus Kolkata India has been conducted and one Global workshop on 'Ecosystem Services, its significance in Community Resilience & Adaptation' has been organized in 8<sup>th</sup> APAN Forum, Incheon, Korea.
4. 02 coveted publications and one policy report has been published, along with 05 news and media coverages. Details are shared below.

## 5. Publications

### BOOK

Biorights: The Neo-economic Conservation Paradigm for Global South. Authors Dipayan Dey & Joyashree Roy (<https://link.springer.com/book/10.1007/978-3-030-91503-2> ).

### POLICY REPORT

<https://indianwetlands.in/uploads/Sahbhagita%20Workshop%20at%20NCSCM%20Chennai.pdf>

## 6. Media reports, videos and other digital content

1. <https://neindiabroadcast.com/2022/06/04/south-asian-forum-for-environment-stakeholders-workshop-at-guwahati/>
2. <https://economictimes.indiatimes.com/news/india/conserving-wetland-ecosystems-key-for-poverty-alleviation-says-assam-minister/articleshow/92007273.cms?from=mdr>
3. <https://www.indiatodayne.in/assam/story/wetland-ecosystem-services-are-paramount-importance-poverty-alleviation-food-and-livelihood-security-marginal-poor-parimal-suklabaidya-388290-2022-06-04>
4. <https://www.sentinelassam.com/north-east-india-news/assam-news/wetland-ecosystem-services-are-of-paramount-importance-parimal-suklabaidya-595306>
5. <https://www.devdiscourse.com/article/headlines/2061544-conserving-wetlands-important-for-poverty-alleviation-assam-minister>

## 7. Pull quotes

- A.** Mr. Parimal Suklabaidya (Hon Environment Minister, Govt of Assam, India)  
*“Conserving the goods and services of wetlands and sustainably intensifying the wetland ecosystem services are of paramount importance for poverty alleviation*

*as well as food and livelihood security for marginal poor segment of the society.”*

- B.** Dr A Arunachalam (Director, Central Agroforestry Research Institute, ICAR, Govt. of India) *“Scientific Pricing of Ecosystem services will not only help in strategizing our conservation priorities but would also empower the marginal communities through Payment of Ecosystem Services (PES)”*.
- C.** Md Saadat Hussain (CEO, O’Creeds, Bangladesh) *“The knowledge of ecosystem services and the scientific methods of pricing it has been empowering. This needs to be included in course curriculum so that future planners and practitioners can best use the same for more proactive planning and preparedness in Asian climate vulnerable countries, like Bangladesh”*.

## **8. Acknowledgments**

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## **9. Appendices**

- A. Scientific paper for APN Science Bulletin
- B. Policy Report on Wetland Conservation, Govt. of India
- C. Reports on International Workshops held
- D. Course Design and Curriculum on ESs along with website
- E. Photo Tour
- F. Financial Reports