

Decolonize the Soil:  
Case Studies in the Restoration of Traditional Ecological Knowledge

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Emma Conover

**“Llaqtakunaq atipayninwan, teqrimuyuta kuyuchisunchis”**

*When the villages work together, we will turn this world around.*

Quechuan proverb

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## Introduction:

Colonial rule in Latin America has intense and adverse effects on native populations that permeate today. Diseases such as smallpox and influenza decimated the Aztec, Mayan, and Inca empires, causing their eventual fall in genocidal levels (Esparza, 2006). The imbalance of fighting techniques and weapons made for a bloody conquest claiming the lives of millions of native peoples, but the enduring effects of European diseases has much culpability on continued population losses (ibid). Endured losses promoted a continued imbalance of power, leading to forced labor among populations. Coinciding with these atrocities, perhaps the most enduring consequence of global imperialism has been the intentional destruction of cultural knowledge and worldview.

The “coloniality of knowledge”, as proposed by Peruvian Sociologist Aníbal Quijano, explains the destruction of mesoamerican *cosmovisiones*<sup>1</sup> by the imposition of Anglo-Saxon worldviews (Mackenthun, 2016). In Latin America, codices filled with religious, linguistic, and cultural knowledge were burned by the conquest in the imposition of Christianity. The loss of texts, artifacts, elders by disease, the murder of religious and community leaders left an irreparable gap in cultural knowledge. The enduring effects of this loss of knowledge perpetuates the coloniality of knowledge, where western ideologies have become so integral to economic and social functioning that traditional Latin American *cosmovisiones* are inconceivable to the average citizen. These *cosmovisiones* are held and protected, mostly by indigenous populations who preserve language, history, and connection to land within their communities. However, modern pressures place a heavy burden on the preservation of culture, often forcing indigenous

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<sup>1</sup> I have elected to keep this word in Spanish for the richness of context that it carries. *Cosmovisión* explains not only worldviews, but every aspect of how one connects to the stars, trees, and society they live in.

peoples to make tragic choices; between community integration and connection to the past. In most of Latin America, proficiency over Spanish over indigenous languages is vital to social and economic prosperity. Legal proceedings take place in Spanish, the only language required in all primary schools is Spanish, and in most urban communities there is considerable informal discrimination towards individuals who elect to speak their native language (FAO). Indigenous populations are more likely to inhabit biodiverse regions rich in natural resources, which often makes them targeted for external investment projects. Whether it be mining or logging groups or development NGOs, indigenous communities often lie under a spotlight of international attention.

Because of rich environmental, linguistic, and cultural history and culture, NGOs and government agencies in Latin America have been studying and implementing cultural knowledge restoration for decades. This investigation aims to measure the efficacy in implementation of these systems, and suggests how future projects could be better executed. Traditional Ecological Knowledge (TEK) is the generalized field of study regarding implementation of cultural knowledge.

The importance of evaluating TEK projects comes from international relevance. On every continent and in every nation, almost every country, there is a colonial legacy impacting, at minimum, the knowledge and traditions of native peoples (see also, appendix A). In the United States, Native American conversion programs decimated linguistic and cultural knowledge among native youths (Adams, 1995). In Sierra Leone, unsustainable land practices forced during colonial times have made for depleted soils, attracting outside influence to support local food systems (Yumeen, 2020). The efficacy of restoring cultural knowledge has global implications for all societies that have had their rich history erased or written over. It also reinforces the

importance of this rich culture, and calls for reevaluation of current cultural practices that threaten the well-being of us all.

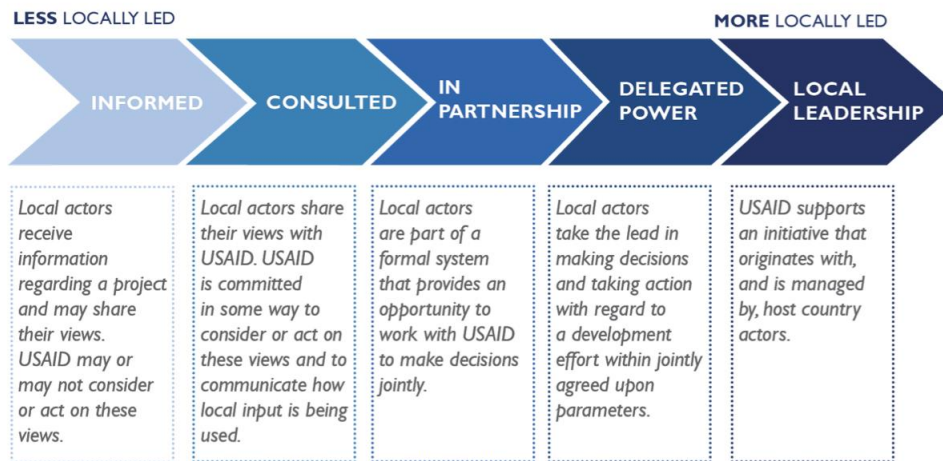
Decimation of cultural knowledge, traditions, and peoples is also a poverty related issue. Traditional economic systems in the Andes have been replaced by a globalized, capitalistic model, where indigenous communities typically lack sovereignty over their assets. Assets not only include businesses and investments, but social capital, environment, and cultural institutions. In Latin America, indigenous peoples are twice as likely to experience poverty than those who identify as *mestizo*. Indigenous peoples are also substantially more likely to feel adverse effects of climate change, making global warming a significant social determinant of health for indigenous populations (Lines, 2019). The efficacy of traditional ecological knowledge is of pressing importance, if it can be proven to serve as a means of protection for land and people.

This paper focuses on two case studies of examples of attempted restoration of cultural knowledge through agricultural practices; raised agricultural beds in Peru and potato agriculture. The efficacy of these projects are expressed in the analysis section by the metrics of longevity, externalities, agricultural production, and social effects. In conjunction with measures of adherence to locally-led development, this paper will aim to measure how well these development standards can account for project efficacy.

## **Methodology**

The two case studies set forth by this paper are measured for their efficacy by three standards. Primarily, project longevity. Both projects were intended to have long-term effects, spanning after the support of development intervention. Secondly, agricultural production. Both case studies had the goal of increasing agricultural productivity, or at minimum, keeping production consistent with previous production with increased efficiency. Third, community integration. This is the most difficult framework to measure, and ties closely with the ethical considerations. Not only does this paper aim to measure the role of community integration in the efficacy of the project, but also claims that without community integration, agricultural productivity and project longevity are inconsequential. A TEK initiative that is not integrated with the community is simply a development project. Community integration is measured with a qualitative analysis, and is compared against a measure of locally-led development.

*Locally-led* development is a phrase coined by USAID, which describes “the process in which local actors – encompassing individuals, communities, networks, organizations, private entities, and governments – set their own agendas, develop solutions, and bring the capacity, leadership, and resources to make those solutions a reality.” (USAID). They measure the degree to which an initiative is locally-led by the following metric.



This model is used by USAID, and clearly uses USAID as the primary development example. However, this model works well regardless of which development organization or initiative is replaced with “USAID”. For this reason, a modified version of this model (which replaces the word USAID) is used to compare projects, in hopes of drawing further conclusions of project efficacy.

Locally- led development has been popularized in modern international relations. In 2014, the Millennium Challenge Corporation (MCC) was established with an alternative to the paradigm of federal aid created by USAID, focusing on strengthening already existing institutions in developing nations (citation). The MCC has many of the same goals set forth by the UN with their Sustainable Development Goals, including poverty reduction, environmental and social sustainability, food security, and gender inclusion; all with special focus to how these initiatives can derive in-country. The grapple between international aid and locally led development is particularly important in the realm of TEK. As is explained in case study 1, often communities lack specific knowledge to suggest new projects to be funded by USAID, MCC, or other development organizations. Placing the responsibility on communities themselves seems



moral, but might not account for the historical contexts in a region. The coloniality of knowledge often impacts nations ability to start projects themselves, even if external funding exists. For this reason, considerations of locally-led development are included in analysis as a way to reconcile the coloniality of knowledge and the value of locally-led development.

*Sustainable* development serves as a consideration for this investigation, but does not factor into the analysis portion. The United Nations Sustainable Development Goals (SDGs) consist of 17 initiatives and 169 targets with the goal of protecting the earth and its people. Among these goals are the protection against climate change, reduction of poverty, and the necessity of responsible economic growth. The universality of these goals make them largely unspecific and without nuance, and the comparison of projects against this standard would be over-simplistic. Of course, the principles the SGDs set forth serve as an underlying ethical framework; economic development ought to not be at the expense of the earth and its peoples, but even without the UN's guide, sustainable development continues in be a primary concern of this paper.

This paper is specifically framed in the Andean states, with case examples of Peru. Latin America, with its rich cultural, biological, and historical diversity serves as an ideal setting for this investigation. The severity of

These are all developing nations, characterized agriculturally by rich soil from the volcanic range, forced adaptability due to intense and fluctuating conditions, and deep cultural ties to land and crops. However, this investigation is careful to avoid the idealization or fetishization of indigenous cultures. Aspects of indigenous culture that counter modern ways of living are often over- commodified and glamorized

This paper is specifically framed in the Andean states, with case examples of Ecuador, Bolivia, and Peru. These are all developing nations, characterized agriculturally by rich soil from the volcanic range, forced adaptability due to intense and fluctuating conditions, and deep cultural ties to land and crops. However, this investigation is careful to avoid the idealization or fetishization of indigenous cultures. Aspects of indigenous culture that counter modern ways of living are often over- commodified and glamorized

## **Literature Review: Overview**

The pre-columbian era describes the era lasting until 1492, when American colonization began. Pre-columbian agricultural practices mirror societal values of the time, and are relevant for comparison to colonial era implementations. The National Academy of Sciences shows that in parts of South and Central America that are now considered unsuitable for agriculture, there were once thriving agricultural systems. These indigenous practices are often grouped together and referred to as “primitive agriculture” due to the lack of western technologies like the plow and cart (Morrisey, 1957). In the early 1900s, as biological diversity decreased alongside agricultural yield, western scientists investigated the possible benefits of traditional agricultural systems and TEK.

The post-columbian era is defined by a shocking fall in land biodiversity. “Damaging use of soils, widespread deforestation, and subsequent decline in species numbers” were common practice due to a colonial emphasis on rapid economic development (Wright, 2021). In modern history, short-term economic benefits of industrial agriculture projects have enforced the economic viability of destructive practices. Use of agrottoxins and “biologically destructive large irrigation projects” have become the norm at the expense of biodiversity and soil health (ibid). South America hosts 40% of the planet’s biodiversity, and biological losses are felt globally (IUCN, 2017). Restoration of Traditional Ecological Knowledge attempts to return biodiversity and production to pre-Columbian levels.

For decades, the value of indigenous knowledge in conservation and rehabilitation has been used as justifications for development and its protection. Particularly in the South American Andes, widespread research has been conducted surrounding the discrepancies between

indigenous agricultural practices and post-imperial methods, and the reconciliation of these two knowledge sources. Victoria Reyes-García, researcher at the Institute of Environmental Science and Technology at the Universitat Autònoma de Barcelona notes that “there are many examples in which indigenous peoples have taken leadership roles in restoring forests, lakes and rivers, grasslands and drylands, mangroves and reefs, and wetlands degraded by outsiders or climate change, successfully coupling the goals of restoration and increasing participation of local population”. While indigenous people have been leaders in environmental movements, they have also been the most impacted by climate change. Aside from deep cultural ties to land threatened by climate change, The United States Environmental Protection Agency recognizes that indigenous groups face increased risk for health risks associated with rising temperatures, such as respiratory illnesses.

Indigenous communities cannot be grouped broadly simply by their indigeneity, but Latin American indigenous groups often share characteristics that allow for helpful comparison. All indigenous groups in Latin America are granted some sort of self-determination, often political, territorial, economic, cultural, legal, and participatory rights. There are 826 recognized indigenous peoples which constituted 58 million people in 2014 (FAO). These rights are considered fundamental to the agency and sovereignty of indigenous people. However, differences between nations on the sovereignty of peoples can limit their abilities to adapt and practice autonomy over their land and practices. Not only are the limits of land-use important to agricultural considerations of sovereignty, but also language, political structures, and economic models. Discrepancies between countries, nation states, and peoples in Latin America mean that widespread, sweeping initiatives are practically impossible.

Janardhan, 2020 coined the phrase “eco-resurgence” to describe the indigenous, “ecologically sustainable activities” to promote economic mobility in Asia following a pandemic-induced economic meltdown. Janardhan sets his policy recommendations at the heart of indigenous knowledge, to foster harmonious relations between human and nature. He sets forth a four step implementation process to further mirror the traditional indigenous relation; spanning from local economies to global climate mitigation. Janardhan notes that the strategy of eco-resurgence is distinctly different from the Green New deal in the US and the Green Deal in the EU. These strategies, aimed to be employed largely by wealthy, developed nations, are unlikely to be effective as a means to protect land and peoples in developing nations. These Green Deals focus largely on decreased dependence on fossil fuels and emissions reductions, a luxury awarded to governments willing (sometimes) to invest in free-market solutions to alternative energy sources. While there is merit and necessity for these government pushes, eco-resurgence focuses on the cultural element of environmental protection. This sentiment is mirrored in Central South America with the concept of *Sumak Kawsay*.

The sentiment of harmonious existence is mirrored in traditional Andean communities, and is now a part of concrete legislation. In Quechua (Kichwa), the phrase *Sumak Kawsay* roughly translates to “good living” or “plentiful living”: the interconnectedness and need for harmony between people and the earth. This phrase is not only a translation, but the representation of an ideology which permeates social and political life. This sentiment exists in other Latin American regions and languages as well: in Bolivian Aymaran, a widely spoken indigenous language, *suma qamaña* is used to express conceptions of “good living”. *Lekil Kuxlejal* in the Tzeltal Mayan language represents the way to an “abundant life”, and has been

the backbone of the Zapatista political revolution. *Sumak Kawsay* in Ecuador is the most well-understood of these principles, and will be explored further in the Ecuadorian context.

Initially politicized by native groups to divert influences of capitalism in Ecuador, *Sumak Kawsay* is now included in the constitution, and is considered an alternate paradigm to development. Much like what is presented by the UN SDGs, it models the goal of progress to be the well-being of people and their environment, rather than GDP and industrialization. The same constitution that focused on *Sumak Kawsay* gave rights to *Pacha Mama*– Mother Earth. Article 71 of the 2008 Ecuadorian constitution states the following:

“Nature, or *Pacha Mama*, where life is reproduced and occurs, has the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structure, functions and evolutionary processes. All persons, communities, peoples and nations can call upon public authorities to enforce the rights of nature. To enforce and interpret these rights, the principles set forth in the Constitution shall be observed, as appropriate. The State shall give incentives to natural persons and legal entities and to communities to protect nature and to promote respect for all the elements comprising an ecosystem.”

Ecuador remains one of the only nations in the world to grant constitutional rights to nature. Symbolically, this proved a willingness for the government to intervene in the business of nature, and to protect it. However, criticisms suggest that these governmental changes are more prescriptivist and symbolic than substantive. Although public authorities “can be called upon to enforce the rights of nature” and the focus has been taken from development to “good living”, harmful environmental projects have only increased in frequency.

The richness of raw material and oil in Latin America leaves nations like Ecuador “sitting on a sack of gold”– weighing the consequences and possibility of economic mobility with the principles of *Sumak Kawsay*. In Ecuador, the government has strategized towards a short-term “trickle down” economic mobility program, “using the extraction of raw materials (in the short

term) to stop the extraction of raw materials (in the long run)". The Central Bank of Ecuador reports that

## **Analysis:**

### **Case study 1: *Waru Waru* in Lake Titicaca, Peru**

#### **Overview:**

A 1980s project in the Lake Titicaca region of Puno and Bolivia worked to reinstate traditional raised field irrigation knowledge as a means for economic development. First investigated by Western archaeologists and anthropologists between 1960-1979, development agencies took interest in reimplementing this agriculture project between 1980-1993. Raised field agriculture had not been used in the area since pre-Columbian times, when it flourished as a means of sustenance and economy. *Waru Waru* in Quechua, these raised fields account for the rugged climate and intense floods of the region by constructing embankments and canals. The canals irrigate the plants and store water, creating fertile land for crop production on the embankments. Nutrients are well cycled, soil is kept moist, and thermal energy is captured in the soil which protects against frosts at Andean elevation<sup>2</sup>.

Implementation of these projects were undertaken by large, international NGOs and subsidiary local chapters. USAID and CARE<sup>3</sup> served as the main financial contributors and logistical facilitators to the project.

The role of NGOs in the Puno project was overreaching and prescriptive. As an incentive to participate in the program, USAID Public Law 480 offered surplus food to participant farmers. The government of Peru and development agencies like CARE continued incentives for participation by offering “food, tools, and seed... [effectively] creating bidding competition between development agencies”. As a result, the withdrawal of development organizations due to

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<sup>2</sup> See Appendix C for graphics

<sup>3</sup> At the time, CARE stood for Cooperative for Assistance and Relief Everywhere



political instability meant there was no community-based or internal incentives to continue the program.

PIWA<sup>4</sup>, The Project for Rehabilitation of the Andean Waru Waru Region attempted to take the actions with implementation of locally-led development principles and considerations of SDGs. PIWA attempted to establish community ties to the raised bed agricultural system through adult education, women's groups, and primary education; linking existing cultural institutions to the *Waru Waru* practice. This strategy fits best within the “in-partnership” category of locally-led development, as shown in figure 1. The PIWA initiative also serves as a better example of adherence to the SDGs; by implementing multi-generational examples of sustainability through its introduction into schools and other educational facets. The SDGs also emphasize community involvement and longevity, which was attempted by PIWA by providing farmers with extrinsic motivations and project continuity.

The Peruvian government invested in subsidies to PIWA due to initial successes and increases in crop yields. This funding enabled the reconstruction of 500 hectares of raised fields in 72 rural communities in the Puno region” (Middleton, 2007). However, suspension of these funds were also impacted by Peruvian political instability, leaving the project and *Waru Waru* beds unfunded and abandoned.

### **Analysis: Efficacy**

#### **Project longevity:**

Erickson’s research was conducted in the late 1970s, and the official development project began in 1981. The extent of Erickson’s project lasted until 1987, and in this seven year period, the

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<sup>4</sup> PIWA serves as the Spanish acronym

NGOs (USAID, CARE, and PIWA) became relevant actors in the process. By the evaluation cycle of 1989, the beds were barren. Based on researcher notes and satellite imagery, there has not since been a raised bed agricultural system in the Lake Titicaca region. The longevity of this project is short, lasting less than a decade. Although the project spanned over 76 individual communities, the longevity was short in all examples. After funding left the project, external monitoring also ended, meaning that exact timelines of each project have not been recorded, and the best investigation of efficacy comes from satellite images. This also creates necessity for a margin of error, because there are no ethnographic or anthropological accounts of the longevity of the project. In the early 2000s, there was hope that the raised beds were in fallow; being left unsown to restore nutrients, but by 2023 it is evident that operations are unlikely to resume with the same beds.

Criticisms, outside of funding changes that undoubtedly shortened the project longevity, comes with project upkeep. The beds could be constructed in a few days with community help, but required upkeep and maintenance about once a year.

### **Agricultural production/ efficacy:**

During the development stage of the *Waru Waru* implementation, agricultural production rose dramatically. Kolata (1996) notes that “Potato yields on the raised fields averaged over fifteen metric tons per hectare, ten times the yield on the traditional, dry-farmed field, all without the use of fertilizers.” In the Puno region, production of quinoa rose dramatically starting in 1990, when the raised fields were in place. During the experimental phase of the project, raised beds produced enough potatoes to support 37.5 people per hectare. Within the Lake Titicaca region, 1.5 million people could have been fed by the *Waru Waru* system.

## **Social integration**

Social integration concerns the efficacy of the project to integrate into existing economic and social systems, and can be measured by the receptiveness of the community— with particular attention to the ways in which social integration is attempted. Social integration is of particular importance in this case study because of the complete reintroduction of the raised fields. Rather than focusing on preserving knowledge within a community, development agencies were tasked with a complete introduction and *integration* of these projects. Lack of social integration was one of the principal factors that contributed to the failure of *Waru Waru*.

Until the integration of PIWA towards the end of the project, little was done to integrate raised-bed agriculture into daily life. Participating NGOs used text-based instruction manuals to instruct rural farmers— a highly illiterate population (Swartley, 2000). Existing economic factors; such as market value for livestock over crops, were overlooked by development organizations, leaving raised beds as a second priority for farmers. NGOs used incentives of food, subsidies and materials to instate these projects, effectively emphasizing the endeavor as a business venture rather than a community effort. Lack of community knowledge, due to their status as community “outsiders” were a major barrier to this social integration for NGOs.

## **Development principles**

Using the framework introduced in the methodology section, *Waru Waru* in Peru falls within the “consulted category”, which states that “local actors receive information regarding a project and may share their views. The organization may or may not consider or act upon these views.” The project was brought forth by development organizations and implemented almost entirely by their initiatives. Implementation of the projects was consented to by local actors on

their land, as required by law on private property, but the specifics of the projects were not necessarily set forth by the development organization or implementors. Because there were almost 70 communities with their own bed systems (concentrated in one geographic area but with their own specific land and project details), it is difficult to know what occurred between local actors and land owners and development teams. There are no records of the individual interactions in communities. Perhaps on individual levels, the development teams had engaging public discourse in local communities. However, on a wide-scale, this is unlikely.

## **Case study 2: *Parque de la Papa*, Cusco Peru**

*Parque de La Papa* (Potato Park) in Cusco, Peru serves as one of the best in-situ agricultural examples of development initiatives in Latin America. Founded in 2001 by *Fundación Andes* with the goals of increasing genetic diversity for tuber species and cultivating human respect for the potato. Potatoes are historically integral to the Andean population, and in the early 2000s, potatoes accounted for over 70% of caloric intake of highland peoples. Now, the land covers over 9,000 hectares over land of six indigenous communities; the Pampallacta, Paru-paru, Sacaca, Chahuaytire, Amaru and Cuyo Grande populations.

The indigenous communities remained rightful owners of their land, and now 5,000 indigenous farmers have collective land titles. The project also takes a “rights first” approach to the restoration of genetic biodiversity, rather than an “income first approach” (Copestake, 2009). The main goal of the project is to increase social connection, connection to the potato, and connection to land. One of the fundamental goals of the *Parque de la Papa* is to foster connection between humans and the potato. Specifically, so that humans can “learn how to be affected” by potato biodiversity (Angé, 2018). Typically, development programs are concerned with improving the quality and selection of seeds in order to increase yield”: a human-centric agrobiodiversity approach (ibid). This approach is closely related to the andean *cosmovisión*, and has similarities to the Quechuan concept of *Sumak Kawsay* described previously. By acknowledging the connection between land and people in a two-way connection, this project recognizes that humans should not be the only consideration in development projects.

### **Project longevity:**

*Parque de la Papa* was established in 2001 and still serves its purposes of connecting individuals to the potato, protecting biodiversity, and providing sovereignty to farmers and

landowners. Now, this project is far from the lens of development, and is providing its own funding, in part by tourism. *Parque de la Papa* is one of the most visited agro-tourism venues in Peru and is still cultivating over 1,000 species of potato (Angé, 2018). Commercialization of the park has increased since its founding, but is considered part of the continued mission: to educate people on their connection to the potato. Now, this has expanded beyond local communities into tourism initiatives. *Parque de la Papa* also supports related business projects in the Andean Cusco area.

### **Agricultural Production**

*Parque de La Papa* challenges the very nature of this paper. While this paper aims to evaluate agricultural production as a means of measuring project efficacy, this is not the principal goal of the potato park. Increasing biological diversity of potatoes *has* led to increases in agricultural production and subsequent food security in the area. More biologically diverse potatoes have made for more nutrient dense options for residents of the land, but this was not the goal of the potato park, rather a positive externality to the initial goal of increasing connection.

### **Social integration**

Social integration of the development initiative was steered heavily by existing Andean *cosmovisiones*. In the highland populations, connection to the potato was already a prominent cultural feature, but resources and community divides made the protection of biological diversity difficult to implement. *Parque de la Papa* uses an already-existing system of *ayllu*, described by the International Institute for Environment and Development as “an indigenous holistic territorial

approach... which allows dialogue and cooperative knowledge construction among members of indigenous communities who share... history and common vision”. The already thriving *ayllu* system makes this project distinct, in that the restoration of cultural knowledge was more of a “propping up” than an implementation. Social integration in the project was high, as it expanded rights dramatically for land owners in a way that supplemented existing cultural norms.

### **Development Principles**

Using the framework of locally-led development, this project falls under “delegated power”, “where local actors take the lead in making decisions and taking action with regard to development effort within jointly agreed upon parameters.” Asociacion ANDES played a financial and logistical role in the development and protection of *Parque de la Papa*, but community input and values were the foremost priority: and the protection of connections between land and peoples was the principle goal. On the model found in *methodology*, this tier of locally-led development is considered highly locally-led.

## Conclusion

A case study of two examples is not sufficient to make claims on the total efficacy of TEK implementation. The timelines of these projects serve as an advantage, but can also be understood as a limitation. The advantage of hindsight on the *Waru Waru* project emphasizes that the principles of locally-led and sustainable development have always been relevant, even if the terms weren't used. In the Lake Titicaca region in the 80s, development agencies had little concern for the dignity that it gave to local actors, the effects of the coloniality of knowledge, or the danger of intense incentive-based programs. However, the project was affected by the variables regardless. This is a benefit given by hindsight that can allow for speculation on current projects, like *Parque de la Papa*. The disadvantage of this timeline is that it creates differences in available research and data. *Parque de la Papa* is rich with photos and videos of the park today, while all there is of the *Waru Waru* project is casual ethnography and minimal satellite imagery of beds.

It is evident that *Parque de la Papa*, by standards of project longevity, agricultural production, and social integration was more effective. Perhaps this is no surprise to the reader of this paper, since it is noted by environmental conservationists as one of the most effective in-situ projects of all time (Angé). This case study is a superb example of the power of harvesting Western funds for indigenous ideas. The project was so successful because it used cultural knowledge and structures that already existed, invested in those systems responsibly, and allowed community actors to have sovereignty over the outcomes. These conditions cannot be replicated with all development projects, but the principles can. The principles of granting sovereignty to populations through direct solutions; for example land grants, allows projects to self-sustain by standards of the people themselves. Promoting a rights-first approach, which



protects people and their community cosmovisión over profits and Western ideologies is a hopeful solution to the question of development.

Alternatively, academics have called for “de-colonialism” as a way of repairing the traditional *cosmovisión* to move towards a pre-colonial (pre-columbian) paradigm (Mackenthun, 2016). Decolonization projects have aimed to bring light to “reinstall epistemologies that were formerly hidden [due to colonial] dominance” (ibid)– among these, the domain of TEK. De-colonialism is often paired with the concept of anti-development, which aims to remove development from its colonial ties. Anti-development advocates call upon case studies like *Waru Waru* and comment on the ways that these prescriptive projects based in Western ideologies of economic success can corrupt valuable projects. Anti-development as a framework is another hopeful solution to development projects. Rather than thinking of development as the solution to problems of colonialism, and rather seeing economic development as a perpetrator to post-Columbian issues allows for more critical thinking about the role of external forces in Latin America.

When considering solutions to the problems of development, Amartya Sen’s *Development as Freedom* serves as an ethical framework for thinking of development as the expansion of rights. Specifically, “a view of development as an integrated process of expansion of substantive freedoms that connect with one another.” Much like Nussbaum’s capability approach, which accounts for human freedom primarily, then the ability of individuals to reach certain capabilities in their lives, Sen notes that freedoms expand other freedoms. Development projects like *Waru Waru* and *Parque de la Papa* stand in almost direct opposition to each other; particularly in their goals. *Parque de la Papa* not only succeeded because of existing ideologies, but because the development objectives aimed for the expansion of rights and freedom. These

rights and freedoms are rooted in a traditional *cosmovisión* that emphasizes the connection between land and peoples.

Historically, development has meant economic development, and economic development often destroyed the connections between land and peoples for the sake of economic prosperity. Decades later, and largely without said economic prosperity, Latin American communities have been empowered to seek prosperity by their own means and with their own heritage, strengthening community bonds and security. External development initiatives cannot be proven ineffective or unnecessary by this investigation, but the importance of local leadership and the consideration of non-western *cosmovisiones* has been emphasized. A Quechuan proverb states “Llaqtakunaq atipayninwan, teqrimuyuta kuyuchisunchis”: when the villages work together, we will turn this world around. Thinking of all actors in a projects as part of a village allows for an empathetic, holistic solution to restoring traditional knowledge: hopefully as a way to protect people and their land.

## Works Cited :

- Adams, David W. *Education for Extinction* (Lawrence, KS: University Press of Kansas, 1995), 27
- Angé, Olivia, et al. “Interspecies Respect and Potato Conservation in the Peruvian Cradle of Domestication.” *Conservation and Society*, vol. 16, no. 1, 2018, pp. 30–40. *JSTOR*, <http://www.jstor.org/stable/26380574>. Accessed 7 Apr. 2023.
- Argumedo, Alejandro. “The Potato Park and Biocultural Heritage: Collective Trademarks and Biocultural Heritage: *Towards New Indications of Distinction for Indigenous Peoples in the Potato Park, Peru*”, International Institute for Environment and Development, 2013, pp. 10–12. *JSTOR*, <http://www.jstor.org/stable/resrep01387.6>. Accessed 7 Apr. 2023.
- Esparza, Marcia (2006) From the guest editors: memory and the aftermath of genocidal terror in Latin America, *Journal of Genocide Research*, 8:2, 111-119, DOI: 10.1080/14623520600702984
- Fisher, Max. “Map: European Colonialism Conquered Every Country in the World but These Five.” *Vox, Vox*, 24 June 2014, <https://www.vox.com/2014/6/24/5835320/map-in-the-whole-world-only-these-five-countries-escaped-european>.
- Lines, LA., Yellowknives Dene First Nation Wellness Division. & Jardine, C.G. Connection to the land as a youth-identified social determinant of Indigenous Peoples’ health. *BMC Public Health* 19, 176 (2019). <https://doi.org/10.1186/s12889-018-6383-8>
- Rojas, Percy & González, G & Zorrilla, Cinthya & Gomez, Rene & Simon, Reinhard & Roca, W. (2006). *Las papas nativas del Parque de la Papa: Caracterización de la Diversidad Genética Local y Repatriad.*
- Shepherd, C. J. “Mobilizing Local Knowledge and Asserting Culture: The Cultural Politics of In Situ Conservation of Agricultural.” *Current Anthropology*, vol. 51, no. 5, 2010, pp. 629–54. *JSTOR*, <https://doi.org/10.1086/656424>. Accessed 9 Apr. 2023.
- Wright, Angus. “Agriculture and Biodiversity in Latin America in Historical Perspective.” *Oxford Research Encyclopedia of Latin American History*, 22 Dec. 2021, <https://oxfordre.com/latinamericanhistory/display/10.1093/acrefore/9780199366439.001.0001/acrefore-9780199366439-e-991;jsessionid=B6ACCA580032D6D4D0A5124D5183101B#acrefore-9780199366439-e-991-div1-2>.
- Yumeen, Leena. “Blood Diamonds in Sierra Leone: How Colonialism Functions Today.” *Columbia Political Review*, 3 Mar. 2021, <http://www.cpreview.org/blog/2020/11/blood-diamonds-in-sierra-leone-how-colonialism-functions-today>.

Morrisey, Richard J. "Colonial Agriculture in New Spain." *Agricultural History*, vol. 31, no. 3, 1957, pp. 24–29. *JSTOR*, <http://www.jstor.org/stable/3740655>. Accessed 9 Apr. 2023.

**Appendix:**

A. Destruction of Mexican Codices. Diego Muñoz Camargo, “Descripción de la ciudad y provincia de Tlaxcala” (c. 1585)



B. In the world, only these five countries escaped European control. Vox, 2014

**Countries that have been under European control**

Legend:  
Europe (purple)  
Colonized or controlled by Europe (green)  
Partial European control or influence (light green)  
European sphere of influence (yellow)  
Never colonized by Europe (orange)

