

# Indigenous Communities in Bolivia's Northern Amazon: Introduced Fish Species Create New Opportunities and Challenges

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## Key Messages

- Introduced fish species in the Bolivian Amazon could provide indigenous communities with livelihood opportunities, but may also be a threat to their critically-important subsistence fisheries through predation and territorial exclusion.
  - Local fishery organizations can be strengthened through ongoing dialogue, leadership training, and technical assistance.
  - Engaging with local, regional and national level actors and promoting open spaces of dialogue (workshops, round table groups) can help identify common interests, resolve conflicts and lead to discussions on future planning.
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## Community Introduction

Several indigenous groups (Chácobo, Pacahuara, Tacana, Cavineño and Esse Eja) have historically practiced traditional hunting and gathering within the river systems of the Northern Bolivian Amazon (Pando and Beni Departments), a region of flooding forests, upland tropical forests and savannahs that is home to a high diversity of fish species and are considered of high ecological significance<sup>(1,2)</sup>. In 1996, after more than a century of colonial exploitation for rubber and Brazil-nut harvesting, the Law of the National Institute for Agrarian Reform marked the start of a process of redistribution of lands to the indigenous groups, as traditional users, organized into communal tenure arrangements designated as Original Community Territories (TCOs). There are currently four TCOs in the region, established in the early 2000s, with a combined area of 1.5 million hectares, and a population of 8,200 people in 93 communities, mostly located close to rivers or lakes with limited access to regional urban centers.

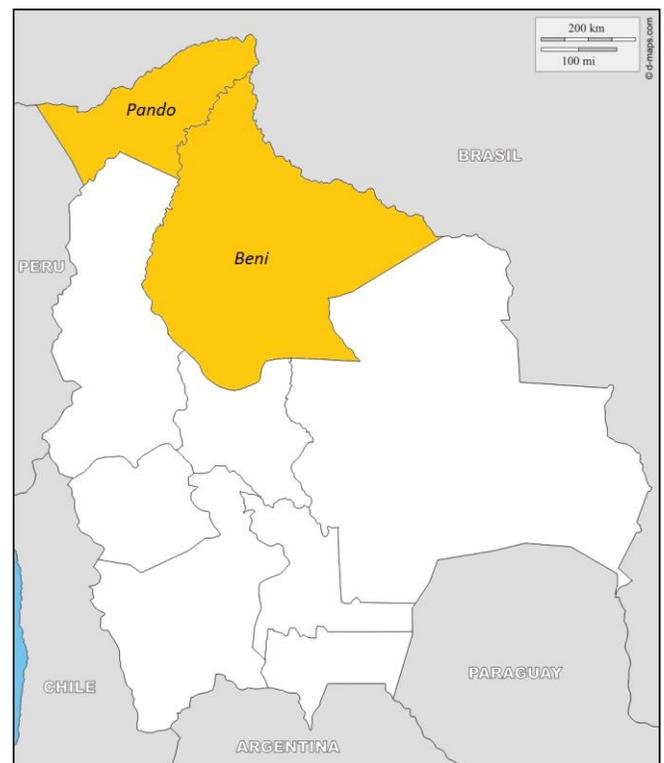


Figure 1: Map of Bolivia showing the Pando and Beni departments<sup>(10)</sup>

The main livelihood activities in TCO communities include seasonal harvesting of Brazil-nuts, other



non-timber forest products, family-based agriculture (yucca, plantain), and year-round hunting and fishing.



Figure 2: Traditional houses in Baketi community, TCO Cavineño, 2015

## Conservation and Livelihood Challenges

Regulations around TCOs specify which resources may be used for subsistence and/or commercial use, and recognize each community's areas to fish, hunt and harvest, with shared-access arrangements where necessary. However, in most cases, local and regional management plans are still needed. Illegal entry by outsiders for unregulated activities such as commercial logging and fishing pose a significant threat to resources. Additionally, high rates of poverty, food insecurity and vulnerability exacerbate local challenges<sup>(3)</sup>.

Fisheries based on abundant and diverse native fish are a cornerstone of local subsistence for most communities and a secondary livelihood for some. Despite the need for income generating opportunities and high, unsatisfied demand for fish in regional markets, few indigenous communities fish commercially on a regular basis. This may be due to a variety of factors, including cultural norms, distance from and access to markets, inadequate equipment (nets) poor access to cold-storage (ice), and low returns to producers.

## Introduced Fish Species

Paiche (*Arapaima gigas*), the world's largest scaled fish, was introduced in 1965 to the headwaters of Madre de Dios River (Peru)<sup>(4)</sup>. This air-breathing and fast growing fish, has spread into a significant portion of the Bolivian Amazon<sup>(1)</sup> and is now relatively abundant in lakes and river eddies. In other parts of the Amazon Basin, where it is native, paiche is an iconic species with high commercial value, a history of over-exploitation, and some successful community based conservation initiatives<sup>(5)</sup>. Though paiche are not native to Bolivia, they remain sensitive to fishing pressure.

Since the 1990s, unmanaged commercial fisheries in the Bolivian Amazon have been rapidly increasing; current production is estimated to be upwards of 7,000 tonnes/year. Urban-based fishers from the main regional port of Riberalta now target paiche almost exclusively and sometimes invade TCOs to access the lakes where paiche is most abundant. This has both contributed to conflicts and created new opportunities for trade; equity remains a concern<sup>(6)</sup>. For TCO communities, paiche could be a livelihood opportunity, but may also be a threat to critical subsistence fisheries through predation and territorial exclusion.



Figure 3: Mapping the spread of the introduced paiche fish, community workshop, TCO Chácobo, 2015

## Community Initiative

Since 2011, indigenous communities have worked with researchers from the Asociación Faunagua, World Fisheries Trust, and the University of Victoria, to better understand the fisheries situation, and identify pathways to improve livelihood and food security in the region. Much of this work has focused on the paiche; providing key information on abundance and impacts, as well as potential for development. To date these efforts have provided important information on:

- Nutritional status and food security of rural and urban populations and key determinants, including the contributions of fish<sup>(7)</sup>.
- Fisheries and other livelihood activities, and local perspectives about paiche.
- Fishery value chains, and mechanisms to improve transparency and promote greater economic equity between fishers, middlemen and markets<sup>(3,8)</sup>.



Figure 4: Explaining local fishing areas, catch and effort, Community workshop, TCO Chácobo, 2015

There have also been a range of practical initiatives including:

- Pilot initiatives for value-added fish production, for example the establishment of a cooperative in one

of the indigenous communities, where paiche fillets and skins (for leather production) are produced and sold at improved prices.

- Strengthening local fisheries organizations through ongoing dialogue, leadership training, and providing technical assistance, e.g. consolidation of the regional fishers association.
- Engaging with local, regional and national level actors and promoting open spaces of dialogue (workshops, round table groups) to identify common interests, resolve conflicts and discuss future planning<sup>(9)</sup>.



Figure 5: Returning with the day's catch, TCO Cavineño, 2015

## Practical Outcomes

Indigenous governments in the region were able to express concerns and priorities directly with the national government through a 2014 national multi-stakeholder workshop held to discuss issues and opportunities surrounding paiche. This was also an opportunity to meet with representatives of commercial fishing.



Subsequently, the Ministry of Environment passed an administrative resolution for paiche fishery regulation and management, authorizing paiche fishing in protected areas and TCOs as a conservation measure to protect native fauna. Specific management plans still need to be developed, including monitoring.



Figure 6: Preparing roasted tucunaré (peacock bass), a traditional dish, TCO Cavineño, 2015

Through a partnership between regional indigenous authorities and the National Institute for Agricultural and Forestry Innovation, a regional study is underway to examine the status of paiche and the potential for fishery development in TCO communities in the Department of Beni. At the national level, a proposed national fisheries law providing definitions, regulations and guidelines for sustainable development and use of fisheries is currently under review.

Overall, the presence of paiche, and associated concerns about how to manage them, has contributed to a significant increase in public attention to the fisheries sector in Bolivia. However, there is still a need for more attention to the specific situation of indigenous fisheries. Within the current TCO system, few resource management plans have been developed or implemented. Enforcement of exclusive access to aquatic resources is weak, offering only limited protection to resources and/or

benefits to indigenous people. To improve this, efforts should include:

- Capacity-building for communities and local organizations to identify and articulate local needs and priorities for development and conservation.
- Development and implementation of resource management plans and other governance tools at a local level.
- More effective engagement in regional planning.
- Support for greater transparency, communication and cooperation between agencies responsible for regulating fishing and fish markets.
- Improving returns to fishers, for example through value-added opportunities or improved pricing structure.

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