



FACT SHEET

Promoting Sustainable Growth of Aquaculture in Myanmar to Improve Food Security and Income for Communities in the Ayeyarwady Delta and Central Dry Zone



Aim of project

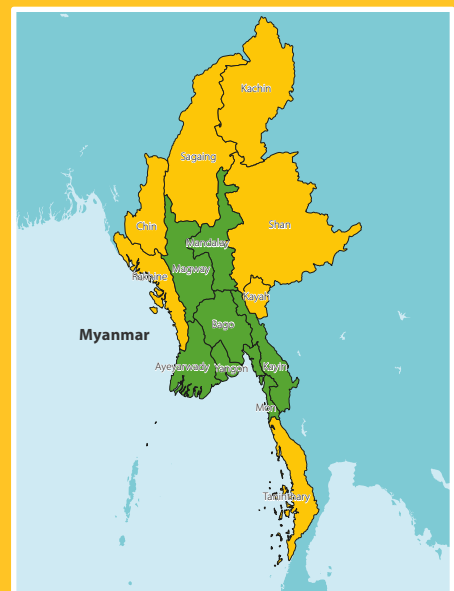
The project funded by Livelihoods and Food Security Fund (LIFT) promoted the sustainable growth of aquaculture in Myanmar by introducing low-cost small-scale aquaculture (SSA) technologies that incorporated small indigenous fish species, mainly with carps and tilapia. The goal was to increase income, food and nutrition security for poor households covering 18 townships in the Ayeyarwady Delta and the Central Dry Zone (CDZ).

Key interventions of the project activities

- capacity building
- upgrading government fish hatcheries
- introducing genetically improved farmed tilapia (GIFT)
- establishing small feed mills and fish seed nurseries
- disseminating knowledge of SSA technologies through nutrition and gender messages to beneficiaries through implementing partners
- technical backstopping for WorldFish partners using training sessions, a learning forum, workshop, thematic discussion group, newsletter and policy dialogues.

Project partners and beneficiaries (2016–2019)

- Department of Fisheries (DOF): 286 households
- Network Activities Group (NAG): 1306 households
- Pact Myanmar (Pact): 1293 households
- Professionals for Fair Development (GRET): 681 households
- Hellen Keller International (HKI): 48 households
- Pan Taing Shin (PTS): 40 households



Project name

Promoting Sustainable Growth of Aquaculture in Myanmar to Improve Food Security and Income for Communities in the Ayeyarwady Delta and Central Dry Zone

Project areas

Ayeyarwady Delta and the CDZ, Bago, Mon and Kayin states, and the capital, Nay Pyi Taw

Country

Myanmar

Project duration

October 2015–December 2019

A total of 3654 households were directly engaged and supported in fish production value chain activities, such as grow-out and nursery, and seed and feed supply networks (Table 1). More than 10,000 households received indirect benefits through awareness raising and exposure to knowledge, sharing and learning.

Technology innovation

The project initiated irrigated canals—known locally as *chan myaung*, used for watering plants, such as fruits, annual plants and vegetables—in delta areas as a water body for fish farming.

Upgrading feed and seed supply systems

A total of 56 nursery farms and 32 small feed mill units in the project areas contributed to complementary chain action for the aquaculture business sector.

Upgrading hatcheries for access to quality seed

The project imported GIFT in 2016 and promoted a breeding system in two government hatcheries in lower Myanmar as well as two satellite hatcheries (one from the Department of Fisheries and the other from the MFF) in the CDZ for good quality GIFT seed production.

Culture systems comprised monoculture and polyculture, using mainly rohu, pangasius, silver barb and tilapia.

| Batch | Villages | SSA groups | Farmers | | |
|--------------|------------|------------|-------------|-------------|------------|
| | | | Total | Men | Women |
| Batch 1 | 67 | 33 | 494 | 437 | 57 |
| Batch 2 | 9 | 7 | 161 | 144 | 17 |
| Batch 3 | 111 | 58 | 1132 | 957 | 175 |
| Batch 4 | 100 | 93 | 1362 | 1060 | 302 |
| Batch 5 | 37 | 14 | 505 | 346 | 159 |
| Total | 324 | 205 | 3654 | 2944 | 710 |

Table 1. Number of beneficiaries involved from 2016 to 2019.

| Aquaculture practices | Indirect farmers* | Households with knowledge | Households that practiced |
|-------------------------------|-------------------|---------------------------|---------------------------|
| Testing natural food in water | 4651 | 62.1% | 52.1% |
| Maintaining stocking density | 5175 | 69.1% | 52.6% |
| Species selection | 5796 | 77.4% | 44.9% |
| Liming | 6180 | 82.6% | 57.7% |
| Providing supplementary feed | 6886 | 92.0% | 89.4% |
| Postharvest handling | 6501 | 86.9% | 56.3% |
| Using quality seeds | 5817 | 77.7% | 56.1% |

*Farmers who learned SSA technologies from direct beneficiaries.

Table 2. Practice, knowledge and sharing about aquaculture methods.

The project's 3654 households assessed and stocked more than 2.6 million fingerlings, including seed produced in project nurseries, in *chan myaung* and WISH ponds as well as their own ponds (Table 3). About 1.5 million fry were nursed in the project's 56 nurseries (Table 4), while a total of 119,452 kg of pellet feed were produced in its 32 small feed mills (Table 5).



| Years | Batch | Fish seed distribution |
|--------------|-------|------------------------|
| 2016 | 1 | 497,458 |
| 2016 | 2 | 80,137 |
| 2017 | 3 | 941,594 |
| 2018 | 4 | 906,460 |
| 2019 | 5 | 124,510 |
| Total | | 2,550,159 |

Table 3. Accessibility to fish seed.

| Years | Batches involved | Fish seed nursed | Income (USD) |
|--------------|------------------|------------------|---------------|
| 2016 | 1, 2 | 250,690 | 3227 |
| 2017 | 1, 2, 3 | 505,937 | 9190 |
| 2018 | 1, 2, 3, 4 | 389,860 | 10,618 |
| 2019 | 1, 2, 3, 4, 5 | 405,500 | 7039 |
| Total | | 1,551,987 | 30,075 |

Table 4. Status of fish seed supply source.

| Years | Feed production (kg) by feed millers | Income (USD) |
|--------------|--------------------------------------|---------------|
| 2016 | 15,798 | 7795 |
| 2017 | 90,105 | 44,460 |
| 2018 | 13,549 | 6685 |
| Total | 119,452 | 58,940 |

Table 5. Status of fish feed supply source.

The monetary value generated from aquaculture practiced by project farmers from 2016 to 2019 reached USD 820,195. The project subsidized farmers with an average amount of USD 73.2 and tested SSA technologies. On average, farmers earned USD 105 by selling fish produced in their water bodies over an eight month production cycle (Table 6). Performance of pond aquaculture was best followed by *chan myaung* and WISH ponds in terms of income earned and profitability.

The value of income gained by the project's direct beneficiaries from the key income sources, such as grow-out, feed and nurseries, was USD 900,000 (Table 7), while the income per household was USD 249. If including the income from the over 10,000 households that indirectly benefitted, the project's investment would be approximately USD 1.25 million. Overall, the estimated total income would be USD 2.16 million.



| Years | Batch | Households by pond type | | | | Average income (USD) per household by pond type | | | | Income (USD) by pond type | | | |
|--------------|-------|-------------------------|-------------|-------------|------------|---|-------------|-----------|------------|---------------------------|----------------|-------------|----------------|
| | | Households | Pond | Chan myaung | WISH | Pond | Chan myaung | WISH | Total | Pond | Chan myaung | WISH | Total |
| 2016 | 1 | 494 | 305 | 113 | 76 | 124 | 73 | 13 | 70 | 116,628 | 17,443 | 2161 | 136,233 |
| 2016 | 2 | 161 | 48 | 48 | 65 | 112 | 49 | 10 | 57 | 15,719 | 6032 | 1184 | 22,935 |
| 2017 | 3 | 1073 | 820 | 229 | 24 | 123 | 126 | 18 | 89 | 156,194 | 33,121 | 540 | 189,856 |
| 2018 | 4 | 1362 | 1144 | 218 | - | 144 | 163 | - | 154 | 323,254 | 71,147 | - | 394,401 |
| 2019 | 5 | 505 | 437 | 68 | - | 150 | 165 | - | 158 | 65,550 | 11,220 | - | 76,770 |
| Total | | 3595 | 2754 | 676 | 165 | 131 | 115 | 14 | 105 | 677,346 | 138,964 | 3885 | 820,195 |

Table 6. Income by SSA production (2016 to 2019).

| Years | Income | | | |
|--------------|----------------------|-------------------------------------|--------------------------|-------------------|
| | SSA production (USD) | Feed production by feed mills (USD) | Fish seed produced (USD) | Total value (USD) |
| 2016 | 159,168 | 7795 | 3227 | 170,191 |
| 2017 | 189,856 | 44,460 | 9,190 | 243,505 |
| 2018 | 394,401 | 6685 | 10,618 | 411,704 |
| 2019 | 76,770 | - | 7039 | 83,809 |
| Total | 820,195 | 58,940 | 30,075 | 909,210 |

Table 7. Total income from SSA, feed mills and nurseries by production.

Acknowledgments

This work was undertaken as part of the CGIAR Research Program on Fish Agri-Food Systems (FISH) led by WorldFish. The program is supported by contributors to the CGIAR Trust Fund.

Citation

This publication should be cited as: WorldFish. 2019. MYCulture: Promoting Sustainable Growth of Aquaculture in Myanmar to Improve Food Security and Income for Communities in the Ayeyarwady Delta and Central Dry Zone. Penang, Malaysia: WorldFish. Fact Sheet: 2019-24.

Creative Commons License



Content in this publication is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

© 2019 WorldFish.

For more information, please visit www.worldfishcenter.org