Food and Agriculture Organization of the United Nations


# BUILDING RESILIENCE IN FIJI'S FISHERIES SECTOR THROUGH IMPROVED DRR AND DRM

June 2024

| | |
|---|---|
| SDGs: |  |
| Country: | Fiji |
| Project Code: | TCP/FIJ/3801 |
| FAO Contribution: | USD 150 000 |
| Duration: | 1 June 2021–31 December 2023 |
| Contact Info: | FAO Representation in Fiji<br>FAO-FJ@fao.org |

### Implementing Partners

Ministry of Fisheries and Forestry (MoFF) and National Disaster Management Office (NDMO).

### Beneficiaries

Selected communities in the northern, eastern and central groups of islands, fishers in the Lau group of islands, women and youth.

### Country Programming Framework (CPF) Outputs

**CPF 2018–2022**

Output 2: Sustainable and climate-smart practices promoted to help build resilient agriculture, fisheries and forestry production systems.


## BACKGROUND

In 2017, Fiji's fisheries production, including both marine and inland, totaled 47 356 tonnes, according to the Food and Agriculture Organization of the United Nations (FAO). The country imported 53 075 tonnes and exported 80 951 tonnes of fish. With a population of 877 000, this equates to a per capita supply of 30.3 kg (FAO Statistical Yearbook 2020). Employment estimates in the fisheries sector are challenging due to the mix of subsistence, part-time and full-time commercial fishers. According to FAO reports there are approximately 9 000 artisanal coastal fishers and 3 000 coastal subsistence fishers. The fishing fleet, last estimated in 2010, consisted of 2 330 vessels.

Fisheries are crucial to the local diet and are valued for recreational and social purposes. The sector is Fiji's third largest natural resource sector, following sugar and other crops, and has significant links to the tourism industry, while facing several constraints, including the following: (i) over-exploitation of inshore resources near urban markets; (ii) limited access for smal-scale fishers to offshore resources; (iii) marketing challenges from remote areas to urban markets; (iv) competition for infrastructure and services with offshore vessels; (v) rising fuel costs impacting small-scale motorized fisheries; (vi) slow development of aquaculture for domestic food supply; (vii) competition from more efficient foreign fishery and aquaculture producers; (viii) coastal community unawareness of overexploitation consequences; (ix) limited communication between the Fisheries Department and the tuna industry.

Fiji's fishing communities are also vulnerable to climate change impacts, such as tropical cyclones, floods and pollution. Natural disasters have severely affected the agriculture and fisheries sectors, impacting food security. From 1931 to 2020, Fiji experienced 63 disasters, including 42 cyclones, causing significant economic losses and affecting millions of people. In the last decade alone, Fiji faced seven Category 5 Tropical Cyclones, causing extensive damage to fishing infrastructure and increasing future risk anticipation.

To adapt, fishers are venturing further offshore, heightening occupational and safety risks due to inadequate boats and engines. Small fishing vessels often do not comply with safety regulations, leading to unreported incidents and accidents. Current regulations mainly cover small passenger and aquatic sport boats used in tourism.

Against this background, the project focused on Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM) by planning a number of activities to address the above-mentioned challenges, including (i) a vulnerability mapping to help the government prepare for and manage future disasters through the development of a Fisheries focused DRR and DRM Plan; (ii) a boat design modification to increase safety and productivity; (iii) training of fishers in the Lau group of islands, severely impacted by Tropical Cyclone Yasa, in engine maintenance and boat repair; and (iv) the development of an adaptive fisheries management plan to be piloted at one site.

## IMPACT

By enhancing the resilience, safety and productivity of Fiji's fisheries sector, ensuring its sustainability amid growing environmental challenges, the project benefitted selected communities in the northern, eastern and central groups of islands, fishers in the Lau group of islands, women and youth, improving DRR and strengthening DRM.

## ACHIEVEMENT OF RESULTS

Under Output 1, a Fisheries focused DRR and DRM Plan was prepared through a structured and collaborative process. Initially, the Wildlife Conservation Society (WCS) developed a specific fisher vulnerability assessment methodology, ensuring it was rapid and straightforward for use by MoF and Forestry community engagement officers. This methodology involved conducting gender-specific focus group discussions and community resource mapping in ten communities, with trained WCS facilitators fluent in the iTaukei language. Household surveys complemented these assessments.

Following the implementation of this methodology in the northern, eastern, and central groups of islands, particularly in ten fisher communities in Bua and Cakaudrove provinces, the WCS ensured a thorough and participatory approach by obtaining free, prior and informed consent from the communities involved. The insights gathered from these assessments were then presented at a workshop in January 2024, which brought together key stakeholders from various relevant organizations. This workshop facilitated discussions to identify actionable insights and collaborative strategies. The comprehensive analysis and stakeholder engagement during this workshop led to the identification of key risks and vulnerabilities, such as financial constraints, decreased livelihoods, overfishing, habitat degradation and climate change impacts. These findings formed the foundation for drafting a robust and inclusive Fisheries focused DRR and DRM Plan.

Activities 1.4 and 1.5, related to the development and piloting of adaptive fisheries and an aquaculture management plan, could not be implemented. Eventually, this component was absorbed into another project, "Adaptive Fisheries Management" (GCP/SAP/003/CAN), which is developing a National Aquaculture Management and Development Plan for Fiji working with oyster farmers in the Rewa River Catchment to the north of Suva.

Under Output 2, relevant government staff and selected fishers were equipped with new skills in boat repair and engine maintenance. Furthermore, local boat design improvement was achieved through a series of comprehensive and collaborative activities. Initially, WCS developed an updated and extended vessel design based on existing models, addressing performance issues such as structural strength, stability and capacity. Following Tropical Cyclone Yasa, WCS expanded its training programmes to support impacted fishing communities across various divisions. Training sessions on the maintenance and operation of boat engines, as well as fiberglass boat repair, were conducted using a combination of video instruction and practical work. This training was provided to fishers and selected provincial officers in multiple communities. Additionally, the Northern Division communities received the necessary tools and materials for fiberglass repair and engine maintenance. As a result, participants acquired the skills to maintain and repair their boats and engines, and they are now capable of imparting this knowledge to others, thereby enhancing the overall resilience and efficiency of local fisheries.

## Implementation of work plan and budget

Human resources-related issues and changes in the Government of Fiji caused some initial delays leading to a no-cost extension until December 2023. Most activities were completed within the newly agreed timeframe and original budget. Activity 1.4 and 1.5. under Output 1 could not be implemented and will be instead covered through a different project as described above.

## Follow-up for government attention

The MoFF detailed the need for monitoring and evaluation mechanisms that can be established on a regular basis to promote data collection, analysis effectiveness and data sharing with other stakeholders, which will assist in adjusting strategies needed based on changing conditions and emerging climatic threats. The NDMO also suggested that more investment could be directed towards building capacity of stakeholders to respond to fisheries-related risks and vulnerabilities. This could include providing training and resources to fisher, community leaders and policymakers on topics such as climate resilience, sustainable fisheries management and disaster preparedness.

## Sustainability

### 1. Capacity development

The DRM assessment provided the Government of Fiji with crucial information to enhance its DRM efforts. The methodology for climate vulnerability and risk assessments developed by WCS is intended to be used by various divisions in Fiji to address DRM issues within fishing communities, as it is easier to implement and analyse, and is less-time consuming. The National Aquaculture Management and Development Plan for Fiji, to be developed under the project "Adaptive Fisheries Management" (GCP/SAP/003/CAN) will support Fiji's aquaculture ambitions.

With the WCS methodology for climate vulnerability and risk assessments, the Government of Fiji suggested that more investment could be directed towards building the capacity of stakeholders to respond to fisheries related risks and vulnerabilities. This could include providing training and resources to fishermen, community leaders and policymakers on topics such as climate resilience, sustainable fisheries management and disaster preparedness. Additionally, Non-governmental Organizations (NGOs) noted the lack of fisheries specific vulnerability assessments suggesting that stakeholders and partners strengthen their information sharing mechanisms, and they will support this initiative.

### 2. Gender equality

The DRM assessment ensured that the voices of both women and men were equally heard. It was suggested that women and children could take lead roles in their communities by being educated to raise awareness about climate-related disasters, mitigation measures and governance, thereby fostering resilient communities.

### 3. Environmental sustainability

The fisheries-specific risk and vulnerability assessment conducted by WCS was used to identify the susceptibility of local communities to climate-related risks and associated hazards, and devising actions to ensure their environmental sustainability.

### 4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The WCS conducted the fisheries-specific risk and vulnerability assessment survey across the ten selected fishing communities in the Bua Province, where WCS has a long, enduring and trusted working relationships with all the ten selected sites. As part of WCS core mandate, HRBA is included in all activities.

### 5. Technological sustainability

The WCS conducted a comprehensive review of available vulnerability assessment methodologies and their application in Fiji (and the wider Pacific Islands region) to synthesize and compile a replicable fisheries-specific and vulnerability assessment methodology and related survey questionnaire(s) that can be used in Fiji. This methodology is readily available.


### 6. Economic sustainability

The WCS Fiji will continue collaborating with the Government of Fiji to refine the methodology for climate vulnerability and risk assessments. This methodology will be easily adaptable and usable by all stakeholders, ensuring it is contextually relevant to the Pacific and local fishing communities. The goal is to build a more sustainable and resilient future for these communities and the fisheries they depend on. Additionally, NGOs noted the lack of fisheries specific vulnerability assessments suggesting that stakeholders and partners strengthen their information-sharing mechanisms. They are committed to supporting this effort.


## DOCUMENTS AND OUTREACH PRODUCTS

- **Hill, N.** 2022. *Fibreglass boat repair and outboard engine maintenance training for fishers in Eastern and Northern Divisions of Fiji including Pre deployment Seabed Survey*. Report prepared for FAO. Apia, Samoa.
- **Davy, D.** 2022. *Activities in support of Technical Cooperation Programme (TCP) project TCP/FJI/3801 'Building resilience in Fiji`s fisheries sector through improved DRR and DRM'*. Report prepared for FAO. Apia, Samoa.
- **WCS.** 2024. *Development of a fisheries specific risk and vulnerability assessment methodology and trialled across ten fishing communities in the province of Bua and Cakaudrove, Vanua Levu*. Report prepared for FAO. Apia, Samoa.

## ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

| | | | |
|---|---|---|---|
| **Expected Impact** | **Increased resilience of small-scale fisheries to natural disasters and impacts of climate change** | | |
| **Outcome** | Enhanced capacities of Fiji small-scale fisheries to respond to natural disasters and impacts of climate change | | |
| | Indicator | - Disaster Risk Reduction and Management Plan for the Fisheries sector available.<br>- Adaptive fisheries and aquaculture management plan piloted in two locations. | |
| | Baseline | - No overarching DRR/DRM Plan (SOPs for DRM are currently being prepared and will be used in the DRR/DRM Plan).<br>- To be determined. | |
| | End Target | - Draft Disaster Risk Reduction and Management Plan for the Fisheries sector presented to Government by Q3 Year 2.<br>- Area specific Adaptive fisheries and aquaculture management plan piloted in two locations by project end. | |
| | Comments and follow-up action to be taken | - This component was completed despite the impact of the departure of the Lead technical advisor, and changes in management within the WCS.<br>- This component was not completed and instead absorbed into the project „Adaptive Fisheries Management" (GCP/SAP/003/CAN), which is developing a National Aquaculture Management and Development Plan for Fiji and has been working with oyster farmers in the Rewa River Catchment to the north of Suva. | |
| | | | |
| **Output 1** | Fisheries focused Disaster Risk Reduction and Management Plan Drafted/Prepared | | |
| | Indicators | Target | Achieved |
| | Vulnerability methodology for mapping of fisher communities developed. | Agreed methodology developed and validated by Q3 Year 1. | Partially |
| **Baseline** | No mapping presently exists. | | |
| **Comments** | The fisheries-specific risk and vulnerability assessment was developed through a structured and collaborative process. WCS first created a rapid fisher vulnerability assessment methodology, including gender-specific focus group discussions and household surveys in ten communities. These assessments, conducted with community consent in Bua and Cakaudrove provinces, provided critical insights. A workshop on 26 January 2024, brought together key stakeholders to discuss findings and identify actionable strategies. This comprehensive analysis highlighted key risks such as financial constraints, decreased livelihoods, overfishing, habitat degradation and climate change impacts, forming the basis for the plan. | | |
| **Activity 1.1** | Develop vulnerability mapping methodology | | |
| | Achieved | Yes | |
| | Comments | The WCS conducted a comprehensive review and designed a specific fisher vulnerability assessment methodology as a rapid and simple tool for the MoF and Forestry community engagement officers. Focus group discussions and community resource mapping were conducted in gender-specific groups in ten communities, with approximately ten participants each. These sessions were facilitated by WCS members of the same gender, fluent in the iTaukei language, and trained in inclusive, non-subjective group facilitation practices. Household surveys were also conducted in five households per community. The vulnerability assessments were designed to be completed in a single day per community. | |
| **Activity 1.2** | Conduct vulnerability mapping in the Northern, Eastern and Central groups of islands | | |
| | Achieved | Yes | |
| | Comments | WCS conducted assessments using this methodology in ten fisher communities in Bua and Cakaudrove provinces. These communities were Tavulomo, Koroinasolo, Tacilevu, Saolo, Urata, Natuvu, Vatulele, Sawani, Waitabu and Kiobo. The communities were selected based on their dependence on and use of coastal resources, with assessments conducted in December 2023. WCS also undertook a free, prior and informed consent process before beginning the assessments. | |

| | | |
|---|---|---|
| **Activity 1.3** | Prepare a Disaster Risk Reduction and Management Plan | |
| | Achieved | Yes |
| | Comments | WCS convened a workshop on 26 January 2024, bringing together key stakeholders from various organizations, including FAO, the MoF, the NDMO, the iTaukei Affairs Board (iTAB) Conservation Unit, the Climate Change Division (CCD), the International Institute for Sustainable Development (IISD), the Women in Fisheries Network (WiFN) and the Worldwide Fund for Nature (WWF) Pacific. The workshop aimed to present the findings of a field survey conducted in the ten villages of Bua and Cakaudrove districts and to facilitate discussions to identify actionable insights and collaborative strategies. Reporting back to stakeholders was successful, providing valuable insights into the challenges facing communities and the fisheries they depend on. Through a rapid and rigorous assessment and analysis, key risks and vulnerabilities were identified, ranging from lack of finances, decreased livelihoods, overfishing and habitat degradation to climate change impacts and socio-economic pressures. |
| **Activity 1.4** | Develop adaptive fisheries and aquaculture management plan | |
| | Achieved | No |
| | Comments | This activity was not completed. Discussions were held with FAO's Aquaculture Division in headquarters on running webinars, but changes within the Government of Fiji delayed these webinars. Eventually, this component was absorbed into the project „Adaptive Fisheries Management" (GCP/SAP/003/CAN) which is developing a National Aquaculture Management and Development Plan for Fiji and has been working with oyster farmers in the Rewa River Catchment to the north of Suva. |
| **Activity 1.5** | Pilot the adaptive fisheries and aquaculture management plan in one location | |
| | Achieved | No |
| | Comments | Same as for the previous activity, this component was not completed. Discussions were held with FAO's Aquaculture Division in headquarters on running webinars, but changes within the Government of Fiji delayed these webinars. Eventually, this component was absorbed into the project „Adaptive Fisheries Management" (GCP/SAP/003/CAN), which is developing a National Aquaculture Management and Development Plan for Fiji and has been working with oyster farmers in the Rewa River Catchment to the north of Suva. |

| | | | |
|---|---|---|---|
| **Output 2** | Relevant government staff and selected fishers acquire new skills in boat repair, engine maintenance and participate in improving local boat design | | |
| | Indicators | Target | Achieved |
| | - Safer, more stable, and fuel-efficient boat design with greater carrying capacity prepared and presented to Ministry of Fisheries<br>- Number of Government staff and fishers trained on improved boat engine maintenance and boat repair skills. | - One safer, more stable, and fuel-efficient boat design with greater carrying capacity prepared and presented to MoF by project end.<br>- Twenty MoF staff and 40 fishers trained on improved boat engine maintenance and boat repair by Q3/Year 2. | Yes |
| **Baseline** | - One ancient design that needs to be adapted to needs that have evolved.<br>- To be determined. | | |
| **Comments** | Under this output, relevant government staff and selected fishers were equipped with new skills in boat repair and engine maintenance, and local boat design was improved through a series of comprehensive and collaborative activities. As a result, participants acquired the skills to maintain and repair their boats and engines, and they are now capable of imparting this knowledge to others, thereby enhancing the overall resilience and efficiency of local fisheries. | | |

| | | |
|---|---|---|
| **Activity 2.1** | Prepare a safer, more stable and fuel efficient boat design with greater carrying capacity | |
| | Achieved | Yes |
| | Comments | An assessment of boat types was conducted and recommendations were made to remediate performance issues. An updated, improved and extended vessel based on the existing FAO 8.6m design, which is still active in the fishery, was developed with the main upgrades being an increased length, beam and depth, resulting in more hold capacity and significantly improved crew accommodation and storage. In addition, a revised design based on the Ba boats was also developed which addressed the problems of structural strength, structural detailing, improvement of longevity by correct use of materials and the improvement of stability. |

| | | |
|---|---|---|
| **Activity 2.2** | Conduct training for fishers and selected provincial officers in Lau group of islands on maintenance and operation of boat engines | |
| | Achieved | Yes |
| | Comments | Tropical Cyclone Yasa landed on the main island of Vanua Levu in the Northern Division and then continued to the Lau group of islands in the Eastern Division. The impact on the Northern Division was greater than on the Eastern Division. Following discussions with the MoF, it was decided to expand the training to assist other impacted fishing communities in Lakeba and Kadavu Islands in the Eastern Division; Kia, Tavea, Galoa, Ono, and Yaqaba Islands, and Labasa Town in the Northern Division; Silana and Naigani villages in the Central Division; and Yasawa Island, and Nadi and Ba Towns in the Western Division. Training in the maintenance and operation of boat engines was conducted through a combination of video instruction and practical work on a range of engines. Additionally, communities in the Northern Division received fiberglass repair and engine maintenance tools and materials. Fishers in all communities that received training are now able to maintain their outboard motor engines and are also able to instruct other fishers with the knowledge imparted. |
| **Activity 2.3** | Conduct training for fishers and selected provincial officers in Lau group of islands on repairing fibreglass boats | |
| | Achieved | Yes |
| | Comments | As for Activity 2.2, following discussions with the MoF, it was decided to expand the training to assist other impacted fishing communities in Lakeba and Kadavu Islands in the Eastern Division; Kia, Tavea, Galoa, Ono, and Yaqaba Islands, and Labasa Town in the Northern Division; Silana and Naigani villages in the Central Division; and Yasawa Island, and Nadi and Ba Towns in the Western Division. Training in the repair of fiberglass boats was conducted through a combination of video instruction and practical work on a range of boats. Additionally, communities in the Northern Division received fiberglass repair and engine maintenance tools and materials. Fishers in all communities that received training are now able to maintain their outboard motor engines and instruct other fishers with the knowledge imparted. |

**Partnerships and Outreach**
For more information, please contact: Reporting@fao.org

**Food and Agriculture Organization of the United Nations**
Viale delle Terme di Caracalla
00153 Rome, Italy


CD3227EN/1/11.24