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Occupy Climate Change (OCC!) *City initiative entry*



FORMAS



Fund for the Protection of Water (FONAG)

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“We conserve and recover the water sources of the Metropolitan District of Quito”

The Fund for the Protection of Water (FONAG) is “an alliance of people, institutions, and communities committed to the conservation and restoration of the water sources of the Metropolitan District of Quito (DMQ)” (FONAG 2019). It was created in 2000 through a Constitution Agreement between the Empresa Pública Municipal de Agua Potable (EPMAPS, the Municipal Sewer and Potable Water Company of Quito) and The Nature Conservancy (TNC), as a private commercial trust with a useful life of 80 years and which is regulated by Ecuador's Securities Market Law (FLACSO-PNUMA 2011).

FONAG’s mission is to protect the watersheds that supply water to the DMQ, working together with local stakeholders. In order to achieve its objective, it executes programs and projects of conservation, ecological restoration, and environmental education through a financial mechanism. In summary, the fund seeks to create “a new culture of water and integrated management of water resources” (FONAG, 2019). Other constituents of the trust, which subsequently joined, are Empresa Eléctrica Quito (EEQ, Electric Company), Cervecería Nacional (CN, National Brewery), Tesalia Springs CBC, and Consorcio de Capacitación en el Manejo de Los Recursos Naturales Renovables (CAMAREN, Renewable Natural Resources Management Training Consortium), which is part of the constituents of FONAG since 2010, because the Swiss Cooperation (COSUDE), a partner since 2005, transferred its contributions to the Consortium (FONAG 2019) (Figure 1).

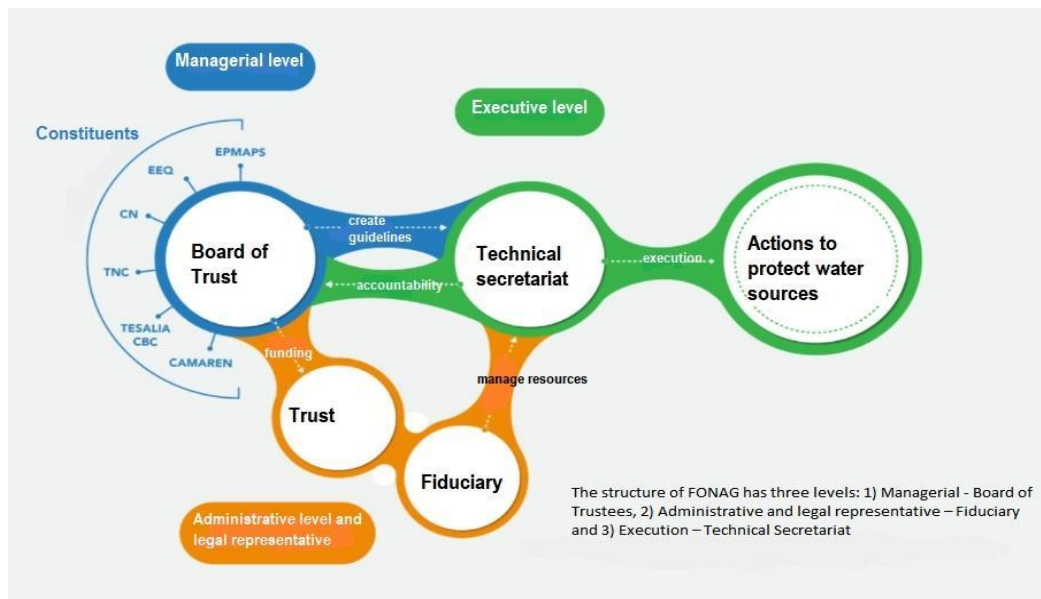


Figure 1: FONAG's structure, Source: [FONAG](#) 2019

The trust works as an endowment fund which gets contributions from citizens through their payments to public companies and contributions from public and private institutions (FLACSO-PNUMA 2011). Currently, the contribution represents 2% of the fixed amount from sales of potable water and sewerage of the EPMAPS. This was established through Ordinance 213 (Concejo Metropolitano de Quito 2007). The remaining equity of the trust corresponds to annual fixed amounts paid by the other constituents. The equity returns are used for investment in projects for the conservation, restoration, and maintenance of the water basins from which the DMQ is supplied (FLACSO-PNUMA 2011). FONAG's actions are located in the provinces of Pichincha and Napo, in nine areas: Pisque, Papallacta, Antisana, Pita, San Pedro, Pichincha - Atacazo, Mindo, Nororiente (Northeast), and Noroccidente (Northwest) (Figure 2).

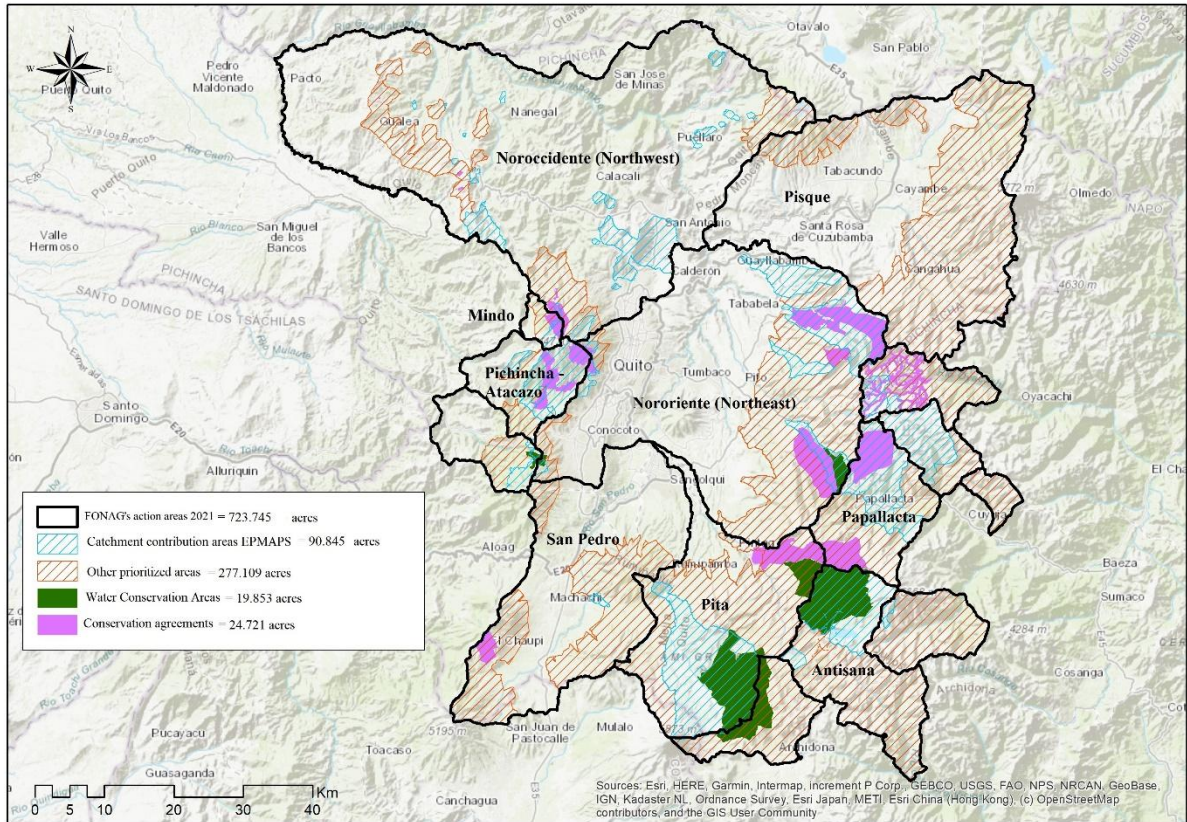


Figure 2: Map of FONAG’s action areas. Source: FONAG 2021

FONAG divides its activities into four programs: Water Management, Vegetation Cover Recovery, Sustainable Water Conservation Areas, and Environmental Education (FONAG 2019). Concerning climate change, its initiatives are mainly related to the adaptive management of water, through the protection of conservation areas that allow the “reduction of risk in the face of climate change through the integrated management of water resources and promoting nature-based solutions when appropriate” (PACQ 2020). FONAG's main scope of action is that of Water Source Areas (WSAs), where awareness-raising and education strategies are carried out for key actors; generation of technical, environmental, and social information; restoration of vegetation and soil cover; and conservation of wetlands, *páramo*, forests, and scrublands (Coronel 2019). Regarding mitigation, there is an important job made by the Vegetation Cover Recovery Program and Sustainable Water Conservation Areas, that allow the protection of relevant ecosystems for carbon capture and storage (wetlands, *páramo*, and forests).

FONAG’s vision is “to be recognized by Quito inhabitants and internationally as a benchmark in the conservation of water source ecosystems” (FONAG 2019) through the development of projects with a technical, social equity, and sustainability approach. These projects and programs are executed with the creation of alliances based on trust, will, and commitment, for which sustainability agreements are reached with communities and private actors, formalized, and put into practice through comprehensive action plans that include conservation and sustainability commitments.

Some of the private companies involved are the National Brewery (CN) and Tesalia CBC, with whom awareness campaigns are carried out on the origin of water as they are large users of it. Environmental education campaigns are conducted with teachers from schools located in areas of water interest that link art and education (Figure 3), involving professional artists (theater, music, puppets, etc.). In the field of environmental communication, awareness-raising tours are carried out with key actors (for example, boys and girls in the fifth year of basic education, the media, authorities, constituents of the fund, among others). Likewise, FONAG led the formation of the Environmental Education Network (REA Quito) in 2013, “a proactive network that seeks to promote and articulate environmental education in the Metropolitan District of Quito” (FONAG 2019).

In its 21 years of operation, FONAG has registered several important achievements such as: establishing a body of 23 *páramo* guardians that manage 19,870 acres of "own" lands bought by EPMAPS or FONAG itself; signing of 18 conservation agreements with private and community owners for 6,593 acres; restoration of 15,374.51 acres of degraded and historically overgrazed *páramo*; establishment of 4 monitoring sites that generate relevant information for decision-making; 46,725 participants in education and awareness-raising processes on the importance of water source ecosystems; establishment of the *Agua y Páramo* Scientific Station that links researchers with decision-makers and monitoring the impact of their interventions that have generated an average annual yield of 7.5% (Coronel 2019, FONAG 2019).

FONAG is led by a Technical Secretary and has a working team of 21 technicians, 23 *páramo* guardians, 7 educators, 3 communicators, 3 operational/logistics, and 6 administrative. Team members come from various professional areas such as hydrology, biology, ecology, geography, sociology, finance, education, and more. The *páramo* guardians are the core team in the surveillance and monitoring of water sources because they sustain the community work since they are women and men natives of the communities and nearby towns of these ecosystems who are connected with their environment and work directly with FONAG.



Figure 3: Theatrical performance by a girl from Oyacachi – Environmental Education Program
Source: FONAG 2019

The trust structure provides FONAG with two vital features to be successful: financial resources and time (Coronel 2019). One of the challenges is to keep building synergies with its constituents and strategic allies in order to articulate efforts around water. Another critical point regarding water sources in Quito is the high consumption of drinking water, mainly in the urban areas, while the rural areas are scarce. According to EPMAPS (2015), a family from Quito uses an average of 24 thousand liters of drinking water monthly which represents an endowment of 200 liters by a person daily, approximately. And although this does not represent FONAG's scope of action but EPMAPS' one, it is necessary to work in a coordinated manner in awareness programs to promote co-responsibility between citizens.

Another challenge is to improve pedagogical planning and the evaluation system to transcend traditional behaviorist education and change perspectives to a constructivist environmental education according to Fernanda Olmedo (FONAG's Environmental Education Coordinator). She also mentioned that it is necessary to strengthen the gender and ethnic approach in FONAG's programs. Additionally, work is being done to expand the work to other water supply areas for the city, such as the Chocó Andino, where FONAG does not have a major impact at the moment.

The trust model lets FONAG have permanent income that has helped to maintain programs within the years, bringing good results. This is a model that could serve as a reference to expanding in other latitudes. As a remarkable fact, FONAG got to declare the Reserve Ponce-Paluguillo as the first Water Protection Area (APH) for the country, and South America, in 2018. This was feasible due to the joint work between FONAG, Secretaría Nacional del Agua (SENAGUA, National Water Secretariat), the contribution of the private landowner, Camilo Ponce Gangotena, and the users from Junta Administradora de Agua Potable San José del

Tablón (Potable Water Administration Community Board), Junta de Riego de San José del Tablón (Irrigation Community Board) and Asociación de Pequeños Productores y Comercializadores de Hortalizas y Animales Menores el Tablón (Association from Small Vegetable Producers and Small Animals Vendors) (Ministerio del Ambiente 2018). Located in the way Pifo-Papallacta, this reserve comprises 4,260.63 acres and it is an important area for water catchment for Quito as well as a refuge for animals such as the spectacled bear, the Andean tapir, the condor, among others (Diario La Hora 2018). In this area, an Interpretation Center was built where environmental education activities are performed for diverse stakeholders.

FONAG has managed to work in a coordinated manner with the National Parks and Protected Areas (PANE), such as the Ilinizas, the Cotopaxi, the Antisana, and the Cayambe-Coca. It also manages the Water Conservation Areas: Antisana (Figure 4), Atacazo, and Alto Pita which are important in the provision of water for Quito. Ultimately, FONAG plays a key role to maintain a sustainable water cycle and water security in Quito since it has developed the power to convene different stakeholders around a common goal through long-term planning.



Figure 4: Vegetation monitoring at Antisana’s Water Conservation Area (ACH)
Source: FONAG 2019

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For this entry, an in-depth interview was conducted with the Coordinator of the Environmental Education Program of FONAG, Fernanda Olmedo. Also, documentary research was done. Finally, information was collected from FONAG’s webpage:

<http://www.fonag.org.ec/web/>