



Amazon Fish for Food: Improving food security and livelihoods in Bolivia

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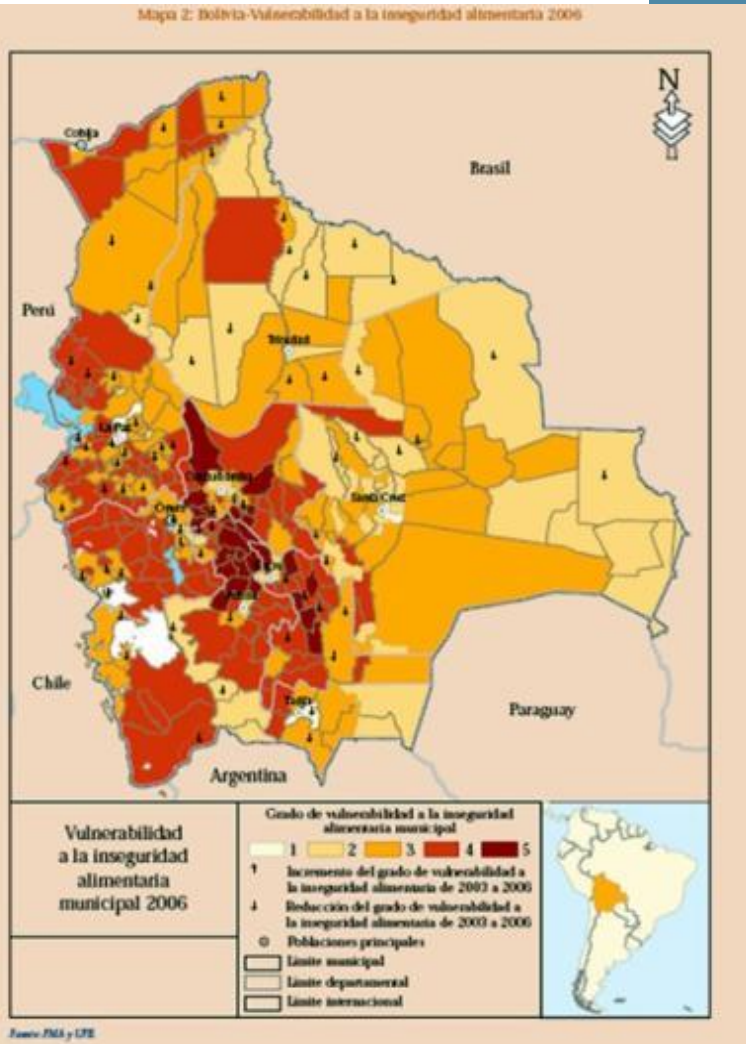
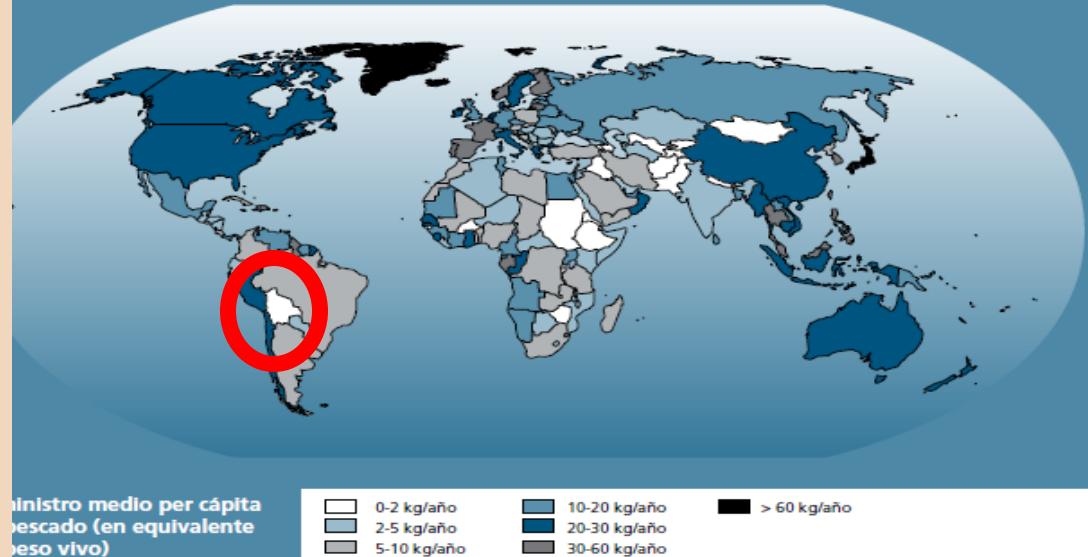
International Development Research Centre
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The context where we began

El pescado como alimento: suministro per cápita (promedio 2003-2005)

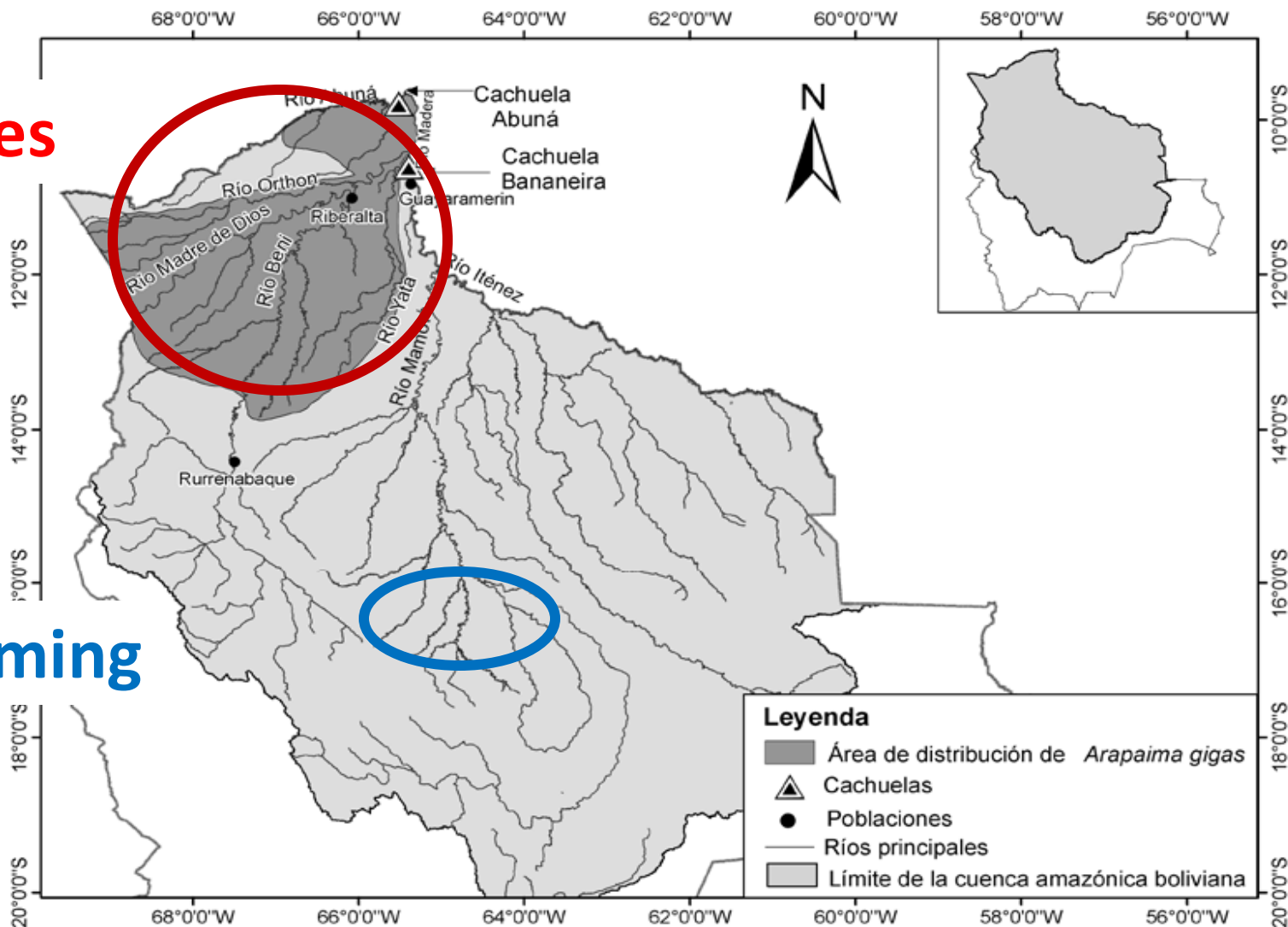


- High food insecurity
- Low fish consumption (2.7-3.5 kg/person/year)
- Under valued fisheries and fish farming sectors



Where within Bolivia?

Fisheries



Fish Farming



- Productive family units
- Native fish species
- Rain-fed earthen ponds
- 8-12 month cycles



- Native species
- Communities eat more than 30 species of fish



- Introduced (invasive) fish paiche (*Arapaima gigas*)
- 1970s from Peru, advances 33km/year

Scaling up Solutions in the Peces para la Vida II model



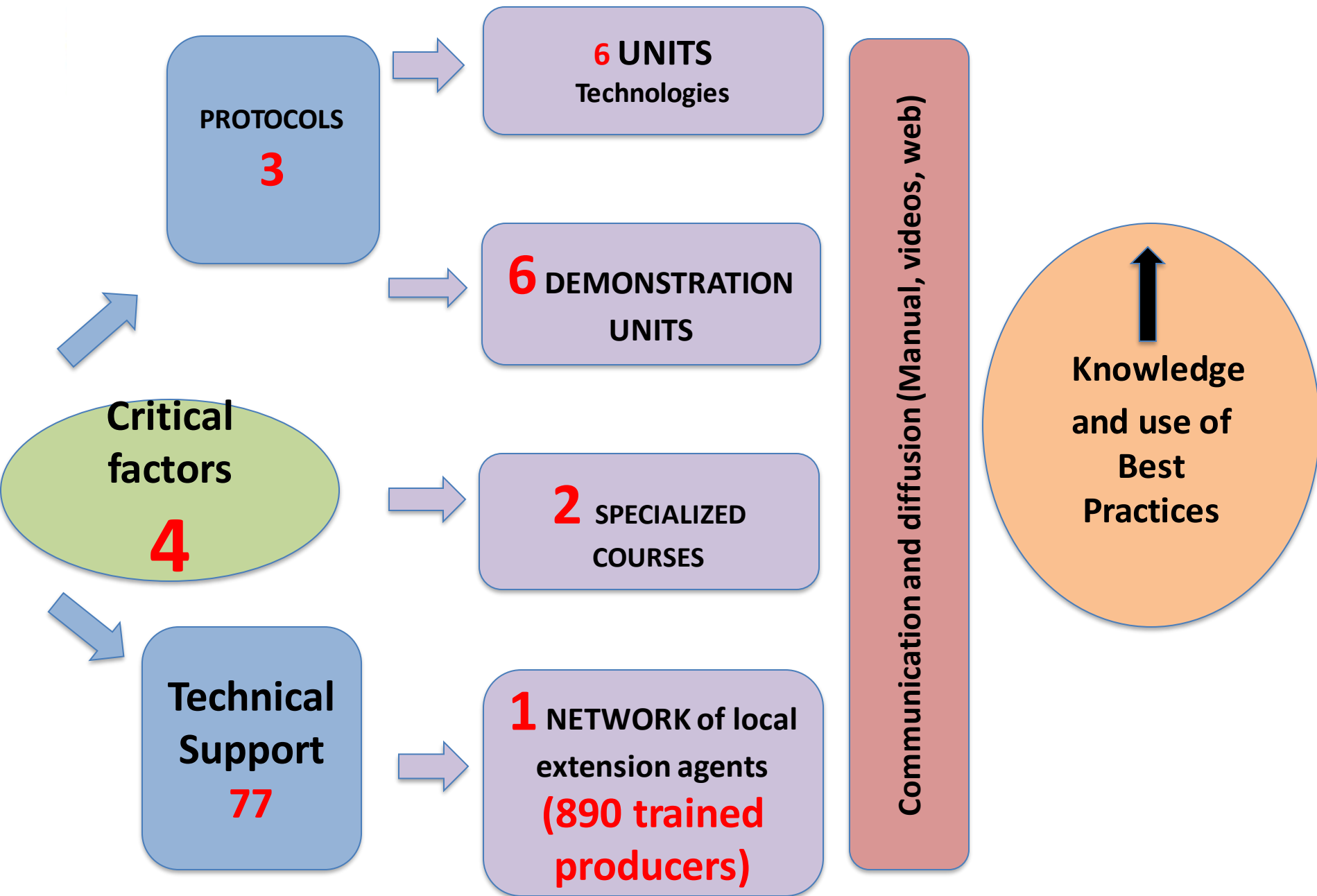
Food Security and livelihoods

- Improved agricultural productivity
- Fostering market access and increasing income
- Improve nutrition
- Gender empowerment and equality
- Improved policies and governance

Food Security and livelihoods

A top-down view of a silver metal plate containing a serving of white rice and a whole, cooked fish, possibly salmon, with its skin on. The plate is set on a light-colored wooden surface. The text of the presentation is overlaid on the image.

- **Improved production**
- Market access and increased income
- Improved nutrition
- Gender empowerment and equality
- Improved policies



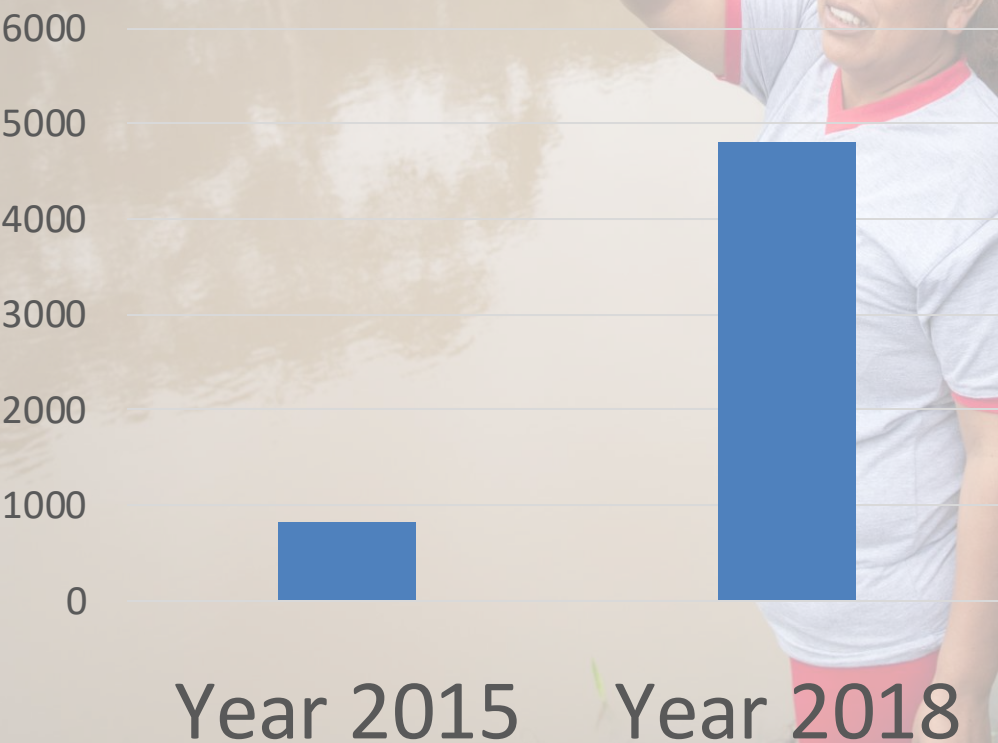
Improved production

Juntos construyendo el sector piscícola
Aprendiendo de nuestros vecinos



Improved production

Fish farming production in
Core Project Intervention
Area (Tonnes/year)



- Increased production by a factor of 6
- Increase number of ponds/family (3.4-4.6)

Improved production

“The capacity-building process has taught us not only how to manage aquaculture production, but also how to develop as facilitators and interact with producers who seek us out to solve a problem or optimize their production.” (Student)

- 75% satisfied or very satisfied with production
- 84% satisfied or very satisfied with aquaculture as part of livelihood strategy



Improved production

Number of fish farming families

Core Municipalities (5)

Total municipalities (8)

2015

532

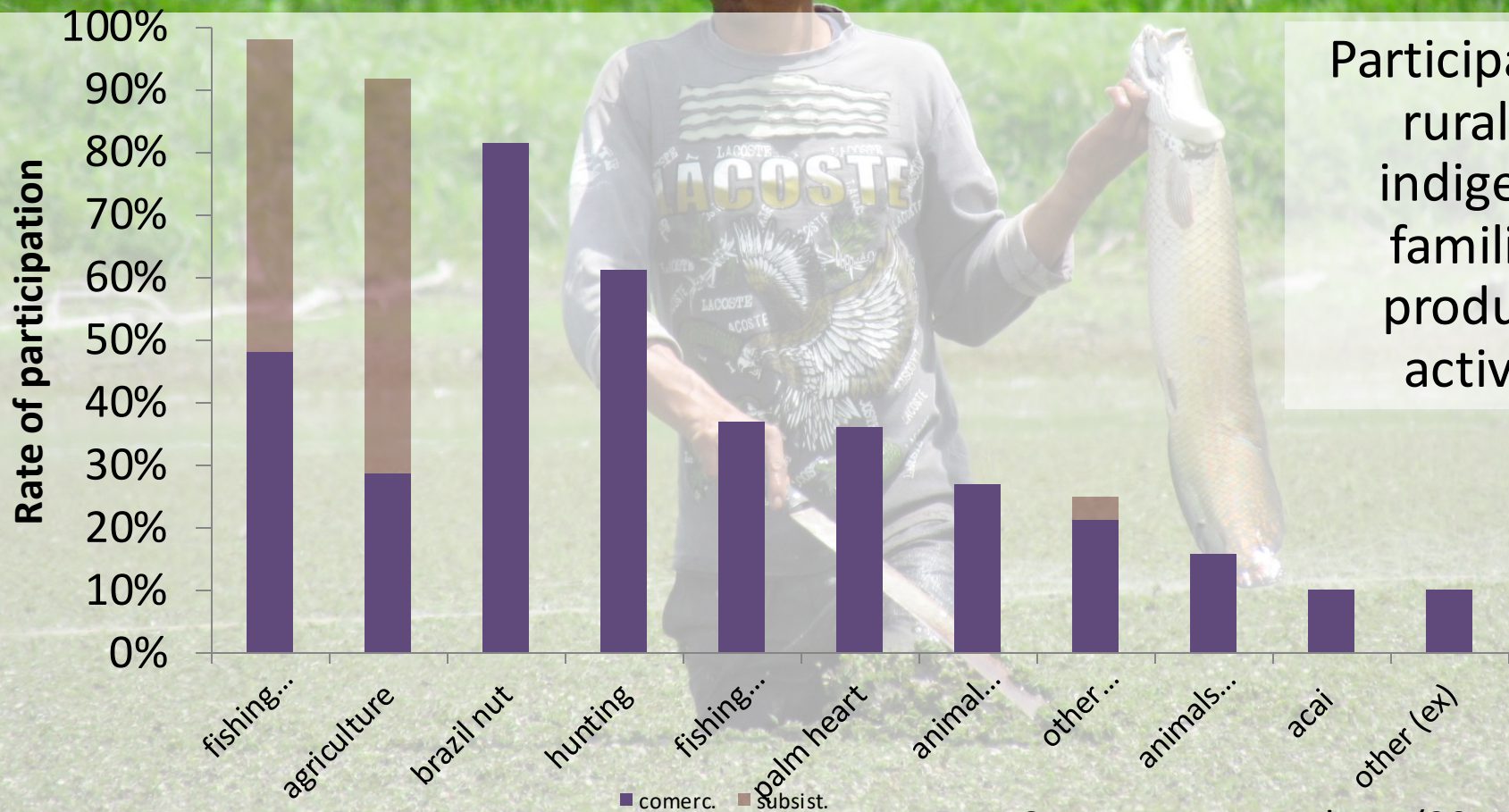
937

2018

1,030

1,757

Improved production



Participation of rural and indigenous families in productive activities

Source: Macnaughton (2017), PPVII



Food Security and livelihoods



- Improved agricultural productivity
- **Market access and increased income**
- Improved nutrition
- Gender empowerment and equality
- Improved policies



Market access and increased income



BUENAS PRÁCTICAS

El desarrollo integral de la producción de pescado requiere la aplicación de buenas prácticas que garanticen la calidad y seguridad de los productos. Estas prácticas deben ser aplicadas en todas las etapas de la cadena de valor, desde la captura o cría hasta el consumo final.

El presente manual de Buenas Prácticas de Higiene y Manipulación del Pescado tiene como objetivo proporcionar a los productores y manipuladores de pescado una guía práctica para mejorar la calidad y seguridad de sus productos, así como también aumentar su competitividad en el mercado.

DEL FILETE ESTÁ LISTO PARA COCINAR PREPARACIONES DELICIASAS ... Y SALUDABLES!

Preparando este delicioso filete de pescado, podrás disfrutar de un momento saludable y delicioso. ¡Prepara este delicioso filete de pescado y disfruta de un momento saludable y delicioso!



Manual de Buenas Prácticas de Higiene y Manipulación del Pescado



PASO 1



ANTES DE COMENZAR

Antes de empezar el despiece, es importante lavarse las manos y los brazos con agua y jabón. También es importante desinfectar el área de trabajo con agua y lejía.

UTENSILIOS PARA EL DESPIEZO

Una vez que se han lavado las manos y los brazos, se debe desinfectar el área de trabajo con agua y lejía. Los utensilios que se necesitan para el despiece son:



PASO 2



QUITAR LA CABEZA

Para quitar la cabeza del pescado, se debe cortar la cabeza del pescado con un cuchillo.

Después de quitar la cabeza del pescado, se debe lavar el pescado con agua y lejía.



PASO 5



REMOVER LAS ESPINAS PEQUEÑAS DE LA COLA

Las espinas de la cola se pueden remover con un cuchillo y se deben lavar con agua y lejía.



PASO 3



RETIRAR EL FILETE

Para retirar el filete del pescado, se debe cortar el filete con un cuchillo y se debe lavar con agua y lejía.



2. Se debe cortar el filete del pescado con un cuchillo y se debe lavar con agua y lejía.



DS:

Seguridad y salud

Incidente a bajo

los enos limpia

te de hielo, productos.

temperatura adecuada de 0 y en buen



Market access and increased income



¿Cómo reconocer pescado fresco?

Placas

- ✓ Bien adheridas y brillantes
- ✗ Móviles o sueltas y opacas

Piel

- ✓ Brillante y flexible
- ✗ Apagada y poco flexible

Escamas

- ✓ Bien adheridas y con brillo
- ✗ Opacas y fáciles de despegar

Las características generales buenas del pescado son:

- Apariencia externa brillante.
- Al apretar con el dedo, la carne vuelve a su lugar rápidamente.
- Olor fresco, casi sin olor.

Agallas	Ojos	Carne
<ul style="list-style-type: none"> ✓ Rojas y brillantes ✗ Opacas y descoloridas 	<ul style="list-style-type: none"> ✓ Convexos y brillantes ✗ Planos o cóncavos y opacos 	<ul style="list-style-type: none"> ✓ Firme y blanca o rosácea elástica o flexible ✗ Muy firme, dura y rígida, color amarillento a bronce

Market access and increased income



Diversified value chains for fish leather and best practices for quality

Indigenous fishers

- 379 increased their income by 47.5% through meat
- 32 increased income by 23% through skin selling

Commercial fishers

- 393 increased income by 35.5% through meat
- 5 increased income by 23% through skin

Vendors

- 56 increased income by 28% selling meat



Market access and increased income



Market access and increased income

Income for fish farming families (\$US/year)



- Microloans and small loans
 - Leasing, unconventional guarantee,

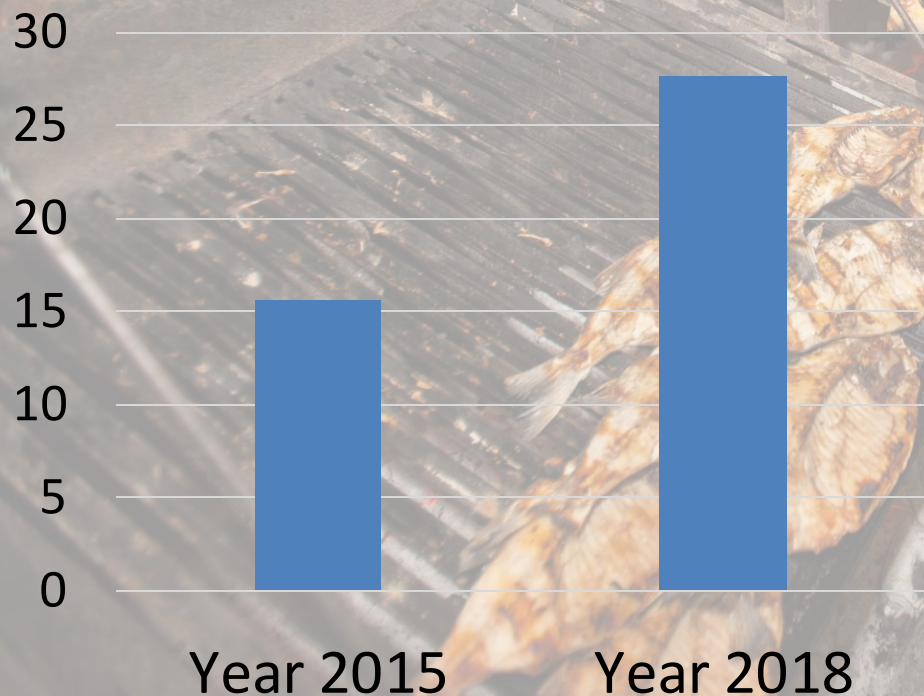
Food Security and livelihoods

A top-down view of a silver metal plate resting on a wooden surface. The plate contains a meal consisting of a mound of white rice in the upper right, a whole fish (possibly a sea bream) in the center, and several pieces of salmon fillet. The fish is cooked and its scales are visible. The salmon has a bright orange-pink hue. The background is a light-colored wooden table with a visible grain.

- Improved agricultural productivity
- Market access and increased income
- **Improved nutrition**
- Gender empowerment and equality
- Improved policies

Improved nutrition

Fish consumption in fish farming families (5 core municipalities) in kg/year



20% increase in per capita consumption in 5 core municipalities

Improved nutrition

A person wearing a red cap and a white face mask is standing outdoors, tending to a large metal grill. The grill is filled with several large fish, likely pacu or tambaqui, which are being cooked. The background shows some greenery and a building structure.

Increased fish meat demand

- 17-32% in major cities in Bolivia

Increased consumption nationally (2015-2017)

- 21% in paiche consumption
- 38% in pacú/tambaqui
- 9,000 new people /year consuming pacu and tambaqui

Improved nutrition

A man wearing a red cap, a white face mask, and a blue apron is grilling fish on a large, open metal grill. The grill is filled with many fish, which are being cooked over a fire. The man is using long-handled tongs to turn the fish. The background shows a rustic outdoor setting with trees and a building.

“The availability of fish to eat also helps a great deal, especially when the rest of the family comes to share fish together”

Food Security and livelihoods

A top-down view of a silver metal plate containing a serving of white rice and a whole, cooked fish, possibly salmon, with its skin on. The plate is set on a light-colored wooden surface. The text of the presentation is overlaid on a semi-transparent grey rectangle in the upper half of the image.

- Improved agricultural productivity
- Market access and increased income
- Improved nutrition
- **Gender equality and empowerment**
- Improved policies

Gender equality and empowerment

Women as important leaders and participants

- 11 Demonstration fish farms and field schools performing peer-to-peer knowledge exchange with 972 producers (44% women).
- 45% of trained Technical staff were women

Gender equality and empowerment

Organizational strengthening

- 14 aquaculture associations, 12 fisheries associations
 - Economic Viability Training (financial literacy)
 - Gender equality sensitization and training
 - Legislative parity norms in associations

Gender equality and empowerment

Women as decision-makers

- 19% → 40% in aquaculture board of directors
- The legal recognition of women as fishers
- Fishing associations officially recognizing women as active members



Food Security and livelihoods

A top-down view of a silver metal plate resting on a wooden surface. The plate contains a meal consisting of a mound of white rice at the top, a whole steamed fish (likely a sea bream or similar) in the center, and two thick fillets of salmon on the left side. The fish is cooked with its skin on, and the salmon fillets are also cooked. The background is a light-colored wooden table.

- Improved agricultural productivity
- Market access and increased income
- Improved nutrition
- Gender equality and empowerment
- **Improved policies and governance**

Improved policies and governance

1 de agosto de 2013

LEY DE PESCA Y ACUICULTURA SUSTENTABLES



- **1** new Sustainable Fisheries and Aquaculture Law
- **3** Normative instruments
- **1** Fish hygiene and handling technical regulation
- Almost all 14 fishing associations and 12 aquaculture associations were **legalized**

Improved policies and governance

2 Multi-stakeholder platforms with Sectoral Innovation plans and expected municipal investment of 27.1 million bolivianos.



Conclusions

- Livelihoods are complicated and diverse, and require equally diverse pathways to address
- Involving local “beneficiaries” as equal partners is necessary for transformative impact
- To address system-level changes, need multi-disciplinary team
- Addressing food security pillars as entry points for poverty and wellbeing work
- Gender work must continue, and can significantly impact food security and family wellbeing

Thank you!

Tiffanie Rainville

