

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

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Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

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**Scaling nutrition-sensitive fisheries technologies and integrated approaches through
partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)**

LIST OF ACRONYMS AND ABBREVIATIONS

AFO	Assistant Fisheries Officer
AG	Adolescent Girl
ARIAS	Assam Rural Infrastructure and Agricultural Services Society
ARNEC	Asia-Pacific Regional Network for Early Childhood
ASF	Animal Source Foods
AWC	Anganwadi Centre
AWTC	Anganwadi Training Centre
APPI	Azim Premji Philanthropic Initiatives
CBO	Community Based Organization
CIFT	Central Institute of Fisheries Technology, Cochin, Kerala
CFNS	Coalition for Food and Nutrition Security
CFTRI	Central Food Technology Research Institute, Mysore, Karnataka
CFS	Committee on World Food Security, United Nations
CSIR	Council of Scientific and Industrial Research
CSR	Corporate social Responsibility
CTCRI	Central Tuber Crops Research Institute
DCPO	District Child Protection Officer
DFO	District Fisheries Officer
DoF	Directorate of Fisheries, Odisha
DRDA	District Rural Development Agencies
DSSO	District Social Security Officer
DSWO	District Social Welfare Officer

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

ECCE	Early Childhood Care and Education
ECD	Early Childhood Development
F&ARD	Fisheries and Animal Resources Development Department, Govt. of Odisha
FGD	Focus Group Discussion
FSSAI	Food Safety and Standards Authority of India
GNOC	Ground nut oil Cake
GP	Gram Panchayat
HCM	Hot Cooked Meal
HETC	Home Economy Training Center
HH	Household
ICAR	Indian Council of Agricultural Research
ICDS	Integrated Child Development Service, Government of Odisha
ICMR	Indian Council of Medical Research
IEC	Information, Education and Communication
IPP	Indian Partnership Programme
JFTA	Junior Fisheries Technical Assistance
KISS	Kalinga Institute of Social Science
MDM	Mid-Day Meal
MoU	Memorandum of Understanding
MSSRF	MS Swaminathan Research Foundation
MSME	Micro, Small & Medium Enterprise Department, Government of Odisha
NFDB	National Fisheries Development Board
NGO	Non-Government Organisation

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

NIN	National Institute of Nutrition
NSP	Nilanchal Seva Pratisthan
OCF	Odisha Corporate Foundation
OLM	Odisha Livelihood Mission, Government of Odisha
ONAP	Odisha Nutrition Action Plan
ORMAS	Odisha Rural Development and Marketing Society, Government of Odisha
OSP	Orange Sweet Potato
OUAT	Odisha University of Agriculture and Technology
PFCS	Primary Fishermen Cooperative Society
PLW	Pregnant and Lactating Women
PR&DW	Panchayati Raj & Drinking Water Department, Government of Odisha
PRI	Panchayati Raj Institution
RB	Rice Bran
R&D	Research and Development
SBCC	Social Behaviour Change Communication
SC	Scheduled Caste
SHG	Self Help Group
SIFA	Society for Indian Fisheries and Aquaculture
SIS	Small Indigenous Fish Species
S&ME	School and Mass Education Department, Government of Odisha
SNP	Supplementary Nutrition Program
SOP	Standard Operating Procedure
SOPAN	Strategy for Odisha's Pathway to Accelerated Nutrition

**Scaling nutrition-sensitive fisheries technologies and integrated approaches through
partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)**

SS	Special School
SSEPD	Social Security and Empowerment of Persons with Disabilities Department, Government of Odisha
ST	Scheduled Tribe
TAG	Technical Expert Advisory Group
THR	Take Home Ration
ToT	Training of Trainers
USAID	United States Agency for International Development
UNICEF	United Nations Children's Fund
WCD & MS	Women and Child Development & Mission Shakti Department, Government of Odisha
WFP	World Food Program
WHO	World Health Organization
WSA	Water Spread Area
WSHG	Women Self Help Group

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

EXECUTIVE SUMMARY:

During the reporting period (October 2019 - September 2020), the project piloted carp-mola polyculture in 789 homestead ponds and in 22 community ponds benefitting 1307 households. Due to Global Covid-19 crisis the field activities were severely hampered. However, the project reached all the beneficiaries through regular phone calls and all the technical support and nutrition related messages were disseminated. Most of the households harvested fish from their pond and regular consumption of fish was observed. All the beneficiaries were supplied with seasonal vegetable plants and kitchen garden kits to increase the household dietary diversity.

The project with the help of WCD&MS, DoF and OLM has identified 10 WSHG from coastal villages for production of hygienic dried fish using innovative and low cost solar dryers. In this regard, a MoU was signed with ICAR-CIFT, Cochin, Kerala to supply and oversee the installation of ten solar dryers on pilot basis for the production of nutritious and hygienically dried small marine fish during February 2020. All the preparatory work has been completed and the solar drier installation work will be started from October 2020.

The project was able to influence policy makers in the Departments of FARD and WCD & MS, resulting in the membership of WorldFish in the Odisha State Nutrition Secretariat for its Technical Expert Advisory Group on Nutrition (TAG).

Department of WCD&MS has approved the piloting of inclusion of small fish in supplementary nutrition programme (SNP) in ICDS Anganwadi Centers of tribal dominated Mayurbhanj District. SOP for piloting of inclusion of small fish in SNP of Odisha was prepared and submitted to WCD&MS and the same has been approved by the Department. This programme will be launched by Honorable Chief Minister of Odisha during November 2020. The piloting of inclusion of dried small fish and fish based product in ICDS SNP program will be conducted once the Anganwadi Centers will be reopened upon Government directives.

In collaboration with Department of WCD&MS and UNICEF, a short cartoon video on benefits of Small fish-based Nutrition in the first 1000 days of the child life was prepared using Tikki Mausi Mascot. Tikki Mausi Mascot has been adopted by Government of Odisha for conducting state-wide awareness and training programs on nutrition and women empowerment.

For scaling up the nutrition-sensitive fish-agri food systems in the state of Odisha, a MoU with WorldFish has been considered by Department of WCD&MS. And it would be signed during November 2020. Under this MoU, many WSHGs will be trained and engaged in production of hygienic dried fish using solar dryers, fish will be included in the ICDS Hot Cooked Meal (HCM) programmes.

Considering the importance of hygienically solar dried fish by WSHGs under this project, the FARD and MSME Departments jointly decided to scale up the activity under One-District One-Product program of the Government with financial assistance, credit linkage support and market linkage support to the WSHGs. The MSME Department has decided to promote at least 100 solar fish driers over the next 2 years.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

I. Program Overview and Performance

A. Results Framework

Project Title: Scaling innovative, nutrition-sensitive fisheries technologies and integrated approaches through partnerships in Odisha, India can improve food and nutrition security” – Implemented by WorldFish in partnership with F&ARD Department, Government of Odisha

Project Goal: The goal of the proposed project is to improve food and nutrition security in the Indian state of Odisha. This project will lead to the introduction of nutrition-sensitive production technologies for nutrient-rich fish and vegetables in selected districts of Odisha as well as increased production of high quality fresh small fish and dried fish for making fish-based products

Project Objectives:

- A. **Increased availability** – Increased production, productivity and diversity of nutrient-rich fish from innovative technologies of aquaculture and capture fisheries, as applied to household and community ponds, and inland freshwater reservoirs.
- B. **Increased accessibility** – Development, marketing and distribution of affordable, safe, nutritious fresh fish and fish-based products using production from aquaculture and capture fisheries, including Chilika Lake. Increased and expanded distribution to reach multiple population groups, in partnerships with the private sector and research institutes;
- C. **Increased consumption** – Social behavior change approaches, targeting the whole family, to promote increased nutrient-rich fish and vegetable consumption, especially in women and young children; and increase knowledge and practice of essential nutrition and essential hygiene actions, in partnerships with relevant local government programs, non-government organizations (NGOs) and community-based organizations (CBOs)
- D. **Improved food and nutrition security and scaling** – Further scaling of innovative, nutrition-sensitive fisheries technologies and integrated approaches, through expanding and strengthening regional and national partnerships and collaborations, in particular, in West Bengal and Terai, Nepal

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

B. Key Accomplishments and Developments during this Year

B1. Operations Report:

(a) Selection of target districts and blocks

The project has been implemented in 9 blocks in 5 districts in Odisha. Carp Mola polyculture and nutrition-sensitive fish food systems interventions were taken up in Jagatsinghpur, Balesore and Mayurbhanj district.

District	Block
1. Jagatsinghpur	1. Jagatsinghpur 2. Naugaon
2. Balesore	3. Khaira 4. Soro
3. Mayurbhanj	5. Khunta 6. Gopabhandu Nagar 7. Kaptipada
4. Cuttack	8. Cuttack Sadar
5. Puri	9. Kanas

B2. Technical Report

Component 1: Increased Availability

(a) Implementing innovative nutrition-sensitive aquaculture production technologies (e.g. carp-mola polyculture)

Following activities have been taken up to implement the activities in the field level

- Selection of beneficiary farmers
- Carp Mola polyculture crop progress
- Mass/Group/Individual Awareness Meetings
- Planting of Orange Sweet Potato (OSP)
- Vegetable/ kitchen gardening
- Provision of inputs
- Regular M&E data collection
- Pond result / fish harvest demonstration
- Promotion of mola consumption by farmer households
- Nutrition education

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

Results

Selection of beneficiary farmers:

- The Carp-Mola Polyculture production system was implemented in 22 Gram Panchayats, 70 villages spread over 7 blocks in 3 districts.
- In total, 789 backyard and 22 community ponds practiced carp mola polyculture.

Carp-mola polyculture crop progress:

a. Backyard ponds:

- In the reporting period carp-mola polyculture was introduced in 34 additional backyard ponds. Along with this, 491 ponds which were partially stocked with carp during the previous season, were fully stocked. No new beneficiaries were enrolled due to the project budget cut.
- The ponds selected during financial year 2017-18 were also stocked with carp during reporting year (2019-20) in order to encourage the farmers and keep continuity of project interventions. Five ponds were excluded due to various reasons.
- Due to COVID-19 pandemic, field movement was restricted but all the farmers were regularly contacted through phone and technical support was provided. Besides this, nutrition messages were also disseminated to all the beneficiaries under the project.

Status of carp mola-polyculture in backyard ponds

Sl. No.	District	Block	No. of GPs	No. of Villages	No. of HHs/ ponds stocked	Area covered (Ac.)	Total qty of carp seed stocked (kg)	Total quantity of mola stocked (kg)
1	Jagatsingpur	Jagatsingpur	10	30	252	50.00	2712.00	-
		Naugaon	4	11	112	23.38	1307.00	-
2	Balasore	Khaira	1	7	142	21.85	1208.00	-
		Soro	2	9	95	13.37	779.00	-
3	Mayurbhanj	Khunta	2	4	42	4.66	287.50	-
		GB Nagar	2	6	91	7.27	441.00	41.00
		Kaptipada	1	3	50	4.17	231.50	50.50
	Total		22	70	784	124.70	6,966.00	91.50

Community ponds:

- During the reporting period, 20 community ponds which were managed by local community or SHG practiced carp-mola polyculture benefitting 508 households which are dependent on these community ponds.
- In total 1,377.50 kg of carp and 20 kg of mola were stocked in these community ponds.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

- Nutrition messages were disseminated to all the beneficiaries of community ponds.
- Harvesting nets were distributed to community tank beneficiaries.

Status of carp mola polyculture in community ponds

Sl. No.	District	Block	No of Ponds stocked	No of HH benefitted	Area Covered (Acre)	Quantity of carp stocked (in kg)	Quantity of mola stocked (in kg)
1	Jagatsingpur	Jagatsingpur	9	311	17.93	973.00	-
		Naugaon	2	22	1.70	88.00	-
2	Balasore	Khaira	2	22	2.28	124.00	-
		Soro	3	42	0.79	43.00	-
3	Mayurbhanj	GBNagar	3	57	2.80	149.50	20
		Kaptipada	1	54	20.00	-	-
Total			20	508	45.50	1377.50	20

c. Institutional ponds:

Activities in Institutional pond of Utkal Balashram, Cuttack, School for Blind, Deaf and Dumb & Nilanchal Seva Pratisthana, Kanas, Puri:

The project provided in-kind support such as fish seed, feed, and fertilizer to the institutional ponds. Regular monitoring of the ponds was done by the project. During initial stages of COVID-19 lockdown, due to unavailability of fresh and dried fish in the market, the institution utilized fish grown in these ponds for the institutional feeding programme.

d. Establishment of mola nursery

The Project found difficulty in sourcing mola and stocking it in all the selected ponds due to inadequate availability of mola source in the project area. Therefore, the project initiated activities to establish mola nurseries in all the selected clusters of the project area.

- The project identified 11 private nurseries for mola in different blocks under project.
- Pre-stocking management practices like weed clearance, eradication of predatory fishes, manuring and fertilization and control of aquatic insects were followed by the district managers.
- Six nurseries covering 5.49 Acre WSA were stocked with 362 Kg of mola. Due to COVID-19 restrictions in the field activities, shifting of the mola grown in the nurseries to beneficiary grow-out ponds was not possible.
- Now these nurseries will serve as mola source for stocking in nearby GP tanks managed by WSHG under the FARD scheme.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

Status of Mola nurseries in Mayurbhanj, Balasore and Jagatsingpur

Sl. No.	District	Block	GP	Village	Name	Nursery area (Ac.)	Mola stocked (kg)
1	Balasore	Kahira	Garsang	Krushanpur	Subhalaxmi Sahu	0.58	43.00
2	Balasore	Kahira	Garsang	Baulani	Manasi Das	0.81	74.00
3	Balasore	Soro	Anantpur	Mulkaida	Labanya Prabha Sahu	0.40	10.00
4	Jagatsingpur	Tirtol	Dhuanpari	Dhuanpari	Jagruti Matshyachashi SHG	2.00	136.50
5	Jagatsingpur	Tirtol	Dhuanpari	Dhuanpari	Jagruti Matshyachashi SHG	1.00	84.00
11	Mayurbhanj	GB Nagar	Sainkula	Sainkula	Ullash Ranjan Moharana	0.70	14.50
Total						5.49	362.00

Awareness Meetings (Mass/Group/Individual):

During the reporting period, the project has sensitized 715 farmers (244 female and 471 male) on carp-mola polyculture and nutrition education through 11 cluster level trainings (Annex. 1). A demonstration on various small fish recipe (Annex. 2) was conducted in Balasore district where community was involved in preparation of different local fish recipes such as Mola Khichdi, Macha Mahura etc. During the project period, the project has trained and sensitized a total 1957 farmers, out of which 665 were women and 1292 men, on Carp-Mola Polyculture and Nutrition. All the meetings/trainings/awareness were conducted in the presence of Government officials such as District Fisheries Officer (DFO), Assistant fisheries Officer (AFO), JFTA, PRI members, Regional & Zonal Managers of FARD Odisha-WorldFish project and Project Manager (USAID-IPP).

Due to COVID-19 restrictions, staff movement was significantly affected. But the project made sure that all the beneficiaries were reached over phone. Continuous monitoring and regular technical support was provided through calls and mobile short message service (SMS).

Training and Awareness programmes conducted

Sl. No.	District	Block	Awareness Camp: formal/informal (No. of Participants)			ToT for Lead Farmers (No. of Participants)			Cluster Level Training		
			Total	Female	Male	Total	Female	Male	Total	Female	Male
1	Jagatsinghpur	Jagatsinghpur	169	34	135	30	5	25	273	39	234
		Naugaon	94	42	52				72	5	67
2	Balasore	Khaira	286	132	154	37	13	24	107	60	47
		Soro	143	43	100				51	34	17
3	Mayurbhanj	Khunta	90	38	52	-	-	-	50	18	32
		Gbnagar	162	51	111	-	-	-	107	57	50
		Kaptipada	231	63	168	-	-	-	55	31	24
Total			1175	403	772	67	18	49	715	244	471

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

Planting of Orange Sweet Potato (OSP):

During the reporting period, 17,000 OSP vines were distributed to 120 farmers in Jagatsinghpur, Mayurbhanj and Balasore district. The OSP vines were procured from the farmers of FY 2017-18 and distributed to the new beneficiaries.

In total, 226 beneficiaries could successfully harvest about 2366 kg of OSP. Project has sensitized the benefits of consumption of OSP in all the project areas through awareness and meetings. As a result, more than 90% of the harvested quantity of OSP was consumed by the participating households.

OSP production and consumption

District	Block	No of ponds with OSP	OSP Harvested	OSP Consumption	OSP sold (kg)
Mayurbhanj	GB Nagar	5	90	90	-
	Khunta	1	1	1	-
	Kaptipada	3	31	31	-
Balasore	Soro	46	412	399	13
	Khaira	65	618	618	-
Jagatsinghpur	Sadar	45	551	518	33
	Naugaon	61	663	595	68
Total		226	2366	2252	114

Vegetable/ kitchen gardening:

All the beneficiaries under the project were supplied with seasonal plants and vegetables which were procured from nearby nurseries. Regular monitoring of these plants and saplings for growth were done by the project staff.

Variety and quantity of plants and saplings distributed

Sl. No.	Plants/saplings	Quantity distributed (nos.)
1	Guava	1100
2	Lemon	1100
3	Papaya	2900
4	Drum stick	500
5	Banana green plant	2300
6	Banana G9 plant	1200
7	Curry Leaf plant	1000

All these beneficiaries were also supplied with kitchen garden kit procured from ICAR-Indian Institute of Horticultural Research, Bangalore.

Arka brand Vegetable seed kit consisted of 8 varieties of seed packets viz., tomato, brinjal, green peas, amaranth, okra, pumpkin, red chili and dolichos. In total, 1000 kits were distributed to all the 784-backyard pond and 20 community pond beneficiaries.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

(b) Supply of nutrient rich small fish from inland water bodies and coastal fisheries

Till March 2020, Utkal Balashram-Cuttack, NSP-Puri, Sriharsha Mishra Deaf and dumb school and Ruchika shelter home followed decentralized small fish procurement but after March 2020 due to unavailability of fish in market the fish from institution ponds were used for feeding programme. But after May all the feeding programmes were closed due closure of institutions.

Component 2: Increased Accessibility

(A) Accessibility of fish to household, community and institutions

The purpose of this component of the project is to develop, market and distribute affordable, safe, nutritious fresh fish and fish-based products using production from aquaculture and capture fisheries, including Chilika Lake.

- i. Supply of fish for school feeding program:** Decentralized procurement of small fish was started in all the institutions. The management procures the small fish from the local fish market once in a week with pre-agreed terms and condition to maintain the quality, hygiene of the fish with fixed price.
- ii. Household accessibility to fish:**

From March 2020, due to pandemic, no fishes were available in the market. All the beneficiaries started consuming the fish harvested from ponds. Fish consumption rate has increased in the households after the intervention of the project. Most of the beneficiary households (657 out of 784) regularly consumed fish harvested from their ponds. Below table provides the details of fish production from backyard ponds and the consumption by households.

Production and consumption of carps by backyard pond beneficiaries

District	Block	No of ponds harvested	No of HH	Area (ha)	Qty Harvested (kg)	Qty Sold (kg)	Qty Consumed (kg)	Qty Gifted (kg)	Productivity (kg/ha)
Mayurbhanj	GB Nagar	73	73	2.64	6246	2250	3369	627	2368
	Khunta	35	35	1.43	2311	1409	822	80	1614
	Kaptipada	44	44	1.67	4138	1576	2164	398	2473
Balasore	Soro	99	99	5.44	4315	1495	2820	0	794
	Khaira	140	140	9.51	6432	2554	3878	0	676
Jagatsinghpur	Sadar	161	161	30.20	3337	994	2343	0	110
	Naugaon	105	105	9.36	1143	653	490	0	122
TOTAL		657	657	60.29	27922	10931	15886	1105	463

Production and consumption of mola by backyard pond beneficiaries

District	Block	No of ponds harvested	No of HH	Area (ha)	Qty Harvested (kg)	Qty Sold (kg)	Qty Consumed (kg)	Productivity (kg/ha)
Mayurbhanj	GB Nagar	35	35	1.66	179.00	22	157.00	154
	Khunta	17	17	0.77	103.00	17	86.00	134
	Kaptipada	23	23	0.77	151.70	10	141.70	196
Balasore	Soro	69	69	3.63	635.00	55	580.00	175
	Khaira	50	50	3.96	327.00	10	317.00	82
Jagatsinghpur	Sadar	65	65	1.97	299.00	41	258.00	152
	Naugaon	53	53	4.98	190.00	0	190.00	38
TOTAL		312	312	17	1884.70	155	1729.70	109

**Scaling nutrition-sensitive fisheries technologies and integrated approaches through
partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)**

(B) Development of nutritious fish-based products in collaboration with private sector and research institutes

Current practices of dried fish production in Odisha:

- ❖ Open air sun drying on the beaches or open spaces is practiced by the majority of people in coastal region of Odisha. They are traditionally marine fishing communities involved in the dried fish trade for generations.
- ❖ Women in these communities play an important role in post-harvest activities such as local trading, drying, vending etc. But men control the harvest. These communities are exclusively dependent on fishing business for their livelihoods.
- ❖ Traditional methods, which consist mainly of spreading the commodity on the ground soil/sandy beach or on some other surface, cause severe damage to fish quality.
- ❖ Generally, about 20% of the artisanal catch is sun dried and consumed in the internal domestic market.
- ❖ The quality of most of the traditional sun-dried products available in the market is not satisfactory for human consumption. There are frequent complaints from the consumers about the quality of the products and the major problems associated with sun drying of fish are infestation of the products by the fly and insect larvae during drying and storage, contaminants (sand & soil), mould infestation and spoilage.
- ❖ In most cases the fishes which are not sold in the fish market are used as raw materials for preparation of the dried products. By this time, considerable quality loss occurs in raw materials and subsequently high quality of the finished products is not achieved.
- ❖ Small marine fishes are directly sundried on the beach or backyard of the house. Raw fishes, comparatively of larger sizes are graded before drying according to their size and species. The smaller fish are not graded at all before drying. Some are graded only on the basis of species. Mainly women and children take part in grading process of fish.
- ❖ Small size fishes, on the other hand, are not dressed at all. It is also observed that washing facilities are very poor near traditional processing site. Raw fish are washed with easily available water, though they contain wastes and filth. Small fish are not washed prior to sun drying. In case of large fish, they are split in butterfly style and washed and cleaned prior to sun drying.
- ❖ There is little or no knowledge among the workers about the sanitation and hygienic methods of handling, transportation, processing and preservation.
- ❖ The dried fish products are marketed without adequate packaging and labelling practices. As a result, in tropical climate like Odisha which has higher humid conditions throughout the year, the dried products absorb moisture from the environment leading to spoilage due to microbial actions during storage. Hence, they have very poor shelf life.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

i. **Fish-based product development with ICAR-CIFT**

- ❖ A sub-grant agreement was signed with ICAR-CIFT during February 2020. The objectives of this agreement are,
 - Training of 10 nos. of Women SHGs (100 women members) in 3 batches (3-day training per batch) for hygienic solar fish drying, production of fish-based products and packing of fish products.
 - Test the dried fish products produced by Women SHGs for food safety parameters.
 - Assist the Women SHGs for availing FSSAI certification for their fish products.
 - Supply of innovative and locally acceptable fish-based products such as fish powder / chutney / soup powder etc for piloting in ICDS program.
 - Technology transfer of a few suitable products from small fish by ICAR-CIFT to Women SHGs or to the industry.

- ❖ ICAR- Central Institute of Fisheries Technology (CIFT), Cochin has developed low cost, energy efficient, eco-friendly solar tunnel dryer for drying of fish and fishery products. The materials of construction are UV stabilized transparent polythene sheet for roof cover, black absorber sheet for floor, supporting frames of CPVC and GI rod. Three ventilator fans of 0.5 hp are provided for moisture air inlet and removal. The trays with tray holders are placed inside the dryer for spreading and hooking the fishes for drying. This tent dryer is designed stand-alone system as it does not require any external power source/ electricity. The fans are operated by means of a solar PV panel fitted roof top of the dryer and associated battery setup. It is also affordable and suitable to the Indian fisher folks. These driers are efficient in achieving higher drying temperatures and reduced humidity. They also increase drying rates, producing lower moisture content in the final product and highly improved quality. It is possible to attain temperatures as high 15-20°C extra inside the solar driers as compare to outer temperature and also it has been suggested that this relatively high temperature offers some protection against attack by blowflies, beetles and other vermin. Additionally, solar driers also offer some protection against adverse weather conditions, especially in wet seasons. ICAR-CIFT will install 10 numbers of solar dryers in the selected project areas for producing dried fish in a hygienic way following the entire food safety standard by WSHGs.

ii. **Quality dried fish production using polyhouse solar fish dryer by WSHG:**

- The project requested WCD&MS for selection of those WSHG from coastal villages of Odisha who are already involved in the production of dried fish through traditional methods. In Odisha, women are in dried fish production business as individuals and not as WSHG. They carry out the business activities individually with the help of family members. Project created awareness among those women to work under WSHG concept to have more benefits and timely assistances from different government schemes and local bank credit linkage.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

- WCD&MS provided names of 18 WSHGs located in 11 blocks of 6 districts (Annex.3)
- Then the representatives from WorldFish, Mission Shakti (District Mission Shakti Coordinator, Block Mission Shakti Coordinator & ICDS-AWC worker), Directorate of Fisheries (AFO, SFTA and JFTA), OLM and ORMAS officials visited all those 18 WSHGs and selected 10 best groups among them. They were selected based on the following criteria.
 - WSHGs which are already registered under Mission Shakti, Odisha.
 - Availability and accessibility to marine small fish.
 - Women in family or Groups, those are already doing dried fish production in traditional way.
 - Availability of suitable land for installation of solar dryers (good sunlight, nearby without big trees and height of land above the sea level and within community).
 - Interest among WSHG in taking up hygienic dried fish production using solar dryers.
- Field level meetings were conducted with those selected WSHGs maintaining the Covid social distancing and other norms. The objective of the meeting is to make aware the benefits of hygienically produced dried fish using polyhouse solar dryers, create market demand and stabilize their livelihood.

The list of selected WSHGs for production of hygienic dry fish using solar dryer

Sl.no	Name &Address	Contact Person with Mobile no	Block/District
1.	Maa Ramachandi Women Dry Fish Producer Group, Dalimbapur, Bagadia, Kujanga, Pin-754141,	Anupama Khatua, President, Mo-9861966401, Runi Tarai, Secretary, Mo- 6372303593.	Kujanga Jagatsinghpur
2.	Maa kalika WSHGs, Barajadauli, Kharasahapur GP	Santilata Biswal, President, Mo-9938828644, Puspallata Biswal, Secretary, Mo-7327826180, Manjulata Biswal, President	Bahanaga Balasore
3.	Badekhan Baba WSHG, Mirjapur, Chandipur (Balaramgadi), Balasore Sadar	HamidanBibi, President, RisinaBibi, Secretary Mo-9337564335	BalasoreSadar Balasore
4.	MaaTarini WSHG, Chudamani, Sashubhuasuni, Basudevpur	Sarathi Mallick, President BangiriMallick, Secretary, Mo-8144424511.	Basudevpur Bhadrak
5.	NitaiGoura WSHG, At/GP-Karanjuadia, Basudevpur	Gouri Mallick, President Arati Das, Secretary, Mo-9861805809.	Basudevpur Bhadrak
6.	Maa Basulei WSHGs, Nuagada, Astaranga, Puri	Pusparani Swain, President, Mo-9938829146, Ritanjali Kandi, Secretary, Mob-7683849037.	Astaranga, Puri

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

7.	Bandarei WSHG, Matrushakti GP level Federation, Kaliakana, Nagara GP	Manjulata Behera, President, Bandarei WSHG Mo- 9777967104	Astaranga Puri
8.	Shri Jagannatha WSHG, Gokhurkuda, Ganjam Block	N Mahalaxmi, Secretary (Anganwadi Worker, Mo- 6370957790) G Kamana, President	Ganjam Block Ganjam
9.	Budhi Maa WSHG, Mangalajodi, Tangi Block, Khurda	Kalika Behera, Secretary Jambu Behera, President	Tangi Khurda
10.	Adarsa Sukhua Producer Group, At-Fatepur, Po- Gopiakuda, Kujanga Block, Jagatsinghpur	Daliprava Samal, President, Mo- 9777705012, Archan Majhi, Secretary, Mo- 9337831560, Nirupama	Kujanga Jagatsinghpur

- Due to Covid restrictions and heavy rains, the solar dryers have not been installed so far. However, all the preliminary ground work has been completed. From last week of October, the installation work will be started and the production of solar dried fish will be started from the last week of November 2020.
- Meanwhile ICAR-CIFT will train these 10 nos. of Women SHGs (100 women members) in 3 batches (3-day training per batch) and all the staffs of Mission Shakti, Directorate of Fisheries and OLM of the selected block for hygienic solar fish drying, production of fish-based products and packing of fish products.

iii. CSR Event planning:

On the initiative of USAID New Delhi, WorldFish and USAID have co-developed a pitch and program for conducting a CSR event in Odisha in the month of February 2020. Transforming food systems through fish presents a major opportunity for use of CSR resources and help shape new scientific thinking on the role of fish for better food systems, improved nutrition and public health. With modest CSR resources, development and testing of novel, safe and nutritious fish products can be tested and piloted in 3 districts of Odisha. The work can generate science-based evidence and stimulate national level discussions for inclusion of fish and fish products in national nutrition programs (e.g. ICDS). The potential to reach millions of beneficiaries is a strong possibility. Companies deploying CSR resources could become Champions of “transforming food systems through fish” discussions at national and global platforms including fulfilling the national nutritional mission of fighting hidden hunger in the most vulnerable groups of people. As part of this work, a pitch (annex.4) and program (annex 5) was developed. In view of the Covid-19 Pandemic the event had to be postponed indefinitely. We expect to conduct this event in Q2 (Jan-Mar 2021)

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

Component 3: Increased Consumption

(A) Development and testing of innovative materials and approaches for SBCC

1. MAMTA NGO (sub-grantee) has completed the works under SBCC component of the project (Annex.6). Key Outputs are as below
 - Final report on SBCC materials have been submitted by MAMTA.
 - A total of 23 different type of IEC material was developed and tested in field by MAMTA and submitted.
 - All the field staffs were trained by MAMTA on the use of SBCC materials.
 - Due to COVID-19, no / very limited field activities were carried out but the messages were disseminated to beneficiaries though mobile SMS and call.
 - As a comprehensive state-level communication strategy, WCD&MS started massive awareness campaign on child and woman's nutrition through innovative mascot named 'Tikki Mausi'. In collaboration with WCD&MS and UNICEF, a short cartoon video on benefits of small fish-based Nutrition in the first 1000 days of life of the child was prepared using Tikki Mausi Mascot.

List of SBCC activities and outputs through MAMTA NGO under sub-grant agreement

Sl. No.	Activities as per the sub-grant agreement with MAMTA NGO	Remarks
1.	Formative Study	The Formative Study was conducted and the report submitted to WorldFish.
2.	Comics to strengthen fish consumption and nutritional benefits	The comic entitled Guddi o Chuna Maccha ra Katha (The story of Small fishes and Guddi)
3.	Handbook on healthy practices in fish consumption in schools and households	A Handbook (Recipe Book) entitled <i>Machha ra Byanjan Bichitra</i>
4.	TV Spot	An animated film to disseminated in TV based on story <i>Tiki Mausi</i>
5.	Radio Jingle/Spot- 1	A radio jingle based on the docudrama on small fishes
6.	Radio Jingle/Spot-2	A radio jingle based on the advertisement format
7.	Poster-1	Thematic area of small fish and the vitamin components in them.
8.	Poster-2	Small fishes and their nutritional value
9.	Poster-3	Thematic area of growing kitchen garden and the benefit of the same

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

10.	Leaflet-1	Invitation for the folk drama likely to be performed at the community level.
11.	Leaflet-2	Invitation for the Street Play (<i>Nukkad Natak</i>) which supposed to be organized at the community level.
12.	Pamphlet/ Brochure-1	The title of the Pamphlet/ Broacher-1 was <i>Chuna Maccha o Tara Upadeyata</i> .
13.	Pamphlet/ Brochure-2	kitchen garden concept and benefit of the sweet potato was prepared and submitted.
14.	Hoarding	Benefit of the small and big fishes
15.	Flexes for the Participatory Learning and Action (PLA) Flex-1	The benefit and the vitamin components of the small fishes was the thematic area of the Flex-1
16.	Flex-2	Requirement of Balanced diet
17.	Flex-3	Concept of kitchen garden and their benefit
18.	Wall Painting	Small fishes and benefit out of the same
19.	Video documentary on fish production and consumption	The film prepared by WorldFish titled by Fish and Nutrition/Nutrition Power House was voice overed in the local Oriya language.
20.	Pocket Book	The title of the pocket book is <i>Mo Pocket Bahi</i> .
21.	Street theater in local folk medium Folk Theater Script-1	The script on the folk base i.e. <i>Pala (Chuna Maccha ra Suna Kahani)</i>
22.	Local Street Theater Script- 2	The script on the street theater titled <i>Gaon ra nama Subarnapur</i> .
23.	Print based publication on Best Practices on fish production and consumption Flip Book-1	Flip book entitled <i>Karp Mahuruli Mishrita Macha Chasa</i>

2. A workshop on Gender Integration was organized by APART-WorldFish Project, Guwahati, Assam in collaboration with KIT Royal Tropical Institute, The Netherlands during 06-07th February 2020. Two officials from Odisha-WorldFish Project and Project Manager, USAID-IPP attended the workshop. On 08.02.2020, an exposure visit was made to the individual tanks and beels in Assam under of APART project along with local Fisheries Development Officer.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

3. Ms. Lydia O'Meara, Nutrition scientist Consultant visited Odisha during 16-24th February 2020. Meetings were arranged with officials from WCD department, Mission shakti, AWC workers and WSHGSs involved in dry fish production. Her visit was mainly to understand the following aspects
 - what nutritional benefits will come by adding fish to the ICDS program
 - what is the acceptability among recipients of doing so?
 - develop SOPs for incorporating fish into the ICDS program through either the THRs or the hot cooked meals (HCM).
 - The SOP will be used to implement and evaluate fish inclusion in ICDS and THR programs
4. Exposure visit to Andhra Pradesh: The team comprised 30 officials from DoF, AFO and hatchery managers of Fisheries & ARD Department and WorldFish visited Andhra Pradesh from 7-11th February 2020 to see aquaculture practices and advance technology adopted by Andhra farmers. The detailed report attached as Annex 7.

(B) Linkage with Institutional feeding program

Initiatives for inclusion of small fish in mid-day meal of ICDS:

After successful piloting of inclusion of small fish in institutional feeding program with support from the Departments of WCD & MS and Social Security and Empowerment of Persons with Disabilities (SSEPD) of Govt. of Odisha, the piloting experiences including different literatures of scientific research on benefit of fish nutrition for human beings were shared by WorldFish to Principal Secretary and other senior officers of WCD&MS.

As a result, Department of WCD&MS recommended Panchayati Raj and Drinking Water Department (PR-DWD), Odisha to invite WorldFish for attending “International Consultation Promoting Nutrition -sensitive Approaches and Linking agriculture, health & nutrition towards malnutrition free Odisha” on 18th October 2019 (Annex 8). In this context a presentation on “Sharing the experience of linking fishery with nutrition and Scaling Nutrition-sensitive Fish Agri-Food systems in Odisha” was made. The WorldFish, Odisha Office was represented by Dr Baishnaba Charan Ratha, Project Manager, USAID project and Dr B A Shamasundar, Senior Consultant, Fish product development expert, USAID-IPP project. It was a great opportunity to present how fish particularly small fish will be benefit to combat malnutrition in state like Odisha in front of experts, researchers, development partners, civil society organization, community engaged in making Odisha state malnutrition free.

“A high-level strategic policy workshop on Maximizing Nutritional Outcomes in Odisha through Fish” was conducted on 5th November 2019 at WorldFish headquarters in Penang, Malaysia followed by a field visit to Cambodia to observe carp-mola polyculture and nutrition activities for senior officials from Government of Odisha including Development Commissioner-cum-Additional Chief Secretary, Agriculture Production Commissioner-cum-Additional Chief Secretary, Principal Secretary, WCD & MS Dept., Commissioner-cum-Secretary, Fisheries & ARD Department.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

As part of the cross-country learning exposure visits, 11 nos. of Odisha government officials from three convergence departments (FARD, Women and Child development and Mission Shakti and Odisha Livelihood Mission) participated in a weeklong Bangladesh exposure visit from 30th January to 04th February 2020. During the field visits, the participants observed the key R & D developments on nutrition –sensitive fish production systems which includes carp-mola polyculture production in small homestead ponds, vegetable production in dikes/homestead areas useful to reduce malnutrition of poor and ultra-poor households, methods of mass production of mola in closed and semi-closed pond-rice field system and the community level processing and cooking of small fish for household consumption with focus on the first 1000 days of life. The detailed report is enclosed as Annex 9.

Then time to time, regular meetings and discussions and regular follow-ups with officials of WCD & MS by WorldFish State officials and senior experts from WorldFish HQ, the project was able to influence policy makers in the Dept. of FARD and WCD & MS, resulting in the inclusion of WorldFish under the Odisha State Nutrition Secretariat and being one of the key member to the Technical Expert Advisory Group on Nutrition (TAG). Henceforth, WorldFish has become one of a partnering organisation to support Govt. of Odisha for new initiatives like i) “SOPAN”(Strategy for Odisha’s Pathway to Accelerated Nutrition), targeting 125 nutritionally challenged hard to reach blocks, “ODISHA 2020-25”under Women & Child Development and Mission Shakti (WCD & MS) in promoting nutrition-sensitive approaches and linking agriculture, health & nutrition and ii) “Pushtikar Panchayats” lead by OLM under the Dept. of Panchayati Raj and Drinking Water (PR-DWD) towards the mission of making all the gram panchayat free of malnutrition. Subsequently, WorldFish participated State level Technical Expert Advisory Group on Nutrition (TAG) on 25th February 2020 under the chairmanship of Director ICDS and SW with the following agenda:

- Technical inputs for improvement of quality of supplementary nutrition (THR & Hot Cooked Meals)
- Menu and quality with respect to the age and category of beneficiaries covered under SNP
- Fortification and micro-nutrient essential for improving THR/HCM
- Setting up on mechanized THR units in the state and
- Setting up Centre of Excellence/ State Institute of Nutrition

In this meeting including other decisions, TAG on Nutrition committee decided for Piloting of Hot Cooked Meals (HCM) with fish to be taken in Mayurbhanj district by WorldFish and also approved for awareness generation of ICDS functionaries across districts on benefits of fish based nutrition.(Annex 10)

State level International Women’s Day was celebrated at the Loka Seva Bhavan, Bhubaneswar, Odisha on 8th March 2020. On this occasion, Honourable Chief Minister of Odisha, Mr. Naveen Patnaik has launched Odisha Nutrition Strategy for the State. Department of WCD&MS has come up with a strategy for transforming nutrition outcomes in 125 identified nutritionally challenged blocks of the state. WorldFish was also invited member of the Technical Advisory Group on Nutrition and declared as a partner in the SOPAN: Strategy for Odisha’s Pathway to Accelerated

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

Nutrition Targeting 125 nutritionally challenged hard to reach blocks, ODISHA 2020-25 (Annex.11).

Another TAG virtual meetings was organised by WCD&MS Department on 28th August 2020 (Annex 12). Officials from UNICEF, WFP, ICMR-NIN, APPI, MDM, Department of S&ME, Department of H&FW, CSIR-CFTRI, CTCRI, OUAT were present. Project Manager, USAID-IPP and Project Manager Odisha-WorldFish project attended from the project side. Following topics were discussed

- “Piloting inclusion of nutritious small fish in diets of pregnant women and lactating mother under the 1000 days approach and among preschool children of 3-6 year age group and adolescent girls among tribal communities through partnership approach in Odisha”. It was decided to use hygienically produced dried marine small fish for the feeding programme for pregnant woman & lactating mother, adolescent girls and fish powder for children of 3-6-year age group.

Beneficiary and fish entitlement

	Hot Cooked Meal	Take Home Ration
Beneficiary	3-6-year old children	10-18-year old AG 19-49-year old PLW
Product	Fish powder	Dried small fish
Quantity entitled	15g / child / day	25g /10-15-year old AG / day 40g /16-18-year old AG / day 40g /19-49-year old PLW / day
Days entitled	5 days / week / child	3 days / week / person
Method of intake	Anganwadi Centre to add fish powder to children’s daily curry as part of the Hot Cooked Meal.	Anganwadi Centre to distribute dried small fish to AG and PLW with Take Home Ration.

- Tikki Mausi video on fish-based nutrition was displayed in the meeting.
- SOP for inclusion of small fish in SNP.

MoU with WCD&MS

A MoU between WorldFish and WCD&MS has been approved, in principle, by the Government of Odisha for scaling up the nutrition-sensitive fish-agri food systems in the state of Odisha. The objective of the MoU over a period of 5 years include

- Train and empower 6000 Women Self Help Groups (WSHGs) involving 60,000 women in nutrition-sensitive fish production systems in Gram Panchayat tanks
- Train and empower 10 WSHGs involving 100 women for fish processing (cleaning and dressing the fresh fish from fish tanks, hygienic solar drying of the small indigenous

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

species of fish from wild catch) through small-scale home industry set-up (producer groups) and linking them to the market.

- Design and develop age-specific fish-based products for ICDS beneficiaries from small indigenous species sourced from capture fisheries (especially marine fish).
- Commercially produce fish-based products from small indigenous species by implementing the government approved food safety standards and market it in domestic market.
- Collaborate in piloting the inclusion of fish and fish-based products in government sponsored ICDS Supplementary Nutrition Programme (SNP) through 50 Anganwadi centers. This will cover children between 3 to 6 years age, pregnant & lactating women and adolescent girls.
- Conduct national and international study tours and brain storming sessions for key officials of the Department to share the experiences on inclusion of fish for nutritional benefits of the vulnerable section of the communities.
- Technically assist the Department in preparing feasibility report on inclusion of fish in SNP to 16,13,775 children in the age group of 3-6 years; 22,45,370 adolescent girls and 7,19,379 pregnant & lactating women across the state.
- Technically assist the Department for inclusion of fish on large-scale basis under ICDS supplementary feeding programme, if decided by the Government.
- Support the Department in creating awareness among 1,37,964 ICDS functionaries across districts on benefits of fish-based nutrition through different SBCC materials and Nutrition Protagonist TikiMausi.
- Technically assist the Department in disseminating the importance of fish based nutrition in 1000 days of life in 125 hard to reach projects under SOPAN.
- WorldFish international and national experts participate in the relevant workshops and trainings conducted by the Department as domain specialists and resource persons.
- Share the scientific evidences of benefits of fish consumption on human nutrition and health on a regular basis.
- Assist the Department in designing and executing proper Monitoring, Evaluation and Learning (MEL) of various activities under the MoU and for documentation of various activities and outcomes of the program in order to share the learnings with wider stakeholders for further developments/investments at scale along with the agreed impact pathway.

Department of WCD&MS, Odisha has approved a proposal from WorldFish for implementation of a USAID funded project - “Piloting inclusion of nutritious small fish in diets of pregnant women and lactating mother under the 1000 days approach and among preschool children of 3-6-year age group and adolescent girls among tribal communities through partnership approach in Odisha” (Annex 13). This programme will be launched by Honourable Chief Minister of Odisha during November 2020.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

Meeting with Department of Micro, Small & Medium Enterprise (MSME) Department

- A meeting was held with Shri. Satyabrata Sahoo, IAS, Principal Secretary MSME, where Commissioner cum Secretary, FARD, Director of Fisheries, and Senior Officers from agriculture and fisheries department were also present. Under 'one district one product' (ODOP) programme in the State, Principal Secretary MSME stressed how more WSHGs will be encouraged to involve for producing hygienic marine dried fish using solar drier in coastal regions of state. He also discussed elaborately about market link to women farmers and make small industries successful in the state under direct supervision of the Fisheries and MSME department. The principal Secretary appreciated the initiative of WorldFish to engage WSHGs in production of hygienic dry fish using solar dryer for their livelihood and all 10 number of solar driers across the six districts will be demonstrated to all near WSHGs in a cluster approach, so that other WSHGs will be motivated to adopt the same approach to produce hygienic dried fish using solar drier in their respective areas. Then, interested WSHGs will be benefited with 50% subsidy and bank linkages to install solar driers to produce hygienic dried fish with support of MSME department.

Development of SOPs for incorporating fish into the ICDS program

In 2016, the Odisha government launched the Odisha Nutrition Action Plan (ONAP), which outlines a multi-sectoral approach to reducing malnutrition. The ONAP places a special focus on reducing malnutrition amongst women and children from hard to reach tribal districts to reduce the high rates of stunting and underweight within these populations.

Fish are commonly consumed in Odisha, especially among tribal communities, making them a culturally appropriate animal-source food. Furthermore, the Odisha state government has programmes in place that support the nutrition of vulnerable women and children in rural areas through the delivery of Hot Cooked Meals and Take-Home Rations via the state wide Supplementary Nutrition Programme. Food is distributed via rural childcare centres called Anganwadi Centres.

To assist in accelerating progress on reducing malnutrition in hard to reach tribal communities, USAID and WorldFish are collaborating with the Government of Odisha to pilot the inclusion of fish products in the Supplementary Nutrition Programme (Government of Odisha, 2018). Specifically, this involves the inclusion of fish powder in Hot Cooked Meals for 3-6-year old children and dried small fish in Take Home Rations (THR) for Pregnant and Lactating Women (PLW) and 11-18-year old Adolescent Girls (AG). The purpose of this study is to improve the dietary diversity and micronutrient intakes of women and children involved in the Supplementary Nutrition Programme and test the acceptability of dried fish products (eg. taste, ease-of-use) with tribal community beneficiaries and Anganwadi Centre workers. Methodology will be scalable to other fish-eating communities within Odisha state.

This Standard Operating Procedure (SOP) has been prepared in line with existing implementation guidelines for Odisha's Supplementary Nutrition Programme (Government of Odisha, 2018) and international criteria for sustainably improving the nutritional content of state delivered meals.

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

This SOP is intended as a unifying document for use by the WorldFish Odisha team and collaborating stakeholders in piloting and evaluating the inclusion of small dried fish products in the Odisha State Supplementary Nutrition Programme. The SOP document was submitted to WCD&MS during the month of June 2020 and it has been approved by the department (Annex 14)

Component 4: Improved food and nutrition security and scaling

(A) Collaboration arrangements with other government agencies for scaling

- Collaboration with ICAR-CIFT (Central Institute of Fisheries Technology) has been done for developing new value-added fish-based products. A sub-grant agreement has been signed between WorldFish and ICAR-CIFT during February 2020.
- Collaboration arrangements discussed with Department of Horticulture, Government of Odisha on supply of different vegetable and fruit plants to the project.
- Collaborations arrangements have been discussed with Odisha Rural Development and Marketing Society (ORMAS) under Panchayati Raj and Drinking Water Department, Government of Odisha. ORMAS will coordinate supply of fresh fish and dry fish products through WSHGs for the feeding program of KISS
- Collaboration arrangements being discussed with following departments in Odisha Government for inclusion of fish/small fish in their ICDS and school meal programmes
 - Health & Family Welfare,
 - School and Mass Education,
 - Scheduled Tribe and Scheduled Cast Development,
 - Social Security and Empowerment of Persons with Disability.

(B) Community Resources

- IEC material developed on Benefits on small fish. A leaflet on importance of small fish in 1000 day of life was prepared in Odia Language by the project team and were distributed to all the farmers during the training program
- Various SBCC materials were produced to distribute in community.
- Other events taken place during the reporting period where USAID-IPP project was a part

Sl No	Name of the event	Date of commence	Activities undertaken/ Displayed

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

1	Historical Bali Jatra at Cuttack (Mega Event)	12.11.19 to 20.11.19	<ul style="list-style-type: none"> • Posters on Small fish- Nutritional benefits was displayed. To sensitize the Importance and benefits of consuming small fishes. • Boneless Rohu was displayed and sold to the interested visitors. • Nutritional benefit of fish was displayed through charts
2	Observation of 65 th Co-operative week at Rabindra Mandap, Bhubaneswar	18.11.19	<ul style="list-style-type: none"> • Separate stall was organized where the Nutritional benefit of fish was displayed through charts, along with other activities of the project. • The inclusion of small fish in school feeding programme was appreciated by the visitors.
3	Krushi Odisha-2020 State level Agriculture fair (Mega Event)	20.1.20 to 24.1.20	<ul style="list-style-type: none"> • Stall was organized by the project. Different activities of Project were displayed through flex materials. • Use of small fish and its benefits was shown. • Carp-Mola Polyculture was displayed. • Integrated fish farming and vegetable cultivation displayed through model • Benefits of small fish was displayed through video clip in a TV

(c) Capacity building activities for Government functionaries

Project manager, Nutrition, USAID has supported government agencies by imparting training to ICDS field supervisors and AWC workers in job-course-training regularly. The training was held at Bhubaneswar and it is conducted every month. Newly joined ICDS supervisors and workers will be trained on various government initiatives where one session on Early childhood care and nutrition and importance of 1000 days of life will be taken up by Project manager USAID-IPP with a special emphasis on fish for nutrition. During the reporting period he trained 123 ICDS field supervisors, 636 AWC workers in 25 batches which are as follows;

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

Status of resource support to Govt. training institutes under W&CD Department by Project Manager, USAID-IPP

Sl. no	Topic of the Job Course training	Date	No. of trainees		No. of Batches
			ICDS- Supervisors	ICDS- AWC workers	
1.	Leadership Quality of ICDS Functionaries to combat malnutrition in State	21.10.2019	-	134	4
	New WHO Growth Chart and Community Growth Chart plotting, Interpretation, Growth promotion and Nutrition counseling	22.10.2019	25	-	1
2.	Importance of Nutrition in early 1000 days Human life	21.11.2019	-	117	4
	New WHO Growth Chart and Community Growth Chart plotting, Interpretation, Growth promotion and Nutrition counseling	27.11.2019	24	-	1
3.	New WHO Growth Chart and Community Growth Chart plotting, Interpretation, Growth promotion and Nutrition counseling	02.12.2019	25	-	1
	Leadership Quality of ICDS Functionaries to combat malnutrition in State	27.12.2019	-	131	4
4.	Importance of Nutrition in early 1000 days Human life	08.01.2020	-	118	4
	New WHO Growth Chart and Community Growth Chart plotting, Interpretation, Growth promotion and Nutrition counseling	20.01.2020	24	-	1
5.	New WHO Growth Chart and Community Growth Chart plotting, Interpretation, Growth promotion and Nutrition counseling	12.02.2020	25	-	1
	Role of Nutrition in Early Childhood Care and Education (ECCE)	17.02.2020	-	136	4
TOTAL			123	636	25

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

C. Cumulative Indicators (as shown in the original project documents)

Activity	2017-2018	2018-2019	2019-2020
No. of households practicing carp-mola polyculture	100	500	2000
No. of community ponds stocking mola and other nutrient-rich small fish	5	15	24
No. of women's groups engaged in fish drying	5	15	40
No. of anganawadi centers using fish products in mother and child health program	5	20	50
No. of schools using fish in midday meal program	5	20	50

Cumulative Indicators achieved by the project

Sl. No.	Activity	Project Target	Achievement from Oct 2017 to Sept 2018	Achievement Oct 2018 to Sept 2019	Achievement Oct 2019 to Sept 2020	Cumulative achievement till Sept 2020
1	No. of households practicing carp-mola polyculture	2000	167	588	34	789
2	No. of community ponds stocking mola and other	24	1	21	-	22
3	No. of women groups engaged in fish drying	40	-	-	1	1
4	No. of Anganwadi centers using fish products in mother and child health care (ICDS)	50	-	-	-	--
5	No. of schools using fish in mid-day meal program	50	3	21	-	24
6.	Planned intervention district & block	3 district and 6 blocks	3 district and 6 blocks	5 district and 9 blocks	5 district and 9 blocks	5 district and 9 blocks
7.	SBCC Materials	0	-	-	19	19
8.	MoU	0	-	1	3	4
9	Partnerships	0	4	3	4	11
10	Policy influence	0	-	1	3	4
11	Cross Country Visits	0	-	-	3	3
12	Training to other Government Functionaries	0	179	1604	759	2542

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

D. Monitoring and Evaluation Activities

MSSRF is regularly monitoring the field activities under the project. Pond record books have been distributed to all the beneficiaries under the project. The project assistant (nutrition) are regularly contacting the beneficiary households for disseminating the nutrition related messages to the community. A household member survey has been done by these assistants. The details of AWCs present in the project area were surveyed for collecting information on the various food menu and nutrition status of children.

E. Meetings with partners

- IEC workshop was held on 14th November 2019 at Project office. District managers, Nutrition assistants, project staff and staff from MAMTA NGO was present in the workshop.
- A review cum planning meeting was held between MAMTA NGO and WorldFish on 12th December 2019. Dr. Mohan, Principal Scientist, WorldFish, project Manager, Odisha WorldFish project, Project Manager USAID and officials from MAMTA NGO present during meeting held at Bhubaneswar.
- A meeting was held between MAMTA NGO and Ms. Lauren Pincus, Scientist, WorldFish on 21st January 2020. Ms. Pincus reviewed the progress and suggested necessary changes required and the same were incorporated in the materials.
- Many virtual meetings were attended by project manager and staffs during the lockdown period.
 - Webinar Virtual Dialogue: Dried Fish Matters: Mapping the Social Economy of Dried Fish in South and Southeast Asia for Enhanced Wellbeing and Nutrition was organised by Social Sciences and Humanities Research Council of Canada-funded project. Date 6 December 2019.
 - Webinar Virtual Dialogue: Young children amidst COVID-19: #5_Ensuring the safety and security of young children during and beyond the pandemic Confirmation, Date: 21 May, 2020, ARNEC's Webinar Series, ARNEC Secretariat, Singapore.
 - Webinar Virtual Dialogue: Exploring the power of play in building the resilience of young children and their families at home, Date: 28 May 2020, ARNEC's Webinar Series, ARNEC Secretariat, Singapore.
 - Webinar Virtual Dialogue: Fish Talk: World Nutrition Day Special with focus on COVID-19,(under the novel coronavirus circumstances) , 28 May 2020, WorldFish, Jalan Batu Maung, Batu Maung, Pulau Pinang, Malaysia.
 - Webinar Virtual Dialogue: Nourishing Billions, Date: 3 June, 2020, WorldFish, Jalan Batu Maung, Batu Maung, Pulau Pinang, Malaysia
 - Webinar Virtual Dialogue: Transforming the global agricultural research and development agenda with aquatic foods, 03 June, 2020, WorldFish, Jalan Batu Maung, Batu Maung, Pulau Pinang, Malaysia

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

- Webinar Virtual Dialogue: The ECD workforce matters, too: profiles, impacts, and support measures during and beyond the pandemic, Date: 9 June. 2020, ARNEC's Webinar Series, ARNEC Secretariat, Singapore.
- Webinar Virtual Dialogue: Virtual Dialogue: Young children amidst COVID-19, The ECD workforce matters, too: profiles, impacts, and support measures during and beyond the pandemic, Date: Jun 9, 2020, ARNEC's Webinar Series, ARNEC Secretariat, Singapore.
- Webinar Virtual Dialogue: Workforce Nutrition during Covid-19, Improving access - Practitioner Perspective, 23 June 2020, Ecociate Consultants Pvt. Ltd, B – 160, Sector 51, Noida – 201301, Uttar Pradesh, India
- Webinar Virtual Dialogue: Partner Event 1: CFS-Side-Events, topic: Building Forward Better with Aquatic Foods, Date Time: Date Time: 27 July, 2020, WorldFish, Jalan Batu Maung, Batu Maung, Pulau Pinang, Malaysia
- Webinar Virtual Dialogue: Building Forward Better with Aquatic Foods, A high-level discussion on aquatic food systems and their contribution to global food and nutrition security, Date: 29 July 2020, WorldFish, Jalan Batu Maung, Batu Maung, Pulau Pinang, Malaysia
- Webinar Virtual Dialogue: Why Inclusion Matters: Featuring Voices from the Field, 29 July 2020, Bureau for Resilience and Food Security, AGRILINKS, Feed the Future, U.S. Government's global hunger and food security initiative.
- Webinar Virtual Dialogue: Mitigating the Impacts of COVID-19 on Food, Nutrition and Water Security, Date: 30 July, 2020, Senior Deputy Assistant Administrator for the Bureau for Resilience and Food Security (alter ego for the Assistant to the Administrator), USAID, Ronald Reagan Building, Washington, DC
- Webinar Virtual Dialogue: Enhancing the Domestic Fish Consumption, Society for Indian Fisheries and Aquaculture, 01 August, 2020, SIFA & NFDB. Government of India.
- Webinar Virtual Dialogue: Animal Source Foods (ASFs) and Child Nutrition in Bangladesh, Nepal and Uganda, Date: 5 August, 2020, Feed the Future Initiative; Feed the Future is America's initiative to combat global hunger. Led by USAID.
- Webinar Virtual Dialogue: Virtual Dialogue: Scopes and Opportunities of Fishery: an enterprise section of Odisha during COVID-19, Date: 8 August 2020, Odisha Corporate Foundation (OCF), Bhubaneswar Odisha, India,
- Webinar Virtual Dialogue: Atmanirbhar Bharat: Opportunities Unlimited"25, August, 2020, Birla Global University, Bhubaneswar, Odisha, India
- Webinar Virtual Dialogue: Different components to produce quality nutritious food (HCM & THR) and also micronutrient fortifications under WCD Supplementary Nutrition Programmes, Technical Expert Advisory Group (TAG) meeting, Date: 28, August, 2020, WCD & MS Department, Government of Odisha.
- Webinar Virtual Dialogue: A Systems Approach for Climate-resilient and Inclusive Aquatic Foods, 01 September, 2020, WorldFish, Jalan Batu Maung, Batu Maung, Pulau Pinang, Malaysia

Scaling nutrition-sensitive fisheries technologies and integrated approaches through partnership in Odisha: USAID IPP Funded Project (Oct 2017-Sept 2020)

- Webinar Virtual Dialogue: Nutri-garden: Bridge between Agriculture and Nutrition, The Coalition for Food and Nutrition Security (CFNS), Date: Sep 5, 2020, NRPC Colony, Block B, Qutab Institutional Area, New Delhi, Delhi.
- Webinar Virtual Dialogue: Fish Feed, Feed formulation and feeding Practices, Date: 11 September, 2020, Assam-WorldFish Project, ARIAS Strategic International Partnership Centre, Guwahati, Assam.
- Webinar Virtual Dialogue: Building A Safe Food System: The Role of Cold Chain Logistics in Food Safety of Perishable Food, 30 September 2020, AGRI LINKS, Bureau for Resilience and Food Security, USAID.

Leverage, Cost Share and Financial Monitoring

Ongoing FARD project of WorldFish along with several new R&D partnerships being developed by WorldFish is providing significant leverage and cost-sharing benefit to the USAID nutrition-sensitive fish food system project. These ongoing and new R&D partnerships are also assisting the project to widely promote nutrition-sensitive messages in fish food systems. During the no-cost extension period of Oct 2020 to Mar 2021, significant leveraging will be secured from WorldFish and also from FARD project in Odisha.

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F. Additional Supporting Documents

1. Cluster level training report
2. Small fish Recipe demonstration report
3. Letter from WCD& MS on selection of WSHG for production of hygienic dry fish using polyhouse solar dryer
4. CSR event Pitch
5. CSR event agenda
6. SBCC report
7. Andhra visit report
8. Invitation by PR&DW Dept to attend “International Consultation Promoting Nutrition - sensitive Approaches and Linking agriculture, health & nutrition towards malnutrition free Odisha”
9. Bangladesh visit report
10. Letter and proceedings to include WorldFish as member of TAG.
11. WorldFish as a partner in the SOPAN: Strategy for Odisha’s Pathway to Accelerated Nutrition Targeting 125 nutritionally challenged hard to reach blocks, ODISHA 2020-25 declared by Chief Minister, Govt of Odisha.
12. Letter by WCD&MS to attend TAG meeting held on 28.08.2020
13. Approval for WCD piloting
14. SOP on inclusion of small fish in SNP, Pilot study in Odisha, India
15. Success stories
16. Photographs