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The technological revolution and the digital divide in times of the COVID-19 pandemic



Introduction

Technology has become essential in all aspects of our lives¹. Every day, there are more people using digital platforms and more activities available online. Mexico has 81 million Internet users (70% of the population)², a number that grows every year. Likewise, most of the people who connect to the Internet do it through their smartphone (95%)². However, not everyone has the same digital opportunities, generating a new source of discrimination, the digital divides³. In Mexico, 77% of the urban population uses the Internet, but only 48% of rural communities have access². This digital divide increases inequalities and opportunities⁴ between individuals who have access to high-speed Internet and those who do not have adequate coverage or the skills and tools to use it. There are “free” services in which the user “pays” with their personal data⁵ and information that generate some benefits for users, mainly derived from the possibility of connecting without mobile data consumption to certain platforms⁶. This is possible thanks to commercial agreements between multinationals, that involve the monetization of users’ personal data for the benefit of third parties. The digital divide deepens depending on the socio-economic status of the user, since people with higher incomes can pay for privacy (protecting their personal data), while people with lower incomes will only be able to access “free” services in which their personal data is the product which multinationals commercialize.

The sanitary measures implemented during the COVID-19 pandemic, especially the #SuSana-Distancia (#SafeDistance)⁷ and restrictions on workspaces and travel, have accelerated migration to digital platforms⁸. Between the first and second quarters of 2020, remote work increased by 324% in Latin America and digital education by 62%⁹. Online transactions are also

on the rise, with a 90% increase in the use of applications for purchases between April and June 2020¹⁰. However, primary production, including small scale fishing, is characterized by operating in remote communities, with complex supply chains, and with very established and traditional ways of working. One analysis calculated that only 2% of workers in the fisheries supply chain could work from home⁵. Even before the pandemic, the fishing sector was in a phase of transition towards digitizing processes along the supply chain such as applying for fishing permits, reporting catches and the payment of some taxes and services. Likewise, in the “new normality”, the 2020-2021 school year is also being taught virtually. Considering that the majority of small-scale fishers in Mexico live in small and isolated coastal communities, they fall into the category of the population most likely not to have access to basic digital services (coverage 2G, 3G, 4G, WiFi) and with higher poverty rates^{2,11}. Thus, COVID-19 has further revealed the existing digital divide in coastal communities.

In this sixth report, Comunidad y Biodiversidad, A.C. (COBI)¹² focused on understanding how fishers¹³ are adapting to the technological change, which platforms they use and how to facilitate technology adoption during and after the pandemic. This allows the identification of opportunities to reduce the digital divide and promote the use of technology in favour of the recovery of the sector.

What was done?

From 28th August to 9th September 2020, 183 phone interviews were conducted¹⁴ (39 women and 144 men) in order to document how the fishing sector is using technology and how this use has changed during the current crisis. Topics like technology access, e-commerce, social media use and technological changes to which fishers have adapted due to the COVID-19 contingency, were addressed.

Thanks to the network of fishers consolidated during the five previous reports¹⁵, the present report integrates 60 fishing communities located in 10 Mexican states¹⁶ and 89 fishing organizations (71 cooperatives) that work in 22 fisheries¹⁷. The average age of interviewees was 43 years old, ranging from 18 to 74 (for women the average was 38; men, 44). Ninety-seven percent of interviewees

work in coastal fisheries, of which 63% participate in harvest, 22% in administration and 15% in other stages of the supply chain (cleaning, processing, distribution and sales). Of the total, 3% work in aquaculture.

In addition, 61 Facebook profiles were monitored, of which 28 profiles were from community partners (10 women and 18 men), six official pages of fishing cooperatives, seven profiles¹⁸ related to the fishing sector and technology, and 19 Twitter profiles, of which 12 were closely linked to gender issues. The total number of monitored profiles was 80, and 1,071 published messages were analysed. Lastly, a WhatsApp channel with Mexican fishers had 195 fishers participating (52 women, 143 men) by the end of September.

The technological revolution in times of COVID-19 - What are fishers doing to join the change?

“Technology is going to stay, not only for the pandemic”
Fisher, 34, Baja California

Seventy-eight percent of the communities where the interviewees live have telephone coverage. The use of smartphones is almost homogeneous with 93% of interviewees owning one. Samsung is the most frequent brand (41%), followed by Apple (15%), Huawei (13%), Motorola (12%) and others (19%) (LG, Xiaomi, ZTE, Alcatel, among others). Forty-one percent of interviewees have a plan (contract) for their cell phone, and 59% make credit top-ups with prepaid cards or prepaid plans. The use of landlines is less common, only installed in 26% of the houses. Due to the isolation of some fishing grounds, 7% of the interviewees have access to a satellite phone. Most of the interviewees reported having access to at least one device. Half of the interviewees reported having access to a laptop at home, 29% a tablet, and 16% a desktop computer. The main reasons for not having

other electronic devices were that they did not need them (38%), that the smartphone is enough to cover their necessities (24%), that they could not afford them (14%) and other reasons (19%). Five percent of interviewed people mentioned not knowing how to use these devices.

To access the Internet, 56% use WiFi at home and 37% use mobile data from their cell phone. The remainder use free WiFi hotspots in their community or workplace. From the total interviewees, 66% reported the need to improve Internet connectivity in their community, especially through the installation of more antennas to extend the 3G and 4G network, and the installation of fibre-optics to increase speed. Ten percent of people mentioned that there is only one company in their community that provides connection services, resulting in fewer options to find better prices or services. The need to install free WiFi networks at key spots, such as parks and schools was also mentioned. This is key to reduce digital divide derived from a lack of infrastructure.

Online fishing

From the total number interviewed, 68% have participated in e-commerce¹⁹. Fishing equipment (hooks, rods, diving gear, etc.) were the most reported purchases, followed by clothes, electronics, spare parts, and food. In sales, fishing produce (including fresh fish and seafood) was the most sold item, followed by other types of food, clothes and electronics. Facebook (31%) and MercadoLibre (26%) were the two most mentioned sites for making transactions, followed by direct deals on WhatsApp (19%) and purchases on Amazon (13%). To a lesser extent (11%), pages such as AliExpress, eBay, Shopify and local pages were mentioned. Of the people interviewed who have not used e-commerce, the main reason was the lack of necessity to make online purchases, although they also mentioned some distrust in the delivery of the products, not having a credit card to buy online and not knowing how to make purchases.

The majority (79%) of the fishers identified opportunities to offer their products and services online, for example commercializing their catches (55%) and selling fishing gear (25%). Less frequently, contacting buyers, offer their technical services (for example, transport, boats and fishing equipment repairs, biological monitoring), tourism and food sales were mentioned.

Half of the interviewees (52%) would be willing to pay a digital subscription for the use of a service and 21% would consider it depending on the situation, cost, and functionality. The main factors for not paying for a digital service (27% of the responses) were lack of economic resources and the fact that free platforms already exist.

Use of social media in fishing, by gender and age

“I am coming out of COVID-19... in these days where I have not been able to see anyone, my ally has been my cell phone and technology”

Fish worker, 69, Sonora

An increase in the access and use of social media by all age groups and segments of society has been evident during the pandemic. From the total interviewees, 97%²⁰ commented that they use at least one platform, with WhatsApp and Facebook being

the most common. Ninety-two percent use two platforms and 21%, more than two²¹. WhatsApp is the most used (95% of interviewees), followed by Facebook (90%) and Instagram (26%). To a lesser extent Twitter (9%) and TikTok (5%) are used. Half of the people considered that their use of social media has increased during the pandemic, with only 4% reporting a decrease in screen time. Communication (with family, fishing organization or buyers) is the main use for social media, followed by the search for news and entertainment.

Interviewees expressed the level of comfort they feel with the use of technology, with 44% feeling very comfortable (34% are men, average age 43, and 10% women average age 33). Forty-two percent (average age 43 for both genders) feel moderately comfortable (10% women, 32% men) and 14% (average age 50 for both genders) said they feel uncomfortable using technology (2% women, 13% men).

Regarding representation by age and gender, young people between 18 to 30 years represented 17% out of the total interviewees (13 women and 19 men), adults from 31 to 45 years represented 42% (19 women and 57 men), 31% of interviewed people were adults from 46 to 60 years (6 women, 51 men) and only 10% were over 60 years old (one women, 17 men). Ninety-seven percent of young people mentioned they feel comfortable with the use of technology and 3% feel uncomfortable. Eighty-nine percent of adults between 31-45 years are comfortable with technology and 11% are uncomfortable. Out of adults between 46-60 years, 81% feel comfortable and 19% uncomfortable. Sixty-seven percent of older adults feel comfortable and 33% uncomfortable.

A digital fishing sector – a vision towards the future

“Technology is wonderful. I do a lot of paperwork without leaving my chair”

Fisher, 63, Yucatán

Given the current situation and during the process of adaptation by the sector, 36% of those interviewed have participated in digital meetings, invited by a government institution or civil society organization. Most people who have participated in these meetings found the experience to be a positive.

People who reported a bad experience in digital meetings mentioned that it was due to problems with their Internet connection (image freezing, poor sound quality) or technical problems when connecting, which limited their participation. Interviewees made several recommendations regarding these new activities: 1) the meeting moderators have a key role to manage the platform and the participants, 2) try to avoid very large groups because it is difficult to give an opinion and the meeting can be confusing, 3) consider fishing activities when scheduling meetings, 4) avoid very long meetings, or without breaks, and 5) consider that many people in the fishing sector do not have high-speed Internet.

Digital natives (young people under 35), spend more time online, with an average of five hours a day (of which women spend on average seven hours and men, four hours). Aged 31 and older, both men and women spend on average three hours online. Men between 31 to 60 and women between 31 to 45 years responded that they were using social media more during the pandemic.

Even though only a third of those interviewed have participated in digital meetings, 61% believe that these could replace face-to-face meetings in the future. However, many people highlighted the importance

of face-to-face meetings, to achieve trust among participants and because they are considered more formal and serious.

“They are useful and necessary tools to acquire new knowledge, new relationships and I get to interact with more people”

Fishery products distributor, 60, Baja California Sur.

Finally, we asked the interviewees about how they imagine their community and fishery in the next 10 years. Only 10% could not imagine a significant change in their community. Many people discussed the digitization of fishing and the supply chain, the improvements of some processes, access to more information and more efficient communication with their organizations or buyers. The fishing sector understands the urgency about the proper use of technologies, as well as the need for a rapid adaptation to the digital world to avoid being left behind in social, economic, and cultural processes. However, they also expressed concerns about not being taken into account and of being left behind by this digital transformation, either due to lack of education or funds to invest in new technologies.

Findings in social media

Out of the 1,071 analysed messages, 5% had a relationship between the fishing sector, COVID-19 and technology. The low percentage of messages containing the three key concepts mentioned, is due to the fact that the situation around the pandemic is being normalized and it is no longer a topic about which people are talking. Of the messages that did contain key words, the word with the highest mention was COVID-19, followed by words like sale, forum, training, virtual, as well as messages relating to webinar invitations.

Just over half (51%) of the posts related to technology were content elaborated by institutional profiles, that is, original content, and was prepared mainly by specialized organizations and civil organizations such as FAO Mexico, UNWomen, PNUD Mexico, MARFund and Amigos de Sian Ka'an. The remaining 49% was content shared from other pages. Community partners were the ones who posted most of the shared content, echoing the information elaborated by institutional

profiles. Social media profiles of community partners are an effective channel for disseminating information with outreach at the community level.

During the analysis it was detected that 18% of the messages discussed the sale of some fishing product such as penshell, clams, conch, octopus, shrimp, crab and finfish in general. These were posted by community partners via Facebook (60% came from men's profiles, 20% women and 20% institutional profiles).

In this process of adaptation and digitization, the fishing sector has aimed to participate in different digital forums, conversations, and webinars. Half (51%) of the messages posted an invitation to a workshop or webinar on different digital platforms²². In addition to showing interest in participating in these digital events, they encourage others to get involved.

Topics of greatest interest in the sector were related to resource sustainability, biological diversity, marine sciences in Mexico with a gender perspective, microplastics as a threat to marine diversity, fish

refuge areas, international whale shark forum, 2020 challenges, gender inequalities and COVID, as well as a high-level discussion on the relevance of #Agenda2030 in times of #COVID19.

Recommendations for the digital transition in fisheries

1. Consider access to the Internet as a human right just like drinking water or electricity. The pandemic has accelerated the digital transition and has increased inequalities. Efforts should be made to improve the digital infrastructure in coastal communities to ensure that they have access to the Internet at a fair price. The government should consider public policies and subsidies to reduce the digital divide (for example, the installation of broadband Internet in rural communities where it is not profitable for the private sector).

2. Protect users and freedom. The UN Human Rights Council has declared that “*The same rights that people have offline must also be protected online*”²³. It is important to protect freedom of expression, but also to ensure that all people have access to the same opportunities, regardless of gender, age, race, educational or income.

3. Do not leave anyone behind. The new generations are “digital natives” (less than 35 years old). They have grown up with digital devices. However, in the fishing sector 72% of interviewees do not correspond to the digital native category, which complicates their use and management of technology. In addition, low-speed Internet in rural areas, plus the economic cost of participating in the digital world (buying a smartphone or tablet, buying mobile data, etc.), projects a picture in which a large part of the sector could be excluded. In addition, digital services with greater security, are often paid, exacerbating the digital divide in relation to the socioeconomic level of users.

4. Reduce the digital gender divide. Although, the digital gender divide is not wide in Latin America, it should not increase, and access to digital tools should be maintained equally²⁴. This report registered that 82% of interviewed women have access to cell phone signal, 95% have a smartphone and 36% feel comfortable with the use of technology.

5. Avoid the exploitation of digital data and facilitate choice. Although the offer of “free” services can generate some benefits for the user, there are also costs, including the centralization of costumers (monopolization of data) and digital traffic between companies, restrictions on information that the user can access (paid information), as well as an invasion of privacy and cybersecurity. The monetization of user data for the benefit of third parties is a central issue in the technological revolution and must be addressed in conservation and sustainable fishing initiatives to achieve digital action without harm.

6. Maintain non-digital services. For some time, procedures, processes, and meetings have been migrating to digital platforms. Due to the COVID-19 situation, digitization has accelerated. For people who prefer to do face-to-face procedures or meetings or are not comfortable with technology, options should be kept available to connect them offline.

7. Strengthen the technological infrastructure, connectivity, and technological and digital literacy. The availability of these factors would allow promotion of individual and social development through real digital inclusion in the sector. Technology and digital tools will be vital to help coastal communities during and after the crisis. These tools will be useful to close the socioeconomic gap and promote the digital transformation necessary to safeguard the fishing sector, contributing to post-pandemic resilience.

8. Digital transformation in the sector can occur at any stage in the supply chain. To achieve an inclusive, resilient, and human rights-based digital transformation, all actors involved in the fishing supply chain are needed. Special attention should be paid to women in this transformation, since pre- and post-production activities (preparation, processing, administration), as well as those complementary to production (monitoring) are spaces where they reach higher levels of participation.

- 1 GSMA (2019). The Mobile Economy in Latin America 2019. <https://www.gsma.com/mobileeconomy/latam/>
- 2 INEGI (2020). Comunicado de prensa número 103/20. https://www.inegi.org.mx/contenidos/saladeprensa/boletines/2020/OtrTemEcon/ENDUTIH_2019.pdf
- 3 UN (2019). The age of digital interdependence. Report of the UN Secretary-General's High-level Panel on Digital Cooperation. 47 p.
- 4 UNDP (2019). Human Development Report 2019. United Nations, New York. 366 Pp.
- 5 Regarding the mobile data you use when accessing any platform or application from your cell phone.
- 6 EFF (2016). Tasa Cero (Zero Rating): Qué es y por qué debería importarte. <https://www.eff.org/es/deeplinks/2016/02/tasa-cero-zero-rating-que-es-y-por-que-deberia-importarte>
- 7 Measure promoted by the Mexican government to keep a safe distance between people (1.5 meters).
- 8 UN (2020). Press bulletin SG/SM/20118. <https://www.un.org/press/en/2020/sgsm20118.doc.htm>
- 9 CEPAL (2020). Universalizar el acceso a las tecnologías digitales para enfrentar los efectos del COVID-19. <https://www.cepal.org/es/publicaciones/45938-universali-zar-acceso-tecnologias-digitales-enfrentar-efectos-covid-19>
- 10 Forbes (2020). <https://www.forbes.com.mx/tecnologia-3-meses-aumento-90-uso-apps-de-compras-mexico/>
- 11 Cave et al. (2019). Bridging Mexico's digital divide: an inside-out/ outside-in view of competition and regulation.
- 12 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 the participation of all stakeholders. Email: covid19@cobi.org.mx
- 13 In the text we refer to "fishers" as both women and men working directly in the extraction and/or processing of fishery products.
- 14 The interviews were conducted by COBI with the support of Smartfish, A.C. and The Nature Conservancy, A. C.
- 15 <https://cobi.org.mx/todo-sobre-coronavirus-covid-19/>
- 16 Baja California, Baja California Sur, Campeche, Ciudad de México, Nayarit, Oaxaca, Quintana Roo, Sinaloa, Sonora and Yucatán.
- 17 Abalone, clam, squid, penshell, shrimp, crab, crown conch, conch, sea urchin, swimming crab, spiny lobster (California and Caribbean), seaweed, jellyfish, oyster, finfish, ornamental fish, sea cucumber, octopus, shark and yellow-tail (mariculture).
- 18 Abalobi, Nadir, Navic, Plenumsoft Marina, Shellcatch, Del Mar al Comedor, Contigo mi Pescador, FeriasOnline.
- 19 The purchase or sale of goods or services made by electronic means (OCDE, 2011).
- 20 The six interviewees who did not use social media commented that they did not know how, they did not have money for data or there is no signal where they live.
- 21 WhatsApp, Facebook, Youtube and Instagram.
- 22 Zoom, Facebook Live, YouTube Live, Webex Meetings.
- 23 United Nations Human Rights (2019). Derechos humanos en la era digital. <https://www.ohchr.org/SP/NewsEvents/Pages/DisplayNews.aspx?NewsID=25158&LangID=S>
- 24 IADB (2020). Brechas digitales de género en tiempos de COVID-19. <https://blogs.iadb.org/igualdad/es/brechas-digitales-de-genero-covid-19/>