

Gulf of Guayaquil communities in time of Pandemic.

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While the COVID-19 health crisis has hit everyone, there are some who have inspired us with their responsiveness and organization. This is the case of three mangrove communities, located in the Gulf of Guayaquil (**figure 1**): Puerto Libertad (population of ≈250), Cerrito de los Morreños (population ≈600), and finally Puerto Roma (population of ≈1.100). It should be noted that these 3 communities are part of the Municipality of Guayaquil, one of the most affected cities in the world during the pandemic (BBC News World, 2020). However, these rural communities have demonstrated a highly efficient and resilient management of the crisis.

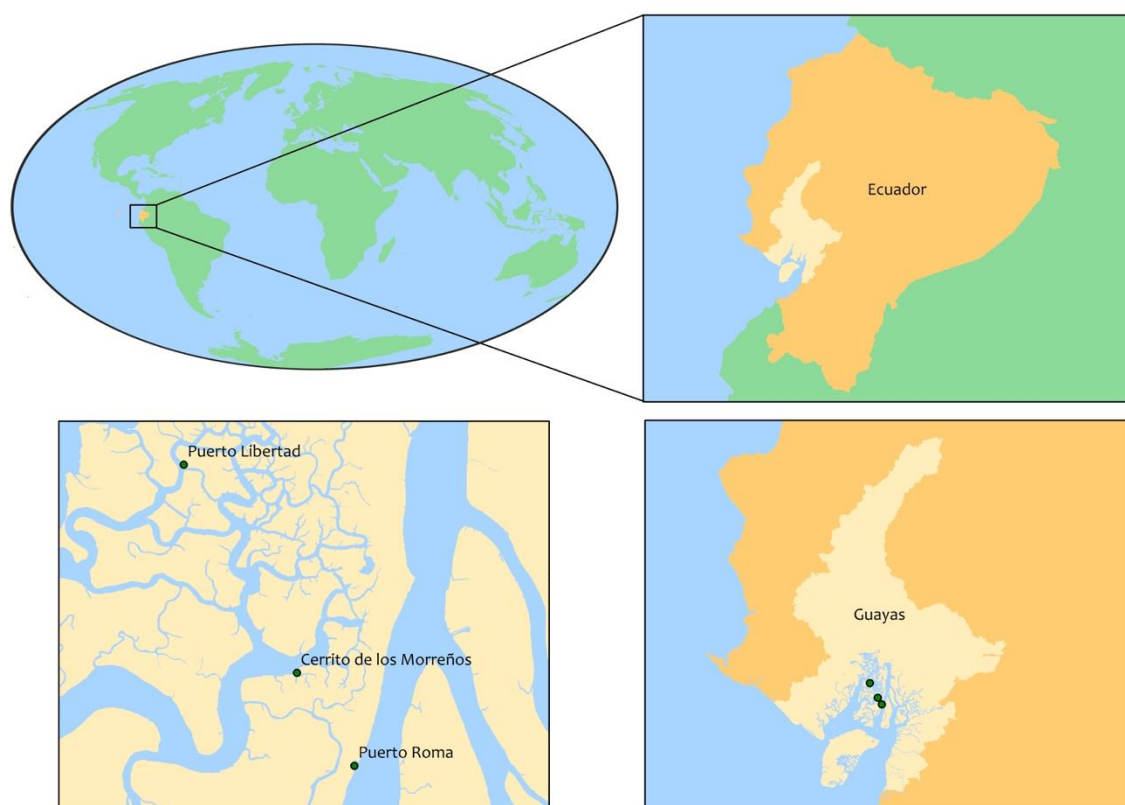


Figure 1: Map of Ecuador, Guayas Province, and the Gulf of Guayaquil where Puerto Libertad, Cerrito de los Morreños and Puerto Roma are located. Designed by Melissa Moscoso.

During the health crisis, the community Cerrito de los Morreños acted swiftly, drafting and implementing an own designed “Contingency Plan” to safeguard the lives and health of the inhabitants. Two formal resolutions were issued with norms and rules for the inhabitants to comply with the entry and exit protocol. A community emergency commission (COE) was formed to maintain the coordination and cooperation of the different residents. The entry of unauthorized persons to the island during the emergency was prohibited, and it was regulated that people who own food sales businesses could go to Guayaquil to supply

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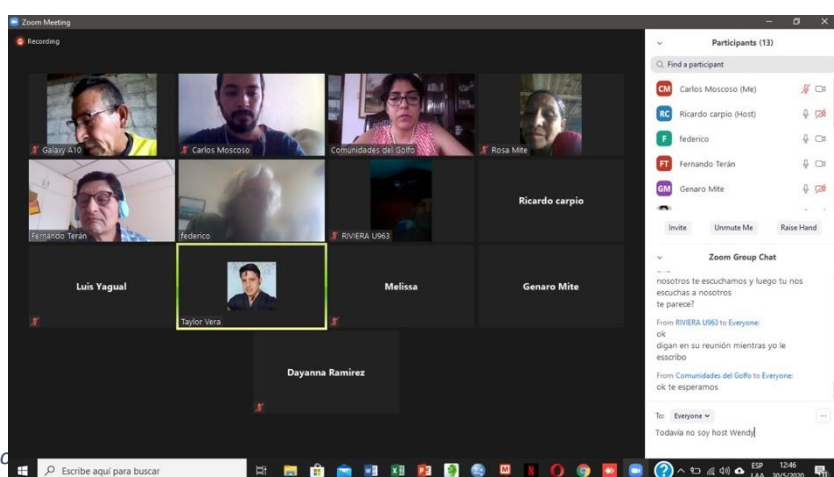
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themselves with products that are required on the island. They made it clear that people who do not comply with the rules set forth in the Contingency Plan will receive a call for attention, sanctions, or complaints. Protocols were also established for labour, religious and humanitarian aid activities and collective actions (*mingas*) too.

These communities are organized through productive associations that are dedicated to fishing, and gathering of mangrove resources such as crab and oyster that are sold in the city markets. These associations and the organizations that provide them with technical assistance (Fundación Cerro Verde from Ecuador and Schutzwald e.V. from Germany), have developed for the last 20 years an organizational practice called "Community Meetings", which involves holding a monthly meeting on an itinerant basis (each month in 1 of 5 communities), in which they meet to discuss issues related to their territorial management.

All of them operate under the figure of agreements of "Sustainable Use and Custody of the Mangrove Forest" and carry out sustainable activities such as custody or surveillance of the concession area, linkage and research with support from the University of Guayaquil and the Polytechnic School of the Coast (ESPOL), management of local water systems, access to basic social services, product diversification, among others. The pandemic helped to highlight the urgent need to continue maintaining these Community Meetings, which rather than being an organizational practice have become a cultural practice where "users gain knowledge of the dynamics of the resource system through processes of individual and social learning", as documented by Moritz et al. in 2018 of experiences in other communities. As knowledge is exchanged about the current state of the concession area in the various parts of the Gulf, decisions are made to manage its territory in an integral and integrated and locally-embedded manner.

The crisis is an opportunity (Nelson, 2020) and has been an opportunity for adaptive organization in the Gulf. As communication for the remote communities is very deficient,



previous installation of "infocenters" in each community still lack internet and through the crisis it has been a great need to use different technological means. Personal or commercial connections of internet are very few because of high costs and so we are working together with different organizations and universities, to reduce the

digital gap. Therefore, with the help of Schutzwald e.V. the communities now have a Zoom account, with which their first digital community meeting in the history of the concession took place on May 30th of 2020. Prior to this, each participant downloaded the Zoom on their cell phone and thus about 14 people attended, among them leaders and volunteers working in the area and in Guayaquil (**photograph 1**).

Since no conventional agricultural practices are possible in the mangroves, the communities have a high alimentary dependency, aggravated in pandemic times, as most customary provisions in the city are closed and costly. Taking care of your team (Nelson, 2020), as a way of prioritizing the wellbeing of people in the communities, has been important since support



strategies have been strengthened. Thus, the last practice we want to refer to in this article is "barter", in which the communities Cerrito de los Morreños and Puerto Roma have participated. During the pandemic and with reduced mobility, food resources in vulnerable households are scarcer. As a result, bartering or exchange was activated as a planning tool to protect the food security of families in the communities. This form, which dates back to the Neolithic period (Spath, 1980) is an alternative as an economic system of its own where money is not involved.

In Cerrito de los Morreños, each family that wanted to contribute did so with resources from the mangrove, such as cockles, oysters, shrimps and fish, and received green plantains, oranges, tangerines, grapefruits, bananas and zapotes (sapodillas) from Naranjal. The community Puerto Roma bartered red crabs with a town farther up the gulf called Santa Lucía, which provided them with products such as rice, oranges, green plantains, bananas, and ointment, which are basic staple of the people. Another case was the community Puerto

Libertad that has family ties with the community Salvador in Balao, at the eastern fringe of the Gulf and received a donation of local products (**photograph 2**).

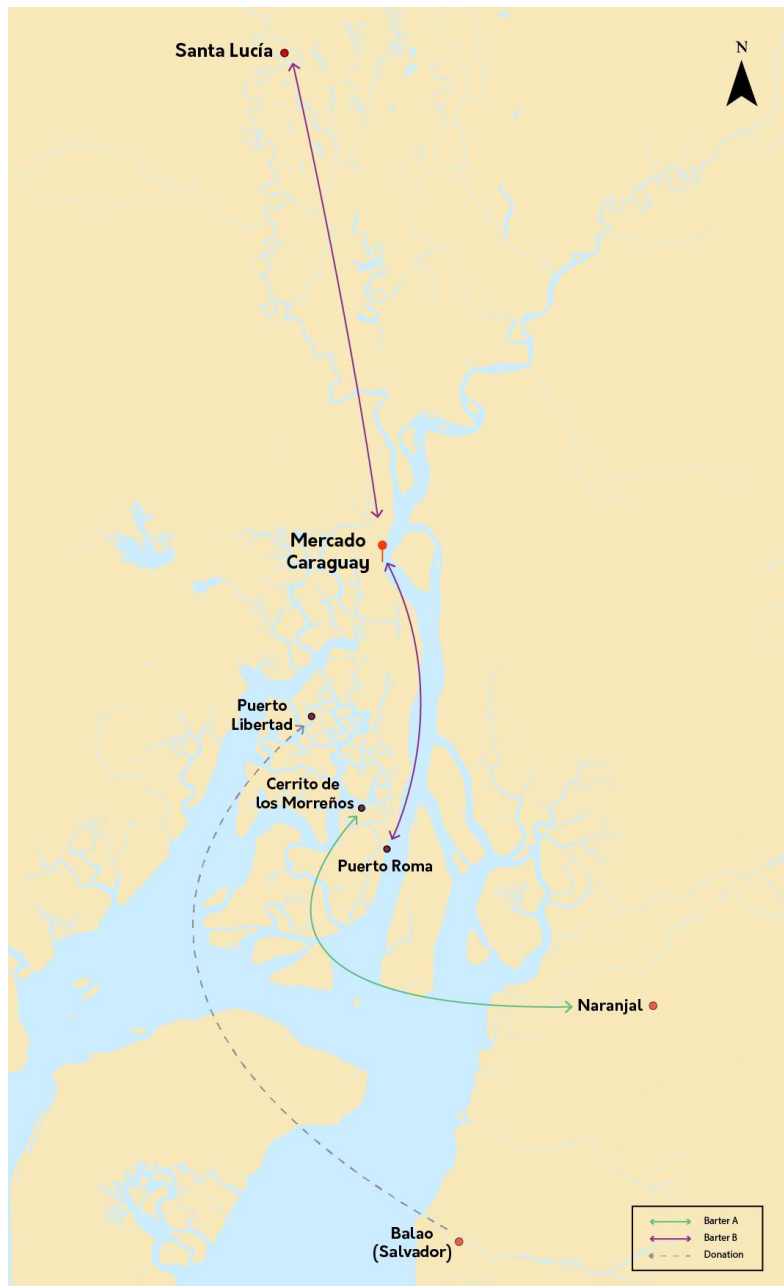


Figure 2: Donation and Barters among communities. Donation: From Salvador (Balao) to Puerto Libertad: Green plantains, sweet plantains and sugar. Barter A: Cerrito de los Morreños exchanged cockles, oysters, shrimps and fish with Naranjal for green plantains, oranges, tangerines, grapefruits, bananas and sapotes (sapodillas). Barter B: Puerto Roma exchanged crabs with Santa Lucía for rice, green plantains, oil and ointment. Since this last 2 communities are far away they met at Caraguay Market (Caraguay Mercado) to realize the barter, as the arrows indicate. Designed by Melissa Moscoso and Freddy Barreiro.

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As it can be seen (*figure 2*) the town Santa Lucía involved in the exchange is not geographically part of the gulf but relationships among community leaders and relatives were means for food security. Bartering benefited many families in the gulf and it became evident that more than exchanging products for others, it becomes a practice that strengthens solidarity ties. This form of ancestral survival from thousands of years ago has made it possible to meet the current food needs of communities in times of pandemic.

The communities of the Gulf of Guayaquil have demonstrated how with their own actions and their management of the territory for the common good, they can get ahead. And they have demonstrated how collective action rather than individual action guarantees the survival of communities (Ostrom, 1990).

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