# CEPF Final Completion and Impact Report

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|---|---|
| **Organization's Legal Name:** | Foundation for Ecological Research, Advocacy and Learning |
| **Project Title:** | Saving the fish from Mekong to Meghalaya |
| **Grant Number:** | CEPF-112103 |
| **Hotspot:** | Multiple |
| **Strategic Direction:** | 1 Multiple |
| **Grant Amount:** | $24,018.50 |
| **Project Dates:** | April 01, 2021 - February 28, 2022 |
| **Date of Report:** | February 04, 2022 |

## IMPLEMENTATION PARTNERS

Dr. James Haokip a resident from the project site who works as an assistant professor at the Anthropology Department, University of Sikkim facilitated and conducted community meetings and training workshops. He also led discussions with communities related to demarcation, establishment, and framing the rules, regulations and co-management of the FCZ.

Local communities of Khengjang and Yangoulen participated in the project activities through several stakeholder meetings and discussion which led to the design and establishment of the FCZ. They also actively monitored the FCZ for violations and all such incidents were communicated to the Village Council to act upon. Members from these communities were also hired by the project team to carry out the various components of the project.

Researchers from the Ashoka Trust for Research in Ecology and Environment were involved in providing training and capacity building of the project team and local communities.

## CONSERVATION IMPACTS

Planned Long-Term Impacts: 3+ years (as stated in the approved proposal)

| Impact Description | Impact Summary |
|---|---|
| Fish Conservation Zones established in other rivers in Manipur | A couple of more FCZ in the Chandel distirict could have been established. Unfortunately, due the pandemic and the associated travel restrictions we were not able to follow up on requests made by village chiefs to visit their communities and assess the potential of establishing FCZ. In the longer run, the success of managing the Khengjang-Yangoulen FCZ should be leveraged to influence the policy of |

| Impact Description | Impact Summary |
|---|---|
| | the state to establish community managed FCZ in other rivers |
| Fish Conservation Zones become one of the pillars of river conservation strategies of state governments in NorthEast India | In the past, Fish Conservation Zones have been established in Meghalaya by the Fisheries Department. However, very little is known on the objectives, functioning, and the involvement of local community in its management. From our field visits to other FCZ's and interactions with officials, the FCZ's that have been formed by the Fisheries Departments are more like fish stocking ponds or pools, and they have not been established in free flowing rivers. These efforts can be strengthened by sharing experience from this project with the concerned officials. |

Planned Short-Term Impacts: 1 to 3 years (as stated in the approved proposal)

| Impact Description | Impact Summary |
|---|---|
| Baseline data on aquatic biodiversity of 1 river covering ~10 km will be generated | Baseline data on aquatic biodiversity has been generated for the Tuivang River. Using a combination of techniques, we sampled for fish along a ~3km stretch, and photographed fish that was caught by fishermen in the Tuivang River. We also recorded fish from local markets, mostly caught downstream of the FCZ. So far we have recorded 22 species of fish. One species, Clarias magur, is Endangered; two species, Channa orientalis and Rasbora ornatus, are Vulnerable, and two species, Syncrossus berdmorei and Ompok pabda, are Near Threatened as per IUCN redlist. Details are available in the aquatic biodiversity report. |
| Two Fish Conservation Zones demarcated, each approximately 500m long and 50 m wide and managed by local communities, to the best of our knowledge these will be the first-ever in the Indian biodiversity hotspots | One FCZ in the Tuivang River covering 2.4 km was established through a series of consultative meetings and they are currently managed by local communities. Details are available in the Tuivang FCZ report. |
| District level government officials introduced to the potential of FCZs in fish conservation, local livelihoods and diversification of protein security | - The district level Fisheries Department officials were invited for an online webinar introducing the concepts of FCZs. The webinar was organised by ATREE, FERAL and FISHBIO. The government officials were also invited to attend the community meeting and inauguration of the FCZ. However, their participation in events held at the project site in Manipur was not possible as they often cited the distance they will have to travel from the district head quarters or nearby towns.<br>- We will invite them to attend the FCZ and e-flows workshop that will held in the coming month. We will also visit their offices and highlight the importance and success of the current project and to seek support for the ongoing efforts. |

| Impact Description | Impact Summary |
|---|---|
| Capacities of about 10 local community members and local researchers built in the basics of fish taxonomy, biology and hydrology | Local community members were trained in basic fish taxonomy, hydrology during our visit to the field site in Jan 2021 and December 2021. Online training workshops for researchers and local community members were also held during the project period. Details are provided in the Hydrology workshop and Western Ghats training reports |
| The ecological flow regimes for one rivers understood, and district-level officials, civil societies and local communities provided with first-hand estimates of their ecological flow regimes | Planned for the month of February, 2022 |

**Unexpected impacts (positive or negative)?**
The FCZ was created to increase fish stocks and protect their habitat. Largely, we had expected reduced fishing pressures from the two project villages and their surrounding villages. However, the establishment of the FCZ has restricted sand and stone quarrying to areas outside and downstream of the FCZ. This unexpected positive impact has not only helped in ensuring that the habitat for fish within the FCZ is not destroyed, it has also ensured that the two villages continue to get clean fresh water for their domestic needs, especially during the dry season.

## PROJECT RESULTS/DELIVERABLES

**Overall results of the project:**
The Khengjang – Yangoulen Fish Conservation zone covering 2.4 km of the Tuivang river has been established.

The establishment of the FCZ has restricted sand and stone quarrying to areas outside and downstream of the FCZ.

Local residents report that the river is less polluted and cleanliness has improved since the establishment of the FCZ, a few of them have also reported increase in fish abundance.

Streamflow and rainfall to assess hydrological status of the river have been successfully implemented.

The project has documented the presence of 22 species of fish in the Tuivang River, 17 of them have been recorded within the FCZ.

Baseline data on river health and aquatic diversity has been generated for adaptive management and scientific monitoring of the FCZ.

**Results for each deliverable:**

| Component | | Deliverable | | |
|---|---|---|---|---|
| **#** | **Description** | **#** | **Description** | **Results for Deliverable** |
| 1.0 | Transfer and sharing of knowledge across hotspots | 1.1 | Report on learning from interactions with communities in Laos who have successfully implemented FCZs | Interactions with communities in Laos was restricted to project implementation team of FISHBIO. International travel and interactions with local communities was not possible due to the pandemic. However, regular interactions with FISHBIO helped our project team to revise and adapt strategies to establish Fish Conservation Zones. FISHBIO also provided valuable feedback and suggestions to address concerns and constraints faced during the establishment and management of the FCZ.<br>FISHBIO Consultation Report on FCZ and FCZ Webinar report. |
| 2.0 | Identification of river stretches with high conservation value in consultation with local communities | 2.1 | Report and maps on on aquatic biodiversity of "Tuivang" river system | Baseline data on aquatic biodiversity has been generated for the Tuivang River. Using a combination of techniques, we sampled for fish along a ~3km stretch, and photographed fish that was caught by fishermen in the Tuivang river. We also recorded fish from local markets, mostly caught downstream of the FCZ. So far, we have recorded 22 species of fish.<br>Details are provided in the Tuivang Aquatic Biodiversity report. |
| 2.0 | Identification of river stretches with high conservation value in | 2.2 | Report and maps on hydrologic health of the "Tuivang" river system | A report on the river health assessment, stream flows, rainfall and catchment characteristics has been completed. Details |

| Component | | Deliverable | | |
|---|---|---|---|---|
| # | Description | # | Description | Results for Deliverable |
| | consultation with local communities | | | are provided in the Tuivang hydrologic assessment report. |
| 3.0 | Establish Fish Conservation Zones in two rivers which will be managed by local communities | 3.1 | Report and map of Fish Conservation Zones in Manipur | The Khengjang – Yangoulen FCZ measuring 2.4 km along the Tuivang River was established through a series of consultative meetings and it is currently managed by local communities. Details are provided in the Phase 1 section of the Tuivang FCZ report. |
| 4.0 | Build capacities of local communities to aid conservation efforts | 4.1 | Report on participatory workshops with local communities on protocols for monitoring FCZs | Details are provided in the phase 2 & 3 sections of the Tuivang FCZ report. |
| 4.0 | Build capacities of local communities to aid conservation efforts | 4.2 | Report and maps on ecological flow regimes for "Tuivang" river system | Planned for February 2022 |
| 5.0 | Build awareness of policy and decision makers on Fish Conservation Zones | 5.1 | Build awareness of policy and decision makers on Fish Conservation Zones | The district level Fisheries Department officials were invited for an online webinar introducing the concepts of FCZs. The webinar was organised by ATREE, FERAL and FISHBIO. The government officials were also invited to attend the community meeting and inauguration of the FCZ.<br>The village council of Khengjang and Yangoulen, who are the local decision making and governing bodies, participated in the project activities through several stakeholder meetings and discussions which led to the design and establishment of the FCZ. Village council members and chiefs of neighbouring villages also participated in public events and |

| Component | | Deliverable | | |
|---|---|---|---|---|
| # | Description | # | Description | Results for Deliverable |
| | | | | are aware of the steps and process of establishing and managing FCZs. |
| 5.0 | Build awareness of policy and decision makers on Fish Conservation Zones | 5.2 | Popular article on FCZs in Manipur | Pinto, N., Vaidyanathan, S., Varughese, S., Krishnaswamy, J., Massar, B., & Haokip, J. (2021). Establishment of community-led fish conservation zones in Meghalaya and Manipur, India. Oryx, 55(4), 493-494. doi:10.1017/S0030605321000338<br><br>https://fb.watch/3nS8B6z8pr/<br><br>https://www.thesangaiexpress.com/Encyc/2021/3/18/Fr-Paul-Lelen-HaokipIntroductionAgainst-the-backdrop-of-deteriorating-environmental-conditions-creation-care-is-a-relevant-option-for-sustainable-behaviour-Creation-care-can-manifest-in-different.html<br><br>http://e-pao.net/epSubPageExtractor.asp?src=education.Science_and_Technology.Khengjang_Yangoulen_Fish_Conservation_Zone_By_Paul_Haokip |
| 6.0 | Monitoring FCZs | 6.1 | Report on the initiation success of FCZs | The establishment and management of the FCZ has improved the overall quality of the river and a few community members also reported an increase in fish stocks. Details are provided in the Phase 4 section of the Tuivang FCZ report. |

**Tools, products or methodologies that resulted from the project or contributed to the results:**
We developed an Open Data Kit to record details of fish species found during sampling and also to record catch from fishermen and markets.

We constructed a portable aquarium, "photarium", to photograph fish for identification. This eliminates the need to handle fish to measure and photograph.

We have telemetered our Water Level Recorders and Rain Gauges. This allows transmission of data on a daily basis when mobile networks are available, reducing the dependence on computer literate field staff.

We have also tested the approach of using underwater cameras to monitor fish populations which will eliminate the need to catch fish to monitor changes in population.

## PORTFOLIO INDICATORS

| Portfolio Indicator Number | Portfolio Indicator Description | Expected Numerical Contribution | Expected Contribution Description | Actual Numerical Contribution | Actual Contribution Description |
|---|---|---|---|---|---|

## GLOBAL INDICATORS

### Protected Areas

Protected areas that have been created and/or expanded as a result of the project. Protected areas may include private or community reserves, municipal or provincial parks, or other designations where biodiversity conservation is an official management goal.

| Name of Protected Area | WDPA ID* | Latitude | Longitude | Country | Original Total Size (Hectares) ** | New Protected Hectares *** | Year of Legal Declaration or Expansion |
|---|---|---|---|---|---|---|---|
| Khengjang Yangoulen Fish Conservation Zone | | 23.961729 | 94.176147 | India | 7 | 7 | 2021 |

*World Database of Protected Areas

**If this is a new protected area, 0 should appear in this column

*** This column excludes the original total size of the protected area.

## Key Biodiversity Area Management

Key Biodiversity Areas (KBAs) under improved management—where tangible results have been achieved to support conservation—as a result of the project.

| KBA Name | KBA Code | Size of KBA | Number of Hectares with Improved Management |
|---|---|---|---|
| | | | |

## Production Landscapes

Production landscapes with strengthened management of biodiversity as a result of the project.

A production landscape is defined as a site outside a protected area where commercial agriculture, forestry or natural product exploitation occurs.

| Name of Production Landscape | Latitude | Longitude | Hectares Strengthened | Intervention |
|---|---|---|---|---|
| | | | | |

## Benefits to Individuals

- **Structured Training:**

| Number of Men Trained | Number of Women Trained | Topics of Training |
|---|---|---|
| 7 | 2 | River health assessment, Hydrological monitoring, Fish sampling, Basic mapping, Data management |

- **Cash Benefits:**

| Number of Men – Cash Benefits | Number of Women – Cash Benefits | Description of Benefits |
|---|---|---|
| | | |

## Benefits to Communities

| View the **characteristics** column below with the following corresponding codes: | View the **benefits** column below with the following corresponding codes: |
|---|---|
| 1- Small Landowners | a. Increased Access to Clean Water |
| 2- Subsistence Economy | b. Increased Food Security |
| 3- Indigenous/ Ethnic Peoples | c. Increased Access to Energy |
| 4- Pastoralists / Nomadic Peoples | d. Increased Access to Public Services |
| 5- Recent Migrants | e. Increased Resilience to Climate Change |
| 6- Urban Communities | f. Improved Land Tenure |
| 7- Other | g. Improved Use of Traditional Knowledge |
| | h. Improved Decision-Making |
| | i. Improved Access to Ecosystem Services |

| **Community Name** | **Community Characteristics** | | | | | | | **Type of Benefit** | | | | | | | | **Country** | **Number of Males Benefitting** | **Number of Females Benefitting** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **a** | **b** | **c** | **d** | **e** | **f** | **g** | **h** | **i** | | | |

**Characteristics of "Other" Communities:**

## Policies, Laws and Regulations

| View the **topics** column below with the following corresponding codes: | | | |
|---|---|---|---|
| A- Agriculture | E- Energy | I- Planning/Zoning | M- Tourism |
| B- Climate | F- Fisheries | J- Pollution | N- Transportation |
| C- Ecosystem Management | G- Forestry | K- Protected Areas | O- Wildlife Trade |
| D- Education | H- Mining and Quarrying | L- Species Protection | P- Other |

| **No.** | **Name of Law** | **Scope** | **Topics** | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **I** | **J** | **K** | **L** | **M** | **N** | **O** | **P** |

**"Other" Topics Addressed by the Policy, Law or Regulation:**

| No. | Country/ Countries | Date Enacted/ Amended | Expected impact | Action Performed to Achieve the Enactment/ Amendment |
|---|---|---|---|---|
| | | | | |

## Companies Adopting Biodiversity-friendly Practices

A company is defined as a for-profit business entity. A biodiversity-friendly practice is one that conserves or uses natural resources in a sustainable manner.

| Name of Company | Description of Biodiversity-Friendly Practice | Country/Countries where Practice was Adopted |
|---|---|---|
| | | |

## Networks and Partnerships

Networks/partnerships should have some lasting benefit beyond immediate project implementation. Informal networks/partnerships are acceptable.

| Name of Network/Partnership | Year Established | Country/ Countries | Established by Project? | Purpose |
|---|---|---|---|---|
| | | | | |

## Sustainable Financing

Sustainable financing mechanisms generate funding for the long-term (generally five or more years). These include, but are not limited to, conservation trust funds, debt-for-nature swaps, payment for ecosystem services (PES) schemes, and other revenue, fee or tax schemes that generate long-term funding for conservation.

| Name of Mechanism | Purpose | Date Established | Description | Country/ Countries | Project Intervention | Delivery of Funds? |
|---|---|---|---|---|---|---|

## Globally Threatened Species

Globally threatened species (CR, EN, VU) on the IUCN Red List of Threatened Species, benefitting from the project.

| Genus | Species | Common Name (English) | Status | Intervention | Population Trend at Site |
|---|---|---|---|---|---|
| Clarias | magur | Mangur | EN | species habitat protection | Unknown |
| Channa | orientalis | Smooth-breasted Snakehead | VU | species habitat protection | Unknown |
| Rasbora | ornata | | VU | species habitat protection | Unknown |

## LESSONS LEARNED

- Establishing community managed fish conservation zones is possible when local communities have a larger role in managing their land and water resources. Our project partners were from the local community and they were able to secure the required commitments from the village councils to establish and manage the FCZ.
- Support from Government agencies (Fisheries Department) to conserve fish might take longer due to different objectives. Often government programmes promote captive fisheries of few select species, sometimes exotics, which might be divergent from the objectives of a FCZ in natural free flowing rivers.
- Designing FCZs when it is not mandated by the government needs to be flexible to incorporate the feedback from community members and from scientific monitoring of fish stocks. An adaptive framework that allows for sustainable harvest of fish based on data will be more acceptable to communities dependent on fish from their rivers.
- A regular monitoring / patrolling team which is paid by the village council might be required to prevent outsiders from fishing within the FCZ.
- Active role of village leaders and council members in timely resolution of disputes and violations of FCZ rules is critical to ensure public support for fish conservation efforts.

## SUSTAINABILITY/REPLICATION

- The biggest challenge that we face is to ensure that the local communities sustain their efforts beyond the project period especially when community managed fish conservation zones are not formally recognised by the Government.
- Sustainability and replicability will need external funds to support the monitoring and patrolling team. Funding from Government and Non-Government sources are required until fish stocks are restored. During the project period, an innovative approach to reward volunteers of the monitoring team was adopted in Meghalaya wherein fines collected from people violating the FCZ rules were distributed to among the member of the volunteering team. While this ensured that their morale remained high, sustaining this approach when violations decrease due to better enforcement will be a challenge and will require alternate funding mechanism.
- In the Indian context, a few states have begun to recognise fish conservation zones (Ex. Karnataka, Meghalaya any other states), a longer engagement with local communities will be required to document and raise awareness among policy makers to shift attention towards community managed fish conservation zones which aim to conserve natural fish populations.

## ENVIRONMENTAL AND SOCIAL SAFEGUARDS/STANDARDS

NA

## ADDITIONAL COMMENTS/RECOMMENDATIONS

This project was not able to achieve all the objectives as per the original plan because of the pandemic. We are grateful to CEPF for extending the project period as well as supporting us in terms of logistical and budgetary modifications.

We wish that this project will get a phase 2, where we can build upon the community engagement that we have established in the two sites and extend it to other sections of the same river as well as include other rivers as per the original plan.

## ADDITIONAL FUNDING

| | |
|---|---|
| **Total Amount of Additional Funding Actually Secured (USD)** | |
| **Breakdown of Additional Funding** | |

## INFORMATION SHARING AND CEPF POLICY

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned and results. For more information about this project, you may contact the organization and/or individual listed below.

Foundation for Ecological Research, Advocacy and Learning (FERAL) Email: feral@feralindia.org