General Development Trends in Ecuador: Political and Economic Influences on Conservation

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Ecuador is a small country located on the northwest corner of the South American continent. Intertwined within its boundaries abounds a wondrous array of diversity. Thee diverse regions encompass the geography of the land: the Costa, the Sierra, and the Oriente. The Costa region borders the Pacific Ocean and consists of lowlands, mountains, and rolling hills dividing the river valleys. The Sierra is composed of two major chains of the Andes: the Cordillera Oriental and the Cordillera Occidental. Traditionally untouched, the Oriente remained relatively isolated until the 1970's when the government began promoting the colonization of the rain forest frontier. Today, after rapid colonization and the oil reserve exploitations of 1967, the jungles of the Oriente are suffering and indigenous cultures are pushed further into the forests.

Over the years, the government and military have had a particularly influential role in the construction of human development. Constant political unrest and a multitude of political leaders lead to a free-for-all in terms of social growth and economic development. It was not until the importance of tropical forests was realized that a more sustainable approach to development was employed. Eco-tourism and other new approaches found in wildlife reserves are just some examples of integrated approaches that need to be implemented across the globe in order to maintain the biodiversity of this planet. The goal of this paper is to examine the effects of Ecuadorian governmental policy on the environment, as well as to the forms of growth and development in Ecuador.

Influential Government and Military Forces

Following the Second World War, Ecuador and much of Latin America was faced with an economic crisis (Isaacs 1993). Import substitution policies, bringing consumer goods into a new area to be produced instead of being imported, were adopted by the government in attempts to fulfill the heightened

import desires of the people. Due to the overvalued exchange rate, the economic status of the country worsened. The population of Ecuador, in the 1950's, tipped slightly above 3 million and has a social structure that subjected 52% of the population to extreme poverty and exploitation; European and North American ideals began to overtake traditional, native values (Hurtado 1985).

Between 1963 and 1966 military rule pursued development through industrial measures. When import substitution policies began to reveal signs of exhaustion, the demand for foreign banana imports disintegrated. Impairment of the government ensued with a decline in the ability to purchase the imported goods of Ecuadorian industrialization. In such a position, the government placed hopes on major oil exports to alleviate economic stresses. Projections from the Texaco-Gulf Consortium estimated 250,000 barrels of crude oil flowing through a pipeline constructed in the eastern jungles of Ecuador; petroleum exports valued at US$200 million, in 1973, assured impending recuperation (Isaacs 1993). Yet, with developmental trends shifting toward oil exploration, new forms of technological dependency arose. Requirements necessary to extract oil stipulated increased foreign technology imports. The prevailing force of foreign corporation control soon penetrated agriculture, banking, commerce, and industry in Ecuador. North American companies, such as Del Monte and Van Camp controlled half of the tuna fleet in Ecuador , as well as 50% of all of the production and processing of the harvested tuna fish (Hurtado 1985). As a whole, industrial development came to be controlled by foreign investment.

Conflicts between the two main political parties, Conservatives and the Liberals, generated political instability. Disagreement between the parties exploded during times of political campaigning and economic crises. Political conflict advocated the exchange of leadership on a multitude occasions. For instance, Jose Maris Velasco Ibarra was elected to office on five different occasions between 1934 and 1972 (Isaaca 1993). A depleted foreign reserve and a serve budget deficit gave no opportunity for stabilization or reform, while Congress and Velasco engaged viewpoints in opposition. In 1968, Velasco's rule was beleaguered with slow industrial growth and stagnant export revenue (Isaacs 1993). Congress constantly blocked Velasco's attempts to add tariffs to imports, as it would adversely affect the industrial import and interests of the elites. Velasco plotted to disband Congress and eventually, ruled by decree. Velasco turned out to be no such savior, as portrayed by popular opinion. He was in fact, ineffective and in many events his corrupt contributions led to further political and economic decline. Velasco steered

away from reform but struggled to obtain political stabilization. Political institutions, controlled by the traditional Ecuadorian oligarchy kept efforts of social and economic reform at an impasse. Velasco had established himself as a dictator with no attempts of compliance towards congress to reach any sort of compromise. The prospect of another inadequate leader approached with the elections of 1972. Assad Bucaram, the director of *Concentracion de Fuerzas Populares,* a rival populist movement founded in the 1940's, was expected to win the June elections of 1972 (Isaacs 1993). Possibilities for growth and development would again dissipate, due to the projected disorganization of the administration. At this point, the military was hesitant to allow Bucaram into office and decided to intervene.

Corporate interests, civilian support, and institutional concerns all impelled military intervention. Opportunities tied to economic recovery also resulted in the intervention of the military. The role of the military came to be the consolidation of political power in the middle class, rather than the protection of middle class interests (Isaacs 1993). If the middle class is consolidated then the thought was that middle class interests would resemble those of the elites. The military declared the establishment of institutional foundations dedicated to the reform of socio-economic order. Armed forces proclaimed the commitment to bridge regional and class inequalities and affirm national sovereignty, but the enactment was simply a call to arms (Isaacs 1993).

In essence, the political and economical problems of the past directed the Ecuadorian economy toward foreign dependencies. Importation became the primary source of goods consumed by the people. The exportation of raw materials to developed countries offered little reimbursement to the Ecuadorian financial standing due to severely reduced price of exported goods. Other dependencies, such as technological machinery, developed with the drive to industrialize Ecuador. The dependant nature of Ecuador then stimulated political instability. The inability of Congress and elected officials to compromise, along with increased corporate interests, blocked any sort of reform. This allowed foreign corporations to infiltrate Ecuador and denationalize the economic political base.

With no guidance or organization elected officials attain the resources necessary for survival. With such a disorderly socio-economic status, no measures were facilitated to construct any sustainable form of growth. Anything people could find to get their hands on was used to endure. Raw materials and resources were plucked out of the tropical rainforests at alarming rates in or-

der to alleviate financial stresses placed upon the economy. This led to the deterioration of the forests. Major concern arose with the depletion of resources and the rapid development of barren landscapes; the importance of the Ecuadorian forests was beginning to be realized.

Importance of Forests

Tropical forests are an intricate part of the earth's ecosystems. Forests play a vital role in the essential processes that are needed in order to maintain the needs of every organism. The importance of these forests can be viewed through a number of diverse means, including: biodiversity, landscape and water control, climate, and rural livelihood. Above all, biodiversity has the functioning ability to provide for a number of different organisms. The abundance of biological diversity creates an area of harmonious co-existence for every living organism. Tropical rainforest areas only account for a mere 7% of the total earth's surface, yet it is comprised of 50% of the world's known flora and fauna species (Vandermeer & Perfecto 1995). However, the potential of this diversity still remains untapped. New discoveries and undocumented species are continually being revealed. One such project in the Andean cloud forests of Maquipucuna, Ecuador has attempted to construct a checklist of the vascular plant specimens located throughout the region (Webster & Rhode 2001).

The Bosque Protector Maquipucuna, a private biological reserve founded in 1988, lies on the western slopes of the Andean mountain range, encompassing nearly 4,500 hectares of mountainous terrain. Fortunately, much of the disturbance to the forest has occurred below 1500 m. of elevation, while the remaining 1300 m. of elevation can still be found in pristine form. The checklist was created in hope to increase the knowledge base of Andean plants. Drawing upon the ability to present the magnitude of endangered, recently discovered, and still unknown species; Webster and Rhode (2001) intend to promote ecological studies and conservation efforts to preserve the richness of the Ecuadorian cloud forest and develop one of the world's most extraordinary reserves of plant diversity. The forests in this region are predominately evergreen rainforests.

However, major disturbance below 1500 m. has dramatically transformed the ecology of the land. Human pressures have led to the conversion of these forests for centuries. Disturbances dating back to the 16th century have been recorded through the construction of pre-Incan settlements of the Yumbo peoples near Nanegal and the construction of the "Inca Trail," which crosses the Maquipucuna reserve; 18th century disturbances indicate deforestation

along the Río Alambi (Webster & Rhode 2001). Recent human invasion has led to the conversion of forested areas to pasture lands and fields to promote the growth of bananas, manioc, naranjilla, and sugar cane. This diversion to natural growth has stunted the growth of many species including those particularly endemic to the region. Studies conducted by H. Balslev in 1988 suggest that the western slopes of the Ecuadorian Andes contain the greatest quantity of species and the highest percentages of endemism in vascular flora alone (Webster & Rhode 2001).

The location of the Maquipucuna Cloud Forests resides 40 km northwest of Quito, Ecuador. With the proximity of the forests remaining extremely close to the residence of humans, pressures and disturbances still continue as possible threats to the land. Increasing road systems have led to increased disturbances by granting access of more people to otherwise inaccessible areas. Local communities are in dire need to environmental education programs in order to maintain the cloud forests of Maquipucuna. Preservation programs including the ecological and socioeconomic assessments of the area need to be implemented in order to ensure the persistence of biodiversity. A plethora of opportunities dwell within tropical forests. Decreasing dependence on exhausted plant types by locating alternates is a viable option. Other benefits arise in possible medical advancements with discoveries of unknown botanicals.

For years tropical forests have been exploited for the raw materials and other naturally occurring products. Early English obsessions with spices, teas, sugar, bananas, coffee, tropical hardwoods, and chocolate became a major economic push to drive into the forests and extract these products (Vandermeer & Perfecto 1995). Eventually, these desires lead to the clearing of forests. This detrimental effect led to the destabilization of the landscape. The inter-working mesh of tree roots prevents soil erosion and reduces sedimentation, thereby protecting rivers, coastlines, and fisheries by controlling the chemistry of the water (Salim & Ullsten 1999). Soil erosion has become a large concern throughout developing countries. With the increased rate of agricultural development many waterways are consumed by sediment. The nutrients found in soils (nitrogen, phosphorus, potassium, calcium, magnesium, and iron) are leaching into waterways, polluting the water, and depleting the land. The absent trees no longer absorb and store nutrients the need recycling back into the ecosystem. Desertification and natural disasters, such as mudslides and floods, now wreak havoc across the land. A problem relating to soil erosion has been occurring in the Río Ambato drainage system, in the Ecuadorian Sierra. The Ambato River, a tributary of the Pastaza River, is

located in the Interandean Valley of the central Ecuadorian Andes. The city of Ambato has a population of about 100,000 and is a chief transportation and market center of the Interandean Valley; only 1% of the region is urban, 31% is cultivated, 65% is uncultivated and used for grazing sheep, and the remaining 3% is ice or barren rock (Harden 1988). The uncultivated grazing area appears to be the main contributor to the erosion factors of the area. The other contributor to high erosion rates is the steep slopes of the region. Unterraced agricultural practices on these slopes compound the rate of erosion. With the soils retreating into the rivers, little soil is left for crop production. Thousands of people may soon be faced with food shortages.

The effect that forests have on climate is another important issue. Although quite complex and not entirely understood, forests have been noted to cause precipitation and ensure constant climates (Salim & Ullsten 1999). The removal of trees reduced evapo-transpiration, directly affecting the amount of water and energy transferred into the atmosphere. Global warming has become a concern that increases with the removal of every tree. Not only do these trees shade the surface of the earth but also consume carbon dioxide, which traps heat in the atmosphere. With the warming of the globe an array of cataclysmic events have opportunity to transpire. Glaciers may begin melting: causing increased water levels, this may lead to the destruction of coastal towns.

Loss of biodiversity will ensue with the rapid change of ecosystems caused by erratic weather conditions. Timing of birthing seasons and pollination would be altered and increasing temperatures could enhance the infiltration of parasitic organisms and disease. Rural livelihoods also depend heavily on forest survival. Forests give hundreds of millions of people the independence and resources need for survival. Wood, vines, fuel, fruits, nuts, and herbal remedies can all be extracted from the forests. Opportunities for the poor and uneducated can also be found in the forests. Small-scale processing and trading activities that require little skill and finance can act as a buffer against poverty (Salim & Ullsten 1999).

The destruction of tropical forests can promote a number of events that are both undesirable and detrimental to the well-being of the planet and every organism that resides within. By protecting out forests we have the ability to promote biological diversity, increase the stability of the landscape and water supplies, stabilize erratic weather conditions, and reduce poverty by strengthening rural livelihoods. Although material gains are immediately apparent, the effects produced by the loss of our forests cannot be recognized quickly.

Humans can now see that our intervention in natural processes have had a dramatic effect on the welfare of the planet. Preservation and restoration of forests is needed to ensure the capability of life to be preserved.

Preservation of Indigenous cultures

Understanding the relationship between culture and ecological variation through time has been an important issue of research in anthropology for year (Moran 1995). Environmental surroundings and the way in which people utilize the resources within an ecosystem, dictates the interpretations of values, customs, and cultures of those inhabitants. With the diversification of environments, an outpouring of unique variation exists between each culture. Driving forces of the environment, such as floods or lack of resources, spur the response of human populations toward decisions that are inevitably shaped by ecological constraints.

The adaptive strategies of humans have led to an ever-winding trail of integrated existence. Often times, as seen in the present, human populations have been able to overcome natural processes through the advancement of technology. Humans then, in some form, take on the ability to shape the very environment in which they live, including: mass production of food and the construction of dams and roads. By engineering a way of life, modern world systems evolved a belief that material possession is equated with wealth. Consumption through material gain then becomes a driving force through the means of production. These rapidly growing human populations therefore, exploit the environment. Often times, the desires of modern societies displace less modernized populations and may cause some cultures to become extinct. Western civilization has an alarming and ever increasing influence on indigenous peoples. As seen throughout recorded history, indigenous populations have held the ability to live sympatric lives with surrounding tropical ecosystems without encountering any extremes that hint at destruction or mass extinctions. An example of a noninvasive population is the Shuar group of Amazonian Ecuador.

The Shuar group contains 40,000 members and is the second largest indigenous group in Ecuador (Bennett 1992). The individuals of this group retain traditional ethnobiological knowledge of many plant specimens that are used on a daily basis to fulfill the requirements of their cultural existence. Eighty-eight different plants are used for the construction of boats, homes, and other permanent structures; palms, cyclanths, and bark of several species of Moraceae supply fiber for clothing and rope (Bennett 1992). Fishing lines and blow guns are made of uwi palm, while other utensils derived from na-

tive soils include monocot leaves that serve as a spice and a cooking pot for a native meal called ayampakus. Staple food resources of the Shuar (yucca, yam, papaya, sweet potato, pineapple, and peach palm) are all native to the area. Ninety species of both wood and nonwood origins are used for fuel, 245 different species of plants are used for medicinal purposes, and 27 plant species are used for personal purposes such as fragrances and adornments (Bennett 1992). Among the wide variety of other plant specimens used, one fact still remains, the Shuar have been able to thrive in a tropical habitat while using a multitude of resources without exhausting the forest. Proper etiquette of the Shuar demand the replanting of seeds found in the fruits they consume (Bennett 1992).

The Amazon region is extremely diverse and contains an array of ecosystems that reflect the variable geological history and past human usage (Moran 1995). Western civilizations must be willing to learn from indigenous cultures and customs in order to acquire a sustainable affiliation with the environment and indigenous societies (Sponsel 1995). Though indigenous cultures use subsistence activities to shape the diversity of the rainforests, the surrounding diversity is more than this simple manipulation. Forest dwellers infrequently harvest and when it is done resource extraction is minimal. On the other hand, western societies frequently harvest large amounts of resources subjecting theses areas to devastating outcomes. These outcomes leave indigenous societies empty handed. The people must then disperse from their native lands and cultural heritage to escape extinction.

Growing concerns are mounting and efforts to conserve both ecosystems and the cultures that dwell within are developing. Development programs are beginning to combine guidelines for environmental conservation and protection, as well as appropriate land-use management with respect to ethnic lifestyles (Chernela 1995). A case exemplifying these new programs is the Awa Biosphere Reserve in Columbia and Ecuador. The Biosphere Reserve was initially created, in 1975, to illustrate the relationship between conservation and development patterns with sensitivity toward the ethnicities of indigenous cultures residing in the area (Orejuela 1992). The binational reserve was designed to include 300,000 hectares in Ecuador and another 800,000 hectares in Columbia (Chernela 1995). The reserve was then subdivided into distinctive zones. The first zone was the core zone. Buffer zones surrounding the core zone demonstrate balanced landscapes of traditional and natural resource land use, including secondary forests, agriculture using slash-mulch techniques under natural and manmade conditions, and maize fields (Orejuela 1992). The affected 7,000 to 10,000 Awa natives also zoned an ethnic

reserve to protect traditional territories (Chernela 1995). Beyond these zones were areas of experimentation (Orejuela 1992). These areas employed year round agroforestry practices (combination of horticulture and animal husbandry), as well as various types of sustainable development, conservation, and restoration techniques.

With the implementation of programs such as these, the ultimate goal of improving the relationships between diverse groups of humans in a particular area, while attending to the resource needs of each, can be accomplished. The devastating trends of Western development can be altered in order to maintain forests and remain respective toward the traditions of other cultures. Again, it is only the willingness of Western societies to cooperate and change their environmentally degrading practices that will promote this type of growth and development. Recognition of diverse cultural practices will lead to the understanding and acceptance of variation. With this acceptance, programs similar to the Awa Biosphere Reserves can be established through the participation of interested parties to promote a multicultural productive process that entertains all the needs of the inclusive participatory groups.

Eco-Tourism

In the 1990's, tourism has become one of the world's fastest growing industrial divisions; by the mid-1990's, 500 million travelers crossed international lines each year (Prosser 1994). Therefore, tourism itself has a direct connection to the world economy. It thrives on economic, environmental, and cultural elements located within and outside the destination. Tourism has the ability to encourage various types of economic, social, and psychological growth, including: the attractive factor of foreign currency, exposure to rich cultural distinctiveness that would otherwise never be viewed (Prosser 1994). Although tourism relies heavily on these elements, it is also subject to cultural interpretations. Culture then has the ability to be shaped and changes, making tourism a marketable entity open to new direction and transformation.

Historically, tourism lacks an environmentally friendly disposition. Concern over the ecological impacts of tourism began to rise throughout the 1960's and 1970's, after the recognition of the ability of the tourist industry to facilitate adverse alteration and complete transforming of travel destination (Fennell 1999). The direct effect of tourism lies in the sheer numbers of people that are continuing to infiltrate other areas. This continuing growth in numbers puts direct pressure on the local resource base, which through improper use and overuse causes a decrease in the value of raw material

available. As the number of tourists increases consumption factor increases correspondingly. All tourism involves consumption. Luring tourists to particular localities involves the provisioning of certain accommodations. Those who have the means to travel usually prefer these accommodations to suite modern technological systems, usually altering the face of the surrounding ecosystem. The underlying root of destructive accommodation is then dictated by the fashion status and image of the promoted destination.

Another leading concern tied to the tourist industry is the increased ability to penetrate remote areas (Prosser 1994). Along with the degradation of local resources, increasing numbers of tourists demand more space. Development of otherwise isolated areas has become an everyday practice. The demand for such measures promotes the idea that economic based development has the right to push further into untapped regions. Unfortunately, the concept of carrying capacity if almost always neglected. The land that sustains humans every need does have limits. The earth supports billions of organisms. A particular region only has the capacity to support a set number of organisms, including humans. Manipulation and exploitation of resources severely hinders the ecosystem's capability to function at productive levels. This offset of balance, produced by human intervention, need to be minimized and regulated in order to maintain ecosystem health.

Due to the dissatisfaction with existing products, as well as growing environmental consciousness and cultural sensitivity, parts of Ecuador have recently promoted forms of ecotourism to encourage sustainable tourist development. Ecotourism is nature based, environmentally educative, and incorporates four basic principles: (1) minimize environmental impacts, (2) minimize impact and maximize respect for host cultures, (3) maximize economic gain to the host country, and (4) maximize recreational satisfaction to visiting tourists (Fennell 1999).

Many times it is the promotion and marketing of destination areas that can hinder responsibilities of the locals to protect their native ecosystems. Key principles must be integrated in to the marketing of tourism in order for a sustainable industry to exist. These principles include the promotion of resource development in an environmentally sound manner; provisioning of long-term benefits of resources to local community and industry; participatory environmental education shared by locals, tourists, industry, governmental and non-governmental organizations; recognition of intrinsic values of the resources; and promotion of moral and ethical behavior toward natural and cultural environments (Wright 1994).

The challenge today is not to stop development and change, but to incorporate sustainable environmental policies to development (Sisman 1994). Modern accommodations tend to be large scale and reflect the interests of industry. Eco-tourism tends to be small scale and locally owned and operated. Local governments play a vital role in determining the construction of attractions. The standards that need to be integrated into local development include: efficiency, consideration of wildlife and cultural heritage, proper waste disposal management, friendly interaction with locals, and sympatric architectural design (Siaman 1994). If local government endorses these types of developmental consideration, tourism will be able to co-exist within ecosystems without increasing destructive measures upon vulnerable areas. It is up to local governments to take control of tour based needs in order to profit from the tourist industry. The negligence to do so becomes environmentally depredating because parent counties of the tourists reap all the profits. If all the profits are returned to the parent countries, no money exists for the host country to accommodate tourists sustainably.

To ensure success, eco-tourism requires the education of tourists, locals, and local governments. Since education has the ability to instill values and ethics it is the easiest way to promote ecotourism (Salim & Ullsten 1999). Through education people learn the functions of the forests and have a better concept of how important forests truly are. Education is the potentional avenue through which the objective of sustainable development can be advanced. New opportunities awaken and sophisticated approaches can be extended.

VI. New Approaches

Conservationists from the West and many indigenous people share similar elements in their vision of the forests (Vandermeer & Perfecto 1995). Not only is the utilitarian values shared, but the desire for nature to persist because of its aesthetic appeal exists too. A number of instances of preservation and development exist enhancing the opportunity of integrated approaches.

One such instance is displayed in the Cuybeno Wildlife Protection Reserve, located in the Napo Province, Ecuador. In the 1970's this area was the center of the oil industry (Hinojosa 1992). Unplanned development took control of the area, settlers set out on individual paths of colonization, and

indigenous groups were removed form native lands. An influx of immigrants followed and with them came deforestation, conversions of forest to farmland, and urbanization. One result of this was the increased dependence of the indigenous tribes on foods medicines, education, and various other products derived from foreign environments (Hinojosa 1992). In order to arraign these needs indigenous tribes went pillaging into the forests to extract materials to produce craftworks to sell. The money attained for these products neither reflected the value of the resources for the times expenditure put into the production of the crafts.

In order to maintain the 121,876 square kilometers of the Ecuadorian Amazon, a plan was designed by the Depatmento de Areas Naturales y Recursos Silvestres and the World Wildlife Fund that encompasses all the aspects of the problem: oil industry unplanned development, influx of immigrants, deforestation and conversion of forests to farmland, the expansion of human settlement, buying and selling of land by speculators posing to be settlers, and internal migrations of indigenous groups (Hinojosa 1992). It implemented a number of objective, policies, strategies, and programs to carryout the plan. Conservation, community training, forestry development, ethonobotany training, tourism management, wildlife harvesting and production, and research programs were all implemented.

Park guards along with technical and professional personnel keep close contact with indigenous tribes to resolve and defer disputed between the tribes and settlers. Education programs established at the community level offer tribes conservation priorities and guidance on environment issues, while settlers are offered alternate fashions to use tropical forests. Programs promoting natural remedies tap into the disintegrating indigenous knowledge of endemic plants. Tourism revolves around visits arranged by local travel companies and profits are funneled back into the reserve. Hunting, fishing, and gathering are all regulated throughout the park and research opportunities focus one the relationship between the people and the environment.

Through extensive planning, programs can facilitate the need of both humans and the environment. If properly used the earth has the ability to sustain each and every living organism. Resource greed is part of past trends, which must no longer persist, especially in the most diverse regions on the planet. Education is the primary factor at hand. It is thorough education that understanding of other cultures and practices can be integrated with processes of prolonged resource use for everyone, which is the ultimate goal of today's pressing issues.

Conclusion

Though it is small, the country Ecuador is filled with cultural and environmental diversity. Biological diversity abounds at every glance. Precious knowledge of indigenous peoples can be discovered in every forest and behind every tree. With past and present political restraints, much has been lost forever by extinction and loss of cultural heritage.

With recognition of these concerns, it is up to the generation of today to promote more sustainable forms of development. The consumption factor of modernization must be altered and general respect for the earth must be maintained and instilled in every human that resides upon the planet. While governments play a vital role in everyday life and the destruction of the environment, we have the ability to adapt to our surroundings and change our regulatory patters. This earth supports our needs and desires. It is up to the human race to recognize the disturbance we have caused. Upon this recognition we must form new dreams of continued growth while respecting the livelihood of the planet. The earth gives us life, if humans hinder the ability of the earth produces and recreate then all is lost. The existence of our species, as well as others will be terminated. The earth will dispose of the human race if we neglect the natural of the environmental. The earth will dispose of the human race if we neglect the natural constraints of the environment. The earth will live on; it is up to us to decide if we want to dwell within.

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