ASSOCIATION OF RETIRED INDIAN COUNCIL OF AGRICULTURAL RESEARCH EMPLOYEES (ARICARE)

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ARICARE NEWS

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भारत का अमृतकाल

President's Desk

Whither Indian Agricultural Research*

Indian agricultural research is poised for a technological revolution driven by AI, IOT,biotechnology and regenerative practices. However, its success hinges on overcoming structural barriers like land fragmentation, digital divides and environmental degradation. By fostering inclusive policies, scaling farmer centric innovations, and strengthening global collaborations, India can transform into a robust engine of growth. Agriculture sector, long a cornerstone of Indian economy employs nearly 46% of workforce and contributes about 18% to GDP, yet faces constraints like fragmented land holdings, climate change and inconsistent growth. Recent developments and emerging trends, however signal a transformative path forward, driven by technology, policy reforms and focus on sustainability. Indian agricultural research spearheaded primarily by the Indian Council of Agricultural Research (ICAR) and its network of Institutes, Universities and Krishi Vigyan Kendras (KVKs) has made significant strides but faces critical challenges and opportunities as it navigates the future. Indian agricultural research has been pivotal in transforming India from a food deficient nation in 1960s to a self-reliant and marginally surplus food producer. The green revolution driven by high yielding verities (HYVs) of wheat and rice, was a land mark achievement facilitated by ICAR.

Indian agricultural research is increasingly leveraging cutting edge technologies to address productivity, efficiency and environmental concerns. ICAR's Gene editing targets crops like mustard, cucumber, potatoes, banana and others to enhance nutrition, develop disease resistant varieties, and synthesize bioactive compounds. Farmers are adopting AI powered tools like Kishan mitra chat boot, which provides multilingual guidance on Government schemes, satellite-based crop monitoring. AI algorithms optimize irrigation, predict yields and monitor pests via systems like the national pest surveillance system. ICAR has developed IOT based irrigation systems that integrate real time soil and weather data to enhance water efficiency and improving precision in tools like planting and spraying. However, chronic underfunding, aging researchers and weak infrastructure have eroded the effectiveness of research and extension agencies; new knowledge and techniques meant for farmers often do not reach the field. Research has focused mostly on rice and wheat neglecting rainfed areas and other crops which covers over 60% of cultivated land. Limited digital literacy and rural infrastructure hinder AI and IOT adoption. High implementation costs further restrict access to small farmers. While public investment in research exists, it's often insufficient compared to global standards. Private sector involvement is growing but skewed toward profitable crops; small farm sizes and subsistence farming limit economies of scale, making it hard to implement modern techniques. Over reliance on chemical fertilizers and irrigation has degraded soil and water resources. Research must balance productivity with ecological restoration. Research should be reoriented to address location specific needs, especially in dryland, hill, tribal areas by harnessing biotechnology, genetic diversities and new crop breeding techniques. Environmental concerns such as soil degradation, inefficient nitrogen use, water scarcity may be addressed through promoting climate smart, diversified and sustainable agriculture through integrated resource management and innovative extension methods. Expanding KVKs and digital platforms like unified farmers service can bridge the lab to land gap. Research should shift towards horticulture, floriculture and food processing driven by consumer demand and export potential. Partnerships with institutions like ICRISAT and IRRI and participations in global forums like FAO's seed treaty and

the like would contribute immensely toward technical solution and capacity enhancement in several frontier areas of technology. Tailoring technologies like decentralized rain water harvesting and low cost IOT devices to small farmers will enhance inclusivity. Streamlining fertilizer subsidy and agricultural insurance can support research adoption.

- Received from Former President , Aricare

Secretary's Desk

The ARICARE news is a half yearly e-publication of our Association covering the information of various activities of ARICARE and important scientific news of national and international importance in agriculture and allied subjects. It is widely circulated among the retired and serving employees/organisations of ICAR and other institutes since January, 2017. The Editorial Board members have tried their best for the publication of Volume 9 (2), 2025 of ARICARE news in time. During the period, the Governing Body and different Sub-Committee of ARICARE have performed various activities successfully with the cooperation of all members. The third GB meeting (2024-2025) was held on 23.05.2025 at ICAR-CIFE, Regional Station, 32, G. N. Block, Sector- 5, Salt Lake City, Kolkata - 700091 and 13 members were present. In the meeting, the date and venue of the 11 th Annual General Meeting (2024-2025) was finalized and other important issues were also discussed. The first GB meeting (2025-2026) was held on 25.7.2025 at Scientist's Home, ICAR-NBSS & LUP, Bhumi Vihar Complex, Block-GB, sector-III, Salt Lake, Kolkata-700097 and different Sub- Committee and editorial boards for the period 2025-2026 were formed. Several meetings of all Sub-Committee were held also during the period. Various important administrative/pension/medical issues, tour programmes, community services, celebration of Naba Barsha Baran, membership drive etc were discussed and most of the programmes were performed successfully. The 11 th Annual General Meeting of ARICARE for the year 2024-25 was held on 12.07.2025 at ICAR – CIFE , Kolkata and 53 members attended the meeting. In the AGM, the office bearers and executive Committee members were elected for the period 2025-2026.

Important events performed during the period are: (1) One International tour was organised in Cambodia and Vietnam from 05.02.2025 to 15.02.2025. Total 19 persons with family and guest participated in the tour covering important visiting places of Cambodia and Vietnam; (2) A short trip of two days from 15 to 16 th May, 2025 was undertaken to Itachuna Rajbari, Hooghly district and nearby places like Debanandapur, Bandel (birth place of poet Sarat Chandra Chattopadhyay) and Hangseshswari Temple, Bansberia etc. 10 members including their family participated in the trip; (3) During 14-15 th July, 2025, a short trip (2 days & 1 night) was organized to Gadiara, Howrah district which is a picturesque village at the confluence of Rupnarayan and Hooghly River. Total 7 persons including their family were present; (4) the celebration of Bengali Barsha Baran (1432) was organised at ICAR- NBSS & LUP, Regional Centre, Kolkata on 26 th April, 2025 and 50 persons including family members participated, (5) the e-publication of the Nababarsha issue of "ANWESHA" in April, 2025. (6) A Medical Camp, a new initiative of the Community Service Sub-Committee of ARICARE, was organized on 21 st February, 2025 for ICAR Working and Retired employees/family members in collaboration with B. P. Podder Hospital and Medical Research Ltd., New Alipore, West Bengal at ICAR-IVRI, Belgachia and 103 persons attended the programme; (7) On 02.03.2025, ARICARE Team visited at Charanekhali village, Basanti block,

Sunderban area to inspect the performance of School where Computer training is being organized by Sunderban Rural Health Awareness Welfare Association. It was decided that financial assistance of Rs 2000/- would be extended for a period of 6 months from March to August, 2025 and thereafter Rural Health Association would do the needful to continue this training facility for Children. During the period, six retired ICAR employees have joined in the ARICARE as life member and they are heartily welcomed to the Association. It is hoped that ARICARE will be enriched with their new ideas and active role in various activities. Sincere thanks to the President, Vice-President, Treasurer, Assistant Treasurer, the members of the Governing Body; the Chairman, Convener and members of all Sub- committee for organising the above events successfully and also thankful to the all members including their families for the active participation to make the events more enjoyable and memorial.

Editorial

Aricare News , July Issue , 2025 (Vol 9 ,No2) has been prepared and is now ready for on line release . News contains all our activities of our Association for the period from February to July , 2025 . As members of our association, we're part of a vibrant community of retired individuals who've embarked on a new journey. Retirement is a time to relax, recharge, and rediscover passions.Our Association was established in 2014 and 11 long years have been passed since its formation. Our association provides a platform to connect with all individuals being members, share experiences, and build meaningful relationships. Let's cherish these connections and support one another.

Retirement offers opportunities to explore new hobbies, pursue interests, and contribute to society. Let's stay engaged, active, and involved in our communities. As seasoned individuals, we possess valuable life experiences and insights. Let's share our wisdom with others, mentor, and inspire the next generation. Our association is more than just a group - it's a community that cares. Let's work together to create a supportive environment where everyone feels valued. As we navigate this new chapter, let's make the most of our time, pursue our passions, and enjoy each other's company. We're excited to share our stories, experiences, and insights with you through this newsletter.

As a part of contribution to the Society , we have started a community Services imparting computer literacy in a remote village in Sunderban area and also a Rural Livelihood Programme . It may be pertinent to mention and we were in Indian Council of Agriculture Research mainly undertaking the task of development in Agri and Allied activities in our Country with a focus in Research , Extension and Education.So , Rural Livelihood programme is a part of our pursuits which we had all nurtured during our professional life in ICAR in various forms. In this July issue , we have incorporated two articles under the Head " Research Thoughts" and concentrated our focus in the domain of Fisheries and Aquaculture . More importantly , the article on Sewage fed Fish Production is of stupendous relevance in fish production in East Kolkata wetlands and the use of water hycinath in accumulating Heavy Metals present in Sewage water is the work well appreciated by Scientists globally in Ramsar sites.Some of our professional engagements as narrated here in this issue is a matter of glory for our members and we request all of you to get yourselves to remain engaged in the area of your expertise not only in Science but also in any other topics of your interest. Our Tour programmes as conducted by Aricare in Domestic and International places are really enthralling and are able to give lots of enjoyment and freshness in our minds. The Editorial Committee extents hearfelt thanks to all of our valued members for

giving inputs in order to prepare this document and puts a note of profuse thanks to Dr KK Satapathy , Dr DC Nayak , Mr Sumit Ranjan Sarkar and Mr BK. Saha for functional contributions. **Best of Regards.**

Meetings and Events

Annual General Body Meeting (AGM)

11th Annual General Body Meeting (AGM) for 2024-25 was held on 12th July in the conference room of ICAR – CIFE, Kolkata . Meeting began with an welcome address by the Vice President followed by by 2 mintues Silence for the memory of Late Dr S. Ayyappan , Former Secretary , DARE , Govt. of India and DG , ICAR . Members who have attaing 75 and 80 years of age were felicitated by President of Aricare who , afterwards gave an account of activities of Aricare during 2024-25 followed by detailed presentation of the Secretary of our Association . Proceedings of last year AGM were unanimously passed by the members present in AGM. Audit was also presented by Treasurer . Ammendment of Rules in Aricare as decided and discussed earlier has not yet been incorporated and attempts will be undertaken in thios task.

Chairpersons of various Sub –Committee of Aricare , Pension , Administrative and Medical , Community Service , Tour Sub-Committee , Social and Cultural Committee had presented the respective achievements and shared their experiences with all members present in AGM. There was a lively discussion taking place in the conference room regarding **Notional increment** , **Commutation of Pension** , **Community Services** , **Domestic and International Tours** , **Festivals /picnic** organized by Aricare. Office bearers (6 persons) were elected through In-House election conducted by Dr B. K. Bandopadhyay , Former secretary/ Founder Member , Aricare, appointed as a **Returning officer** by the President of Aricare. Office Bearers thus elected are as follows : Dr M. Datta , Priesident , Dr S.M.Deb , Vice President , Dr D.C. Nayak , Secretary , Dr G. Bose , Asstt. Secretary , Mr B.K. Saha , Treasurer and Dr Debabrata Das , Asstt. Treasurer.

As declared by the Returning officer , Dr Bimal Kumar Bandopadhyay in the House , the following persons were elected to become the EC members of Aricare. They are as follows : Dr S.S. Pal , Dr (Ms) Syamali Chakraborti ,Dr. K. Das , Dr A.N. Roy , Dr Debasis Pal ,Dr Asok Biswas, Dr (Ms) Madhumita Das , Dr S.K. Mahapatra ,Dr B.K. Mahapatra and Mr S.K. Pal . Ex – officio members , Dr K.K. Satapathy , Dr B. K. Bandopadhyay and Mr Sumit Ranjan Sarkar had agreed to help the Association whenever needed. It was also decided that the three members were the permanent Invitees of all Meetings/ events of Aricare. Meeting came to an end with Vote of thanks proposed by Asstt. Secretary followed by sumptuous lunch arranged in Training Hostel ,ICAR – CIFE .


AGM Meeting held in ICAR – CIFE , Kolkata

Felicitation to senior Members of Aricare at 75 and 80 years of Age

Members felicitated were Dr Dinabandu Kumar(CRIJAF , Barrackpur) ,Dr Dhirendra Nath Maitra (CRIJAF , Barrackpur) ,Dr Suprakash Saha(CRIJAF , Barrackpur) , Dr Swapan Kumar Bhaduri (NINFET , Kolkata) Dr. Kant Ranjan Mahato (NRRI , Cuttack) , Mr Nani Gopal Naskar(NINFET , Kolkata) at 75 years of age and Dr Saradindu Choudhury (IARI , Pusa , Samasthipur) and Dr Monoranjan Saha (IARI , New Delhi) at 80 years of age. Felicitated Members had also expressed their present life style and past service life experiences. They had also thanked Aricare for this memorable event. Outgoing President Dr K.K. Satapathy and Treasurer Mr Sumit Ranjan Sarkar were felicitated and present President Dr M. Datta was also felicitated in the meeting.

Don't Worry about Getting Old , Worry about Thinking Old

Members (53 persons) present in AGM

Governing Body Meeting

Governing Body Meeting for 2024-25 was held on 23-05-2025 at ICAR – CIFE , Bidhannagar , Kolkata and 13 persons including office bearers and EC members had attended the meeting to discuss mainly regarding the ensuing AGM for 2025-26. GB meeting was attended by Drs KK Satapathy , DC Nayak ,BK Bandopadhyay , Ms Syamali Chakrabarti , K Das ,SS Pal ,SK Mahapatra , Ms Madhumita Das , BK Mahapatra , Asok Biswas , Mr Sumit Ranjan Sarkar , Mr BK Saha and Mr SK Pal .President welcomed the members present in the meeting Meeting started as per agenda . Minutes of the last GB Meeting held on 22.01.2025 were confirmed. Review of the community Services and utilization of fund would be done shortly through a visit to the village at Sonarpur. Hilsa Utsab may be arranged in the month of August , 2025 at ICAR-CIBA , South 24 Parganas , kakdwip . Treasurer had raised an information that total expenditure would vary from Rs 70,000 to 80,000 per year and it is a matter of great concern . It was decided that AGM would be held on 12th July at ICAR – CIFE , Kolkata after receiving the permission to hold the meeting in CIFE campus in Kolkata. Meeting came to an with vote of thanks to the Chair.

A view of GB Meeting and Members present in the Meeting

New Governing Body Meeting (**GB)** for 2025-26 was held on 25th July , 2025 at ICAR-NBSS & LUP Guest Hose , Salt Lake, Kolkata. The meeting was attended by Drs M. Datta (President) , SM Deb (Vice President) , DC Nayak (Secretary) , G Bose (Asstt. Secretary) , Mr BK Saha (Treasurer) , Drs D Das (Asstt. Treasurer) , K Das , SK Mahapatra , AN Roy . Dr B. K Bandopadhyay and Mr Sumit Ranjan Sarkar were present as Invitees. Meeting was initiated by welcoming all the members by the President. Meeting was continued as per the agenda items.

1st meeting of GB with the **newly elected Members** held in ICAR – NBSS & LUP, Guest House , Kolkata

In the Governing Body meeting held on 25.7.2025 at Scientist's Home, ICAR-NBSS & LUP, Bhumi Vihar Complex, Block-GB, sector-III, Salt Lake, Kolkata-700097, the different Sub-Committee of ARICARE for 2025-26 are formed. The list is given below:

DIFFERENT SUB-COMMITTEE of ARICARE (2025-26)

Pension, administration and medical sub-committee

1. Dr. Sankar Kr Mahapatra (Chairman) 2. Mr. Sumit Ranjan Sarkar (Convener) 3. Dr. B. K. Bandyopadhyay 4. Dr. A. N. Roy 5. Dr Sitangsu Mohan Deb 6. Dr. Swarup Kumar Chakrabarti 7. Dr. Gautam Bose 8. Mr. Balaram Chatterjee

Tour Sub-committee

1. Dr. Syamali Chakrabarti (Chairperson) 2. Mr. Binoy Kr Saha (Convener) 3. Dr. Madhumita Das 4. Dr. Dwijendra Barman 5. Mr. Ratan Kr Das 6. Dr. Sankar Kr Mahapatra 7. Dr. Biplab Saha

Social and cultural Sub-committee

1. Dr. Krishnendu Das (Chairman) 2. Dr. Debabrata Das (Convener) 3. Dr. Syamali Chakrabarti 4. Dr. Sachidulal Raychaudhuri 5. Mr. Swapan Kumar Sinha 6. Dr. (Mrs.) Tapati Banerjee 7. Mr. Binoy Kr Saha

Community Services Subcommittee

1. Dr. Sitangsu Mohan Deb (Chairman) 2. Dr. Krishnendu Das (Convener) 3. Dr. Alok Nath Roy 4. Dr. Pratap Kr. Mukhopadhyay 5. Dr. B. K. Mahapatra 6. Dr. Asok Biswas 7. Dr. Debabrata Das.

Digital Media Sub-committee

1. Dr. Gautam Bose (Chairman) 2. Dr. Krishnendu Das (Convener) 3. Dr. S. S. Pal 4. Dr. Samir Kumar Barari

A. Editorial Board "ARICARE" Newsletter

1. Dr Mrinmoy Datta 2. Dr. Asok Biswas 3. Dr. Samir Kumar Barari

B. Editorial Board "ANWESHA"

1. Dr. Sudhansu Shekhar Pal 2. Dr. Asok Biswas 3. Dr. Samir Kumar Barari

C. Administrators 'WhatsApp'

1. Dr. Gautam Bose 2. Dr. Sitangsu Mohan Deb

D. Administrators 'Face book'

1. Dr. Krishnendu Das 2. Mr. Binoy Kr Saha

E. Administrators 'ARICARE Website'

1. Mr. Sumitranjan Sarkar 2. Mrs. Jayashree Nath 3. Dr. (Mrs.) Tapati Banerjee

The Administrators of 'WhatsApp', 'Face book' and 'ARICARE Website' will be associated with the Digital Media Sub-committee. President, Secretary and Treasurer will be ex-officio member of all the Sub-Committee. The chairman of the different Sub-Committee is authorized to induct any other member in their committee as they deem fit.

ARICARE Tour Sub- Committee

International Tour

Tour Sub- Committee of Aricare is a vibrant committee organizing both International and domestic tours along with short tour so that our members are in a position to see many places with lots of amusement . An International tour to Vietnam and Cambodia was organized during the period from 5th to 15th February , 2025 and 19 persons were present in this International Tour . The tour offers a blend of cultural experiences, historical sites and natural beauty with options for cruises, city explorations and temple visit. Popular itineraries were

visiting Hanoi , Ho chi Minh City , Halong Bay , Mekong Delta and ancient temple ofSiem Reap and Phnom Penh in Cambodia.

Aricare Members ia visit to Vietnam and Cambodia

Ho Chi Minh City in Southern Vietnam

Angkor Wat Temple in Cambodia

Short Domestic Tour

Aricare had Organized a short trip (2days 1 night) from 15th to 16th May, 2025 to Itachuna Rajbari which is a heritage hotel and tourist spot in the Hoogly District of West Bengal . It was established in 1766 by the Kundan family of Maratha origin and has been transformed into Heritage Homestay. The Rajbari is known for its historical significance, architectural beauty and as filming location for various movies and television shows. Birth place of Novelist Sarat Chandra Chattopadhyay at Debanandapur, Bandel, Hooghly and Hangseshswari Temple, Bansberia were also visited . 10 members with their family had participated in the tour.

A group of Aricare Members with their family

Itachuna Rajbari as shown here

During 14-15 th July , 2025 **,Aricare** had organized a short trip (2 days & 1 night) to Gadiara which is a picturesque village at the confluence of Rupnarayan & Hooghly river . 4 members with their family (Total 7 persons) were present in the short tour amidst lush green surroundings and we have enjoyed the Nature , river with an unforgettable experience of rural Bengal Authentic Charm.

Gadiara , West Bengal Tourist Lodge

Gadiara Ferry Ghat

ARICARE Pension , Administration and Medical Sub-Committee

Medical Camp

Preliminary meeting of ARICARE team was held on 31.01.2025 at ICAR-IVRI, 37, Belgachia, Kolkata to organize a Health Checkup Camp for the members and their families in collaboration with B. P. Podder Hospital and Medical Research Ltd., New Alipore and ICAR-IVRI, Belgachia in the month of March. Meeting was attended by Dr.Arnab Sen, I/C, IVRI, Dr. K.K.Sathpathy, Dr. Mrinmoy Datta, Dr.D.C.Nayak, Dr Gautam Bose ,Mr Sumit Ranjan Sarkar and .Mr B.K.Saha and Mr Amit Chandra, Representative of B.P. Poddar Hospital .

Discussion at ICAR – IVRI , Regional Centre , Kolkata

Medical Camp an initiative of ARICARE for ICAR Working and Retired Employees/Families Members was held on 21st February, 2025 in collaboration with B.P.Podder Hospital and Medical Research Ltd., New Alipore, West at ICAR-IVRI, Belgachia.Blood Sugar , Blood Pressure , Eye Test , ECG and Pulmonary test were carried out and 103 persons were present. At validictory programme, a token of appreciation was given to representative of B.P.Podder Hospital by Dr. Mrinmoy Datta, Vice President of ARICARE and Chairman of Community Sub-Committee.

Medical Camp arranged by Aricare

Sub – Committee Meeting

A combined meeting of the Community Service Sub-Committee and Administration, Pension and Medical Sub--Committee of ARICARE was held on 11.03.25 (Tuesday) in the ICAR- NBSS & LUP, Scientist Home, Block-GB, Sector - III, Salt Lake, Kolkata. The meeting was attended by Drs M. Datta , DC Nayak ,K Das ,P Sanyal ,BK Bandopadhyay , SK Mahapatra , Ms Syamali Chakraborti , AN Roy ,S Sarkar , Mr Sumit Ranjan Sarkar , Mr BK Sahs and Mr Balaram Chatterjee. The meeting started with discussion in Medical issues and thereafter community Services. Nos of Hospitals empanelled with ICAR Institutes located in Kolkata were varying from one Institute to another and such disparity may be removed . Retired employees coming from ICAR Institutes located outside West Bengal may face difficulty to get the Medical IPD card issued from local ICAR Institutes . Sub- Committee of Pension/ medical/ Administration may look into these matter . In case of any problems regarding Pension or other related issues , querries may be raised in Pension Adalat whenever convened by Pension Disbursing Unit , ICAR- CIFRI

Computer literary classes are held in a remote village in Suderban in collaboration with a NGO ,Suderban Rural Health Association and financial assistance of Rs 2000/- is being made from the fund of Community Services , Aricare . Such Financial Assistance would be continued for a period of 6 months more and afterwards NGO will continue to maintain the computer classes. Total ampunt to be spent from Community Services fund is Rs 12000/- to continue for a period of 6 months.Black Bengal Goat Distribution is being initiated in a village in Sonarpur in collaboration with KVK under Ramakrishna Mission . Committee members of Community Services would pay a visit to

the village at Sonarpur to see the performance of goat already supplied to 4 villageres and future course of action .

Views of Combined meeting of Sub - Committee

On line Meeting of Sub – Committee

On the 9th April, 2025 ,Aricare Sub - Committee of Pension , Medical and Administrative was held and google on line meet was attended by Drs KK Satapathy , M. Datta , SM Deb and Mr Sumit Ranjan Sarkar to discuss regarding the Medical circular issued on 1st April ,2025 by ICAR – NINFET showing the difference in Monetary cap in cashless limits for Regular (Rs 10 lakh) and Pensioners (Rs 3.0 lakh) and not consideration of medical Insurance in combination with ICAR Hospital empanelment.It was decided that a team of officials would Director of ICAR – NINFET to solve this matter.

On 28th April , 2025 , on line google meet of Aricare Pension , Medical and Administrative sub –committee was held and attended by Drs M. Datta , SK Mahapatra , SM Deb ,BK Bandopadhyay , Chirantan Chattopadhyay and Mr Sumit Ranjan Sarkar . It was learnt that Director , ICAR- NINFET had kindly agreed to meet our Pensioners Association on 30th April , 2025 at 3 PM . It was decided that the following persons , Drs DC Nayak , SK Mahapatra , SM Deb , NC Pan , Subhash Saha and Mr Sumit Ranjan Sarkar would meet and other officials at ICAR – NINFET.

On the 30th April , 2025 , Director , ICAR – NINFET had met Retired officials from Aricare (Drs DC Nayak , SK Mahapatra , SM Deb , NC Pan , S. Saha and Mr Sumit Ranjan Sarkar) and Administrative officer of ICAR – NINFET was also present in the meeting . It was agreed to remove the discrimination in cashless IPD treatment for Regular and Pensioners and accordingly a separate Medical Circular would be issued. Medical insurance along with ICAR empanelment Hospitals bill would also be considered . Some more hospitals being dropped in the order dated 1/04/2025 ould be included .

ARICARE Community Services Sub-Committee

Visit to Suderban at Computer Training Centre

On 02.03.2025, there was a visit of the ARICARE Team at Charanekhali, Sunderban area to inspect the performance of School where Computer training is being organized by Sunderban Rural Health Awareness Welfare Association. Dr. Mrinmoy Datta, Dr. Prosenjit Sanyal, Dr. Syamali Chakraborty and Shri B. K. Saha had gone to the village for inspection of Computer Training to Boys and Girls of the locality. It was decided that financial assistance of Rs 2000/ would extended for a period of 6 months from March to August , 2025 and therafter Rural Health Association would do the needful to continue this training facility for Children.

Computer Training in Sunderban

Visit to KVK , Sonarpur

Aricare Members (Drs K Das , SM Deb , D Das and two more experts) had visited Krishi Vigyan Kendra , Sonarpur to interact with beneficiaries of distributed goats on 28/06/2025 . There was a discussion regarding the goat rearing by the Experts with farmers of the village for Rural Livelihood programme by Aricare.

Aricare members in front of KVK , Sonarpur

Goat Farmers

Goat is poor mens' ATM

ARICARE Social and Cultural Sub-Committee

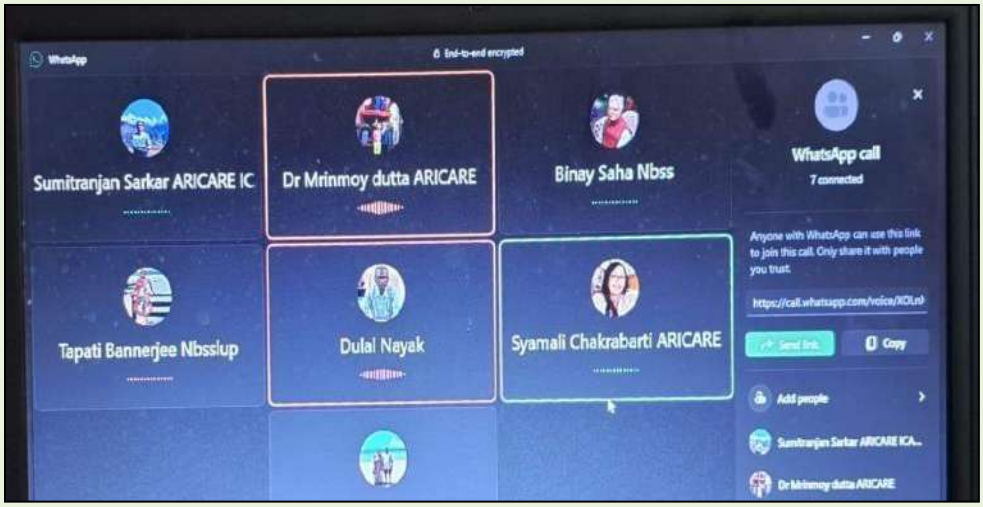
The Nobo Barsobaran (1432) festival of ARICARE attended by 50 members along with families was held at ICAR-NBSS & LUP, Salt Lake, Kolkata on 26th April , 2025. After inauguration of the programme by the President of our association , there was recitation of Poems followed by songs, Sruti Drama etc by the members to make the programme enjoyable and pleasing .

Nobo Barsobaran Programme

Members present in the Programme

Photograph of Members present in Borshoboron Progrogramme

On line Meeting



Online WhatsApp group meeting of ARICARE Social and Cultural Sub-Committee was held on 30.07.2025 to conduct our **Illish Festival** for this year. Expected date is third week of August, 2025. Members were present in the meeting - Dr. Mrinmoy Datta, Dr. D. C. Nayak, Dr. S. Roychoudhury, Dr. K. Das, Dr. Syamali Chakraborty, Dr. Tapati Banerjee, Mr S. R. Sarkar and Mr B. K. Saha.

Life Member

During this period , 6 (six) persons retired from ICAR have become life Member of ARICARE and they are as follows

- Dr. Chirantan Chattopadhyay
  Former Principal Scientist , ICAR – CRIJAF,
  Bud Bud , Burdwan & Former VC , UBKV ,Cooch Behar

- Dr. Dwijendra Barman
  Former Principal Scientist
  ICAR-IARI , Regional Station , Kalimpong
  West Bengal.

- Mr Amalesh Khan
  A. C.T.O
  ICAR – NINFET , Kolkata

- Dr Samir Kumar Barari
  C.T.O

ICAR-RCER, Patna

- Dr Madhu Sudhan Kundu
  Principal Scientist
  ICAR – CIARI , Port Blair

- Dr Tapati Banerjee
  Principal Scientist
  ICAR – NBSS & LUP
  Regional Centre , Kolkata

Dr Chirantan Chattopadhyay

Dr Dwijendra Barman

Mr Amalesh Khan

Dr Samir Kumar Barari

Welcome New Members - Aricare

Dr Madhu Sudhan Kundu

Dr Tapati Banerjee

Our Achievements / Engagements

Brief of Engagements of **Dr. P. Das**, Former Deputy Director General (Agricultural Extension), ICAR, New Delhi ;

- Attended the National Seminar on Extension Strategies for Sustainable Food Systems in Dryland Areas, Central Agricultural University, Jhansi.- Presented a paper on Extension Strategy for Sustainability and Levels of Action in Management of Dry Land Agriculture. - Attended the Inaugural Session as Guest of Honour. -Chaired: Technical Session 1 & 2 on **5-6 March**. -Chaired: Valedictory Session on **7 th March.**
- Attended the Brainstorming on Futuristic Economics: Promoting Sustainable Development and Welfare, organized by Central Agricultural University, Imphal, and Indian Society of Agricultural Economics; held at the College of Agricultural Engineering and Post Harvest Technology, Gangtok, Sikkim. Presented a paper on Sustainable Natural Resource Management in Rice- Wheat Production Systems. Attended both the Inaugural and Valedictory Session as Guest of Honour during **11-12th March**
- Chaired: Third Interaction Meeting of the NGO Review Committee at Kodaikanal, Tamilnadu - visited the KVKs at Ramanathpuram, and Theni. - visited the Horticulture Research Station at Kodaikanal **during 24-26 March.**
- Attended the Consultancy Meeting of ITC, Lucknow **during 24-29th March.**
- Visit to KVK, Unnao, Uttar Pradesh. -Participated in the Foundation Stone Laying Ceremony of the Centre for Excellence in Honey Production **during 29-30th March.**
- **-**Attended the Inauguration of " Think-A-Thon on Futuristic Education" College of Fisheries, Agartala, Tripura.-Chaired the Technical Sessions 2 nd 3 on **10th May.**
- -Attended the Fifth Convocation of Central Agricultural University, Imphal.-Conferred **D.Sc. (Honoris Causa) on 11th May**.

- Invited by Techno India University Tripura (TIUT) and delivered a lecture on -ynamics of Outcome-Based Education and Its Application-1 -Dynamics of Outcome-BasedEducation and its Application-1 on **12th May.**
- Attended 12 th National Seminar on Futuristic Agriculture: Technology, Sustainability ,and Beyond.-Chaired the session on Theme 3-Participatory Research and Knowledge Sharing. -Chaired the session on Theme 6-Role of Youth and Women in Agriculture. -Attended the Validictory Session as the Guest of Honour during **20-22 June**

Dr . K.K. Satapathy , Former Director , ICAR- NINFET, Kolkata attended a training programme on Integrated Farming in a village (Bagma) in the District of Gomati , Tripura rganised by ICAR Research Complex for NEH Region , Tripura on 20th February.

Dr M. Datta , Former Joint Director , ICAR Research Complex for NEH Region , Tripura attended attended a training programme on Integrated Farming in a village (Bagma) in the District of Gomati , Tripura , organized by ICAR Research Complex for NEH Region, Tripura on 20th february and Published a book " Soil Acidity Management Options for Higher Crop Productivity (U.C. Sharma , **M.Datta** and Vikas Sharma) by **Springer Nature , Switzerland, 2025** (586 pp).

Dr Madhumita Das Former Director (Acting) / Principal Scientist , ICAR – IIWM , Bhuvaneswar , Odisha evaluated a MSc Thesis on "Effect of nano-urea supplemented with normal urea on winter rice grown under STCR approaches" of Soil Science Department, **Assam Agricultural University**, Directorate of Post-Graduate Studies, Jorhat and submitted the report on 2nd February 2025.

Dr. B.K. Mahapatra, Former Principal Scientist and Scientist In-charge, ICAR-CIFE, Kolkata had the following engagements .

- Invited as Special Guest on the occasion of World Wetlands Day to discuss technology and its possibilities on 2nd February.
- Took an Interactive Session at LINAC-NCDC Fisheries Business Incubation Center (LIFIC), Govt. of India during 11-12th February.
- Participated in on line session on Feed Management in Fisheries Part-I & Part II for LIFIC/ LINAC on 29th April and 21st May.
- Delivered 'Professor N.C. Datta Memorial Award Lecture 2025' organized by the National Environmental Science Academy and Indian Science News Association, Kolkata on 2nd May.
- Appointed as Paper Setter for 4 years B.F.Sc . 6th semester Examination 2025 and Appointed as Moderator in Aquaculture Management at Vidyasagar University on 5th May& 26th May.
- Participated in Online class on Ornamental Fish Breeding and Culture in ICAR-CIFE, Mumbai on 20th June.
- Appointed as an Expert for taking an interview at ICAR- CIFRI, Barrrackpore, Kolkata on 30th June.

- Participated as Chairman in Technical Session for sharing of success stories by fish farmers and Farmers-Scientist interaction at ICAR-CIFE, Kolkata on National Fish Farmers Day (10th July).
- Published a **book** on Important Marine Reef Fish Genetic Resource of India. Narendra Publishing House, New Delhi, (ISBN: 978-93-5651-587-1 by BK Mahapatra and Ghosh Swagat , 2025.
- Published a **book** on Glossary of Fisheries and Aquaculture Terms-1 (GFAT-1). Narendra Publishing House, New Delhi, (ISBN: 978-93-5651-06-5) , 2025.
- Published **Handbook** of abbreviations in fisheries. Narendra Publishing House, New Delhi, (ISBN: 978-93-5651-460-7) , 2025.
- Published a **book** on FAQ on Fisheries and Aquaculture. Narendra Publishing House, New Delhi, (ISBN: 978-93-5651-772-1) , 2025.

Research Thoughts

Prioritizing sustainability issues in Freshwater Aquaculture

Pratap Mukhopadhyay, Former Principal Scientist , ICAR- CIFA , Bhubaneswar

Freshwater aquaculture is a viable rural enterprise in most parts of India . Its contribution towards provision of human food having very high biological value , creation of livelihood options , conservation of endangered aquatic bioresources are becoming significant. Many of the technical aspects of aquaculture including year-round seed production in captivity , essential pond management measures , nutrition dietetics , fish health monitoring have been more or less standardised and all these together contributed to a 10-fold increase in production over the past decades. Indian aquaculture today (world's second best) is based mainly on freshwater cyprinids consisting of 3 major carp species and 3 species of exotic carps. The sector has been growing further by way of horizontal expansion and higher productivity per unit area with the available technology back up, financial investment/ credit support, entrepreneurship development and strategic planning . Such rapid strides in its development have also simultaneously brought several issues and problems to the forefront like inconsiderate application of feeds/ fertilisers , unapproved chemicals / weedicides,/anti-parasitic agents /anti-microbials /endocrine disrupting chemicals and xenobiotics in fish husbandry (affecting water and sediment quality) aimed at obtaining high yields per unit water area . Such a scenario raises justifiable concerns related to public health ,safety of harvested fish as human food and above all environmental sustainability thereby necessitating a pro-active approach to prioritize sustainable farming system that takes care of fish production without ignoring environmental factors and also giving due cognizance to the indigenous traditional knowledge while at the same time taking benefit of the available aquaculture technology packages .

It is expected that if aquaculture production in India continues to maintain the much needed current growth rate then adoption of innovative approach based on ecological principles are mandatory. Long term sustainability and future aquaculture

expansion should be aimed at development of farming system, which improves the overall efficiency of resource use and are based upon primary renewable resources. This will also have relevance in the context of reduced clean freshwater availability in the foreseeable future , emerging threat perceptions including natural resource degradation, climate change effects and new global trade regulations. Precision feeding strategy in a sustainable aquaculture system :

In the process of healthy fish production from aquaculture, nothing can be more important than sound nutrition and adequate feeding. Feeding to near requirement can be achieved by a number of means provided there is close monitoring of the trophic activity and feeding behavior of cultured fishes. This will lead to homogeneous growth of all the fish species in a water body by decreasing competition for feed what is expected in a sustainable farming system. Therefore,a general understanding and assessiment of the fish feeding behaviour(different from terrestrial animals) right from initial recognition till intake is of use. The practice should be to feed the fish and not water and to be precise, when fish needs and not when farmer can or have time .This will allow fish to grow well with maximum feed utilization efficiency . Feeding practice should be in tune with the biological rhythm. For example, catfishes prefer feeding towards the evening while carps feed only during day time. The frequency of feeding depends primarily on two factors- body size and water temperature since both these factors affect the passage of feedstuff through the digestive tract. Rapid feed intake lessons its residual time in aqueous system thereby reducing chance of feed related water spoilage . The feed wastage in aquaculture is of common occurrence and happens mainly due to mismatch between culture system, feeding behaviour and nutritional physiology of the cultured species . Feed waste not only has a direct economic impact for the aquaculturist but also contributes to water pollution.Such a situation will have negative environmental impact and may have consequences on human health also. The logical steps may be (i) supply of the acceptable quality of the feed in tune with the voluntary feed intake (VFI) . A number of environmental as well as intrinsic factors affect feed intake. Of the biological factors fish size, physiological stage and genotype are known to influence VFI (ii) such feeds having the required bioavailable nutrients and digestible energy are to be prepared in the proper form (chowmein type ,small spherical/granular shape, flake type-floating) that may provide special physical properties like smoothness ,water stability and correct feed particle/pellet size enough to be digestible by the fish species corresponding to the mouth opening to facilitate feeding in water .Devising a feeding strategy (feed sources, preparation and schedule) taking into account specific biological rhythm in order to reduce emission of metabolic waste products is thus vital. . It may be required to maintain the dissolved oxygen content using the aerators after feeding or during unfavourable weather conditions in case there is oxygen depletion Timing to start feeding the fish is important for achieving efficient feed conversion. Precise control of feed delivery is essential to optimise feed conversion and maximize return.Three major feeding devices to distribute feed for fish in aquaculture are in vogue. There are: hand-feeding(broadcasting) , simple techniques like perforated feed bags attached to

bamboo poles /cane trays hung from bamboo poles, mechanical feed applicator or demand feeder which fishes are capable of using well in pond conditions. A proper feeding strategy (in tune with the biological rhythm) is the one which increases feed efficiency, decreases the environmental load and maintains the body composition/profile of the fish so -crucial from organoleptic point of view.


Fish Production Management

Sustainability through aquaculture diversification: Despite the fact that number of indigenous and endemic freshwater fish species occurring in India is the highest among all nations and we are in possession of the vast resources and rich faunal biodiversity (with more than 10% of global fish diversity), the index of biodiversity being utilised for aquaculture is only too low again , out of this also 85% of production is contributed by three species of Indian major carps- catla, rohu and mrigal ,5% by air-breathing fishes and 10% by rest all species together. Thus carps continued to be the mainstay of Indian aquaculture even today. We have besides carps, unique species like catfishes ,murrels, perch, featherbacks, loaches ,eels ,cichlids ,number of shellfishes and a host of small indigenous fish species. In fact ,there are more than 600 freshwater fish species and propagation of even one sixth of this could help utilise the primary production for our benefit at no extra cost. During the sixties when the campaign of increasing the country's freshwater fish production began with a mission mode initiative, the first task was to remove or kill the existing small indigenous fishes in the ponds and tanks (terming them as fish of no importance in fisheries development) using a natural piscicide ,mohua oil cake (which acted initially as a fish poison but later became a manure contributing to growth of natural food organisms in the waterbody),followed by stocking with induced bred seeds of catla ,rohu mrigal ,grass carp, silver carp and common carp. It is true that in this process fish production was significantly raised within a year with lucrative economic returns and we continuously became the second best in the world but at the same time we lost the diversity. The same trend of culture , i.e., carp polyculture system still continues. Those smaller ones-always in high consumer demand (fish eaters prefer diversity of fish) regionally are being conserved separately in sanctuary type of ponds at individual or group levels

mostly in panchayets/talukas like in rural Bengal . With the freshwater shortage, currently a burning issue and that there is a scope for better utilisation of thousands of ephemeral ponds and impoundments, swampy areas reclamation cost of which are very high and which are otherwise unsuitable for long duration carp culture but could be safely utilised for the farming of some of these air-breathing fishes and certain small fish species(most of these species are self-recruiting and thus one time stocking is enough) offering livelihood options for marginal village people became an eye opener .The idea of culturing them in cages installed even in large ponds and lakes only to have fish diversity in our daily diets was taken up Self-help groups(SHGs) and several dedicated NGOs working across the county .It is nice that they realised the fact that diversity can lead to sustainability ,enhanced water productivity ,preserve the environment , maintain ecological balance and above all conserve indigenous biodiversity thereby profitability both in terms of economy and ecology..

There is a large amount of scientific literature on the merits of fish eating on human health (supply of animal protein of high biological value, reduction of cardio vascular ailments due to high levels of long chain n-3 PUFAs, supply of vitamins like cyanobalamine and important mineral elements like Ca, P, Zn, Iodine). Aquaculture thus has a major role in providing bases for better human health. It is also known that one can tailor aquaculture product quality through proper application of nutritional principles. For example even in a semi-intensive system it is possible to modify the fatty acid composition of fish through small changes in the feed mixture (presence or absence of oilseed cake, rice bran which are deoiled or not).

East Kolkata Wetlands (EKW) Fisheries: An Integrated Socio-Ecological Model of Wastewater Aquaculture, Urban Sustainability, and Livelihood Resilience

Bijay Kali Mahapatra , Former Principal Scientist & Scientist-In- Charge , ICAR-CIFE , Kolkata

The East Kolkata Wetlands (EKW) are one of the most remarkable examples of an integrated socio- ecological system where wastewater is used as a resource for food production, wastewater treatment, and ecological restoration. Situated on the eastern outskirts of Kolkata city, the wetlands are home to vast fish ponds (locally called bheris) and marshes that support both aquaculture and agriculture. Recognized under the Ramsar Convention as a wetland of international importance, the East Kolkata Wetlands have been managing untreated wastewater for decades, converting it into vital resources like fish, vegetables, and other aquatic products. The system is one of the world's largest wastewater-fed aquaculture systems, supporting a diverse array of species and providing livelihoods for tens of thousands of people.

The East Kolkata Wetlands play a pivotal role in managing Kolkata's sewage by utilizing natural processes that filter and treat wastewater. The wetlands receive nearly 980 million liters per day of untreated domestic sewage, primarily from urban settlements. This untreated wastewater flows into shallow ponds, which act as natural oxidation lagoons where a range of biological processes take place, facilitated by bacteria, algae, and aquatic plants . The efficiency

of the system is remarkable: studies have shown that the treatment process reduces Biological Oxygen Demand (BOD) by over 80%, and eliminates fecal coliforms by more than 99.9%. Unlike conventional sewage treatment plants that require significant energy inputs, the EKW system is energy-efficient and utilizes no mechanical treatment—a major cost-saving feature for Kolkata city . Furthermore, as the wastewater passes through these ponds, it nourishes aquatic life, supporting a variety of fish species and aiding in nutrient cycling. This ecological process highlights the benefits of nature-based solutions for urban waste management.

Entry of Raw Sewage

Sewage Fed Fishery pond in EKW

The East Kolkata Wetlands host a rich variety of biodiversity, supporting 58 fish species, 11 prawn species, 3 crab species, and over 20 mollusk species . These wetlands not only provide ecological services by purifying water but also help in maintaining biodiversity and supporting a thriving food web. The wetlands' rich vegetation plays a key role in carbon sequestration, helping to mitigate the impacts of climate change by absorbing and storing carbon dioxide . Moreover, the wetlands act as an effective flood mitigation system during monsoons, preventing floodwaters from overflowing into nearby urban areas. The wetlands' ability to retain water also helps regulate the water table, a crucial function in the face of rapid urbanization. These ecosystem services have been valued at around INR 300 crore annually in terms of waste treatment alone, highlighting the importance of preserving the East Kolkata Wetlands for their ecological benefits.

EKW provides a crucial contribution to the local economy, particularly in terms of fish production. Annually, the wetlands produce an estimated 18,000 to 24,000 metric tons of fish, meeting around 30% of Kolkata's fish demand . These fisheries contribute to both local food security and regional trade, with fish being a staple part of the diet of the surrounding population. The fish production system is primarily based on cooperative-based management, with over 50,000 individuals directly engaged in fishing activities. These cooperatives manage approximately 245 fish ponds across the wetland area, which collectively produce up to 240,000 quintals of fish per day. Fish farming in these wetlands follows an organic model, with minimal external inputs, making it both cost-effective and environmentally sustainable.

The EKW wetlands are also crucial for local agriculture. The nutrient-rich water from the fish ponds supports vegetable cultivation, with 150 tons of vegetables produced daily. Vegetables such as spinach, cauliflower, ladyfinger (okra), and bottle gourd are grown using water that has been naturally treated by the wetlands' ecosystem. This agricultural practice is particularly important for food security in the urban context, where land availability for farming

is limited.In addition to crop cultivation, the wetlands support nutrient cycling and provide a low-cost alternative to chemical fertilizers, as the water used for irrigation is rich in nitrogen and phosphorus, which are essential for plant growth. This integrated system of aquaculture and agriculture is an excellent example of sustainable resource management that enhances both food security and economic resilience

The East Kolkata Wetlands provide direct livelihoods for approximately 118,000 people, with the majority of them involved in fishing and agriculture. The wetland areas are organized into cooperatives that manage the resources and ensure that the system is operated sustainably. Local fishers rely on the wetlands for their income, and the community is organized into cooperatives, which govern the allocation of fishing rights, fish production, and resource management. These cooperatives not only manage the wetlands but also serve as a platform for community empowerment, where local people have a direct stake in the conservation of the wetlands and the sustainable management of resources. However, there is a growing concern that younger generations are leaving the community in search of urban jobs, leading to a decline in traditional ecological knowledge . This demographic shift poses a challenge for maintaining the cultural heritage of the East Kolkata Wetlands and for ensuring the continuity of traditional sustainable practices.

One of the most pressing **challenges** to the East Kolkata Wetlands is the rapid urban encroachment and the conversion of wetland areas for residential and commercial development. Over the past few decades, the area covered by wetlands has shrunk dramatically. Between 1991 and 2023, the total wetland area decreased from 91.2 km² to 33.4 km², primarily due to landfilling, construction, and illegal encroachment . This shrinkage has a direct impact on fish farming and agricultural production, which depend on the availability of open water bodies.

The influx of **industrial effluents**, including chemicals and untreated sewage, poses another threat to the health of the wetlands. Additionally, the diversion of sewage to alternative treatment plants has reduced the nutrient flow into the wetlands, affecting the ecological balance and reducing fish productivity (Business Standard, 2023). The presence of toxic substances in the water has also led to the **eutrophication** of certain wetland areas, reducing biodiversity and affecting the water quality.

Water Hyacinth used as accumulator of Heavy Metals in Sewage

The impacts of **climate change**—such as rising temperatures, increased storm intensity, and irregular rainfall patterns—have created additional stress on the wetland

ecosystem.Changes in precipitation and temperature have led to altered fish breeding cycles,decreased fish survival rates, and increased vulnerability to disease outbreaks . Moreover, increased flooding during the monsoon can damage the wetland infrastructure, threatening both agriculture and aquaculture.

In response to **the threats** facing the East Kolkata Wetlands, the East Kolkata Wetlands Management Authority (EKWMA) was established in 2006 to oversee the wetlands conservation and management efforts. The authority is responsible for enforcing the East Kolkata Wetlands (Conservation and Management) Act, 2006, which aims to prevent land encroachment, promote sustainable fish farming, and regulate water quality. Additionally, EKWMA works to balance the needs of the local communities with the long- term ecological health of the wetlands.

The **West Bengal Fisheries Department** has been instrumental in promoting scientific **aquaculture** techniques and training local farmers in sustainable practices. These include shrimp farming, fish breeding, and water quality management, which ensure that fish production remains environmentally sustainable while increasing productivity. Local farmers and fishers have also been trained in **Integrated Fish Farming Systems (IFFS),** which combine fish farming with agriculture, further enhancing the resilience of the wetlands ecosystem .

Fish Harvested from Sewage fed EKW

In **conclusion** , The East Kolkata Wetlands exemplify how urban wastewater management, food production, and ecological sustainability can be effectively integrated within an urban setting. The wetlands provide vital services such as wastewater treatment, fish production, and agricultural benefits, while also offering livelihoods to thousands of people. However, the wetlands are under significant threat from urban encroachment, pollution, and climate change. With effective governance, improved pollution control, and community engagement, the East Kolkata Wetlands can continue to serve as a model for sustainable urban resilience and circular economies in other cities around the world.

Fish is a true Nutritional Powerhouse

News/Technology Summary

Revolutionizing Rural Agriculture

Swuyievezo Dzudo, a 26-year-old farmer from Nagaland, developed a **solar-powered dryer** using bamboo and recycled materials, benefiting 500+ farmers. His eco-friendly, low-cost innovation improves post-harvest management without electricity, boosting incomes and market access. He earned the IARI Innovative Farmer Award 2025 for his impactful work. Post-harvest losses are one of the biggest issues affecting both income and food security.

A prototype Solar Dryer made of local / recycled Materials

(Source : https://krishijagran.com/success-story/revolutionizing-rural-agriculture-)

Fasal Bima Yojana

Pradhan Mantri Fasal Bima Yojana (PMFBY) is a flagship crop insurance scheme that safeguards farmers against crop loss due to natural calamities, pests, and diseases.

PMFBY aims to support farmers by covering crop losses and ensuring financial stability.

(Source : https://krishijagran.com/news/pm-fasal-bima-yojana**)**

Natural Farming

Niraj Kumar Singh, a mechanical engineer turned natural farmer from Rewa, Madhya Pradesh, earns by cultivating **ancient grains** like Sona Moti wheat and Buddha Rice, which sell for 1.5 to 2 times more than chemically grown crops. Today, he is reviving these traditional grains and inspiring others with his sustainable, chemical-free approach to farming.

View of Natural Farming

(Source : https://krishijagran.com/success-story/natural-farming**)**

Mango Production

Mangoes production in India during 2024-25 is estimated to be 228.37 lakh metric tonnes (LMT), according to the second advance estimate shared by Minister of State for Agriculture and Farmers Welfare, Govt. of India . The higher production as compared to last year is mainly due to better output of processable mango varieties, particularly in the southern states.

Mango production

(Source : https://krishijagran.com/news/mango-production**)**

Black Fungus – An edible wild Mushroom

Black fungus (*Auricularia polytricha*) is an edible wild mushroom sometimes known as tree ear or cloud ear fungus, given its dark, ear-like shape.While predominantly found in China, it also thrives in tropical climates like the Pacific Islands, Nigeria, Hawaii, and India. It grows on tree trunks and fallen logs in the wild but can be cultivated as well . It is used in traditional Chinese medicine.

Black Fungus(Tree Ear)

(Source : https://www.healthline.com/nutrition/black-fungus)

Obituary

We express our heartfelt condolences to Dr Banku Behari Das , Former Project Coordinator / Director (Acting) , ICAR-SBI & **Member of ARICARE** for demise of his beloved spouse , Ms Gita Das who breathed her last on 13th June, 2025 and we pray for the departed soul rest in eternal peace.

Late Gita Das

It is hard to say GoodBye