

FISH VALUE CHAIN

Quarterly Newsletter

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BEEL FISHERIES DEVELOPMENT IN ASSAM UNDER APART



India has a large number of wetlands covering over an area of 3,54,000 ha. The north-eastern region of India is a rich source of aquatic resources including wetlands. The total area of the wetlands locally called ‘Beels’ cover an area of 1,00,815 ha. Among the states of the North-eastern region, the largest area of wetlands is located in Assam. These wetlands are highly productive natural resources and play an important role as a major fishery resource for the states of Assam, West Bengal, Bihar, Uttar Pradesh, and Manipur.

Beels are low-lying areas bordering rivers and water-filled natural depressions on abandoned courses of rivers with or without river connection, generally inundated by floodwater, rivers and accumulation of rainwater having an abundance of aquatic flora and fauna, traditionally recognized as common resources for fish and other aquatic resources of the local community. The beels are productive ecosystems with an estimated fish production potential of 1000-1500 kg/ha/year, but presently, the actual production of stocked and unstocked beel is around 450 kg/ha/year and 221 kg/ha/year respectively, which is far less than their potential.

In Assam, a large number of the population, mostly from poor socio-economic groups, such as; Schedule Caste

(SC), Schedule Tribe (ST) and Other Backward Class (OBC) depend on beels for their livelihood. For long years, communities living nearby the beels use the beels for fishing, using boats and local gears. They collect aquatic weeds and grasses as fodder for livestock and also for crop production. In order to get higher fish production and income, the local communities have also developed ponds within or nearby for fish fingerlings production. Also in a few beels, pen culture is being introduced for in situ rearings of fingerlings, as part of an enhanced stocking to get higher fish production and income. For example, in a 245 ha Choutara Naitara Beel in Goalpara District, more than 700 households are using a single beel and are involved in fishing and other activities for their livelihood.

Beel fisheries development is planned in order to increase the benefit of the beel for increasing the productivity and sustainability of the beels, without any environmental impact. Beel fisheries development is planned under APART in the 15 Project Districts covering an area of 2225 ha. The major approaches for beel fisheries development include stock enhancement, stock improvement, conservation of natural resources, nutritional security of local communities and better governance mechanism.

During 2018-19, a total of 7 beels covering an area of 138.25 ha have been selected in Jorhat, Sivasagar, Dhubri and Nalbari districts following the APART selection criteria with the approval of the District Level Coordination Committees (DLCC) and the works are in progress. For the year 2019-20, the selection of beels is in progress and so far 6 beels, covering an area of 238 ha, have been identified and have got approved by DLCC for implementation.

Officials from the Department of Fisheries, ARIAS Society and WorldFish Experts have visited these beels and created awareness among the user communities for developing the beel fisheries under APART. These beels, when developed with the support of APART are expected to sustainably increase the fish production and productivity, conserve the indigenous fish species through better governance to provide nutritional security for the local communities in the years to come.



Activities for development of beel fisheries through APART

Content Courtesy: World Fish

FISH VALUE CHAIN STUDY MEETING

A fish value chain study meeting was organized on 17th October 2019 at 10.30 am in the SIPC Conference Hall. Dr R. Suresh, Project Coordinator, Assam-World Fish Project gave a presentation on the Components of Fish Value Chain Study and its scope and objectives. He also informed that the study would focus mainly on Fish Value chain in Assam, Fish Feed Value Chain and Scope for value addition, processing and marketing of fish. He further suggested having a study of the consumer preference and demand for fishes in Assam.

Dr Sanjay Sarma, Fisheries Co-ordinator, ARIAS gave a detailed presentation on the Value Chain Development Plan study taken up under APART by the Fisheries Department, Govt of Assam. He also discussed the State Fishery Resources, Production and productivity gap, Supply chain gap, Fish Seed production, Fishery contribution, Fish feed mill, etc. He expressed that the main constraints for fisheries development in Assam are non-availability of quality fish seed and quality fish feed and also inadequate availability of raw materials for the feed industry.

Smt. Arpana Barman, Social Sector Specialist, APART, stressed that the study should focus on capturing the information on involvement and participation of women in the entire Fish Value Chain. Environmental Specialist, APART, Dr Atanu Chatterjee requested for quality control of the feeds produced by feed mills and also due certification of the processed products.

A brief deliberation on enterprise development under MSME through APART was done by Shri. Baljeet Singh, Marketing Specialist, APART, and Shri Sreemant Phukan, M&E Specialist, APART requested the Consultants to complete the study at the earliest with support from WorldFish, ARIAS and DoF Team. Mr Kaustuv S. Mukhopadhyay (Adjunct Consultant, WorldFish) discussed and clarified the role of the financial sector in Fish Value Chain, whereas Ms Monisha Choudhary, Post Harvest Management Expert (PHME), APART discussed the scope for fish processing, development of enterprises for value-added products like pickle and dry fish.



Discussion on Fish Value Chain Study in process

Shri. Nirmalya Mandal (Principal Consultant, WorldFish) thanked the participants for providing insight into the study and also discussed the study plan.



Meeting on Fish Value Chain Study in process

CREDIT LINKAGE ON FISHERIES UNDER APART

A meeting on credit linkage for fisheries under APART was held on 11th October 2019, where the Fishery Coordinator and Financial Services Specialists (FSS) of APART, Department of Fisheries and officials from Canara Bank were present.

Dr Sanjay Sarma, Fisheries Coordinator, APART explained the process of formation of Farmer Producer Groups (FPGs) of the fish farmers and requested the officials from Canara Bank to explore possibilities for credit linkage to the beneficiaries as priority sector advances for sustainability, profitability and adaptability of the activity. He further informed that the Department of Fisheries, Govt of Assam, has been supporting the beneficiaries through the promotion of market-led production technologies namely, polyculture technology development and demonstration in Beel Fisheries.

Training and capacity building of the beneficiaries is provided to the FPGs on improved package and practices (PoP) for Fish Value Chain under APART. WorldFish, an international, nonprofit research organization with its mission to harness the potential of fisheries and aquaculture to reduce poverty and hunger in developing countries has been providing and technical support for the Fish value chain under APART.

The Financial Sector Specialist, APART, explained that there is provision for access to finance in the Project design, to bring in external support from Banks/FIs to enable the beneficiaries to adopt new and innovative ideas. The officials from Canara Bank responded that they will be pleased to collaborate with APART for extending credit to creditworthy beneficiaries and would further develop linkages through proper process.

FOCUS GROUP DISCUSSION ON FISHERY SUB-COMPONENT UNDER APART



Focus Group discussion on fishery components

A focus group discussion was organized by WorldFish with district-level fisheries officers and APART staff on implementation of WorldFish deliverables under APART during the visit of WorldFish Experts to Assam on 1st July at SIPC, Guwahati. WorldFish experts Dr Jharendu Pant, Dr Benoy Kumar Barman and Dr R.Suresh interacted with the participants regarding the activities under various interventions like Polyculture of carps and Paddy cum fish integrated farming demonstrations.

Technical difficulties faced in implementing the project activities, as well as lessons learnt, were also discussed during the session. For the quality of inputs like feed and seed, it was observed that random feed

samples were collected from each district and submitted to DoF, Assam to assess the quality of the feed. Though the fish culture period varies in different regions, under APART, where the main focus is on market-led production, the demonstrations were carried out during the period from July-June, so that the fish production reaches the markets during the ban period, April-June when the fish arrivals are low and price realization will be better. WorldFish experts Dr Jharendu Pant and Dr Benoy Kumar Barman gave their observations for the implementation of Better Management Practices under APART for increasing fish production and productivity through the project interventions during 2019-20.

INTERACTIVE SESSION ON CAPACITY BUILDING PROGRAMS UNDER APART AT COLLEGE OF FISHERIES



Interactive session on capacity building programs at College of Fisheries, Raha

An interactive session on capacity building programs of fishery sub-component under APART during 2019-20 was held on 6th August 2019 at the College of Fisheries, Assam Agricultural University, Raha. Capacity building programs conducted by College of Fisheries (COF) was presented by Dr P. C. Bhuyan, Coordinator. Annual Work Plan for 2019-20 was discussed in detail

to complete the target for beneficiary training, non-beneficiary training, demonstrations and exposure visits involving COF, DOF and KVKs. Results of the short-term fish culture and dry fish preparation demonstrations were also presented by Dr S. Borthakur and Dr Sarma and the results are encouraging to scale-up in the APART clusters.

Dr Rupam Borgohain, Nodal Officer, Dr.Kalyan Pathak, Alternate Nodal Officer from AAU, Dr Sanjay Sarma, Fishery Coordinator, APART, Shri Baljeet Singh, Marketing specialist, Er. Sreemant Phukan, M&E Specialist from ARIAS, Dr.R.Suresh, Project Coordinator, WorldFish Assam, APART Project, Dr.K.K. Tamuli, Dean, Faculty and Project staff of College of Fisheries, Raha attended the meeting.

REVIEW CUM TECHNICAL DISCUSSION UNDER FISHERY SUB-COMPONENT APART



Review cum technical discussion on of fishery sub-component

A review cum technical discussion under Fishery Sub-component of APART was conducted WorldFish on 27th September at the Directorate of Fisheries (DOF), Guwahati. At the outset, Dr Sanjay Sarma, the Fisheries Project Coordinator, APART welcomed all the Officials and APART's consultants present and introduced Dr C. V. Mohan, Project Leader, WorldFish. Dr Sanjay Sarma made a detailed presentation on the outcome of the recent World Bank Review Mission.

Dr C. V. Mohan, Project Leader, WorldFish gave a brief presentation on the major areas of WorldFish technical support to APART, such as, sustainable intensification in ponds aquaculture, increasing diversity and productivity of Beels, improving Fish Value Chains etc. He mentioned that quality and improved seed, quality feed, improved

management practices and integrated farming systems are the key factors for sustainable intensification of aquaculture in ponds. He also added that for increasing diversity and productivity, the major activities involved are stock improvement, stock enhancement, habitat management improvement, governance systems strengthening as well as for improving fish value chain, strengthening informal and formal farmers' clusters, societies and cooperatives for production and marketing, improve transportation and processing to reduce post-harvest loss and enhance fish quality and safety, use of innovative information and communication tools etc. are the main activities.

Dr Mohan also discussed the cross-cutting areas such as climate-resilient production and value chain systems, nutrition-sensitive production, gender-sensitive approaches, partnership strengthening etc, besides keeping a record of all the information of every formal and informal meeting, awareness program, workshop etc.

Dr R. Suresh, Project coordinator, Assam- WorldFish project discussed field activities, technical difficulties in field and tentative planning for various interventions by WorldFish under APART and also suggested the consultants share their views and experiences in the field, which could be good learning for improving the technical implementation under APART.

WORLD FISH CONSULTANTS VISITED CIFRI REGIONAL CENTRE, GUWAHATI AND COLLEGE OF FISHERIES



Participants during the session with Project Leader, Assam WorldFish Project

Dr.C.V.Mohan, Project Leader, Assam WorldFish Project and Dr R. Suresh, Project Coordinator visited CIFRI Regional Centre, Guwahati on 25th September 2019 and held discussions with Dr B.K. Bhattacharjya, Principal Scientist and Head and other Scientists regarding the WorldFish deliverables under APART Project and possible collaborative work for Beel fisheries development under APART. They also visited College of Fisheries, Raha on 26th September 2019 and discussed



with Dr K. K. Tamuli, Dean, other faculty members and Dr P. C. Bhuyan, APART Project coordinator regarding the capacity building programs and demonstrations conducted by COF under APART. It was also discussed that the trainings provided by College of Fisheries (COF) need to focus on the APART project requirements and the results of the Short-term fish culture demonstrations needs to be evaluated and recommended for wider adoption.

VISIT OF PROJECT LEADER, WORLD FISH TO POLY CULTURE DEMONSTRATION CLUSTER



Dr C. V. Mohan, Project Leader, WorldFish Assam Project interacting with the beneficiaries

Project Leader, WorldFish Assam Project, Dr C. V. Mohan, visited the Polyculture demonstration sites in Rupahi Cluster in Nagaon district along with Mr Sanjoy Tamuli, Alternate Nodal Officer and Dr R. Suresh, Project coordinator on 26.09.2019 and interacted with the beneficiaries regarding the results of the polyculture practices followed by them. The farmers were advised

to dry the ponds at least once in two years, apply lime, proper feeding and to follow BMPs for sustainable increase of fish production and productivity. Details of fish consumption by the local communities were also discussed and were educated on the nutritional advantages of fish consumption.

PROJECT IMPLEMENTATION SESSION BY DR. C.V. MOHAN, PROJECT LEADER, ASSAM WORLD FISH PROJECT AT WORLD FISH OFFICE



WorldFish Technical Expert Fisheries and officials with Dr C. V. Mohan

On 24th September 2019, a technical discussion on APART Project implementation was conducted by the Project leader, Dr C.V. Mohan with the WorldFish Technical Expert Fisheries was held at SIPC, Guwahati. Objectives and role of WorldFish, as an international knowledge partner of APART and the deliverables under APART project, were thoroughly explained by Dr C. V. Mohan. He also gave details of the implementation plan of

WorldFish deliverables under APART. He also mentioned that the major role of the WorldFish is not only to focus on the increase in fish production and income of the farmers but also to monitor the nutritional security of the local communities. He urged the TEFs to collect and record the basic information of farmers, more particularly, role besides involving women in implementing the fisheries activities of APART.

AWARENESS PROGRAMME UNDER FISHERIES

In order to sensitize the farmers on the benefits that they can avail through the Department of Fisheries under APART, a total of 90 awareness programmes were conducted at the Cluster level. The topics covered included project overview, activities under fishery value chain in the Project, criteria and process of selection of beneficiaries and formation of farmer groups, beneficiary share, project share, accounts opening and the modalities of providing project share for beneficiary activities, climate-resilient technologies in fisheries, value-added products of fish

and their marketing avenues etc. During these awareness programmes, a total of 11,950 farmers attended and benefited from these awareness programmes in 44 clusters of 15 Project Districts. The Fishery Development Officers cum Cluster In-charge, Technical Expert Fisheries and Engineering Consultants, District Social Co-ordinators and District Environment Co-ordinators, as well as the concerned ATMA officials, attended these awareness programmes as resource persons.



Awareness camps by Fisheries department under APART

POLYCULTURE DEMONSTRATION UNDER APART

Polyculture is one of the techniques through which maximum out-put can be obtained and higher production can be ensured in extensive and semi-intensive systems because more of the available natural food in the pond is utilized by fish in polyculture. This system may produce an expected result if the fish with different feeding habits are stocked in proper ratio. By following the Package of Practices provided by the College of Fisheries under Assam Agricultural University and better Management Practices provided by WorldFish, the polyculture Demonstration is initiated for a water area of 424.90 Ha covering 1491 farmers in 13 Project Districts like Kamrup, Darrang,

Barpeta, Lakhimpur, Sonitpur, Golaghat, Jorhat, Cachar, Morigaon, Nalbari, Kokrajhar and Goalpara.

In a sustainable semi-intensive pond aquaculture technology including major carp species as cash-crop and small indigenous fish species (SIS) as food for the farmers' families, it has been observed that the nutritional intake of the rural people remains poor. People normally grow fish as a cash crop and sell all their products in the market saving little fish for their own consumption. This tendency could be changed by producing small indigenous fish along with carps in the polyculture system. The small indigenous fishes are a chief source of animal protein and

micronutrients for the rural poor. Though several species of small indigenous fishes are considered suitable for aquaculture, among those, mola (*Amblypharyngodon mola*) is of special interest to the fish farmers because of its good taste. Its high nutritional value has created an equally great interest among scientists. It is recorded that 100g mola contains approximately 1960mg, 1071 mg

and 7.0mg of vitamin A, calcium and iron respectively. Though the small fishes have always been regarded as competitors of carps in the polyculture system and therefore invariably eliminated, yet no studies have so far been made on the effect of small indigenous fish such as mola on the growth and production of carps in the system.



Polyculture demonstration under APART



Inputs distribution under APART

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