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Review

Outcomes of Ecuador's Rights of Nature for Nature's Sake

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Abstract

The rights of nature have been widely discussed at a philosophical level for a long time, but examples of its practical application are quite rare. Ecuador is the first country to incorporate this concept into its constitutional foundation and put the theory into practice. However, implementing entirely justifiable rights of nature is hindered by factors, such as economic considerations, legal interpretations, cultural norms, political will, and disproportionate perspectives of "the greater good". After getting opportunities for more than a decade to convert theoretical concepts into tangible results for nature, many doubts remain concerning the applied practicality of this ideology.

Keywords

Rights of nature; Ecuador; functional; applied; constitution; endangered/threatened species

1. Introduction

While most people either ignore the concept of nature´s rights or view it simply as an interesting academic exercise [1], one South American country has tested ways to apply the concept practically. On 20th October 2008, Ecuador became the first nation in the world [2] to formally and broadly recognize the rights of nature at a constitutional level [3]. While the consequences for conservation efforts within this megadiverse tropical country are potentially transcendental, by extension, global repercussions of the concept could prove to be existential for millions of species. In a world fraught with environmental challenges, such as the human population explosion, climate crisis, mass extinction, and ecosystem collapse, it is important to consider an innovative perspective for protecting the non-human inhabitants of Earth.

Given the far-reaching implications of such a big step, the legislative body is expected to treat the issue vaguely; however, an entire chapter of Ecuador's constitution entitled "Rights of Nature" was dedicated to the premise. In that chapter, it was stated that *Pacha Mama* (interpreted from the Kichwa language as "Mother Earth" or "nature") can be subjected to the same considerations under the law as humans. Many relevant points are reiterated in different sections to reflect the commitment to overcome an era of self-interested abuse by foreign oil companies, which occurred due to decades of corruption and poorly applied environmental standards. For example, the Preamble stated a goal of "living in harmony with nature," and Chapter 1 (Art. 3.7 of the Ecuadorian Constitution) defined the protection of the country´s natural heritage as a "primordial responsibility". Other parts of the constitution signal "the right of the [human] population to live in a healthy and ecologically balanced environment" (Ch. 2, Sect. 2, Art. 14) and that "nature has the right to be respected integrally, including the maintenance and regeneration of life cycles, structure, function, and evolutionary processes" (Ch. 4, Art. 71). In that same article, "every person, community, people, or nationality" was invited to "demand that the public authority enforce the rights of nature". The constitution intends to respect the relationship between humankind and nature based on the concept of *sumak kawsay* ("a better life" or "a full life" in Kichwa), which can only be attained by being conscientious, active members of an inclusive community that integrates nature in its fully functioning condition.

Biologists and conservationists have interpreted this collective discourse to mean that nature should be protected for nature's sake. As a corollary (and as an incentive for participation), humans might expect to derive direct and indirect benefits. Many scholars have investigated the influence of the rights of nature on sustainable development [4-11], but broader implications for sustainable development are beyond the scope of our study. Since 2015, when the United Nations established a series of Sustainable Development Goals (SDGs) to be achieved by 2030 [12-14], attention has been largely focused on ways to maximize benefits to humans [15]. Although we are inevitably dependent on nature for maintaining a sustainable relationship with our surroundings and resources, only two of the 17 SDGs (#14, "Life below water" and #15, "Life on land") directly assess material parameters in nature. Many of the applied strategies have been less effective than expected, and most quantifiable indicators have been disappointing on the global scale [16-19]. Although Ecuador has experienced an increase of about 6% in the SDG indicators since establishing its rights of nature, the change is not significantly different from the trends seen across the region and the globe for the same period [20]. Venezuela and Bolivia have also incorporated some rights

of nature into their legal systems, but they both rank substantially lower [18] and, thus, do not show any correlations between the SDG indices and improvements for nature or their citizens.

Accepting that nature and living beings deserve to exist and acknowledging that our existence and well-being rely heavily on nature and ecosystem services, additional information concerning the natural systems of Ecuador might be required to fully grasp the pertinence of our arguments. More than 9% of all known terrestrial vertebrates are found here within only 0.2% of the total land area on Earth (and the figures are comparatively striking for invertebrate and plant taxa). Ecuador has the greatest concentration of biodiversity of all countries [21]. Specifically, the Yasuní Biosphere Reserve of eastern provinces, coinciding with the Napo Pleistocene Refugium, includes more species than any other area of a similar size [22]. Considering the rich biodiversity, Ecuador should recognize the great opportunity associated with all this genetic diversity, as well as protect and maintain its natural resources [23]. We need to maximize our efforts to conserve biodiversity to protect the planet, as well as our future. Since Ecuador is a relatively small Andean-Amazonian country whose economy heavily depends on the exploitation of crude oil, metal ores, and marine resources (wild-caught and farm-raised), as well as extensive use of land for traditional tropical agriculture (bananas, cut flowers, coffee, cacao, etc.) [24], protecting wildlife using any strategy, including the rights of nature, is challenging.

Upon close examination of the draft of the constitution concerning nature in 2008, most environmentalists were reservedly optimistic and predicted many lawsuits against various industries for chronic violations, as well as against the government for its inaction against these industries. Some industrialists, developers, and politicians were preparing for legal actions against them as these laws were being passed.

Immediately upon ratification, the country gained nearly mythological status among the environmentally aware. Ecuador's president, Rafael Correa (2007–2017), who led the constitutional reform, was labeled as a visionary for the planet. Additionally, he proposed to abandon billions of dollars in underground crude oil (the Yasuní-ITT Initiative) to protect biodiverse tracts of the Amazon rainforest [25-27] and garnered further support worldwide [28]. Briefly, he was even being considered to be awarded the Nobel Peace Prize, suggesting that similar legislation should be implemented on a global scale. However, only a few countries have adopted fragmented bits of the concept of nature's rights in their judicial systems; most countries are extremely reluctant to face potential legal and economic repercussions.

2. Methods

Humans cannot have a bright future if the most critical issues of life are not addressed [4, 29, 30]. Because Ecuador ranks among the countries with the highest number of species threatened or at risk of extinction [31-34], our goal here was to determine the meaning of the rights of nature for organisms and ecosystems.

Several examples of various events in Ecuador associated with minimizing the problems in nature are discussed in this study. We investigated whether recognizing the rights of nature has already produced positive outcomes in nature or may produce a noticeable difference for ecosystems and species.

3. Results and Discussion: From Rhetoric to Practice

While implementing new laws, much time is spent on experimentation and assessing unique opportunities to set precedents while scrutinizing the boundary between philosophical idealism and economic practicality. After a decade of writing and adjusting laws designed to convert constitutional verbiage into functional applications, concerns regarding feasibility have arisen around the efficacy of related norms. Although sorting out the purpose of the law versus its application is challenging, in its first decade, the rights of nature proposed by Ecuador might have been more of a marketing scheme for international image than a functional conservation measure. This should not be shocking; all governmental regimes strategically choose focal areas for policy application while ignoring other issues for various reasons, such as concentrating power and maintaining popularity.

Although financial well-being might be associated with greater consumerism and exploitation of natural resources [35], stronger economies allow greater application of formal conservation measures, while the lack of liquid assets at the national level can deeply distract from even the most justifiable and fervent of ideals [36]. The notable exception regarding the relationship between wealth and directed management is that some indigenous groups have been moderately successful [8, 37] in protecting their lands on a local to regional scale without access to huge funding sources, primarily by excluding outside interests. As a broad example of the inability of developing nations to protect nature at a basic level, we only need to consider the lack of sewage treatment and proper solid waste management in most countries [38] to understand the link between money and realized protection or recovery of nature. Interestingly, in our example, a moderate economic boom, partially fueled by historically high international oil prices, followed the approval of nature's rights as part of Ecuador's constitution. The timing provided excellent opportunities for the government to act on these ideological footings, but substantive outcomes have been relatively few and often contested.

Investigation of different cases selected from across all four geographical regions of Ecuador (Sierra, Coast, Amazon, and Galapagos), as well as various cultural and jurisdictional settings, might help to understand the gaps in constitutional/legal jargon, good intentions, a decade of experience, and realistic projections.

3.1 Example 1. Complications for Useful Applications

Instead of the predicted initial inundation of related lawsuits, only a few complaints were filed during the Correa administration. In the early years, only one case (involving physical impacts on the Rio Vilcabamba due to adjacent road construction in the Province of Loja) resulted in an adjudicated decision in favor of nature (in March 2011) [39]. An optimistic interpretation is that nature can win in a court of law, but the bigger lesson was that it might not be worthwhile to go through the trouble of hiring attorneys, developing arguments, accumulating evidence, and presenting scientific data if the probability of success is so low for similar litigation. Although the decision made in 2011 recognized the rights of nature related to the impacts of 2009, which originally provoked this litigation, legal procedures continued in 2018 due to inadequate mitigation *in situ* [40].

3.2 Example 2. Poorly Defined Role of The Ministry of Environment

In 2018, after the national administration changed, the overall situation for nature improved slightly. Legal action was taken against the Ministry of Environment of Ecuador for approving a $1.2 billion project to construct deep-water port facilities in Posorja (in the outskirts of Guayaquil, a bustling coastal city of 2 million inhabitants) [41], asserting that the governmental agency had acted with absolutely "minimal diligence in the protection of the rights of nature". The demand was to revoke the license of the agency, conduct a more thorough independent environmental impact study, and suspend construction in the meantime [42]. Unfortunately, the case was dismissed in February 2019, favoring the Dubai-based company called DP World. The same government that composed and ratified the rights of nature, including the Ministry of Environment, played every role possible in this case (from savior to villain) at different times.

3.3 Example 3. Technicalities of a Win

Some cause for hope, however, arose from a case in July 2019 related to the right of the indigenous peoples to have a traditional lifestyle in their ancestral Amazonian territories. Around the world, indigenous rights have been constantly sacrificed for hundreds of years under the pretext of the "greater good" [8]. In this case, during the first phase of gaining legal access to tribal lands, the oil industry improperly managed the requirement of "previous informed consent", thus violating the basic human rights of the Waorani nation [43]. Although an appeal was made by the Ministry of Environment, the decision favored the Waorani people.

3.4 Example 4. A Win is Still a Win

Ecuador has 21 species of primates, which are under the pressure of habitat loss, and some are also affected by hunting and live trafficking [44]. Historically, western Ecuador has faced extensive deforestation and fragmentation [45]. Two of the four primate species inhabiting this region are critically endangered [46] and have been included in the list of the 25 most endangered primate species in the world. In an inter-institutional effort to improve the overall status of Ecuadorian primates, a national action plan for their conservation was launched and officially approved by the Ecuadorian Ministry of the Environment in 2018 [46]. The rights of nature were the foundation of the legal framework of the plan.

Since the launch of this plan, there have been some legal attempts to apply the rights of nature, specifically Article 73, which concerns precautionary measures to prevent species extinction, by stopping high-impact extractive activities in areas of western Ecuador inhabited by the two critically endangered primates. The case of Los Cedros is particularly relevant. It is a cloud forest reserve in the conflicted area inhabited by one of the few remaining populations of *Ateles fusciceps*, the brown-headed spider monkey. In June 2019, the provincial court ruled in favor of protecting this reserve against mining activities. The arguments used by the people from Los Cedros to support their complaint included violations of the rights of nature that could increase extinction risks for several species that occur in the area, including this critically endangered primate [47]. The final legal decision made by the court, however, (and similar to the previously mentioned Waorani case) was based on the violation of the rights of local communities to be properly informed and consulted before the development of mining activities. In July 2020, the Constitutional Court decided to re-

evaluate the case. After more than a year of investigation and deliberation, in a 119-page "definitive" decision [48] in favor of nature, thorough discussion and counterpoints were made public by a team of six judges. Their decision emphasized that violations were made well beyond the boundaries of nature's rights. They stated that people's rights to access water and a healthy environment had also been breached. Their decision expressed scientifically founded principles and correctly placed humans within the ecological functioning of the planet rather than giving them a "traditional" position of domain over all of nature. Surprisingly, even before activities had advanced to the point of causing serious quantifiable damages, the potential of facing adversities [49, 50] was recognized as a sufficient cause given the circumstances, citing "*in dubio, pro natura*" (Latin; roughly translated to "when in doubt, take nature's side"). As recently stated [51], this ruling is important not only for this particular case and others pending in Ecuador but also for the entire planet.

3.5 Example 5. Does Water Belong to Nature?

Cases involving water adequately illustrate conflicts of interest regarding environmental issues. In the Andes of Ecuador and Colombia, montane ecosystems, especially páramo and cloud forests, abundantly capture and store water, which is used for human consumption, irrigation, and energy generation, and thus, these forests are critical for millions of people. The use of water in this zone is not sustainable, and the integrity or the rights of these watersheds or ecosystems are violated. The constitution grants all citizens the right to reliable and clean water, which has led to unrestricted water consumption, eliminating some streams and their basic ecological function. Major demands for the availability of water are not new, but growth in extractive industries such as strip mining has increased the consumption of water for the processing of ores. Due to the expansion of copper and gold operations, large areas of land have been exploited in the southern provinces and might soon obliterate the physical matrix of these highland ecosystems at the regional scale. Tailings and wastewater with high silt loads and chemical contaminants are released downstream. The outcomes of court cases seem to depend more on community organization and solidarity than on the letter of the law [52].

3.6 Example 6. Nature Takes Matters into Her Own Hands

The development of a controversial $2.25 billion hydroelectric project, Coca-Codo Sinclair, on the eastern Andean slopes under the Correa government ignored all concerns for nature, opposing the ideals proposed in the newly formed constitution [53]. The project was located in the Gran Sumaco Biosphere Reserve, which includes some of the most species-rich cloud forests. To feed the 1500-MW facility inaugurated in 2016, water from the upper reaches of the Rio Coca was diverted almost completely, effectively eliminating the 131-m-high San Rafael Falls, the largest and most iconic cascade in the country. From early on, issues of structural integrity plagued the concrete installations [54] relegating generation to about half of the projected capacity. Catastrophic erosive forces were unleashed upstream in the capture basin that destroyed massive tracts of landscape [55]. Sections of roadways and other infrastructure, including the country's largest oil pipeline were ripped apart by torrential pulses requiring several costly operations and replacements. Many hectares of cloud forest were eradicated, and downstream areas were coated with black crude [55]; all this was the result of improperly evaluated development goals in a highly vulnerable area. In this

case, ongoing geological processes that were triggered over a decade ago continue to cause problems.

3.7 Example 7. Even in Galapagos, Application is Complicated

The Galapagos Islands of Ecuador have been protecting nature for a long time. They have also served as a beacon of conservation awareness for the entire planet. Examples of these roles include the establishment of the Galapagos Marine Reserve (GMR) in 1998, an area of 50,000 square miles around the archipelago. In August 2017 a Chinese vessel was intercepted within the GMR transporting 300 tons of fish, including over 6,000 illegal sharks [56-58]. In May 2019, the Ecuadorian Integral Organic Penal Code (COIP in Spanish) was applied, resulting in a fine of US $6.1 million for the ship's owners to be paid to the Galapagos National Park for crimes against nature, plus three years of imprisonment for the ship's officers (four individuals) and one year for the crew (16 members) [59]. This legal action should have set a precedent for all fishing vessels around the GMR, but it highlighted the magnitude of a serious problem for the Galapagos. Satellite monitoring (SRT) by the Ecuadorian Navy, as well as NGOs [60], has routinely detected hundreds of foreign fishing vessels sitting just outside the Economic Exclusion Zone (EEZ) and large numbers of domestic vessels located just outside the reserve boundary [59,61]. One might assume that these national vessels are all fishing intensively right up to the limits of the designated reserve, but according to the Galapagos National Park director, 136 Ecuadorian vessels were intercepted within the confines of the GMR between 2018 and 2020 [62]. One strategy to exploit off-limits fishery resources "legally" is by deploying drifting Fish Aggregation Devices (FADs). These artificial platforms are routinely released by purse seiners into currents entering the GMR where they attract communities of large fish species that can be harvested upon emerging into the open ocean on the opposite side of the archipelago. Another concern is that of longlining by the Galapagos artisanal fleet. Although longlines are not permitted inside the reserve, they are used extensively, and pressure is constantly being applied to change their legal status [63]. At least five experimental fisheries have been authorized over the years, and unacceptable levels of by-catch were found in all cases [64]. Furthermore, the mainland-based longline fleet targeting large pelagic species also operates around the borders of the reserve. This fleet consists of mother ships that tow up to 15 smaller fiberglass skiffs each. While the larger tending vessels are required to use automated tracking devices, the skiffs did not need to have these devices until recently, and this encouraged a largely unmonitored "ghost fleet" that could fish within the reserve without detection or legal repercussions. Over 200,000 sharks are caught by this fleet each year [65, 66]. This situation probably arose due to lax regulations for Ecuadorian fishermen, which allowed an artisanal fleet to commercialize sharks resulting from "incidental" by-catch, an environmental loophole established as a political pacification under the Correa regime [67] and maintained by the current administration. The approval of the new fisheries law in early 2020 was disappointing in that it did not try to rectify the by-catch loophole. The seizure of 26 tons of shark fins of Ecuadorian provenance in Hong Kong a few weeks later sparked a national outcry. In response, on 1 June 2020, the Vice Minister for Fisheries announced a comprehensive package of measures to address the issue of shark fishing, including an immediate ban on the sale and export of products from critically endangered oceanic whitetip and scalloped hammerhead sharks (as well as three other hammerhead species), the creation of an inter-institutional technical committee to advise the National Plan of Action for

Sharks (including the development of Non-Detrimental Findings for CITES-listed species), hiring and training of 75 fishery inspectors, and a campaign to reduce internal consumption of shark products and incentivize responsible fishing practices. However, none of these proposals were realized, and hammerheads continue to be caught illegally [58, 62].

Organized crime, which is often associated with multiple illegal activities, further complicates the problems in Galapagos [68]. These crimes include illicit drug trade, weapons trade, human trafficking, and international fuel contraband, as well as illegal wildlife trade. Galapagos is a strategic connection point along the northbound drug route, where cocaine leaving the coast of Ecuador reaches the islands in four days. Once there, fishermen team up with smugglers by providing fuel or helping with the distribution of illegal cargo to other fleets on their way to Central and North America disguised as fishing boats [66]. The illegal novelty pet trade was responsible for the disappearance of 123 endemic giant tortoise hatchlings from a breeding center in 2018 [69], as well as the removal of 84 tortoises and five land iguanas in June 2022 [70]. These illicit activities could involve the same logistics and crime rings. The Ecuadorian government might permit the US Air Force to establish a base on the island of San Cristobal specifically to monitor drug trafficking. The agreement to allow the USAF to use this island as a military base is jarring. After decades of similar agreements between the two nations, the previous administration, under Rafael Correa, expelled all US military and DEA contingents from their coastal base of operations in the fishing capital of Manta [71]. This controversial decision might indirectly improve the protection of nature by reducing organized crimes and suppressing drug trafficking.

The consideration/acceptance of the presence of the US military in the archipelago despite nationalist sentiments reflects the ineffectiveness of the application of nature's rights even for iconic species due to inefficient law enforcement and the lack of monitoring power in Ecuador. The overall effort might continue to face the challenge of controlling thousands of square miles of one of the most celebrated marine reserves. Under normal circumstances, dozens of tour operations constantly ply the waters of the GMR every day, transporting thousands of passengers to various sites scattered across the archipelago, thereby providing a default system of vigilance even in remote and isolated areas. During the COVID-19 pandemic, however, tourism and this monitoring strategy stopped completely, resulting in a period of exceptional vulnerability for marine resources, as well as adjacent terrestrial ecosystems. Due to the loss of income from tourism, local economic impacts made tens of thousands of Galapagos residents desperate to earn, driving them to opportunistically sell more natural resources. Additionally, the government cut an already insufficient budget for protected areas by 33% [72, 73].

4. Summary

A review of these examples from recent Ecuadorian archives provides a panoramic perspective of a complicated situation. Upon examination of the individual cases, many overlapping features appear in varying degrees, which indicates that the management of specific aspects needs to be focused on for full functionality. However, many of these challenges might be viewed as stereotypical and predictable for a developing tropical country, but appropriate recognition may provide an opportunity for improvement. Weak institutions and financial constraints imply limited possibilities for monitoring and vigilance, delayed responses, underfunded enforcement, inconsistent application of regulations, uncertain prosecution, and widespread exploitation of

administrative and jurisdictional loopholes. This often results in prolonged and inconsequential legal proceedings. Additionally, these factors are exacerbated by gaps in environmental education, poor valuation of nature by the citizens, and generalized public apathy toward environmental issues compared to socio-economic challenges, which are perceived as more urgent (inflation, unemployment, crime/violence, substance abuse, etc.). Corruption and vulnerability to corruption worsen the situation.

5. Conclusions

The fact that the issues regarding environmental concern have persisted over the years since 2008 when the rights of nature were formally incorporated into the Constitution of Ecuador, is a major concern. Ecuador's position at the top of the list of countries with the greatest number of endangered species has not improved [31-34], and the IUCN Red List status of none of the species in Ecuador has been upgraded. Additionally, the condition of protected areas has deteriorated [74] and crude oil extraction continues even in reserves that house extreme biodiversity [75]; one governmental administration after another seeks to augment petroleum production to improve the nation's economy [76-78], mostly disregarding legal obligation to the rights of nature.

For any society that aims to balance its desires to exploit various ecosystem services with the rights of nature, the disparity between words and deeds quickly becomes evident. The concept of rights for nature represents great possibilities for advances in the field of conservation, within Ecuador and beyond. For reasoned functionality, however, we must understand that the fundamental rationale to protect nature and natural resources, as well as, to maintain ecosystem services for perpetuity is not altruism but outright selfishness. Humans think of quickly capturing every bit of land and consuming every resource available as the greatest expression of selfishness, but this perspective confines our perception of selfishness to the moment and individuals. Truly selfish motives require the protection of nature and all its species (i.e., genetic diversity) for continued exploitation in the long term. It is the only viable strategy to continue to thrive or even exist, and we must acknowledge that humankind depends entirely on resources and external forces for survival. Mathematically, truly sustainable use of resources, including space, cannot be related to sustained economic or population growth [13, 79]. Without incorporating the contextual aspects of the recognition of nature's rights into the psyche of future generations, the concept cannot have significant effects.

The conflict between the declaration of the rights of nature and our strong dependence on the exploitation of its resources will most often resolve in favor of the short-term needs of expanding human populations and economies, especially in financially poor countries. Given such conditions, certain species might practically be considered to be extremely valuable to enjoy protection through philosophical rights, even those explicitly enumerated in legal documents. Current and ongoing global economic problems resulting from the COVID-19 pandemic will adversely affect developing countries more than their wealthy neighbors [80, 81], and the perceived luxury of conservation will present even more serious challenges for the rights of nature in Ecuador, where GDP depends heavily on oil, agriculture, and tourism. Regarding this, the development of supporting jurisprudence and the accumulation of foundational precedence are directly related to applying the rights of nature, and thus, are extremely important. Although legislation is a slow process and often lags behind the Popular Will, there is evidence of progress ("A win is still a win", Example 4 above)

and reason for optimism. Chances for successful application of the rights of nature within Ecuador could ultimately depend on their adoption in other countries. International replication would provide much needed validation of the concept and could strongly enhance the probability of producing positive outcomes for nature everywhere. Also, similar lessons from the implementation of Indigenous Peoples' Rights [82] can help in these efforts.

Human numbers and needs have mostly relegated nature to the remotest corners of the world. A declaration of rights for nature might be a moral imperative, which may be discussed and adopted by our culture and others. However, it may lack effective short-term applications if not accompanied by an inclusive and substantive discussion about the limits to the growth and development of society. There must also be room for altruism and biocentrism as drivers of change. Making decisions to conserve biodiversity can be based on the belief that other living beings have equal rights to live. However, the urgent need for resource exploitation in a world with limited tangible alternatives might hinder the applicability of legally recognizing the rights of nature in the short term. Early perceptions that the rights-of-nature philosophy might provide a panacea for conservation-related concerns were probably too optimistic, but the concept is expected to constantly mature, and thus, it has great potential to overcome many of the challenges presented here for the benefit of nature and society.

Author Contributions

Kelly Swing, original idea, draft composition, revision; Jaime Chaves, original idea, editing; Stella de la Torre, revision; Luis Sempértegui, draft composition; Alex Hearn, revision; Andrea Encalada, revision; Esteban Suárez, revision, Gonzalo Rivas; original idea, editing.

Competing Interests

The authors have declared that no competing interests exist.

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