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**Address of the organization:** Metropolitan Region of Santiago Chile

**Type of organization:** NGO Non-governmental non-profit organization International

**Representation and Next Office Opening in:** Guayaquil, Ecuador

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**Title and Objective of the Proposed Program:** Sustainable Development Program for Guayaquil, Ecuador. Phase I Use of Existing Technologies.

The program has as its general goal the creation of sustainable development in Guayaquil, to the extent that ecological hydroelectric plants are built in the rivers that surround and circulate in the city, designed at a macro level in a multipurpose and multifunction water infrastructure, to manage the 3 main problems in the management of water resources: rainwater harvesting, wastewater treatment and failures in the management of water dynamics to avoid floods and shortages, in such a way that they generate income, so that the efficient management of water resources is self-sustaining, instead of being considered a public expense, is an investment of the public and private sectors. In view of the problems of mobility and transport infrastructure in the city, its improvement will also be included, to make the city carbon neutral we plan the transition of the city towards smart and sustainable buildings and infrastructures, generators of air, drinking water and renewable energies, the integration of nature and ecosystem recovery to regularize water cycles and mitigation of natural disasters, the improvement of their main economic activities so that they function as biofactories, without pollution and reuse, for the improvement of production processes and profitability, promoting a circular economy, that is, the supply and demand of sustainable products, for a sustainable economy, in a carbon neutral city free of pollution, with prosperity, security and justice, so that the continuous consolidation of human and environmental rights is allowed, in an increasingly participatory democracy where its citizens can assume responsibility for the consolidation of human and environmental rights.

We invite you to watch our video [How to Make Your City Sustainable?](#)

From our [series Against Climate Change](#), where most of the solutions to be used in this program are explained .

**Discussion of the objectives:** The objectives of the proposed Sustainable Development Program for Guayaquil, Ecuador. Phase I Use of Existing Technologies are:

1. Multipurpose and multifunction water infrastructure, to manage the 3 main problems in the management of water resources.
2. Improvement of transport infrastructure and expansion of the use of electric transport from renewable energy sources.
3. Transition of the City towards Smart and Sustainable Buildings and Infrastructures, Generators of Air, Drinking Water and Renewable Energies.
4. Integration of nature to the city and recovery of ecosystems to regularize water cycles and mitigation of natural disasters.
5. Transition of Economic Activities of the Region towards Sustainability.
6. Security and Justice in a Participatory Democracy.

These goals are comprehensive solutions, which are described and explained in our [Climate Change Video Series](#), in our [online courses and free textbooks](#), thanks in part to an award received by our president Patricia Rincon of the National Geographic Society.

The realization of this program will be an investment because it will solve the problems of Guayaquil, Ecuador in a profitable and self-sustaining way that will improve the quality of life with sustainable development and will contribute to the solution of climate change through the reduction and absorption of CO2 emissions, protecting and conserving ecosystems and indigenous communities.

### **Methodology and technologies to achieve the objectives of the proposal:**

#### **1 Multipurpose and multifunction water infrastructure, to manage the 3 main problems in the management of water resources:**

Se will make a general design of a multipurpose and multifunctional water infrastructure for the entire port city of Ecuador, using the rivers, aquifers, hydrographic basins and estuaries that make it up, linked with artificial underground and surface networks, in order to efficiently manage the water dynamics. The artificial underground networks will be composed of rainfall water filtering tanks, for avenues, streets, infrastructures and buildings, assisted with Natural Biological Systems (NBS) that basically consist of gravel, sand and plants, in such a way that the reserve of rainwater for the supply of drinking water is guaranteed. and avoid floods, it will be encouraged that buildings, industries, companies and households have rainwater collection systems, for their self-sufficiency of water and to feed these underground networks, which will serve to guarantee the optimal levels of the different water sources, those who invest in these systems will be paid for the water supply, that is, the water meters must be bidirectional, to measure the consumption and contribution. Similarly, investment in wastewater treatment systems will be promoted to the public and private sector, through photobioreactors that harvest microalgae while purifying it from any contaminant, including heavy metals, capable of providing water for self-consumption and drainage in NBS systems, in gardens that will beautify the city and filter water to rainwater filtering tanks, from the same network of underground rivers, in underground pipelines or pipes.

The natural aquifers in the central region have high saline content, so before connecting them to the networks of drinking water aquifers these must reduce their salinity, studies by IMDEA Agua de Madrid, show that the photobioreactors of the algae *Dunaliella salina*, can act as osmoregulators to produce water from seawater using CO2 and sunlight or artificial or public or private investment

can be encouraged to install underground blue power plants that generate electricity while desalinating, there are different techniques to do so such as reverse electrodialysis (RED), capacitive mixing exposes two electrodes equal to different types of water and TECNALIA des Capacitive ionization using graphene-based electrodes, which allows to treat saline waters with concentrations greater than 5 grams liter, the process, electrochemical based, allows the purification of saline waters simultaneously storing energy or any other blue energy generation technology that desalinates and generates electricity.

Surface rivers will have to be continuously dredged, with industrial and residential wastewater treatment they will no longer receive pollution, but as they are already contaminated mainly by residential, industrial and agricultural wastewater discharges, they will have to be decontaminated with water treatment plants that harvest microalgae in the sky. Open and through mangrove forests, the areas where mangrove forests exist must be conserved and planted in strategic places where they can be reforested, since they purify water and air and mitigate hurricanes, swells and tsunamis, in very effective ways, and sow offshore to form a coastal flood and tropical storm defense system through TetraPots' award-winning novel invention to protect coastlines<sup>®</sup> and ecosystems. In the bridges and other infrastructures of the city, microalgae photobioreactors can be installed, encouraging in ideal places according to the water currents the harvest of microalgae in the open sky, which uses water from the river and the decontaminated return pour, functioning as a water circuit.

The harvest of microalgae in the open sky and in photobioreactors absorb CO<sub>2</sub> and emit oxygen, helping air quality and the solution of climate change, the decontamination and treatment of water sources will contribute to the health of soils, that is, Guayaquil with these water infrastructure of networks of underground and surface water sources, will have clean soils, air and water, although to make it more self-sustaining and that dredging is an investment, in all the routes where the water circulates hydroelectric plants must be installed, according to the size of the flow and the force of the currents, there are various models of ecological hydroelectric plants, which do not affect the fish, of different magnitudes, even where there is little water and little water force, they work with turbines that accelerate them to generate enough electricity to villages and require little maintenance and investment, from the company Turbulent<sup>®</sup>, in the same way in pipelines and pipes of various industrial and residential magnitudes can be installed inside hydroelectric, there are various brands in the market.

Also to ensure flood safety in different parts of the river path, where there are farms, industries and towns, water circuits can be installed, which consist of small water batteries to generate and store water and electricity from different renewable energies and store them with a reversible pumping system. If we take as an example a farm, it could install rainwater collectors and microalgae photobioreactors that treat the wastewater of the residence and agricultural activities, this would store it in underground tanks that also receive rainwater and filter the flood water to be stored, its diameter would be in proportion to the projections of water to be stored, this tank would also serve to maintain the levels of a natural or artificial river, which would take and return water to the decontaminated river, on the farm according to the climatic conditions could generate solar, wind and biogas energy, in our video [How to Create a Sustainable Development in a Rural Area?](#) We describe how to create very useful water circuits for the management of water dynamics in areas near rivers, this could be done as a private or public investment, because those who invest in the

system would receive a payment for the surplus water and electricity that they sell to water and electricity companies, in Chile by law 20,571 the surplus of energy from renewable sources can be sold to the electricity distribution network, encourage the generation and use of renewable energies through the slogan produce and sell your electricity. This can be done on coasts and on riverbanks. On coasts the water circuits could be used for blue power plants, which is possible where there is fresh water and salt water, fresh water we recommend that it be taken from wastewater treatment plants and salt water from storage in underground tanks near coasts that prevent flooding with filtering systems that separate or capture waste, the garbage on the coasts, so that it is directed to different industries that buy waste from the sea for recycling, such as the company Adidas, which urges ventures for its collection and the manufacture of threads for their garments. The salt water would be used by the blue power plant and returned to the sea without pollution and with the appropriate levels of salinity or desalinated for consumption, while also generating electricity in the process, these blue power plants can be installed in estuaries and other areas where water sources contain high levels of salinity.

The networks of water sources that integrate rainwater collection systems in roofs, pavements and vegetable soils, the treatment of wastewater, the water circuits that work as a water battery to generate hydroelectricity and storage of renewable energies feasible in the area, the provision of ecological hydroelectric plants must be done through a macro design, since these are the components of a multipurpose and multifunction water infrastructure, to manage the 3 main problems in the management of water resources: rainwater collection, wastewater treatment and failures in the management of water dynamics to avoid floods and shortages, in such a way that they generate income, so that the efficient management of water resources is self-sustaining, rather than being considered a public expenditure, it is an investment of the public and private sectors. Although it must be based on a macro design, it can be built in a scalable way, starting with the most critical areas of water pollution, floods and water scarcity, to unite all the pieces of Guayaquil's water infrastructure, so that it is efficient for several decades considering the national meteorological and climate change projections, of the meteorological services of the European Union and the United Nations.

## **2 Improvement of Transportation Infrastructure and Expansion of the Use of Electric Transportation from Renewable Energy Sources:**

The abundance of low-cost electricity generated by different renewable energy sources stored in water batteries and the production of microalgae makes the transition to electricity supply feasible for the rapid recharging of electric mobility from 100% renewable sources.

Public and private investment in the cultivation of microalgae in the recovery and conservation of water sources for water infrastructure, will supply large amounts of microalgae, these wastewater treatment systems, can also be integrated into land transport infrastructures, in airways and at ground level through photobioreactors, which will help the absorption of CO<sub>2</sub> of cars, oxygen emission and generate clean water, for industrial misting systems indoors and outdoors for the improvement of thermal comfort of Metrovía facilities. Street lighting could also be with microalgae

lamps. Microalgae can be marketed to different industries, the production of microalgae biomass has provided a wide range of biotechnological products with uses in the food industry, health and human medicine, animal feed, organic compounds and biofuels. In fact, the Ecuadorian graduates of the National Polytechnic School in Quito, Queeny López and Gabriela Samaniego, developed filtros of Microalgae Anuka, have a capacity up to 100 times greater than trees to absorb CO2 and transform it into oxygen. , which can also be integrated into critical areas for air quality, which is a necessity since 1 in 8 people in the world dies from this cause and generates large expenses in public health. Along the roads, endemic trees selected for their high CO2 absorption and resistance to the climate must be available, to prevent the particles of pollution generated by motor traffic from being breathed by pedestrians.

In this objective we highlight the use of microalgae biomass, for the production of biofuels or for the generation of electricity through the burning without CO2 emissions of oils, biohydrogen use or biogases that will supply electricity to various fast recharging stations, such as those of Chakratek<sup>®</sup> , there are several companies that produce biofuels from biomass, among which the company of the Chilean Andrea Irarrazabal BioCapture<sup>®</sup> stands out, which has registered several biofuel patents. As renewable energies increase, energized pathways can be built.

Electric cars should be made accessible to the public through tax incentives and agreements with electric car manufacturers and recycling companies, so that owners of combustion engine cars can be offered to replace their engines or cars with electric ones. Similarly, with the owners of private buses and public transport buses replacing them with electric ones, to guarantee clean electromobility. Currently Guayaquil has diesel buses of the Metrovía system these can be adapted to be electric.

The metroways can be improved, we recommend that they be adapted to be green, in general they would be stations capable of generating photovoltaic energy, microalgae bio fuels and district power plants with systems to improve thermal comfort, lighting, clean indoor air free of odors and viruses in a sustainable and self-sustaining way, for more details we invite you to [watch video](#) which explains how to make the metro stations green. In addition to replacing buses with electric ones, power trams through the train base, such as those used in Dubai, could be useful, trams are more economical since they do not need large infrastructures or excavations, although [Liner](#) tunnel methods , make underground constructions increasingly economical without interfering with urban traffic. Other options for an increasingly efficient metro are airways where excavations are impossible and high-speed solar electromagnetic trains for long loading and passenger distances, which can gradually be improved with Hyperloops, trains in hyper-speed vacuum tunnels. , the electromagnetic trains will serve to connect the canton with all its parishes and with other cities of the province and ports. It may sound somewhat ambitious, but this program will encourage Guayaquil to grow, as much or better as Dubai, although it does not have oil, will have high production of biofuels and renewable energies, favored with its innumerable water sources, will contribute to the continuation and expansion of its economic activities in a sustainable way, therefore, transport planning in urban planning must project this growth in general plans, considering the connection with industrial, rural and port areas for distribution and marketing. You can start building the most viable and improve as planned according to the expansion.

Another great advantage for the improvement of urban mobility and connection with rural areas, in addition to the previous options, is to consider the rivers of the city of Guayaquil as transport routes, considering that in these rivers will be working water batteries, hydroelectric and NBS ecosystems for the maintenance of water quality, then, the vessels and transport that operate there must comply with anti-pollution regulations and that do not interfere with the operation of the water batteries. In large cities where there are rivers or lakes, water buses (either boats or amphibious buses), taxi boats, ferries, among other options, such as underwater trains and electromagnetic trains on water, which can be incorporated as Guayaquil's GDP grows, which travel at high speed will serve for the transport of cargo and passengers.

Then, we would have the options of renewable energy, biofuel or bioelectricity, accessible electric cars, fast charging stations, taxis and electric buses for the improved Metrovías transport system, with the green modernization of the stations and the inclusion of trams, in which underground metro tracks are built. and airlines, high-speed passenger and freight trains, water transport of buses, taxis, ferries and trains.

Public land and water transport must be connected to the same service of the Guayaquil Metro, which ensure the connectivity of the city and the urban area with rural areas, users with a card of the same payment system or debit credit card can access different payment plans adaptable to all socio-economic levels, for example, in Dubai there is first class, 2nd and 3rd class, maritime and land transport are connected to the same payment system, they divide the city by zones, the value of the trip is according to the zones they cross, that is, the distance is the values of the trip; in Austin Texas they allow you to buy a monthly or weekly card for unlimited trips regardless of the distance, which is a good option for those who continuously use these services and travel long distances. Among the most economical meters is the metro of Mexico, one of the most populated cities in the world, the establishment of the rates should be in proportion to the local purchasing power, but at the same time they can generate enough income for the metro to work efficiently, because it would be useless to build good transport infrastructures without anyone or few can use them, as happened in India where a lot was invested and still continue with pollution and overflowing traffic, or that the tariff is so economical that it can not be kept in good condition or functioning, that is, establish an optimal equilibrium point, it may be that the self-sufficiency of water and energy and the sale of biomass of microalgae, generate extra income to offer very accessible services, considering in the structure of maintenance costs la cleaning for a good image, of examples of cleaning we find Hong Kong and Tokyo, including culture, art and science to the land and sea stations is essential to preserve the culture of the city and the tourist attraction, as it is done in Mexico, Russia, Chile, Dubai, Germany ... Another way to make it more accessible and motivate the use of public transport and exercise is the generation of renewable energy by kinetics, establish on the stairs and pedestrian crossings of the metro kinetic energy floors, such as those of Pavegen®, through a platform that transforms each step in electrical energy, and that can also generate data and even rewards, the rewards would consist of discounts or accumulation of money in the metro, in Europe sidewalks have been installed on sidewalks, shopping centers, sporting events, where pedestrians accumulate money or discount coupons when they walk on them.

### **3 Transition of the City towards Smart and Sustainable Buildings and Infrastructures, Generators of Air, Drinking Water and Renewable Energies:**

Both residential, industrial and agricultural buildings and infrastructures can be intelligent, generating clean air and water, oxygen and renewable energies, connected to surface and underground water batteries, so that the whole city is a circuit generator of basic services without pollution or waste that affect nature, on the contrary the constructions will help the reduction and absorption of CO<sub>2</sub> for the solution of change climate and will reduce water pollution, for the conservation of air, soil and water ecosystems.

The way to do this is comprehensive systems of treatment of waste water with photobioreactors of microalgae that can be located on roofs, basements or in the building itself. Rainwater collection systems on roofs, pavements and green areas with filtering and storage tanks, so you would have clean water. Air quality is a problem in cities and Guayaquil is not exempt from that, bio skins of microalgae solar panels and lighting in buildings and public spaces with microalgae lamps and LED lights, would help the absorption of CO<sub>2</sub>, oxygen emission and generation of electricity and green lighting, thus reducing CO<sub>2</sub> emissions, resulting in clean air. The surplus of energy and water generated by the buildings by laws could be sold to the electricity distribution network, as is done in Chile, which encourages the generation and use of renewable energies through Law 20,571 "Produce and sell your electrical energy", in this case it would also be applied to the sale of the surplus of drinking water generated, this will encourage the owners of buildings and infrastructures to invest in remodeling and construction of new smart and sustainable buildings, the NGO Arca Tierra educates how to do it and encourages this kind of projects, currently in our advisory and training services we have the [Online Workshop Reduce Your Carbon Footprint in Your Home](#), where we explain and encourage them to transform their homes into smart and sustainable.

Water and green energy from smart and sustainable buildings will be stored in the general water battery of the entire city or in microcircuits of water by neighborhood or any other territorial division that is considered appropriate according to the geography and current constructions. In view of the fact that rivers have high levels of pollution, public and private investment in wastewater treatment plants should be encouraged, through the harvesting of microalgae in the open air, which will treat in addition to industrial, agricultural and residential wastewater, the water of the rivers, that is, they will extract contaminated water from the river and enter Clean water with appropriate mineral levels, water circuits and water battery will contribute to the management of water dynamics efficiently to maintain optimal water levels of the natural and man-made water source networks of the water infrastructure of objective #1 of this program.

Then, we would have more microalgae, all these should be used to generate more renewable energies, for local, national consumption and export, through District Power Plants strategically located for the supply of solar energy, bioelectricity, clean water, fuel oils, biogases, bio hydrogen, such as those patented by the company Biocapture<sup>®</sup> founded by the Chilean Andrea Irrrazabal or another innovation from Ecuador. The electricity and biogases produced with the biomass of the microalgae can be distributed underground to nearby buildings and infrastructures, the surplus can be marketed nationally or internationally. The NGO Arca Tierra recommends that these innovative District Power Plants be installed in new municipal offices of the canton of Guayaquil and its parishes, so that the public administration is an example in the investment of renewable energies,



to see more details about it we invite you to watch video of our district energy proposal made to the commune of La Florida de Santiago de Chile <https://youtu.be/cvHSi3nw01c>

Cities grow without efficient urban planning, until a few decades ago it was conscious to plan population growth considering nature and the well-being of citizens. Guayaquil has made important urban interventions to improve it with the support of the Development Bando of Latin America CAF, in a few years Guayaquil recovered important public spaces such as boardwalks, parks, streets and squares. Urban planning falls to central government entities, regions, provinces, cantons and parishes. Especially from the National Secretariat of Planning and Development and its sub-secretariats, a Master Plan has been drawn up in Guayaquil with five central axes, inclusive ciudad, healthy city, resilient city, productive city and territory city. The methodology of the plan was in charge of the new Directorate of Urban Planning Projects and Territorial Planning (Dupot)," some key factors complain of having been excluded such as professional architecture and engineering guilds and neighborhood councils, although the municipality argues that work tables were made with citizens, State universities, Católica and UEES, inter-institutional organizations and local experts in urban planning and mobility, as they advance they will make more working groups with various sectors. However, in order not to leave aside key factors of society, the NGO Arca Tierra proposes a way of organizing, which will be explained later. The Master Plan we do not know to the fullest extent is encouraged the recovery of parks, planting trees on public roads, the recovery and conservation of mangroves, make it greener, which is positive, encouraging the use of public transport and pedestrian paths to avoid congestion, enhancing culture in public spaces and entertainment. Enhance culture in emblematic and tourist places, which is very important to publicize and preserve cultural values of the canton of Guayaquil. The urban planning of the canton of Guayaquil in its urban and rural areas must integrate its rich cultural diversity, 18% of the inhabitants of Guayaquil define themselves as montuvio, Afro or indigenous, so they should also be considered for their integration, integrating their cultural aspects in their residential areas and in the representation of the s diverse cultures of the city in architecture, the arrangement of cultural centers, integrating art, nature and biomimetic technologies described in previous points. In case of existing reserves or displaced indigenous communities, they must be assigned territory and develop projects for the construction of their settlements considering their customs and cultural heritage in their design, as well as their sustainable development, where they can carry out sustainable economic activities to which they are accustomed to carry out, but with techniques that do not contaminate, which will be described in the objective of sustainable economic activities of this programme.

Areas of extreme poverty where they have improvised houses or that do not comply with construction regulations, should be designed a parish or neighborhood sector in a nearby place that works 100% with renewable energies, applying the technologies described above to guarantee access to basic services and the rest of their human rights, that is, the design must ensure shopping centers, supplies, health centers, education at all levels, women's empowerment offices (education and work), if possible a branch of a University, access to transport (trams and the metro will help) ... In short, designed in such a way that citizens have access to all human and environmental rights, integrating and conserving ecosystems, the way to make new parishes, neighborhood complexes, new towns or settlements, must be done in such a way that access to rights is facilitated , designing based on the functions of the buildings and the categories determined by human rights, their roads



and construction regulations would be oriented to fulfill rights, in each way there would be buildings with functions to satisfy a set of rights, related buildings would be nearby, for example where the educational centers are, there are libraries, bookstores, copying centers, student cafeterias ... Our video from the [Series Against Climate Change How to Make Your City Sustainable?](#) We explain how to do this and advise you to use our recommendations, especially for the construction of our models of sustainable cities Tree, Globe and Galaxy in areas where the city will expand, in new constructions of new settlements.

In order to make the right to housing accessible, in parishes of scarce resources, to make the constructions more economical and to involve the future owners with title of property we recommend the use of the ecological technique of superadobe of the CalEarth Foundation, with which the NGO Arca Tierra has an alliance to disseminate the use of its techniques, which consists of educating a group of 20 people how to build them to replicate houses with sandbags and wire mainly, so they are very cheap and with the finishes are very aesthetic, they can be adapted to attractive models for their users according to the number of members of the family, they provide protection against any natural disaster and thermal comfort in any climate, equipped with microalgae solar panels and the rainwater collection systems described above to avoid flooding and water scarcity. The houses will be built by the owners themselves or generate local employment in their construction, they would be financed with low interest rates. In the case of relocation of families with makeshift houses that do not meet construction standards, they may be offered to agree to be relocated as part of the financing payment for the property they abandon, based on an appraisal of the property (construction and land). The relocated people will be able to pay the financing and improve their quality of life, having the basic economic services generated by renewable energies and water with the systems of water circuits and rainwater collection, they will be able to have extra income with the sale of the electricity and water supplier. They will also have sources of employment in the parish or neighborhood complex with the construction, maintenance and operation of energy systems, transportation, multipurpose and multifunction water infrastructure and other sustainable economic activities that will be carried out in the parish, we will mention in this program the possible sustainable economic activities to be developed.

In the areas with old constructions of the city and rural areas they must preserve their architectural cultural reserve, for this they must integrate renewable energies, wastewater treatment, rainwater collection and recycling or reuse waste in a camouflaged way, for this there are many ways to do it through underground district energy, described above. If possible, microalgae solar panels will be integrated into the windows and roofs, which will also provide biomass to the district power plants strategically located in an existing or a new building. That way they would have renewable energy and clean water. Gutters on roofs is a simple way to collect rainwater in a disguised way, among many functional architectural alternatives, in the soils it is very important to absorb rainwater, filter it and store it in water reserve tanks, since paving in cities prevents its absorption cause floods and water is wasted, these tanks would also serve to reserve water treated with microalgae or Natural Biological Systems (NBS), the stored water will serve even for human consumption. In garbage deposits have recycling containers that will be collected, processed and reused making the waste material pass through a chain of companies and industries in a lucrative way, both for the building that provides the classified material and for related companies. In this way they would have renewable energies, wastewater treatment, rainwater collection and waste recycling in historical

and cultural centers, the aforementioned recycling system is applicable for the entire city. In other buildings that are not cultural heritage it is easier to do so, through our models of sustainable cities tree, globe and galaxy, the way to achieve it is explained in our videos of the [Series Against Climate Change](#) How to Make Your Home Sustainable? And how to make your city sustainable?

In Guayaquil according to the surveys of the Master Plan most citizens do not want to live in buildings, we recommend [tree buildings](#), they are modular constructions that can grow like a tree as the demographic index grows, designed in such a way that they can have indoor gardens and balconies, Aquaponics systems, if what they want is a personal urban garden, to make it more attractive for them to live in the heights, the views of the coasts and the integration of nature must be promoted. In the case of wastewater treatment in large residential complexes, in addition to microalgae photobioreactors we recommend the Natural Biological Systems (NBS), which consist of endemic plants, grits and gravels that beautify the landscape without odors, integrating nature to the enclosures without irrigation problems, landscaping that treats wastewater even for human consumption.

All these recommendations also apply to rural areas so that they have basic services and access to human rights, in the videos [How to Create Sustainable Development in a Rural Area? And how to create sustainable development in desert and coastal areas?](#) It fully explains how to ensure this, to solve the problems of access to water and poverty. We highlight in our recommendations for rural areas that should be connected to large cities for the transport of cargo and passengers, the high-speed electromagnetic trains of solar energy will facilitate access to human and environmental rights of the different parishes as well as the water road of the water battery. The way of sowing will be explained in sustainable economic activities.

These would be the general guidelines for an efficient urban planning in Guayaquil, we hope to be able to contribute to the Master Plan of Guayaquil with these recommendations and with our advice that will effectively help them to be a carbon neutral city, with quality of life through sustainable development and its citizens will be facilitated the assumption of responsibility for the continuous consolidation of rights human and environmental.

**4 Integration of nature to the city and recovery of ecosystems to regularize water cycles and mitigation of natural disasters:** the recovery of ecosystems and the installation of natural biological systems (NBS) will be fundamental for the maintenance of water sources of the water infrastructure of the water battery, this will make the recovery of nature and increase of green areas in populated areas a vital investment. These NBS systems can also be installed in residential complexes and in large buildings for the treatment of wastewater, connected to the networks of water sources of the water infrastructure once the water is potable or will serve for the supply of water for the building, so the private investment of real estate and existing constructions will invest in NBS systems for the continuous purification of water, accompanied by laws that sanction wastewater and reward the contribution of clean water to the rivers of the water infrastructure. This is extremely important because in Guayaquil each inhabitant discharges approximately 132.8 liters per day of wastewater.

Guayaquil has a beautiful botanical garden to conserve endangered species, apart from this we recommend Vertical Gardens such as the Singapore Bay Gardens that will attract a lot of tourism

and will serve to supply rod grass which is vital to recover the health of eroded soils and thus avoid landslides, of endemic vegetation, including wildflowers for the conservation of bees and butterflies, pollinators that facilitate reforestation and soil recovery. These gardens will be differentiated because they will be able to generate photovoltaic energy by integrating bio skins of microalgae solar panels, inside they will serve as greenhouses for the breeding of butterflies and beekeeping, for the planting of vegetation of grass rod with compost, endemic wild flowers, repopulation of butterflies and bees, with the support of programs similar to the UNESCO program "Women for Bees", sponsored by Angelina Jolie, the vegetal layer will be recovered and once the vegetal layer with these plants has been recovered, it will be possible to plant trees extinct by deforestation, as ecosystems recover, they must be declared areas of key natural reserves for the maintenance of ecosystems, especially water sources, the way to protect natural reserves with sustainable development we explain in our [video "How to Help Solve Climate Change"](#) of our series Against Climate Change. With the purposes of beautifying the city and rural areas and creating habitats for butterflies and bees, giant sculptures of flowers must be created with local artists and botanists, currently the gardens that own these works of art are very famous and attract a lot of tourism these living sculptures that help the maintenance and conservation of ecosystems.

On the coasts of Guayaquil, for the mitigation of natural disasters, the recovery and conservation of mangrove forests in strategic places and towns vulnerable to tropical storms and hurricanes is essential, since they have proven their effectiveness for the mitigation of damage in cases of tsunamis and hurricanes. Likewise, we recommend the construction of offshore mangrove barriers that will create high pressure systems to reduce the formation or intensity of hurricanes, protect coral reefs, marine life and coasts from strong winds and swells, for the construction of these mangrove barriers we recommend the use of TetraPots<sup>®</sup> which also serve for the recovery of marine ecosystems. In order to have mangroves that clean the seas even of mercury and heavy metals, marshes, cucumber fish and other species that help maintain marine ecosystems, we recommend complexes of domes and / or vertical gardens of aquaponics for the recovery of marine and terrestrial ecosystems, affected by tropical storms. In our solutions to the mitigation of natural disasters with sustainable development on coasts [we present these solutions](#).

**5 Transition of Economic Activities of the Region towards Sustainability:** this merits the improvement of its main economic activities so that they function as biofactories, without pollution and reuse, for the improvement of production processes and profitability, promoting a circular economy, that is, the supply and demand of sustainable products, for a sustainable economy, to achieve this, incentives must be given, the Water Infrastructure will do so because it will be an investment in the reuse of water and the generation of renewable energies, for its self-consumption and to contribute to the electricity and drinking water distribution network. Specific projects would be developed for each productive sector, to launch sanctions and incentives for the transformation of their companies or industries into biofactories, that is, centers that produce valuable resources, which avoid the generation of waste, the environmental impact and do not consume energy of fossil origin because it produces its own energy to function, so that they improve their production processes and increase their profitability. The NGO Arca Tierra will offer advisory services for the preparation of projects for different productive sectors and direct advice to companies and industries. Here are some recommendations for some sectors to adapt their production processes as a biofactory:

**\* Food production in a sustainable way:** we propose the construction of dome complexes with bio skins of microalgae solar panels, all the interior design of the domes will be spiral to make the most of the space. In the first dome would be installed spirals of microalgae photobioreactors, where the microalgae are harvested while fulfilling the functions of wastewater treatment, CO<sub>2</sub> absorption and oxygen emission, the waste of microalgae would be used to manufacture: biofuels, for the feeding of fish, grazing animals and for human food, although this dome would be processed directly the microalgae for fish feed and fertilizer for plants, because in the second dome spiral aquaponics systems would be installed, where different kinds of fish, mollusks and shellfish can be raised, even if they have. The rearing of fish outside the sea is vital for the conservation of the oceans and fish must be produced in large volume, because it is the main source of protein for humanity. Similarly, with low water consumption, aquaponics allows the production of other foods in large volume under any weather condition with water savings, countless vegetables, fruits and legumes can be planted without generating contamination and produce as a biofactory. In the third dome, food that is not going to be sold fresh would be processed, to avoid waste by making them long-lasting, either by dehydration, drying or frozen according to cutting-edge techniques that reduce the use of chemicals and preserve the nutritional values of the food and where they will be packaged in compostable containers produced from algae, compost or other prize materials produced in the region, with export quality.

The grazing of livestock can also be done as a biofactory, the breeding of animals can be done in a sustainable way and grasslands are a necessity because they absorb CO<sub>2</sub> and conserve it in the soils for many years, of course it is recommended to use suitable territories without deforesting areas of natural reserves, because trees are vital for the water cycle. There are various techniques of sustainable grazing through vegetation fences, the continuous rotation of livestock to avoid soil erosion and the use of rod grass for feeding, avoid the emission of methane gas through biodigester plants that can produce electricity and biogas, biodigesters would also serve for the treatment of sewage from rural residences, assisted by natural biological systems NBS for the treatment of any agricultural or residential wastewater and / or the use of microalgae photobioreactors of the first dome of the feed dome complex.

Food production must be planned and coordinated according to national and international supply and demand, this must be applied with greater need in areas where hunger and malnutrition are suffered, Ecuador is one of the countries with the highest rate of chronic child malnutrition with one case of every four children under five years, revealed the vice president of the country, María Alejandra Muñoz, during the 36th FAO Regional Conference, "*the social and productive fabric has been as impacted as the Sustainable Development Goals in their generality and the challenges ahead require duplicating efforts and doing it together, with creativity and discipline,*" said the president. Therefore, we recommend the planting of quinoa, due to its high nutritional values, only a quinoa bar is equivalent to the consumption of a steak, prevents anemia and helps the growth of children, because it contains iron, calcium, phosphorus, vitamin E and vitamins of group B, with levels much higher than conventional cereals, to I combining with other cereals, for its amino acids, raises the traditional protein use with which they are mixed, intuitively this was done by Mayans and Aztecs, when combined with corn. Thus improving the feeding of children in their homes, because by producing them on a large scale they will reduce costs or be able to produce them at home with aquaponics systems that will supply them with this cereal, vegetables, fruits, molluscs, shellfish and

fish for their healthy nutrition, giving them the fishing rod and not the fish, that is, facilitating the assumption of responsibility for the consolidation of the human rights of food, work and private property. In the schools of Ecuador children receive a daily school breakfast consisting of milk with a cookie, cereal or other food, we recommend that foods based on quinoa be given, especially in rural areas, where 30% suffer from malnutrition. In areas vulnerable to hunger and malnutrition, schools open or closed due to pandemics, holidays or other causes must keep feeding children out of school until the problems of hunger and malnutrition are solved by granting grants with contributions from international organizations so that modern adjustable aquaponic systems are installed in domes to make them work. as a biofactory on their land and are engaged in sustainable agricultural activities.

Due to the high levels of malnutrition, the manufacture of food and beverages with high nutritional values and serums is recommended for the recovery of the health of the malnourished. The president of the NGO Arca Tierra, Patricia Rincón propuso in her book 531 Beauties of the World, on which our mission to comply with [24 strategic plans](#) are based, the development of a serum against malnutrition, with components of the leaf and cereal of pira, with its high nutritional value would help defeat malnutrition, its possible combinations, would be considered coconut water, for being a natural serum that contains electrolytes, is very nutritious has many of the compounds of breast milk, such as copper, zinc, iron, folic acid, phosphorus, vitamins E, group B, A vital for the growth stage and more than 50% is potassium, It is rich in fiber, combats anemia, nervous exhaustion and thinning, eliminates toxins by natural routes, has a great caloric value, strengthens bones, nails and teeth, so it is recommended for growing children and pregnant women. In addition, it remineralizes the body, increases platelets and strengthens the immune system, is low in fat and acts against malnutrition. In this formula you can also add lemon juice, because it provides vitamin C, stops diarrhea and has properties against anemia. Se suggests as another component of serum CalMag (calcium and magnesium) because they are vital for the development of our bones and cells. Laboratory studies should be carried out to develop this serum formula against malnutrition and anemia, ensuring its distribution to affected children and adults.

Another economic activity in food production is aquaculture for the production of shrimp, the second largest export product of Ecuador, world famous for its high quality and nutritional value, the research and development of new technologies positions it in the market as the best in the world, has obtained different international certifications that accredit it as well. 30% of the shrimp are produced in saltwaters on the coast and the other 70% on land, in greenhouses where different ponds are located for it, many of the aquaculture greenhouses are sustainable, use solar energy, water reuse and in a smaller space produce more shrimp than in the saltwaters, which despite operating in areas designated as non-protected areas, Merited the deforestation of mangrove forests, to compensate for this damage the shrimp industry has dedicated itself to reforestation. The NGO Arca Tierra considers that it is not necessary to deforest mangrove forests for aquaculture, because mangroves in addition to their high environmental value against climate change, generate sustainable economic activities, in them shrimp can also be harvested naturally, with controlled logging and reforestation, generate useful wood and with blue carbon credits generate income, making reforestation and mangrove conservation a sustainable economic activity. Onshore production with renewable technologies and energies has proven to be more productive and requires fewer antibiotics to conserve water quality than in saltwaters. Ecuador has innovated

throughout the production process generating hundreds of thousands of jobs, among which innovation in shrimp feed based on soy, sorghum, rice dust and non-consumable by-products of the fishing sector stands out. The NGO Arca Tierra applauds these advances towards sustainability, but it must continue to research, innovate and improve, for this we propose that successful actions of sustainable aquaculture on land and gradually in new production centers of the aquaponic dome complex described above be continued, in this case in the 1st dome will be dedicated to producing food based on microalgae for shrimp, which is a natural feed of shrimp, the top quality freeze-dried microalgae *Nannochloropsis*, *Isochrysis*, ... , have proven to be the best option for shrimp and post larval culture, the benefits in the health and feeding of shrimp with microalgae are quite a lot, being this way of feeding a novel and revolutionary way in the industry, there are already various foods for shrimp based on microalgae with excellent results, but Ecuador given its experience with shrimp can improve the products available in the market, can make shrimp feed based on microalgae another export product. Thus the shrimp industry would no longer use useful consumable products to defeat hunger, so that instead of feeding shrimp they feed humans and in many cases to feed fish and shrimp inputs must be imported which increases production costs, the harvest of microalgae and its processing would reduce it, while treating wastewater in the process and producing drinking water without any risk of contamination in photobioreactors that can also deliver oxygen to the ponds. In the 2nd dome of production the spiral ponds will be distributed, the ponds will not only be aquaculture, but also aquaculture for the production of vegetables, vegetables and fruits most demanded on the market, while shrimp are harvested and finally, in the 3rd dome they will be packed in ecological packaging, this will increase the demand for Ecuadorian shrimp around the world, for its outstanding quality and sustainability, they will no longer use antibiotics because microalgae photobioreactors in addition to producing food will maintain the quality of the water, its discharge and circulation in the ponds will also oxygenate it.

Another export product of Ecuador is bananas, their harvest can improve through polyculture and permaculture, of different crops that contribute to diversify the crops and income of farmers. For example, Obiefuna (1989) reported that between sowing egusi melon in a banana plantation, banana harvests could be increased by up to 26%. They also reduce costs in weed control and reduce the need for the use of pesticides, so they can make more profits with this diversification of production and improved electromagnetic train transport systems will reduce links in the marketing chain of agricultural products.

Through these technologies of production of food and serums in a sustainable way it will be possible to defeat hunger and malnutrition, for its development the NGO Arca Tierra can guide together with other related organizations, this project that supplies the fishing rod and not the fish. At present there are NGOs that can assist, such as Action Against Hunger ACF International, universidades, guilds, joining forces we can achieve it, consolidating democracies and Weuman rights, so that the developments obtained are viable and sustainable. In our video of the Series Against Climate Change, [How to Create Sustainable Development in Rural Areas?](#) It explains how the production, distribution and marketing of food should be, if you want to delve into this proposal to defeat hunger.

\* **Mining and Petroleum:** mining carried out in an unsustainable way affects and depletes water resources, soil, water and air quality, thus affecting the quality of life and water supply of the inhabitants. It also impacts sectors of the economy such as industrial, agricultural and livestock,



generating poverty. being paradoxical because gold enriches, but mining for its extraction impoverishes by affecting other economic activities by decreasing their access to healthy soils, air and water and also impoverishing intensifies the problems of climate change.

In order to control the alleged impact on the quantity and/or quality of water derived from mining activities, the Water Regulation and Control Agency (ARCA) of Ecuador carries out control inspections. Legal mining, that is, that which is carried out outside natural reserves, in assigned territories must operate in a sustainable way and restore nature as it progresses, with the following recommendations they can use renewable energies and systems to significantly reduce their environmental impact and instead of affecting the quality of life where they operate they improve it.

It is right on the part of Ecuador to establish a regulatory agency, but these must be supported by strong regulations, so that the mining industry goes from being the ugly duckling of the environment to being conservationists, making them part of the solution to climate change and not the problem, establishing stricter limits in relation to pollution and giving investment incentives for the transition of its operation as a way of biofactory. This Ecuador can promote nationally and internationally in alliance with democratic Amazonian nations, such as Colombia and Brazil that to date of this proposal still survive the systematic destruction of democracies, freedoms and human rights committed by the conglomerate of international organized crime and narco terrorism that now accompany the criminal system to commit genocide and [ecocides](#). of communism. So, this Ecuador and democratic Amazonian nations can boost the approval in the Organization of American States (OAS) and if it recovers from the clutches of communism to the UN, of our proposal for [an Air Quality management policy](#) aimed at reducing and absorbing CO2 emissions through a green economy. , which must be promoted worldwide to achieve the transition of all products, goods and services to be sustainable, with a regulation of implementation of taxes and sanctions in import and export tariffs on CO2 emissions, sanctions that do not end up being paid by the citizen, but by the responsible company or industry, with incentive mechanisms for the transition of companies and industries to be sustainable so that they offer sustainability and increase demand by granting facilities so that citizens can have access to renewable energies, electric transport, sustainable products, goods and services, so that in this way humanity makes the transition to a sustainable or circular economy.

Industries must function as a biofactory without waste or CO2 emissions for the benefit of the environment, its profitability and generate prosperity for the regions. Mining must function as a biofactory if it wants to continue operating in the regions, because what good is mining for a country if it is going to generate poverty and destruction of valuable natural resources for its development? What good will it be to create water roads and water pumps if they will eventually be decimated and polluted by mining?

In gold mining they use mercury and cyanide, in many countries such as Costa Rica they have banned the use of mercury for its devastating consequences to the environment for long years, so many responsible miners use cyanide, which in low concentration is not lethal. In the responsible mineral industry, cyanide is recycled in the same mine, and if necessary it is treated by chemical processes or degraded by natural processes so that they do not affect soils or water. Cyanide is not persistent like mercury, which facilitates its degradation. Others bet on artisanal mining as the winning



proposal of [Oro Verde](#), it has plausible environmental and socio-economic aspects, but its value superior to the rest and the high demand for this mineral puts it at a disadvantage, so we must work so that the mining industries are green. Artisanal and industrial mining in most cases is done in the open pit destroying all nature in its path, which can be reforested, yes it can, but it can take years to recover natural resources, and why do it in the worst way? If underground or underground mining is more profitable and has less environmental impact, in Ecuador there are underground miners for the extraction of gold, they extract rocks in an underground way to be taken to the gold extraction phase, through a process of gravity and flotation, they use air inside tanks with water so that a foam is formed from which, at the end, the concentrate comes out and the last phase is the leaching process, where the remaining gold is separated from the ore. Recycling substances, water and gases would be a sustainable way to improve.

The NGO Arca Tierra proposes for the exploration and exploitation of mineral sensors and robotic excavators to dig and extract veins of the mineral in an underground way with greater precision and less impact, reducing deforestation and water use in the process, excluding the use of pollutants. In order to reduce the environmental impact in areas already designated for mining exploitation, where key resources for the fight against climate change (forests, forests, glaciers and grasslands that absorb CO<sub>2</sub> and contribute to the water cycle) are not destroyed, it can advise so that processes are improved so that industries are not enemies, but that they join sustainable development so that we can overcome global warming, absorbing and reducing CO<sub>2</sub> in human activities. Here in general we recommend that from its first phase of the gold mining process is sustainable, tunnels with soil studies are designed through laser scanner devices for safe and assertive extraction, such as LIDAR (Light Detection And Ranging) sensors, an active remote sensing technology that uses a laser scanner, GPS system and inertial navigation, uses harmless sound waves and reflection to detect targets and determine distance, also uses laser pulses with its timed reflectance to determine the distance the target is capable of provide specific land access and support environmental monitoring, along with accurate location planning for drilling. Once this is done, vertical and horizontal tunnels can be dug, there are ways to do it without excessive removal of earth, that is, without destroying the land surface, for example, high-wall mining improved with the vertical and horizontal excavation techniques Tunnel Liner have a lower environmental impact, they are already used in mining because it is highly competitive for tunnels under stock pile, ventilation and rainwater conduction. Once the gold veins are extracted, these tunnels would be properly cleaned so that later they work as a water battery, this is done around the world, mainly European mining companies have enabled mines for their operation as a water battery underground, that is, mining companies are dedicated to producing renewable energies and storing them in water batteries, extending the useful life of their investments, making their activities increasingly green, profitable and sustainable. This in addition to being a green economic activity is ultra necessary, because we vary the weight of the earth by extracting earth and minerals, which on a large scale throughout the planet can affect the Earth's axis and ultimately the Earth's magnetic field which makes life on the planet possible, the weight of the water can compensate for the weight extracted, or if you do not want to invest in green energy, you must at least with the technique of Túnel Liner return the extracted rocks and soil and reforest on the disused mine.

Areas that have already been affected by deforestation, environmental laws, soils and contaminated water, especially at points where mines discharged and will discharge wastewater (without

pollutants harmful to health) into rivers and streams must be pre-treated before being discharged. , by microalgae wastewater treatment plants in photobioreactors or in the open sky depending on the conditions of the terrain, in the areas that were severely affected and where high levels of pollution still remain, the open-pit harvest of microalgae will help to decontaminate the soils, since the microalgae In addition to absorbing CO<sub>2</sub> and emitting oxygen, they clean the environment of mercury and heavy metals, this more than being a sanction for the mining industry will be an investment, because microalgae can be marketed with other industries, food, pharmaceutical, biofuels, or they can be dedicated to producing biogases, biodiesel , biohydrogen, among other renewable energies based on microalgae. In the areas that the Ministry of the Environment, Water and Ecological Transition as the administrative entity of the natural resources of the province determines that they must be reforested, the artisanal or industrial mining company after it has cleaned the soil with the aforementioned microalgae harvesting technique, will use fertilizer based on microalgae, compost, rod grass, wild flowers and pollinators, so that the vegetal layer is recovered to be able to plant endemic trees and reforestation is feasible. The disposal of residual sludge from mining will be prohibited on the slopes of rivers, this can cause floods, these sludge may be decontaminated by the harvest of microalgae in the open pit to later be used as fertilizer or filler for reforestation or filling for tunnels, however, they will be required to dredge and channel rivers where they operate. Se will be able to give incentives to reuse water instead of consuming and wasting, consume water through water circuits described above, which according to the design of the Water Infrastructure, can be connected to the water battery of Guayaquil, which would be an investment for the mining industry, because they could be supplied with electricity and water. in a sustainable way, the surplus by laws could be sold to the electricity and drinking water distribution network, as is done in Chile, which encourages the generation and use of renewable energies through Law 20,571 Produce and sell your electric energy. In this way mining would reduce its environmental impact and help recover ecosystems, making a progressive transition towards the generation of renewable energies instead of generating pollution, so all industries will become green, such as steel, cement, will no longer use fossil fuels in their operations making other mines less and less necessary, for the existing ones, their profitability and subsistence will depend on generating renewable energies and conserving them in the tunnels with underground water batteries, through which they will be able to sell water and electricity. Entonces the relevant government entities of Ecuador will establish the natural reserves to be recovered and conserved in the region which affected or are affecting mining.

In order to ensure that all companies and industries operate as a biofactory, the Air Quality Management Policy must be implemented, which establishes sanctions in taxes and customs duties on CO<sub>2</sub> emissions, the collected will be invested in 3 funds, the natural resources fund, for environmental conservation, the climate change fund that refers to the transition of human activities towards sustainability, co<sub>2</sub> absorption and reduction and the natural disasters fund, for the prevention, mitigation and reconstruction of these events. These funds will allow Ecuador to conserve natural resources and make the transition to a green economy, strengthening the supply of green products, goods and services and demand through subsidies or soft credits so that citizens can acquire them and no longer consume products derived from hydrocarbons. This law in its sanctions also involves customs tariffs on slavery, we are in the twenty-first century and there are still nations with slaves, we are complicit in slavery by buying cheap products at the expense of human suffering and at the expense of the local economy, because what local company or industry

that respects labor rights can compete with industries that exploit slave labor? None and so countries stop producing to only dedicate themselves to market products made with slave labor, unemployment increases and the informal economy increases to sell Made in Slavery, made in slavery, in the informal economy people do not have labor rights and so complicity in slavery affects us all. In Chile, the textile industry completely disappeared and now only Made in Slavery fabrics are imported. These sanctions will help national green companies to succeed nationally and internationally and to continuously consolidate economic growth and labour rights.

The Air Quality Law considers rewarding the green economy, allocating the money collected from sanctions, deposited in the climate change fund for the granting of subsidies or soft credits to companies and industries that offer green products, goods and services to increase their delivery capacity and subsidies for consumers, to citizens to increase green demand, because the laws of penalties to CO2 emissions in the world currently, at a general level implement only taxes, these taxes in the end end up being paid by citizens with high gasoline prices and the hydrocarbon industries are not affected and do not think about making a transition, on the contrary, the exploitation of hydrocarbons continues to increase, the supply of its fuels and derivatives, the legislation of prizes and sanctions will help to reverse this, in our [online course and textbook \(free\) Management Policies for Sustainable Development](#) we fully explain the Air Quality Law and We mention how oil industries transition to renewable energy production, considering their infrastructure, expertise and technologies, such as onshore and offshore geothermal, which absorbs CO2 and buries it in volcanic rocks, while producing energy. This energy is very feasible in the oceans and would help reduce high concentrations of CO2, because acidification is one of the main problems facing the survival of marine life and on land near volcanoes, in Ecuador there are several volcanoes, which would make the development of geothermal energy feasible, Hellisheidy in Iceland is the largest geothermal plant on the planet and in Chile it is possible to develop geothermal energy. installed the first geothermal plant in South America and the highest in the world, to supply electricity to the electricity distribution network. In this way the oil industry can make the transition, we mention in the book different ways to make the transition considering its facilities, crude oil tanks, refineries, ... In how you can adapt to produce green energy and products that replace hydrocarbons and their derivatives, in this way the oil industry will stop exploiting fossil fuels and will integrate into a green economy, they will continue to earn jobs and income to the country, but in a better way because they will diversify products and services in green technologies.

\* **Environmental Conservation as a Sustainable Economic Activity:** recovery and conservation of ecosystems in Guayaquil is fundamental for the preservation of water sources and this activity of recovering and conserving generates jobs with national or international financing, which is also fundamental for the normalization of the water cycle.

The penalties for CO2 emissions and the national and international blue-capped bonds will allow financing investment in this activity, which is more than altruistic for our survival and for the Water Infrastructure to function, since ecosystems and biodiversity maintain the balance free of pollution from water sources. The importance of the recharge of natural water sources affected by droughts or human consumption must be taken into account, because the direct interrelation between surface water and groundwater must be taken into account at the moment when the flow of a river decreases. and since the water table is above the surface of the river stream, the groundwater provides water to the river and in the opposite case, if the groundwater water table is below the

surface of the river current, it contributes to the aquifer, as well as the water source networks of the water road of the water battery, that through a biomimetic technology, imitating nature, the appropriate levels of water are maintained, correctly managing the water dynamics, to avoid floods and droughts. This will also go a long way in providing sustainable development through jobs to communities near nature reserve areas.

But, there are serious problems to ensure the conservation of natural resources, among which forest fires stand out these require expensive and sophisticated fire prevention, control and mitigation systems (in our [plans for natural disasters](#) we make recommendations for efficient forest fire systems) and for security, illegal mining, drug planting and narcoterrorism are problems facing Ecuador, the terrorist groups FARC and ELN repeatedly destroy jungles and forests for the planting of drugs, fracture aqueducts to steal oil or gasoline causing terrible oil spills. Guayaquil faces these security challenges that are aggravated by the network of international organized crime and narco terrorism that communism promotes in Latin America, especially driven by Russia, Cuba, Venezuela and Mexico continuously their mafias expand drug trafficking, human and arms trafficking and of course corruption to commit their crimes with impunity, this we will address in the objective of security and justice, in this objective we will refer to security in natural reserves, because they are extensive hectares to protect from easy and difficult access that require special maritime, land and river transport, drones and satellite systems, a security system that are expensive to avoid illicit activities in protected areas but that are essential for their conservation. In the surroundings of the city of Guayaquil, at a distance of no more than three hours, there are some parks, reserves and protective forests that make up the National System of Protected Areas of Ecuador, such as Machalilla National Arch, Churute Mangrove Ecological Reserve, El Salado Mangrove Fauna Production Reserve, El Morro Mangrove Wildlife Refuge, Cerro Blanco Protective Forest, Puntilla Santa Elena Coastal Marine Wildlife Production Reserve, Lake Park National Recreation Area, Santay Island National Recreation Area, Samanes National Recreation Area, located within the urban perimeter of the city, Cerro Colorado Protective Forest with Guayaquil Botanical Garden, Cerro Paraiso Protective Forest, Bosqueira Prosperina Protective Forest, Protective Forest Palo Santo Trail, Papagayo Protective Forest, El Salado Mangrove Fauna Production Reserve. The reserves of forest and mangrove forests cover hundreds of hectares, Guayaquil has 133,444 hectares under some type of conservation in its urban and rural areas that merit surveillance and security for their protection, through specialized transport systems, drones and satellite systems, these we explain in our Series Against Climate Change in the video [How to Help Solve Climate Change?](#)

The funds would help finance them, but to fully protect natural resources the Air Quality Law proposes that the forests, mangrove forests that serve as the lung of humanity, be given a monetary value for their conservation and ensure that present and future generations breathe, the monetary value should be allocated according to their oxygen emission, CO<sub>2</sub> absorption and water purification, which would rather be to the contribution of trees to the normalization of the water cycle in the world, because if this is not done gold, oil, coal, diamonds and many other minerals will still have more value than oxygen and water, which will cause jungles and forests to continue to disappear. Although we could survive without these minerals, without oxygen and without water we would not, then we must assess in order what contributes most to the survival of humanity and the planet, because there is less and less supply of oxygen and drinking water and more and more supply of CO<sub>2</sub> and scarcity of water suitable for human consumption and wildlife. It is vital for

Ecuador, Colombia, Brazil and the world to promote this management policy, the aforementioned illegal activities can have greater resources from their illicit activities than the entire GDP of a country or several, that is why countries with natural reserves must have sufficient resources for the surveillance, security and sustainable development of the villages near the nature reserves, so that criminals do not take advantage of them or extort them for drops of water. Many causes of forest fires and illicit activities ensure the extinction of natural reserves at a dizzying speed, to stop them they merit sophisticated security and fire control systems, so this policy is needed that will help finance these tasks and promote sustainable development in areas of natural reserves, In our [video How to Help Solve Climate Change?](#) We explain how to develop and implement the Air Quality management policy and achieve sustainable development in its surrounding areas and that the recovery and conservation of natural resources are well-paid sources of employment, as well as security.

Many other sustainable economic activities can prosper with the execution of the previous objectives and with the transition towards a green economy, such as ecotourism that advances in Guayaquil evolving with sustainable buildings, sustainable means of transport, nature conservation and its integration into the city and the water road that will beautify everything in its path. As well as the recycling, of the described chain of residential and industrial collection, distribution, processing and commercialization of raw materials of recycling .....

**6 Security and Justice in a Participatory Democracy:** Guayaquil faces enormous crime problems, its normal local crime rates have been soaring, the rates of robbery, kidnapping, extortion, illicit drug trafficking are overflowing. Reports mainly denounce the presence of Mexican drug cartels in Guayaquil that have allied themselves with local gangs.

Guayaquil for its privileged seaports has been a target of the international network of organized crime and narcoterrorism of communism, driven mainly by Russia, Cuba, Venezuela, Bolivia, Nicaragua and Mexico, some may wonder, but what does communism have to do with drugs? Communism in the cold war has used drugs as a weapon, its battle is to weaken democratic nations to implant its tyrannical system for domination through genocide, holodomor and repression, among its tactics of weakening societies and democratic countries is drugs as a weapon, the Soviet Union from Cuba has sent criminals and has promoted drug trafficking for the United States and narco terrorism for Latin America, to have control of drug crops and their distribution covertly in the past and clearly today, now after the collapse of the USSR they have the full support of Russia, which support or train dictators of Latin American narco states, such as Venezuela accused of narco terrorism. Communists have alliances with drug cartels and international terrorists, because drugs kill, demoralize families and nations with addiction and crime, bribery and corruption that unleash these activities, addicts are capable of committing the worst inhuman crimes to consume drugs and those who consume them lose their lives or they reduce their cognitive abilities, reduce their learning capacity and IQ, in short, make people criminal and idiotic. Who remembers the noisy campaigns promoted by the communists for the legalization of marihuana? And many useful idiots (as communists call it, those who follow their doctrines in their favor and ignore their true purpose) believed that this would reduce the problems of drug trafficking and addiction, ignoring what scientific studies had revealed, that marijuana use reduces IQ and its users are very likely to become

addicted and hook up with drugs more. heavy, the media and social networks sanctified marijuana, seeing the news it seemed that they spoke of the sacred chalice, but it was promotion of marijuana and poor of the one who thought otherwise even if he had scientific studies in hand, they insulted, censored or attacked violently, that is, a campaign des informative very characteristic of those who use [communist gag](#). In short, many nations approved the legalization of marijuana consumption, now they see even children hooked with marijuana sweets, marijuana consumption and addiction skyrocketed to the skies as well as the crimes of drug trafficking and narcoterrorism, young people of violent urban terrorism under the influence of drugs set fire to Ecuador and other Latin American nations on the orders of the communists at the Sao Paulo Forum. so that their useful idiots would weaken democratic nations along with acts of cyberaggression war by detected bots from Cuba, Russia and Venezuela, and scorched earth, to set fire to infrastructure, especially transport, supply, churches and SMEs to weaken their economies.

After the legalization of marijuana in Chile there are few spaces without the smell of marijuana, the crime of drug trafficking also skyrocketed, according to anonymous complaints they bought votes with marijuana in neighborhoods to vote in favor of the constituent assembly, a false ploy to implant communism in a new constitution and many voted for a communist president addicted to drugs according to doping tests in elections Presidential elections of 2021 and that supposedly won, the NGO Arca Tierra denounced that it distrusts the results because in the Chilean television T13 they gave the exact figure of the electoral results hours before the final results were given despite the fact that there were still people voting, it is totally illogical to trust those results, how hours before they will give the same results hours later with people still voting? It was done just as the usurper regime of Venezuela does, in elections the results were already ready before the people even voted, but they gave them in the early morning so that no one protested.

So, Ecuador has been the victim of acts of narcoterrorism, urban terrorism, acts of cyberaggression war and scorched earth in 2019 by Russia and its allies on the continent and have tried to repeat it on other occasions. Guayaquil is suffering from the ravages of crime of the international network of organized crime and narco terrorism of communism, the coasts of Guayaquil have been turned into a distribution center for the United States and the European Union. The rates of consumption of marijuana, of other heavy drugs go hand in hand with the increase in crimes and homicides, because not only do they traffic drugs abroad they have expanded their illicit sale in the local market, the more addicts, the more criminals to hire and the more victims to sell. For these reasons, this sustainable development program for Guayaquil and any national development must include security, justice and the consolidation of democracies as an investment and something essential for the economic, social and environmental development of the regions. Because without solving this, what good would it be to build so much if at any moment the communists set it on fire?

Ecuador has taken security measures in the face of these facts and at the end of 2021 managed to seize more than 146 tons of drugs, the largest seizure occurred in one of the seaports of Guayaquil, on October 17, 2021, during an inspection of one of the containers, the uniformed found two and a half tons of cocaine.

The NGO Arca Tierra educates and advises how security and justice can be improved, improving the rights and performance of security agencies, through the improvement of their labor benefits, police and military in most countries do not have salaries commensurate with the level of risk they face,

they are consumed by long hours of work, their families and their lives are at risk in their homes. The way to improve their profits is to make crime pay and not honest citizens with their taxes, through rewards for successful days of seizures of drug trafficking and organized crime. Improvement of their capacities and interaction with citizens, through the education of civic values and neighborhood security programs. We integrate them into environmental conservation and natural disaster mitigation.

In the face of the unleashing of crime and narco-terrorism, security and justice must be shielded, because they have plenty of money to bribe and violent means to coerce. Bribes should be avoided, with external comptrollers (of allied democratic nations) and national comptroller to immediately detect coercion or bribes to the security and justice network, so that in case of financial or any other irregularities it is denounced and investigated to maintain impeccable and efficient security and justice.

Security in addition to personnel, equipment and transportation consists of crime prevention with citizen or civic responsibility, Prevention and Rehabilitation Programs for Drug Use, Programs for Former Gang Members and Ex-Convicts, Prison Reform for Sustainable Development, Demobilization of Armed Groups, for all these activities projects must be developed and the NGO Arca Tierra can advise to do these actions successfully to dismantle crime and recover people, make the individual a valuable citizen for society to build sustainable development. These activities, in addition to recovering the individual, will generate sources of employment and tax savings, since in prisons the inmates with paid salaries will carry out sustainable economic activities, of those described above.

Similarly, Ecuador must press the United States and the European Union to implement tougher security and justice measures against drug use and trafficking and invest in drug prevention and rehabilitation programs, security improvements and enable security programs described above to dismantle crime. and international drug trafficking networks, because impunity is not only aggravating drug addiction is increasing the number of deaths year after year the culture in favor of drugs, in the United States more than 63,632 overdose deaths occur annually and the violence unleashed are seen in major cities. Therefore, it is essential to restore security to people and rehabilitate valuable citizens to generate sustainable development.

Recovering the security of Guayaquil, of Ecuador can be carried out, but to stop the attacks of war, terrorism and narco trafficking they must promote and demand international justicia for Russia, Cuba, Venezuela, Nicaragua and Bolivia that are evidenced as narco states and mafiosos, allied with organized crime and narco terrorism international, applying to them the corresponding justice of these crimes, of systematic commission of crimes against humanity and of State terrorism against their citizens, who are the true owners of the sovereignty of their country. Apply Resolution 1373 to stop support and financing of narco terrorism, applying special attention to the cryptocurrencies that these narco states promote to evade financial controls of their illicit activities and continue to fill their criminal coffers with scams.

Guayaquil must continuously consolidate its democracy, granting equal opportunities to its citizens for the continuous consolidation of human and environmental rights, which through the recommendations made in this program were indicated.



The execution of this program is essential because it provides integral solutions to effectively achieve sustainable development in Guayaquil, defeating poverty and hunger, empowering citizens to assume responsibility in the consolidation of their rights as duties and benefits to receive, while at the same time recovering and conserving ecosystems, develop a sustainable economy, with entrepreneurship, private property, labor rights in diversified sources of employment and improvements in the qualification of labor with cutting-edge and innovative biomimetic technologies that will lead Guayaquil to be one of the first carbon neutral cities and not only that, it will absorb CO2 emissions to contribute effectively to climate change, where its citizens have quality of life in a participatory democracy, with equal opportunities to exercise human and environmental rights without discrimination. Guayaquil has been a world example in developing a shrimp industry of innovation and sustainability, once again it will be a global example in being a smart city, carbon neutral, generating sustainable development, with security, justice and in a democracy that is consolidated with citizen responsibility.

### **Project Management and how to execute the Program:**

These objectives frame a general design layout, definition of technologies and necessary resources, to define them with greater specifics it is necessary to carry out different stages of engineering, which merits defining the leadership of the project, the way to organize and execute the engineering stages to make the infrastructures and management policies described above a reality for the canton of Guayaquil.

We hope that Ecuador will preserve its democracy and not fall into the clutches of the system of committing genocide of communism or socialism of the twenty-first century, which mixes Nazism with communism, because if democracy is not preserved, water and electricity as well as all human rights will go to the abyss of extermination, as it happens in Venezuela and humanity will be able to say goodbye to the jungles, forests and other natural resources of Ecuador, since in addition to committing genocide they commit ecocides, we invite you to [watch a video](#) that documents these denunciations of the SOS Orinoco Foundation.

If Ecuador retains its democracy it will be able to make this and many other programs for the sustainable development of the whole country, the region and the world, for which the NGO Arca Tierra will be ready to give non-profit advice, we need donations for its establishment and cover the expenses of its operational and administrative activities in the country and in the region through possible sponsors who will receive free counseling hours among other benefits, if any of the readers found this proposal interesting and wish to make donations or sponsor the NGO office in Guayaquil you can contact our Guayaquil public relations coordinator Carmen Martínez at phone / WhatsApp +593 98 687 0647.

Considering the structure of the current administration of Ecuador, the leadership of the project should be led by Vice President María Alejandra Muñoz Seminario together with the local authority, Mayor Cynthia Fernanda Viteri Jiménez, integrating all related ministries, national and foreign

companies related, considering especially the ECUADORIAN ASSOCIATION OF RENEWABLE ENERGIES AND ENERGY EFFICIENCY (AEEREE), a private non-profit entity, which brings together organizations and companies that are committed to the implementation and development of non-conventional renewable energies in Ecuador, organizations and civil associations national and international non-profit, to help communities in meeting the objectives of state and local climate and energy actions, national and international universities, national and international unions, indigenous ethnic authorities, neighborhood councils, youth associations, such as the Association of the International Baccalaureate, Associations of Artists and Botanists and any other public or private organization committed to sustainable development in democracy and respect for human rights without discrimination related to this project that considers the leaders of this development program.

To the national and local government we offer our non-profit advice, the NGO Arca Tierra will act as "Open Innovation Intermediary", that is, it will assist the vicepresident and mayor in the coordination of the parts of the public, private and civil sector for its execution in the different stages of the project, guiding in the design and how to execute it in its different stages for the use of the best current technologies, ways of improvement and innovation, organization and management of the project; for the provision of this non-profit advisory service, it will request the coverage of an annual budget so that the NGO can cover its administrative and operational expenses, to be able to dedicate 5 hours a day for 5 days a week to the advice of this program for a period of one year, a contract that can be renewed once completed s the activities planned to reach the stage of engineering in detail, the renovation and conditions will be at the discretion of both parties, the NGO Arca Tierra is not responsible if in this period of time those involved have not specified the last stage of engineering.

The activities to be carried out in the period of 3 months from March 2021 are:

- Meet the project execution committee, in conjunction with authorities designated by the vice president and mayor.
- Organize 6 work teams so that separately, but in a coordinated way they achieve the fulfillment of the 6 objectives.
- Strategic Planning, Detail layout, architectural and engineering designs in detail that are necessary of the 6 objectives of integral solutions of the Sustainable Development Program of Guayaquil, the objectives will be broken down into 6 mini programs to achieve each of the objectives of the program, from which the projects that are necessary for the fulfillment of each objective of the mini-program will be derived, so that it is possible to establish a schedule for the execution in stages of a well-designed strategic planning for the full achievement of the objectives of the Guayaquil Development Program.
- Economic analysis for the issuance of detailed budgets, considering the layout and the projects necessary for the achievement of each of the objectives of the Guayaquil Development Program. Determine the stages of each project, to execute them by different sections until it is possible to unite all the water roads and the parts of this program.
- Detail in a report the program in the best way according to designs and economic analysis, one or more options for the development of the mini programs, establish Gantt chart, the execution schedules of the mini programs and their corresponding projects for the

achievement of the 6 objectives of the program that together are oriented to the achievement of the goal: the sustainable development of Guayaquil.

- Guide in the elaboration of proposals for the financing of the projects, according to formats of national and international financing entities, for this class of projects there are many international funds that subsidize this kind of works for a sustainable development to which mostly only national and sometimes municipal government entities can access. In the same way, many of the solutions can be promoted with private investment, while subsidies are managed, private sector works can be promoted.
- Start of the first sections of the water infrastructure in critical areas of floods and / or drought.

Then we would continue with the following stages for the execution of the mini-programs and their corresponding projects with the advice of the NGO Arca Tierra only if Ecuador retains its democracy, because we consider it fundamental for sustainable development.

The way to organize for the execution of the program will be involving all the related sectors, so that the organization can function efficiently, we will develop an organizational chart to integrate in the direction the executing committee and its corresponding delegates that I designated the committee to be in charge (I / C Incharge) of the 6 working groups. An external authority, whether public or private, must designate at the time when resources are allocated, to carry out comptroller work, in this work of monitoring and disseminating the progress of the project journalists must be involved, so it is also important to integrate the association of journalists into the committee, in the section of guilds. While it is true that a country has control systems, journalists committed to the truth will open channels of information and monitoring of all stages of the project to maintain interest in its realization, they will report irregular situations, such as the diversion of resources or the delay in the fulfillment of objectives so that the failures are immediately corrected, as well as show the successes of the project, to keep the population involved taking responsibility until the full fulfillment of this and the subsequent stages of the program.

When the project is executed, other factors of society can be integrated, in which it is worth highlighting the inclusion of security, this must be efficient in the face of the acts of vandalism promoted by the communists of the Sao Paulo Forum, violence and urban terrorism against public and private property, acts of scorched earth war that are part of a These acts of war, terrorism and cyber aggression that already occurred in Ecuador, Colombia, Chile and other nations of the Americas in 2019 were driven by detected bots of criminal states that openly support the narco international terrorism and organized crime in Russia, China, Cuba and Venezuela, which caused billions in losses in infrastructure and SMEs, because another of their objectives is to weaken their economies, that is why security and justice are so necessary to arrest those who commit these criminal acts against the property of all Ecuadorians and punish those who promote and support these criminal acts, if justice victimizes vandalism and terrorism and criminalizes security officials who perform their duty under the law must also be investigated and brought to justice. The victimization of terrorism and the criminalization of victims is a global strategy driven by China and Russia, so that crime thrives and security recedes, to see more details of these facts, we invite you to read our article [Look Up at the Horsemen of the Apocalypse](#).

In the same way, we urge Ecuadorians to preserve their democracy, an impartial justice system, free and transparent elections, otherwise the same fate awaits them that is suffered in Venezuela, Cuba, Nicaragua, Bolivia, Afghanistan their sovereignty is in the hands of Russia, China and narco terrorists. , they will be directed by the threads of Russia and China, they will divide the territory and its resources until they devour them to the bones, and in bones even their children will leave them with high rates of malnutrition, hunger and poverty (holodomor), the territorial division will be governed through terrorist groups and organized crime , governorships and mayors will only be worthless figures, to disguise a "democracy", which would make this and any other sustainable development program impossible. Russia's urban terrorism cells have already destroyed Ecuador's infrastructure, if they allow them to lose their democracy and sovereignty they will lose everything just as we Venezuelans lost, we were the richest country in Latin America with more water and electricity and now without any basic service and the worst humanitarian crisis in the history of the hemisphere that had not suffered from a holodomor. So, for the continuity of this program and for the NGO Arca Tierra to function in Ecuador, it will be essential that democracy be preserved, because for the success of this and any other development program, democracy with citizen responsibility, security and justice are fundamental.

Considering a democratic scenario, with security and justice, it will be possible to consolidate human rights through a participatory democracy with citizen responsibility, integrating the neighborhood councils and indigenous communities, which would be the best informed to express the needs to be covered by this program, in the construction of each section of the water infrastructure. and the other works necessary for the achievement of the 6 objectives, local labor must be hired, from the municipality and parish where projects are executed, starting on the critical coasts of poverty and risks to natural disasters. The planning of the schedule of implementation of the program should include the improvement of the qualification of local labor, the development of innovations and the training of the use of new technologies, for the unemployed and the updating of professionals, integrate public and private colleges and technical schools for this, to industrial lyceums thus offering education and employment especially for young people who cannot access university education, also being participants in university scholarship programs, to outstanding students in the execution of the project, to offer them a career in the technologies related to this program, youth need hope for a better future although I can not afford a university degree, many advocate for free education, but the truth is that 100% free education is unviable, in my country Venezuela when it still had democracy, the oil income left enough dividends to finance it, however, there were limited quotas to enter and high academic performance was required, the student paid something symbolic, if after entering he did not meet the academic standards he was expelled so that another student who did want to study really entered, in short, it was not totally free, the student earned his quota by studying disciplinedly and paid a symbolic value compared to the expensive tuition fees of private universities. Venezuelan public universities were among the best universities in the world, for their dedicated students and highly qualified professors, who from time to time took a sabbatical to train in any country of the world they chose, great professionals turned out and you still see part of that heritage even though today public universities were destroyed to instruct the hateful ideology of communism. In Venezuela it was not enough to graduate, you had to be an excellent professional, have a lot of specialties and speak at least two languages if you wanted to get a good job. So, there is no free education, you have to earn it. What should promote this program is equal opportunities to be able to be a professional or technician and have the opportunity to continue growing professionally. As progress is made in the execution of this program, more and more young

people will be able to train, the most outstanding and disciplined would be hired, that is, they will be chosen by meritocracy.

In the formation of the committee and in hiring, it is essential to consider gender equity, both in salaries and in the appointment of management and management positions, to make women participate in the development of this project, in Ecuador the wage gap is 18.4% in 2021 according to the National Council for Equality and Development in Ecuador. This means that, on average, an Ecuadorian woman earns 18.4% less than what they pay a man to do the same work and there is also no equity in hiring in management positions, in view of this we demand that 70% of women be hired in management and 60% in the other hierarchical levels of the organization, since one of our operating policies is hiring aimed at balancing the balance towards gender equity.

While it is true that most of the contracts will be national labor, it is also important to designate the hiring of migrants from the municipality, duly legal in the country and help those who qualify for their prompt legalization and integration, migration is synonymous with economic, cultural and social growth, the most developed cities in the world are multicultural and multiracial, to close the door to migration and its integration is to close the door to development, in fact I am a Venezuelan migrant, rather a displaced by violence that is very different from being a migrant, but whatever the reasons for leaving their countries of origin, I can assure you that the majority who go to another country will be willing to work. I am very grateful to have been received in Chile, when communism had not yet begun to burn and attack this country, I will always thank you for having saved my life from the holodomor and the narco terrorist criminal state that keeps Venezuela kidnapped, in Chile I managed to register the NGO Arca Tierra to promote sustainable development at the level if I had not been allowed to join Chile legally, this project, these recommendations I would not have been able to make, I believe that I would not be alive to do so.

Multiracial cities move towards prosperity to the extent that human rights are respected without discrimination, that is, with equal opportunities to exercise human rights for all without discrimination based on race, creed, gender or sexual orientation, to close gaps the NGO Arca Tierra establishes in the management policies of its projects, that recruitment places with meritocracy must be guaranteed to minorities, according to the margins of discrimination and demographic index of minorities, orienting the balance of the balance towards equal rights in hiring without discrimination, as explained in gender equity. In Guayaquil there are several indigenous and Afro-Colombian ethnic groups that must be included, integration to close gaps and create bridges of cooperation with respect for rights and awareness campaigns for respect for human rights without discrimination.

The hiring of demobilized members of the NARCO TERRORIST GROUPS of FARC and ELN with bilateral agreements with Colombia must also be considered, if this nation manages to get rid of the claws of the vultures of communism, opportunities must be provided to those who have really left their weapons and crimes, who have already compensated their victims, or are integrated with reintegration programs that provide for compensation for damages. In the same way, the hiring of ex-convicts with parole or full release should be considered, who have demonstrated their desire to integrate into society as good citizens, the prison population grows day by day in Ecuador and in the world, if the ex-convicts are not integrated as citizens it is very likely that the crime integrates them so that they return to be criminals of similar or worse crimes, we do not justify or victimize criminals, we help them to take responsibility for their mistakes and to reintegrate into society as productive

citizens, for their selection we can work together with the justice system, with their rehabilitation and reintegration programs in society, also considering the expanders.

In conclusion, the Program Implementation Committee should have management policies that guarantee human and environmental rights without any discrimination, work together with other related national and international bodies, as well as seek joint projects with the Province of Guayas and other nearby provinces, in coordination with their Committees for Sustainable Development.

**Brief description of the work and previous experience of the NGO Arca Tierra, both functionally and geographically:** We are the NGO Arca Tierra, a Non-Governmental Non-Profit Organization, environmentalist and human rights activist, registered in Chile, of international scope, we educate, innovate and advise for the achievement of our mission, the solution to climate change, the mitigation of natural disasters and the expansion of humanity with quality of life through sustainable development with equal opportunities to exercise human rights without discrimination, in stable and participatory democracies that promote the assumption of human and environmental rights as duties and benefits to be exercised, so that citizens are responsible in their continuous consolidation, based on our [24 Strategic Plans](#).

Our experience begins in 2011 since our president and founder Patricia Rincón, a specialist in data evaluation and strategic planning, investigated the problems of climate change and population growth without planning, for which she evaluated the successful actions carried out in the world to solve these problems, improved them to provide comprehensive solutions and proposed technological innovations, administrative and management policies, in 24 Strategic Plans, exposed in his book 531 Beauties of the World II Edition in 2015, he gave it away and received very good recommendations, in fact, The History Channel la urged to produce a documentary to expose these solutions, but realized that to execute these strategic plans it was necessary to create an NGO, that is why it brought together professionals and artists to support it, so the NGO Arca Tierra was founded in 2016 in Venezuela, it was not formally registered since we do not recognize as an authority the venezuelan narco-terrorist criminal usurper; displaced by violence part of its board of directors migrated to Chile, where since January 2020 it is legally registered in the Commune of La Florida, Metropolitan Region and they are currently working on [Climate Plan 1](#), Our board of directors is made up of President Patricia Rincón (specialist in evaluation and strategic planning, with experience in project management), Treasurer Griselda Méndez (Economist, specialist in administration of contracts, projects and tenders.) and Secretary Tamara Greaves (Professional Chef, Technician in Administration, Tourism and Hospitality and in Public Relations), who make up its staff of Operations Coordinator, Administration Coordinator and Public Relations Coordinator and dozens of volunteers. In Guayaquil we have Carmen Martínez as Public Relations Coordinator of Ecuador, with whom we began the procedures to formally open an office in Guayaquil. This multidisciplinary team previously brings together more than 40 years of experience in project management, strategic planning, bid and budget management and contract administration for the private sector.

We have dedicated ourselves to open education to teach how to develop technological, administrative and political innovations in the management of our [Plan I Climate](#), through [online courses](#) and [educational materials](#), the National Geographic Society awarded an award to our

president and operations coordinator Patricia Rincón for the quality of our education and our innovative proposals to lay the foundations of a civilization capable of solving climate change, surviving natural disasters, recovering and conserving natural resources, with quality of life through sustainable development and equal rights, since the end of 2021 we begin the stage of execution of programs and projects so that the solutions taught are applied and made a reality. Another recognition that should be highlighted is that the Ministry of the Environment, Water and Ecological Transition of Ecuador notified us that due to our trajectory and influence on environmental issues they make us part of their stakeholders.

Our areas of focus are: 1) Teaching innovative solutions through open education. 2) Advise on how to apply solutions by formulating and organizing programs and projects for public and private institutions and for civil society aimed at reconciling solutions to their specific problems 3) Guide in the execution of solutions in projects, we have a range of programs and projects to create sustainable development and help solve climate change in the process See in: <https://en.ongarcatierra.org/proyectos-projects-ong-arca-tierra>. We have participated in important congresses and forums to present our innovative integral solutions, we have more than 7 partner organizations, more than 300 students and our publications on social networks reach more than 7,000 people weekly, they are great achievements in a short time, but we need to reach millions to help them understand and apply these solutions, help us spread them! If you want to know more visit our website [www.ongarcatierra.org](http://www.ongarcatierra.org)

If you are interested (or) in donating or sponsoring the office of the NGO Arca Tierra for its opening in Guayaquil contact our Coordinadora de Relaciones Públicas de Guayaquil Carmen Martínez at the phone / WhatsApp +59 3 98 687 0647 or contact us at the e-mail [info@ongarcatierra.org](mailto:info@ongarcatierra.org)

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