



FACTSHEET | 1954

A Better Margin: Disadvantaged minorities in rural Bangladesh boost their incomes with new fish skills

KEY FACTS

- The Bangladesh Department of Fisheries has recognized the fish production and extension efforts of 27 beneficiaries of the Adivasi Fisheries Project (AFP) in the 2007/08 and 2008/09 production cycles.
- In leading the AFP, the WorldFish Center built on 2 decades of earlier work in Bangladesh on aquaculture techniques for smallholders and community fisheries management, now targeting disadvantaged rural minorities called Adivasi.
- The AFP is implemented in five districts of north and northwest Bangladesh, with EURO1.13 million (US\$1.49 million) in funding from the European Union and EURO0.12 million (US\$0.17 million) in funding from the project implementing partners.
- The AFP lifted the average income of participating Adivasi households from Tk44,075 (US\$647) in 2007 to Tk52,035 (\$763) in 2008, largely by quadrupling the contribution of fish.
- The increased income improved the food security of Adivasi households, reducing their food deficit period from 1.7 months in 2007 to 1.4 months in 2008.
- By the end of 2008, the AFP had improved the livelihoods of 3,594 Adivasi households.

SUCCESSFUL FISH FARMER

Sudhir Tigga never liked pedaling a rickshaw in Dhaka. He and his brother started migrating to the city in 2001, staying for 2-3 months before returning to their poor farming community in northwestern Bangladesh. Members of the Oraon community, they are among 2 million Adivasis, ethnic minorities that are the poorest and most socially excluded people in Bangladesh.

The Tigga brothers last went to Dhaka in 2007, the same year that the WorldFish Center and its partners launched the Adivasi Fisheries Project (AFP) to teach pond and rice-fish culture to Adivasi smallholders and cage aquaculture



Sudhir Tigga (c) has stopped working in Dhaka to stay with his wife (r) and rear fish in rice-fish plot



and fish-related business to Adivasi landless. The project lifted the average income of participating households from Tk44,075 (US\$647) in 2007 to Tk52,035 (\$763) in 2008, largely by quadrupling the small but growing contribution of fish. Almost all of the dozen or so neighbors of the Tiggas who used to migrate seasonally now stay home year round.

Tigga is one of 24 AFP beneficiaries awarded by the Bangladesh Department of Fisheries during National Fish Week 2009 in recognition of their extraordinary performance in the 2008/09 production cycle, from July 2008 to June 2009. This number is eight times the three AFP stakeholders who were recognized in National Fish Week 2008. The large number of awardees illustrates the accessibility and potential for success of the fishery-related livelihood options promoted by the AFP.

Named a best farmer for fingerling and food fish production in rice plots, Tigga, a resident of Pirgonj Upazila in Rangpur District, derived a profit of Tk40,500 from an investment of Tk8,100 in integrated rice, fish and vegetable farming. Stocking 30 kilograms (kg) of genetically improved farmed tilapia (GIFT), silver barb and common carp in rice paddies totaling 0.22 hectares (ha) in the *boro* growing season, Tigga harvested within 6 months 540 kg of fingerlings worth Tk42,000 and 560 kg of rice worth Tk6000, as well as 45 kg of vegetables worth Tk600 grown on paddy bunds.¹ The other awardees and their achievements are listed at the end of this factsheet.

HELPING THE POOREST

Working with Caritas Bangladesh and the Bangladesh Fisheries Research Forum in the AFP, WorldFish built on 2 decades of earlier work in Bangladesh that refined pond and rice paddy aquaculture techniques for smallholders and community fisheries management to benefit the landless and other poor rural residents. The AFP, with EURO1.13 million (US\$1.49 million) in funding from the European Union

and EURO0.12 million (US\$0.17 million) in funding from the project partners, is implemented in five districts of north and northwest Bangladesh, has extended proven low-input techniques to the country's most marginalized communities.

By the end of 2008, the project had improved the livelihoods of 3,594 Adivasi households, increasing by four times their income from fish culture in ponds, rice paddies and cages, as well as from habitat restoration for capture fisheries and from aquaculture-related income options such as forming fish-netting teams for hire and trading in fingerlings and food fish. The increased income improved the food security of Adivasi households, reducing their food deficit period from 1.7 months in 2007 to 1.4 months in 2008.

The four categories of awards given in National Fish Week are (1) integrated rice and fish culture, (2) pond aquaculture, (3) cage aquaculture, and (4) extension services. AFP support for cage culture in particular exemplifies the project's focus on the poorest of the poor, including the landless. Rearing fingerlings and food fish in cages floated in large ponds owned by either the community or accommodating neighbors is especially attractive to women, as a manageable cage measuring 1 cubic meter can produce 20 or more kilograms of fingerlings in less than 2 months. Paulina Hembron, whose husband, Stephan Murmu, was recognized during National Fish Week for his cage culture of fingerlings, says cage aquaculture provides a good source of additional income for her family as it requires little labor and the return is quick.

Another option the AFP extended to landless Adivasi is forming a team that provides fish netting and transport services to fish farmers for a fee equal to 10-15% of the wholesale price. Other Adivasi beneficiaries have opted for fish trading, sometimes going door to door. As running a business, however small, was new to Adivasi communities, the project trained beneficiaries in such skills as keeping accounts.

¹ The boro season in Bangladesh is dry, extending from January or February to May or June. It became productive only with the advent of modern high-yielding rice varieties and extensive irrigation. The *aman* rice crop coincides with the rainy season and is normally seeded in June or July, transplanted from July to September and harvested from November to January. The *aus* rice crop is sometimes planted between the boro and the aman, from March to May, and harvested in July or August.



RECOGNIZED FOR ACHIEVEMENT

Other best farmers, in addition to Sudhir Tigga, who were recognized in 2009 for fingerling and/or food fish production in rice plots are as follows:

- Suka Tigga, of the Oraon community in Nawabgonj Upazila, Dinajpur District, derived a profit of Tk8,444 in 4 months of the boro season from an investment of Tk5,911, as he used 4.5 kg of silver barb, common carp and GIFT to produce 29 kg of fingerlings and 17 kg of food fish worth Tk5,325 and 623 kg of rice worth Tk7390 in a 0.11 ha plot, along with 82 kg of vegetables worth Tk1640.
- Anil Mahato, of the Mahato community in Panchbibi Upazila, Joypurhat District, derived a profit of Tk9,440 in 4 months of the boro season from an investment of Tk6,200, as he used 10 kg of GIFT and common carp fingerlings to produce 80 kg of fingerlings worth Tk8,000 and 640 kg of rice worth Tk7100 in a 0.10 ha plot, along with 45 kg of vegetables worth Tk540.
- Budu Soren, of the Santal community in Birgonj Upazila, Dinajpur District, derived a profit of Tk22,800 in 6 months of the boro season from an investment of Tk4,000, as he used 6 kg of GIFT and common carp fingerlings to produce 75 kg of fingerlings and 25 kg of food fish worth Tk21,000 and 480 kg of rice worth Tk5150 in a 0.07 ha plot, as well as 50 kg of vegetables worth Tk650.
- Bishu Mardi, of the Santal community in Birampur Upazila, Dinajpur District, derived a profit of Tk4,297 in 4 months of the boro season from an investment of Tk935, as he used 3.5 kg of tilapia and common carp fry to produce 19 kg of fingerlings worth Tk1900 and 280 kg of rice worth Tk2450 in a 0.04 ha plot, as well as 84 kg of vegetables worth Tk882.



Suka Tigga (c) shows part of the harvest from his rice-fish plot



Anil Mahato casts a net in the ditch of his rice-fish plot



Budu Soren (r) harvests fingerlings from his rice-fish plot



Bishu Mardi applies feed in the ditch of his rice-fish plot



- Chandradev Hazong, of the Hajong community in Kalmakanda Upazila, Netrokona District, derived a profit of Tk6,730 in 4 months of the boro season from an investment of Tk4,085, as he used 3 kg of GIFT and common carp fingerlings to produce 90 kg of food fish worth Tk8,765 and 120 kg of rice worth Tk1,500 in a 0.16 ha plot, as well as 28 kg of vegetables worth Tk550.
- Birandra Barman, of the Barman community in Nalitabari Upazila, Sherpur District, derived a profit of Tk19,420 in 4 months of the boro season from an investment of Tk6,000, as he used 4.5 kg of GIFT and common carp fingerlings to produce 180 kg of food fish worth Tk19,000 and 360 kg of rice worth Tk4320 from a 0.12 ha plot, as well as 155 kg of vegetables worth Tk2100.
- Swarnokanta Barman, of the Barman community in Nalitabari Upazila, Sherpur District, derived a profit of Tk11,825 in 5 months of the aman season from an investment of Tk4,225, as he used 8 kg of GIFT, sarputi, mrigal, rui and silver carp fingerlings to produce 100 kg of food fish worth Tk9,980 and 400 kg of rice worth Tk4800 in a 0.10 ha plot, as well as 120 kg of vegetables worth Tk1270.
- Gohin Coch, of Jhenaigati Upazila, Sherpur District, derived a profit of Tk33,934 in 5 months of the aman season from an investment of Tk5,766, as he used 3.25 kg of GIFT and common carp fingerlings to produce 137 kg of food fish worth Tk12,100 and 1,680 kg of rice worth Tk27,600 in a 0.32 ha plot.



Chandradev Hajong harvests fish from his rice-fish plot



Swarnokanta Barman harvests fish from his rice-fish plot



Birandra Barman shows pleasure at harvesting fish from his rice-fish plot



Gohin Coch sometimes uses a lift net to harvest his rice-fish plot



Farmers recognized in 2008 and 2009 for pond culture are as follows:

- Nicolas Minj, of the Oraon community in Nawabgonj Upazila, Dinajpur District, derived a profit of Tk19,448 in 6 months from an investment of Tk13,608, as he used 78 kg of fingerlings to produce 570 kg of food fish worth Tk33,056 in a 0.15 ha pond.
- Eujan Richial, of the Garo community in Durgapur Upazila, Netrakona District, derived a profit of Tk20,128 in 10 months from an investment of Tk6,412, as he used 10 kg of rui, catla, mrigal, common carp, silver carp, silver barb and tilapia fingerlings to produce 192 kg of food fish worth Tk19,245 in a 0.06 ha pond, as well as 365 kg of vegetables worth Tk7,295 grown on the pond dikes.
- Anil Rongdi, of the Garo community in Kalmakenda Upazila, Netrakona District, derived a profit of Tk4,003 in 8 months from an investment of Tk3,117, as he used 4 kg of rui, catla, silver carp, common carp, silver barb and tilapia to produce 62 kg of food fish worth of Tk6,200 in a 0.01 ha pond, as well as 90 kg of vegetables worth Tk920.
- Makhan Chandra Dalu, of the Dalu community in Nalitabari Upazila, Sherpur District, derived a profit of Tk19,200 in 9 months from an investment of Tk3,460, as he used 8 kg of rui, catla, mrigal, silver carp, silver barb and tilapia fingerlings to produce 208 kg of food fish worth Tk20,800 in a 0.04 ha pond, as well as 155 kg of vegetables worth Tk1,860.



Nicolas Minj (c) displays fish harvested from his pond



Anil Rongdi (c) is very pleased with his pond fish production



Happy Eujan Richial (c) displays a large fish harvested from his pond



Makhan Chandra Dalu (c) is happy to show fish from his pond



Gourango Chandra Barman and his wife prepare fish feed for their pond



Uttam Chandra Hazong (c) harvests fish from his pond

- Gourango Chandra Barman, of the Barman community in Jhenaigati Upazila, Sherpur District, derived a profit of Tk18,770 in 10 months from an investment of Tk3,550, as he used 1 kg of common carp fry and 4 kg of silver carp, rui, mrigal, catla, surputi and tilapia fingerlings to produce 130 kg of food fish and 33 kg of fingerlings worth Tk21,320 in a 0.04 ha pond, as well as 65 kg of vegetables worth Tk1,000.
- Uttam Chandra Hajong, of Kalmakanda Upazila, Netrakona District, and awarded in 2008, derived a profit of Tk23,800 in 6 months from an investment of Tk30,800, including Tk3,000 for fingerlings, as he used 4,000 rui, catla, silver carp and pungus fingerlings to produce 760 kg of food fish worth Tk54,600 in a 0.12 ha pond.

Farmers recognized in 2008 and 2009 for fish culture in cages measuring 1 cubic meter are as follows:

- Stephan Murmu, of the Santal community in Kaharol Upazila, Dinajpur District, derived a profit of Tk2,880 in three cycles totaling 180 days from an investment of Tk1,020, as he used 6 kg of silver carp and GIFT fry to produce 42 kg of fingerlings worth Tk3,900.
- Jogadis Tappo, of the Oraon community in Nawabgonj Upazila, Dinajpur District, derived a profit of Tk1,644 in two cycles totaling 73 days from an investment of Tk925, as he used 3.5 kg of silver carp fry to produce 29.5 kg of fingerlings worth Tk2,569.
- Shamoli Mahato, of the Mahato community in Panchbibbi Upazila, Joypurhat District, derived a profit of Tk1,585 in one cycle of 80 days from an investment of Tk640, as she used 1.5 kg of silver carp fry to produce 27.8 kg of fingerlings worth Tk2,225.



Stephan Murmu and his wife show fingerlings in their cage



Jogadis Tappo and his wife show fingerlings in their cage



Shamoli Mahato and her husband demonstrate fingerling production in a cage



Minoti Murmu and her husband demonstrate fingerling production in a cage



Jishu Hasda and his wife demonstrate fingerling production in a cage



Shudhir Hembrom (r) cultured fingerlings in his cage

- Minoti Murmo, of the Santal community in Birgonj Upazila, Dinajpur District, derived a profit of Tk1,300 in one cycle of 55 days from an investment of Tk490, as she used 2.0 kg of silver carp fry to produce 24.0 kg of fingerlings worth Tk1,790.
- Jishu Hasda, of Santal community is landless and lives in government housing in Fulbari Upazila, Dinajpur District. He derived a profit of Tk3,250 in two cycles totaling 105 days from an investment of Tk450, as he used 2.5 kg of silver carp fry to produce 37 kg of fingerlings worth Tk3,700.
- Shudhir Hembrom of the Santal community in Birampur Upazila, Dinajpur District, and awarded in 2008, derived a profit of Tk1,583 in 43 days from an investment of Tk417, as he used 2 kg of silver carp fry to produce 20 kg of fingerlings worth Tk2,000.
- Rajen Hasda, of the Santal community of Kaharol Upazila, Dinajpur District, and awarded in 2008, derived a profit of Tk2,535 in 49 days from an investment of Tk650, as he used 2.5 kg of silver carp fry to produce 24.5 kg of fingerlings worth Tk3,185.
- Birandra Chandra Barman, of the Barman community in Nalitabari Upazila, Sherpur District, derived a profit of Tk3,710 in two cycles totaling 135 days from an investment of Tk1,260, as he used 3 kg of silver carp and sarputi fry in two cages to produce 50.5 kg of fingerlings worth Tk4,970.
- Nittananda Hazong, of the Hajong community in Nalitabari Upazila, Sherpur District, derived a profit of Tk3,150 in two cycles totaling 85 days from an investment of Tk1,015, as he used 3 kg of silver carp and tilapia fry in two cages to produce 45 kg of fingerlings worth Tk4,165.



Happy Rajen Hasda and his wife demonstrate fingerling production in a cage



Birandra Chandra Barman applies feed for fingerlings in his cage



Nittananda Hazong (L) demonstrates fingerling production in a cage



Bandana Hazong (c) sells dried fish



Hiran Chandra Barman reaches his customers on foot



Suraj Drong (r) shows fingerlings to a pond owner

The following fish traders and extension agents were recognized for their service in disseminating improved aquaculture technologies to fish farmers:

- Bandana Hazong, of the Hajong community in Kalmakenda Upazila, Netrakona District, is landless and lives on public land. Starting with Tk2,160 in capital, she earned Tk14,260 trading dried fish.
- Hiran Chandra Barman, of the Barman community in Nalitabari Upazila, Sherpur District, started with Tk2,700 in capital and earned a profit of Tk55,300 trading fingerlings and food fish.
- Suraj Drong, of the Garo community in Jhenaigati Upazila, Sherpur District, started with Tk2140 in capital and earned Tk16300 in 7 months trading fingerlings and food fish.

WorldFish factsheets present current issues on fisheries and aquaculture with a course for action outlined. These factsheets as an impetus for action and update of WorldFish research.

Photo captions -

Page 3 banner L-R:

- Photo 1: Stephan Murmu receives an award from Mr. Monoranjan Shil Gopal, Member of Parliament, Government of Bangladesh
- Photo 2: Shamoli Mahato receives an award from Mr. Mojahar Ali Pradhan, Member of Parliament, Government of Bangladesh
- Photo 3: Bishu Mardi receives an award from Mr. Bashirul Alam, Upazila Nirbahi Officer, Birampur, Dinajpur
- Photo 4: Swarnokanta Barman receives an award from Ms. Sultana Laila Tasnim, Upazila Fisheries Officer, Nalitabari, Sherpur

Photo captions -

Page 4 banner L-R:

- Photo 1: Anil Mahato and his wife and son with their award.
- Photo 2: Nicolas Minj and his family with their award.
- Photo 3: Jogadis Tappo and his wife and daughter with their award.
- Photo 4: Minoti Murmu and his husband with their award.

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