

Introduction

The pandemic has revealed a world eager to stay connected. Global uncertainty is such that decisions to accomplish systemic changes are yet to be made, despite the persistence of the pandemic. Digital transformation and adoption have accelerated^{1,2}, and travel has been limited, affecting not only people but also goods and products³. Therefore, both the local and national scales have become important opportunities in the face of globalization to adapt to this new context.

The fishing sector in Mexico reveals a lack of attention from government agencies, especially regarding the safe reactivation of activities. In countries, such as Peru, specific initiatives to establish effective protocols for fishery reactivation have already been developed⁴. These protocols standardize and ensure the operation of key fishery processes, especially those relating to the supply chain, where everyone participates, including actors that are generally under-represented in fisheries statistics, such as women and the next generation of fishers.

In this eighth and last report, Comunidad y Biodiversidad, A.C. (COBI)⁵ focused on understanding what has changed in the lives of fishers⁶ as a result of the pandemic, what has been learned during the past months, and how to safely return to fishing activities in the context of the new normal.

What was done?

From 28th October to 9th November 2020, 166 interviews were conducted⁷ (33 women y 133 men) in order to document the principles for fisheries reactivation in the new normal. Topics related to the changes fishers have observed in their lives and in their communities as a result of the pandemic, lessons learned, and how to safely return fishing, were addressed. Thanks to the network of fishers consolidated during the seven previous reports, this report integrates 52 fishing communities located in 13 states⁸ of Mexico and 71 fishing organizations (52 cooperatives) that work with 21 fisheries⁹. The average age of the interviewees was 44 years old, ranging from 20 to 71 (for women the average was 40, men, 45). Ninety-eight percent of interviewees work in small-scale fisheries, while 2% work in aquaculture. From the total interviewees, 72% participate in extraction, 17% in administration, and 11% in other stages of the supply chain (cleaning, processing, distribution, sales, technicians).

In addition, 75 social media profiles were monitored (51 on Facebook and 24 on Twitter). Of the Facebook profiles, 10 corresponded to fisherwomen, 16 to fishermen, six to official fan pages of fishing cooperatives, 39 to groups related to fishing (e.g. confederations, suppliers, non-government organizations, international organizations) from which 12 were closely linked to gender issues; and finally, six profiles of government agencies¹⁰ related to the fishing sector. A total of 1,067 messages were analyzed.

Changes in the lives of fishers due to the pandemic

When the lockdown was declared in Mexico (March 2020), 48% of people¹¹ reported they stopped fishing completely. Eight months later, 91% of those interviewed reported having returned to fishing with limitations (70%) or completely (21%). In the words of a fisher (70 years old) “We are learning and adapting to this, I tell my children, we have no choice”. Only 8% mentioned not having stopped their fishing activities and 1% said that they had not returned to working in fisheries (only four people mentioned working in alternative economic activities). In addition, 52% mentioned that their markets have reopened while 28% that markets have partially opened. On the contrary, 10% mentioned not having lost their market, while the remainder reported that they have not yet managed to reactivate them (8%) or were not sure if they had already opened (2%).

Despite this reactivation of activity, two out of three people (67%) mentioned that their fishery has not returned to normal¹². A fisher (49) said “I don’t know if we should attribute this situation to climate change or bad weather, but there is no octopus, I have talked to my wife and colleagues who are also fishers and the truth is that it has not gone well and we are worried”. The remaining 33% said that they are operating normally (21%), that they never changed the way they work (10%) or are not sure (2%). People who changed the way they work reported: 1) a reduction in fishing effort (fewer working days and lower catches), 2) the implementation of preventative measures (fishing gear for personal use - not shared, hand sanitizer, masks, and improved hygiene, personally and in their gear and facilities), and 3) modification of the fishing dynamics (extraction of lower-value species, shorter distances).

Communities perceived positive changes especially in social (43%) and health (19%) aspects. An administrator (53) mentioned “We learned to value

what surrounds us. We were just living life, not valuing family, friends, everything we had, but we learned that we have to be prepared for whatever comes” and they mentioned being more united at the family and community level “*This helped us to unite as a community, since we all lack things and it taught us to work for the good of everyone”* (fisher, 41). Other answers included environmental aspects (8%), economic (5%), solutions (2%), technology (2%) and role of the State (1%). An administrator (49) shared the following reflection “*It is a strong wake-up call as human beings, we have to be more sensitive and be aware that we have to care for our environment”*. The remaining 20% insisted that nothing has changed for the better.

Negative changes mentioned in the interviews reflect that the main concern of the communities is the economy (44%). They even perceive an abuse from the market “*Catches are badly paid, and suppliers take advantage of it”* (fisher, 38), something that has been mentioned from the beginning of the pandemic⁹. Fishers are concerned about the increase in crime and misinformation (26%), they notice negative changes in health (7%) and to a lesser extent, impacts on the environment (4%), role of the State (4%), solutions and technology (1% each). The remaining 14% believe that everything remains the same.

“Since many people stopped earning money, crime has exploded. Now they are stealing small things to sell them quickly, several engines have already been stolen from the boats and the authorities do nothing”

Fisher, 49

The voice of fishers about the principles for the new normal

Learn to adapt and find their own solutions



“We need to understand that nothing is going to be the same, we must look for and create groups to find solutions”.

(Fisher, 61).



“The world is constantly changing, and we must adapt at the same time or faster so that it does not affect us, get creative to adapt, not wait for someone to bring us the solution”.

(Fisher, 28).



“We have to learn to save for these contingencies and not wait for the government or someone else to solve our problems”.

(Fisher, 33).

Be in communication and use technology



“Communication is essential, having internet in the community has helped us understand the problem and how to avoid spreading it on the island”.

(Fisher, 32).



“I think we are still on time for fishers to use social media and keep ourselves up to date by migrating to the digital world. It could be a way to offer catches, of any species, try to find a market, post weather conditions and government announcements focused to the sector, without getting involved in political issues”.

(Fisher, 47).

Be organized and informed



“Organization is key to solving these big problems, if we are not organized or we do not respect ourselves as cooperatives, in the end we are more vulnerable in every sense”.

(Fishery technician, 32).



“It has helped us, as a cooperative, to stand together, to define each of our roles, and better organize the cooperative”.

(Worker from a processing plant, 50).



“Organize ourselves and show from the start that this is hitting our economy hard to get the attention of the authorities, we are still forgotten in many aspects, procedures, licenses, surveillance”.

(Administrator, 58).

Save and find alternative markets



“Regarding fishing, I should have looked for more market alternatives locally, to have better income and avoid intermediaries”.

(Fisher, 28).



“Commercialize nationally and create awareness on consuming local or regional products, so that we do not have to rely too much on the international market”.

(Administrator, 39).



“Save and commercialize in different places, offer products with different presentations”.

(Fisher, 48).

Lessons learned from digital interventions

In general, those interviewed highlighted that the eight months of consultation have contributed to making visible the situation of the sector and to connect with other fishers (they mention a WhatsApp group with more than 200 participants), and to understand that they are being heard: *“I liked that they listened to us and look after a sector forgotten by the authorities”* (Fisher, 49). Some people mentioned that the interviews questions, as well as the reports, made them think about their own situation.

The participants found the process satisfactory (63%) and highlight the kindness and patience of the people who conducted the interviews. Despite this, they also mentioned opportunities for improvement, with requests focusing on using technology to improve communication and stay connected (15%), as a fisher said (49): *“Having a virtual meeting with all the participants. Brainstorming could be really beneficial”*; or continuing with the interviews (8%) incorporating new topics (2%) and more people (2%). The remaining 10% mentioned a variety of issues that include visiting the communities once the pandemic is over or including open-ended questions to discuss additional topics.

They also think that there were too many questions, or they regretted that on occasions the interview had to be rescheduled several times.

Interviewees believe that the information is very valuable and should be made available to diverse sectors (some people indicated more than one sector): federal government, particularly the dependencies in charge of fisheries and aquaculture (82%), communities and fishing organizations (58%), general public (25%) and others (civil society organizations, municipal/state government, private sector) (15%). They said that the best way to send these reports is through digital platforms including social media (WhatsApp and Facebook) (52%), printed versions (27%) and via other formats such as videos (6%), mass media (tv, radio, newspaper) (6%), through summaries with a more didactic approach (4%), as well as other forums (meetings with authorities and key actors, support through other non-government organizations, telephone, conferences, among others) (16%). Some people (10%) did not know what the best way to share the reports would be.

Findings in social media

Out of the 1,067 analyzed messages, 54 (5%) directly mentioned the fishing sector, COVID-19 and the new normal. Of these, the majority (96%) correspond to content elaborated mainly by specialized agencies and non-government organizations, such as *International Collective in Support of Fisherworkers* (ICSF), *Secretaría de Pesca y Acuicultura Sustentables de Yucatán* (SEPASY) and the *Food and Agriculture Organization* (FAO) in Mexico. The rest (4%) was content produced by two fishers.

A high percentage (85%) of the messages were related to the new normal discussion around the resumption of activities and the reactivation of fisheries. In addition, messages that provide a solution or have a purposeful, hopeful tone that invited reflection or collective action stand out. For example, a message posted by the profile PescaConFuturo said *“We call on producers to join*

the electronic commerce that has been increasing since the pandemic”. Other messages expressed concern and frustration. Keywords in this analysis, include: COVID-19, fishing, fishers, economy, sustainability, subsidies, strategies, pandemic, courses, webinar and new normal.

Likewise, the normalization of the use of face-masks and visors is perceived, from their increased use in messages that were accompanied by videos or photos of a virtual meeting or conference. Among the changes to adapt to the new normal, some general recommendations were found, based on guidelines from the Health Secretary and related agencies (sanitary protocols). None were specific to the fishing sector.

Recommendations for the principles to return fishing in the new normal

1. Continue informing the sector about the virus and how it is transmitted, in order to reduce infections. *“I should have believed in the pandemic from the beginning”* (Fisher, 49).
2. Develop security protocols for COVID-19, specifically for the fishing sector. These must include preventive measures for the different stages of the supply chain (pre-production, production, post-production and activities complementary to production)¹³.
3. Ensure sufficient supplies of personal protection gear, and environmentally friendly production and waste disposal of these products.
4. Promote local and national level commercializing and consumption of products likely to improve fishers’ incomes. This must be done with a gender perspective, with the equal participation of men and women.
5. Share protocols developed by fishers, to access coastal communities. This is particularly important in isolated communities with limited access to health services. Some communities have defined their own access protocols, which can be replicated in other locations.
6. Encourage fisher to fisher collaboration, cooperation and organization. These were principles explicitly recognized during the interviews as strategic for the adaptation of small-scale fisheries during the pandemic.
7. Include fishers in the COVID-19 vaccination plan. When there is access to an effective vaccine, fishers must be included in the progressive vaccination plan, starting with the most vulnerable populations.

Impact and acknowledgements

In COBI, we began this national effort to give a voice during the pandemic to the people dedicated to small-scale fisheries. Between April and November 2020, 468 people dedicated to small-scale fisheries were consulted. In total, 1,490 interviews were conducted and 9,147 posts on social media (Facebook and Twitter) were monitored. The consultation reached all the coastal states of Mexico with approximately 200 participants in each report, which covered eight issues: 1) economic and social impacts, 2) the role of the State, 3) local solutions, 4) gender equality, 5) access to healthcare, 6) the technological revolution and the digital divide, 7) environmental impacts and, the present report, 8) principles for the new normal.

The reports were shared each month with 1,269

people and organizations (national and international), through digital platforms (email, WhatsApp, websites). The impacts include the establishment of a network of around 300 fishers connected through a WhatsApp group to share and face together the impacts of the pandemic, the promotion of fishers’ participation in the Support Component for the Wellbeing of Fishers and Aquaculturists (BIENPESCA), and the strengthening of a call for proposals from a philanthropic foundation focused on environmental issues.

All of this would have not been possible without the participation of the interviewers and interviewees, to whom we greatly appreciate their time, knowledge, and generosity.

Interviewed people, listed based on their community or fishing organization:

Baja ornamentals	S.C.P.P. Atuneros y Tiburoneros
C.P.B.S. Pescadores de Nuevo Campechito	S.C.P.P. Auténticos Pescadores del Golfo
C.P.P.B. y S. El Chejere	S.C.P.P. B. y S. de Altura Francisco Flores Flores
Cabo Pulmo Sport Center	S.C.P.P. Bahía de San Juanico Sur
Cámara Nacional de las Industrias Pesquera y Acuícola en México (CANAINPESCAMX)	S.C.P.P. Bahía la Tijera
Centro Regional de Investigación Pesquera (CRIP) Manzanillo, Colima	S.C.P.P. Bahía Magdalena
Club de Pesca San Agustín	S.C.P.P. Bahía Tortugas
Comercializadora HealthyFish (Smart Fish)	S.C.P.P. Barra de corazones
Comercializadora Mariano González Salvatierra	S.C.P.P. Bella Vista de Pichilingue
Comité estatal de sanidad acuícola de Baja California	S.C.P.P. Biósfera del Vizcaíno
Comité Justo y Solidario de Pescadores Ribereños de San Román	S.C.P.P. Boca del Río Culiacán
Comité Sistema Producto calamar gigante de Baja California	S.C.P.P. Bocana de la Soledad
Comité Sistema Producto calamar gigante de Baja California Sur	S.C.P.P. Buzos de Bahía
Comité Sistema Producto calamar gigante de Sinaloa	S.C.P.P. Buzos Líderes de Kino
Comité Sistema Producto calamar gigante de Sonora	S.C.P.P. Buzos Orilleros del mar de Cortés
Consultoría y tienda de artículos para pesca deportiva, La Paz, Baja California	S.C.P.P. Buzos y Pescadores de la Baja California
Dirección de Pesca Municipal Dzilam de Bravo	S.C.P.P. Buzos y Pescadores de las Marietas
El Mar Diving Center	S.C.P.P. Cabo Catoche
Federación de Cooperativas de Quintana Roo	S.C.P.P. California San Ignacio
Federación de Sociedades Cooperativas Pesqueras Zona Centro de Baja California Sur	S.C.P.P. Camellos del Mar.
Federación Regional de Cooperativas Pesqueras del Centro y Poniente de Yucatán	S.C.P.P. Chuburná Progreso
Fuente del Mar Bermejo	S.C.P.P. Copesmar
GranSu	S.C.P.P. Cozumel
Habitantes de la comunidad El Rosario	S.C.P.P. Criptonos de Chuburná
Habitantes de la comunidad Ensenada	S.C.P.P. Demetrio Soberanes Castro
Habitantes de la comunidad Isla Natividad	S.C.P.P. Dios es Bueno
Habitantes de la comunidad Puerto Peñasco	S.C.P.P. Don Hueso
Habitantes de la comunidad Punta Allen	S.C.P.P. Dzilam de Bravo
HASHTBT	S.C.P.P. El Carrizal
King Kampachi	S.C.P.P. Emancipación
Organización de Pescadores Rescatando la Ensenada (OPRE)	S.C.P.P. Ensenada
Pescadores libres	S.C.P.P. Estrella del Mar
Permisionarios	S.C.P.P. Estrella del Norte
Pescadería La Almeja	S.C.P.P. Extraviadas de Santa María de Acú
Pescados y Mariscos Bernabé	S.C.P.P. Familia Véjar
Pesquera GILMASA	S.C.P.P. Felinos del Mar
Pesquera Miramar	S.C.P.P. Chuburná Progreso
S.C. Grupo de Monitoreo Submarino y Análisis de Cambio Climático	S.C.P.P. Copesmar
S.C. Mujeres emprendedoras	S.C.P.P. Cozumel
S.C. Pescadores del Faro Zapotitlán	S.C.P.P. Criptonos de Chuburná
S.C. Pesquera y Acuícola, Bendito Mar	S.C.P.P. Demetrio Soberanes Castro
S.C. Progreso	S.C.P.P. Dios es Bueno
S.C. Santa Cruz de Miramar	S.C.P.P. Don Hueso
S.C.P.P. 29 de agosto	S.C.P.P. Dzilam de Bravo
S.C.P.P. Abuloneros y Langosteros Isla Guadalupe	S.C.P.P. El Carrizal
S.C.P.P. Agua Azul Cerro Hermoso	S.C.P.P. Emancipación
S.C.P.P. Almejeras de Santa Cruz	S.C.P.P. Ensenada
S.C.P.P. Andrés Quintana Roo	S.C.P.P. Estrella del Mar
S.C.P.P. Arrecife del Rizo	S.C.P.P. Estrella del Norte
S.C.P.P. Arrecifes y Manglares	S.C.P.P. Extraviadas de Santa María de Acú
	S.C.P.P. Familia Véjar
	S.C.P.P. Felinos del Mar
	S.C.P.P. Flor del Muco
	S.C.P.P. Hermanos Domínguez
	S.C.P.P. Indígenas y Campesinos
	S.C.P.P. Isla Pájaro
	S.C.P.P. Isla Santa Cruz
	S.C.P.P. José María Azcorra
	S.C.P.P. Jóvenes Ecopescadores

S.C.P.P. Kontei Kai
 S.C.P.P. La divina Misericordia
 S.C.P.P. La Manga
 S.C.P.P. La nube sobre nosotros
 S.C.P.P. La Purísima
 S.C.P.P. La reina de los mares
 S.C.P.P. La Santa María
 S.C.P.P. La Única de San Miguel
 S.C.P.P. Laguna de la Puntilla
 S.C.P.P. Langosteros del Caribe
 S.C.P.P. Leyes de Reforma
 S.C.P.P. Libre
 S.C.P.P. Ligüü
 S.C.P.P. Lobas del manglar
 S.C.P.P. Los bendicidos de Dios
 S.C.P.P. Los Pinolillos de Los Cabos
 S.C.P.P. Los Pulpos de Don Camerino
 S.C.P.P. Los Sazanes
 S.C.P.P. Manuel Cepeda Perez
 S.C.P.P. Mojarra del Arrecife
 S.C.P.P. Mujeres del Golfo
 S.C.P.P. Mujeres del Mar de Cortés
 S.C.P.P. Nautilus del Mar
 S.C.P.P. Norte de Nayarit
 S.C.P.P. Nube sobre el cielo
 S.C.P.P. Ostimar
 S.C.P.P. Paredones de Punta Cirio
 S.C.P.P. Pescadores de Dzilam de Bravo
 S.C.P.P. Pescadores de Ensenada Blanca
 S.C.P.P. Pescadores de la Colonia Zaragoza
 S.C.P.P. Pescadores de Puerto Morelos
 S.C.P.P. Pescadores de Vigia Chico
 S.C.P.P. Pescadores del Banco Chinchorro
 S.C.P.P. Pescadores del Manglito
 S.C.P.P. Pesquería Isla Montosa
 S.C.P.P. Por la Justicia Social
 S.C.P.P. Productos marinos carey
 S.C.P.P. Puerto Chale
 S.C.P.P. Pulga de Mar
 S.C.P.P. Punta Abreojos
 S.C.P.P. Punta Arena
 S.C.P.P. Punta Baas
 S.C.P.P. Punta Ixtul de Chuburná
 S.C.P.P. Reforma Portuaria
 S.C.P.P. Ribereña Porteños
 S.C.P.P. Ribereños
 S.C.P.P. Sardina azul
 S.C.P.P. U-Meya Coolelo
 S.C.P.P. Watax Zac
 S.C.P.P. y Acuicultura en General Ostricamichin
 S.C.P.P. y Acuícola Casa Cuna de Pescadores, de Pescadero
 S.C.P.P. y Acuícola en General Llano del Tigre
 S.C.P.P. y Acuícola Ignlogar
 S.C.P.P. y Acuícola Los Dorados de Villa
 S.C.P.P. y Acuícola Palmar de Cuautla
 S.C.P.P. y Acuícola Unión de Los Morillos
 S.C.P.P.B. y S. Luchadores del Castaño
 S.C.P.P.B. y S. y de Acuicultura Dragado Caracol
 S.P.R. Punta Canoas
 S.S.S. Productores del Golfo
 Servicios Ecoturísticos EcoAve
 Unión de Pescadores ribereños del Carmen

Social media profiles monitored:

Abalobi
 Alejandro Murat Hinojosa (Governor of Oaxaca)
 Alianza Kanan Kay
 Amigos de Sian Ka'an
 Antonio Echeverria Garcia (Governor of Nayarit)
 Archipiélago Espíritu Santo National Park
 Arrecifes de Cozumel National Park and Flora and Fauna
 Protection Area Isla de Cozumel
 Bahía de Loreto National Park
 Cabo Pulmo National Park
 Cámara Nacional de las Industrias Pesquera y Acuícola en
 México (CANAINPESCAMX)
 Caribe Mexicano Biosphere Reserve
 Carlos Joaquin Gonzalez (Governor of Quintana Roo)
 Carlos Mendoza (Governor of Baja California Sur)
 Centro Intercultural de Estudios de Desiertos y Océanos,
 Mexico (CEDO)
 Claudia Pavlovich (Governor of Sonora)
 Claudia Yañez Centeno (Representative)
 Confederación Mexicana de Cooperativas Pesqueras y
 Acuícolas (CONMECOOP_MX)
 Confederación Nacional de Cooperativas Pesqueras (CO-
 NACCOOPMEX)
 Consejo Mexicano de Promoción de los Productos Pesque-
 ros y Acuícolas A.C. (COMEPESCA A.C.)
 Coope Sol i Dar R.L.
 Cooperativa de Trabajo Nómada Sur
 Costa Salvaje
 De Pescador a Pescador
 Del Mar al Comedor, Contigo mi Pescador
 Dr. Alonso Oscar Perez Rico (Health Secretary - Baja Cali-
 fornia)
 Dr. Carlos de la Peña Pintos (Health Secretary - Guerrero)
 Dr. Donato Casas (Health Secretary - Oaxaca)
 Dr. Efren Encinas Torres (Health Secretary - Sinaloa)



Several organizations and institutions have also supported the process: 1) conducting interviews: Smartfish A.C., The Nature Conservancy (TNC) Mexico A.C.; and 2) providing contacts to expand the consultation coverage: Programa de Pequeñas Donaciones (PPD) of the United Nations Development Program (UNDP) in México, Sociedad de Historial Natural Niparáj, Foro para el Desarrollo Sustentable AC, and Confederación Nacional de Cooperativas Pesqueras (CONACOOB).

In addition, a non-government organization has successfully replicated this methodology in Guatemala (Fundación Mundo Azul) and others have shown interest in replicating it in countries such as Belize and the United States.

1 COBI. 2020. The technological revolution and the digital divide in times of the COVID-19 pandemic. Guaymas, México. 7 pp.

2 Ting, D.S.W., Carin, L., Dzau, V. and Wong, T.Y. 2020. Digital technology and COVID-19. *Nature Medicine* 26, 459–461. <https://doi.org/10.1038/s41591-020-0824-5>

3 Bennett et al. 2020. The COVID-19 Pandemic, Small-Scale Fisheries and Coastal Fishing Communities. *Coastal Management*, 48(4), 336-347.

4 <http://www.pescalibredecovid19.org/>

5 Comunidad y Biodiversidad, A.C. (COBI) (www.cobi.org.mx) is a civil society organization that has promoted marine conservation and sustainable fisheries since 1999 through participation of all stakeholders. Email: covid19@cobi.org.mx

6 In the text we refer to “fishers” as both women and men working directly in the extraction and/or processing of fishery products

7 Interviews were conducted by COBI with the support of Gente Sustentable A.C.

8 Baja California, Baja California Sur, Campeche, Guerrero, Nayarit, Oaxaca, Quintana Roo, Sinaloa, Sonora, Tabasco, Tamaulipas, Veracruz, Yucatán.

9 Abalone, clam, crab, crown conch, finfish, jellyfish, octopus, ornamental fish, oyster, scallops, sea cucumber, sea urchin, seaweed, shark, spiny lobster (California and Caribbean), swimming crab and yellowtail (mariculture).

10 CONANP, CONAPESCA, INAPESCA, PROFEPA, SEMARNAT, SEPASY.

11 COBI. 2020. Resiliencia de las comunidades pesqueras de México ante COVID-19. Impactos económicos y sociales. Guaymas, México. 7 pp.

12 The pre-pandemic is considered “normal”.

13 Pre-production: supplies, gear repair, bait. Production: boarding, harvest (fishing). Post-production: landings, sorting and storage, processing, transportation, administration, sales. Complementary to production: maintenance, services, surveillance, monitoring, fish cleaning, family support.