



## Article

# Mama Coca Chronicles: Navigating Ancestral Heritage and Future Narratives

Mejía Zapata, Giselly Andrea

*Liana Collective, New York, USA*

## Abstract

*The coca plant's Western narrative has long reduced her multifaceted identity to a single term, "cocaine." However, a transformative movement is underway, with Andean and Amazon indigenous communities, rural groups, urban activists, academics, artists, and politicians actively redefining the coca leaf as sacred and advocating for change. Could coca serve as the catalyst propelling indigenous and Latin American futures thinking forward? Might the future of coca be the first step toward a fusion of ancestral and contemporary worlds? This paper explores these questions using various futures methods, such as signal scanning, Three Horizons, Causal Layer Analysis, and the formulation of thought-provoking scenarios to investigate diverse future possibilities for coca.*

## Keywords

Coca Leaf, Latin American Futures, Decolonisation, Reparations, Indigenous Futures.

## Introduction

The contemporary Western narrative regarding the coca plant has been marked by the simplification of her plurality into a singular term: cocaine (Allen, 2002). This narrative represents a shift from diversity to uniformity, where the multifaceted applications and cultural significance of the plant—as understood and cherished by those who have a deep connection to it—have been overshadowed by the single, specific usage imposed upon her by the Western world.

The Western portrayal is facing resistance from Andean and Amazon indigenous peoples and rural communities who have taken the reins in redefining the coca leaf, and actively pressuring governments and international bodies for change (Jaimes, 2023; Maihold, 2023; Manjarrés, 2022). For millennia, these communities have revered Mama Coca, the indigenous spiritual embodiment of coca and Pachamama (Henman, 1978), as a source of medicine, nourishment, and connection to the land. Today, this movement is gaining even more momentum as urban activists, academics, artists, politicians, and even chefs come aboard. Together, they are forging a powerful movement that promises to shape a diverse landscape of future possibilities for the coca leaf.

## Methodology

This study aims to explore the alternative futures of the polemic leaf, shedding light on her ancestral uses and the impact of policies on the communities that have used her for millennia. It also promises to serve as a tool for reflection on individual and collective positionality in the face of imminent changes in the perception of coca.

As Latin America continues to evolve and face new challenges (deforestation, migration, eruption of authoritarian regimes), there is a growing potential for increased interest and investment in futures thinking to address complex and interconnected issues. This becomes especially crucial in Colombia's post-conflict context, where there is an aim to prevent the recurrence of violence, repair damages done to people and land, reconcile with

\* Corresponding author.

E-mail address: (G. Andrea) [giselly182@gmail.com](mailto:giselly182@gmail.com)

our ancestral connections, and work towards a collectively envisioned future.

I have opted for a qualitative exploration, placing emphasis on speculative research, anticipating its significant contribution to the emerging field of indigenous and Latin American futures. While practitioners of speculative design and foresight innovation from the Global South have already begun advocating for futures thinking and recognising its importance in long-term planning, Latin America lags behind (Duque-Gómez et al., 2022). There are few in-depth foresight-focused initiatives in Latin America, and most of the work is concentrated in architecture or urban planning.

This study commenced with an exploration of coca's 8,000-year history and its intricate entanglement with global politics. Subsequently, I conducted primary research that actively incorporated the perspectives of migrant citizens from Andean and Amazon countries. These individuals have witnessed the impact of the plant's stigma on their lives, representing voices typically overlooked. See Table 1 for a detailed description of the research methods used in this research.

**Table 1: Methodology**

Type of Research	Research Methods	Description
Secondary research	Desk research	<ol style="list-style-type: none"> <li>1. Review of existing background materials and research on the history of coca from a Western and indigenous perspective, coca's impacts on global politics, and differences between cultivator countries.</li> <li>2. STEEP model: Categorisation of signals of change by social, technological, economic, environmental, and political to understand the driving forces of change today.</li> </ol>
	Historical timeline	Chronology of the history of coca until the present moment.
Primary Research	Intercept Interview	Short, structured conversations were conducted with workshop participants, researchers, and traditional users of coca.
	Workshops	<ol style="list-style-type: none"> <li>1. Three Horizon: Unpacking participants' desires for change.</li> <li>2. Causal Layered Analysis: Delving into the root causes of the current problem, brainstorming of potential solutions and aligning them with participants' preferable futures.</li> </ol>
Speculative Research	Alternative Scenarios	<p>Creation of alternative scenarios showcasing the possibilities for the future of coca, inviting readers to reflect on their perspectives.</p> <ol style="list-style-type: none"> <li>1. Counterfactual: Explores how different actions could have led to different outcomes. Offers insights to guide future behavior and goal achievement.</li> <li>2. Probable Future: Expands on the current trends of coca continuing <i>business as usual</i>.</li> <li>3. Preferable Futures: Offers a glimpse into the feasibility of realising participant's preferred futures.</li> </ol>
	Future timeline	Chronology of the history of coca until the present moment, plus the integration of future scenarios, and how to get there.

### Mama Coca: Who she is and what she does

The plant I will discuss here has many names; some are very old, and others are more modern. Surely the plant would call herself by other names if she could, and surely there are many other names that are not known, or there is no written record of them. Hayo, ipadu, kukka, pajarita and Mama Coca are just a few examples of traditional names, representing different sub-species or indigenous languages. *Erythroxylum coca* is her scientific name. Coca is a plant that has co-existed with humans in the Andes and Amazon region for about 8,000 years and continues to be part of the life and traditions of many indigenous and peasant communities in the region (Dillehay et al., 2010; Blickman, 2014).

Coca is a resilient, bush-like plant that can reach heights of two to three metres. She features small oval leaves with distinctive parallel lines along the central vein. The plant produces small white flowers and red fruits, approximately a centimetre in length, housing her seeds (see Figure 1 for image of a coca plant). While she typically prefers warm, moist conditions, coca can adapt to drier environments. She reproduces through seeds or stem cuttings, and within six months, yields the first batch of leaves for the use of the humans caring for her (F. A. Avila-Castillo, personal communication, August 23, 2023).



**Fig 1:** Seed-grown coca plant

*Note:* This seed-grown coca plant is about 5 years old and 2 metres tall. From *Wikimedia Commons*, by Dbotany derivative work: Ilmari Karonen (talk) ([https://commons.wikimedia.org/wiki/File:Erythroxylum\\_novogranatense\\_var.\\_Novogranatense\\_\(retouched\).jpg](https://commons.wikimedia.org/wiki/File:Erythroxylum_novogranatense_var._Novogranatense_(retouched).jpg)), CC BY-SA 3.0.

The relationship between Andean indigenous peoples and Mama Coca is long and tight. For cultures such as the Muisca, Aymara, Quechua, Kogi, and others, coca is part of their cultural identity and hence, part of their quotidian life. In exchange for the care provided through harvest and rituals, the plant has shared her leaves, which, when chewed, provide mild stimulation that prevents hunger and fatigue in extended hours of work or long walks in the mountains. Coca helps them relieve digestive disorders, alleviates altitude sickness, provides local anaesthesia, and possesses divinatory powers (Henman, 1978; Garrido-Lecca, 2022). Coca also plays a vital role in passing down knowledge, making political decisions, and participating in Amazonian rituals. Communities like the Murui Muina, Uitoto, Ocaina, Nonuya, Andoke, and Ooira use coca in ceremonies in the form of mambe (see Figure 2). Mambe is known for providing narrative powers to indigenous leaders who share stories, connect with the divine, and discuss community management and development (Emisora de Paz, 2023; Pereira E. 2012). Additionally, coca is used in making offerings to Mother Earth in the form of a k'intu. A k'intu is crafted from three select coca leaves and blown gently while invoking deities and spirits of the local mountains and sacred places (Allen, 2002).



**Fig 2:** *Mambe*

*Note:* Mambe is a green powder made from roasted and crushed coca leaves mixed with ashes of the yarumo tree, traditionally consumed slowly by placing it between the cheeks. From *Wikimedia Commons*, by C Castellanos ([https://commons.wikimedia.org/wiki/File:Mambe\\_coca\\_colombia\\_crista\\_castellanos.jpg](https://commons.wikimedia.org/wiki/File:Mambe_coca_colombia_crista_castellanos.jpg)), CC BY-SA 3.0.

Mama Coca is then food, a healer, an oracle, a spirit, a tool for conversation, an offering, and she is also an illegal plant. Her illegal status is connected to a modern use given to the plant since 1859 when a German chemist extracted one of the 14 alkaloids present in her leaves and called it cocaine. The narrow and colonial notion that coca is cocaine has created a stigma towards her consumers and ancestral growers. This presumption has sent peasants and indigenous people to prison, incited wars and violence, poisoned territories, made the traditional uses of the plant invisible, and minimised the knowledge of indigenous communities. As the Colombo-Canadian ethnobotanist Wade

Davis says, "Declaring that coca is only cocaine is like saying that potatoes are only vodka" (Drug Science, 2022).

### **Unveiling Coca's Controversial Past**

When the Spanish colonisers arrived in the continent we now call America, claiming discovery of already known lands, abusing and exterminating their people and their territories, and blinded by lust for power and wealth, they also encountered coca. The first written record that reports the use of coca in America was written by Amerigo Vesputio and dates from September 4th, 1504, when he describes his voyage along the north coast of South America in 1499.

They were very ugly in manner and appearance; all had their cheeks bulging with a certain green herb which they chewed constantly, like cattle. They could hardly speak, and each carried two gourds hanging from his neck, one filled with the herb he had in his mouth, and the other with white flour [lime] that looked like powdered plaster. From time to time they would wet a stick, dip it in the flour with the herb... and, amazed at such a thing, we could not understand its secrets (Henman, 1978).

According to Anthony Henman, Spanish colonisers initially frowned upon coca leaf chewing, linking it to unattractive habits and witchcraft. The Catholic Church opposed her during its conversion efforts. However, the plant's widespread use throughout the Andes and her medicinal benefits, including digestive and nervous ailment relief, began to change colonisers' perceptions. Enthusiasm for the plant's properties eventually reached Europe, where around 1858, German chemist Albert Niemann first isolated cocaine in a laboratory. The alkaloid was quickly adopted as an analgesic in surgeries, an antidote against morphine addiction, and used recreationally by philosophers and writers such as Sigmund Freud (Henman, 1978). An important milestone occurred in the 1860s when Angelo Mariani created Vin Mariani, a popular coca-infused wine containing 6 mg of cocaine per fluid ounce of wine (211.2 mg/L), where ethanol acted as a solvent to extract the cocaine from coca leaves (Karch, 2017). This tonic enjoyed immense popularity in Europe and the United States and inspired the creation of other high-cocaine beverages, including Coca-Cola in 1885 (de Lestrangle, 2018; Greenwood, 2016). See Figure 3 for images of Vin Mariani and a Coca-Cola advertisement.



Fig 3: Mariani Wine and Coca-Cola old advertisement posters

*Note:* Vin Mariani was advertised as a healthy, restorative, and energising tonic. The wine was consumed by popes, presidents, sovereigns, ministers, and famous painters of the time. From *Coca Wine: Angelo Mariani's Miraculous Elixir and the Birth of Modern Advertising* by A, de Lestrage, 2018. Inner Traditions/Bear.

The misunderstanding that coca and cocaine are identical and yield similar effects became widespread as critics of coca leaf chewing tradition in South America drew parallels with cocaine use. One of the turning points came in 1924 with the publication of the book *Phantastica* by Louis Lewin. In his book, which was considered the epochal bible on the effects of narcotic and psychedelic substances (see Figure 4), Lewin states, "The use of leaves and that of cocaine produces a very similar result as regards the actual symptoms and final form of cocaine evil." The years following the publication were filled with prohibition and a vigorous campaign against coca chewing and cocaine products from the market (Henman, 1978). Finally, in 1961, the United Nations Single Convention on Narcotic Drugs put coca leaves in the same category of narcotics as cocaine (Schedule I) and mandated the destruction of illegally cultivated coca bushes and the abolition of coca leaf chewing within a 25-year period, based heavily on a 1950 ECOSOC report that portrayed coca leaf chewing as harmful and linked it to cocaine use. The ECOSOC report faced criticism for its research team composition, perceived arbitrariness, inadequate methodology, lack of precision, and racial undertones, making it unlikely that a similar study would pass today's rigorous scrutiny and critical review applied to scientific research (Blickman, 2014).

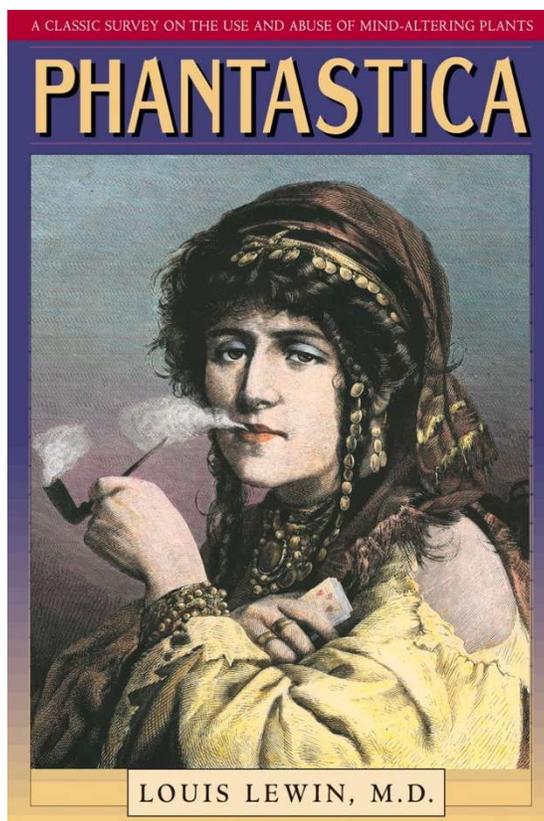


Fig 4: Cover of book *Phantastica* by Louis Lewin, M.D.

*Note:* From *Phantastica. A Classic Survey on the Use and Abuse of Mind-Altering Plants* (Cover), by L. Lewin, 1998. Park Street Press. (<https://books.google.com.br/books?id=5GPthV9MyccC&lpq=PP8&hl=pt-BR&pg=PP2#v=onepage&q&f=false>) Copyright 1998 by Inner Traditions International. In the public domain.

The international ban on coca leaves and cocaine precipitated the creation of international policies like the *War on Drugs*, which the United States has waged for five decades and spent millions of dollars without reducing the production, drug trade, and consumption of the alkaloid (“ONDCP Releases Data on Coca Cultivation and Production in the Andean Region,” 2022). In 1999, during the Clinton administration, the United States signed *Plan Colombia* with the aim of addressing narcotrafficking prompted by a national crisis stemming from a cocaine consumption epidemic in the country. From the initiation of Plan Colombia in 2000 until 2015, the Colombian government received close to \$10 billion in aid from the United States, with 71% of the funds designated for security-related purposes (Lee, 2020). Despite recommendations from the Rand Drug Policy Research Center study, which estimated that drug treatment is twenty-three times more effective than supply-side law enforcement (Rydell & Everingham, 1994), the U.S. government proceeded with this decision. In 1995, the estimated coca leaf production for cocaine in Colombia was 51,000 hectares (UNODC’s Illicit Crop Monitoring Programme, 2006). In 2021, this figure surged to a total of 234,000 hectares (“ONDCP Releases Data on Coca Cultivation and Production in the Andean Region,” 2022).

The War on Drugs has also brought catastrophic social and environmental consequences and disproportionately affected cultivating countries like Colombia, Bolivia, and Peru. Poisonous aerial herbicide application, forced eradication, militarisation, forced displacement, and prohibition have turned peasants and indigenous peoples into state enemies, fuelled the Colombian armed conflict for decades, and caused death and sickness to people and rainforests (Thornton, 2022). However, the UN categorisation and ban have not affected the Coca-Cola company,

which continues to use decocainised coca leaves—processed by extracting one of the 14 alkaloids present in coca—from Peru in its famous beverage, generating billions of dollars in sales worldwide (Geib, 2023; May, 1988).

Coca's chronology can then be split into five periods (see Figure 5).

1. Ancestral period of Mama Coca in the Andes.
2. The European encounter with coca until the extraction of cocaine in 1860.
3. The rise and fall of coca and cocaine. A global craze for coca's famous alkaloid until the international prohibition in 1961.
4. Coca and cocaine locked in a war. Political decisions around the illegal trade of cocaine.
5. Reclaiming the leaf. The period, beginning in the 2000s until the present, is characterised by indigenous peoples' organised resistance to maintaining their customary relationships with the coca plant.

This last period, speaks about the long fight indigenous communities worldwide have fought against erasure, commodification, appropriation, and forced assimilation. As Jane Carling, an indigenous activist from the Cordillera Philippines, said at The New York University on September 18, 2023:

What defines us, what makes us distinct is our spiritual, cultural, and intergenerational tights with the land and its resources. Our life is lived collectively with nature, and our call has always been that we exist, WE EXIST! We existed and governed ourselves before the creation of nation-states, we ask respect for our cultural diversity, we ask for freedom from discrimination and the right to participate in decision-making that affects our customary lands.

Analysing the current period in coca's history provides insights into potential futures that can go from destigmatisation to the possible legalisation and regulation of coca-derived products, including cocaine. What are the signals of change disrupting coca's timeline? How might these developments shape coca's future and impact cultivator nations like Bolivia, Colombia, and Peru? What steps are required for reparation and reconciliation for the plant, land, and people? Could this lead to a new phase of colonisation and industrialisation, similar to other plants like cannabis? What role will indigenous communities play in this transition?

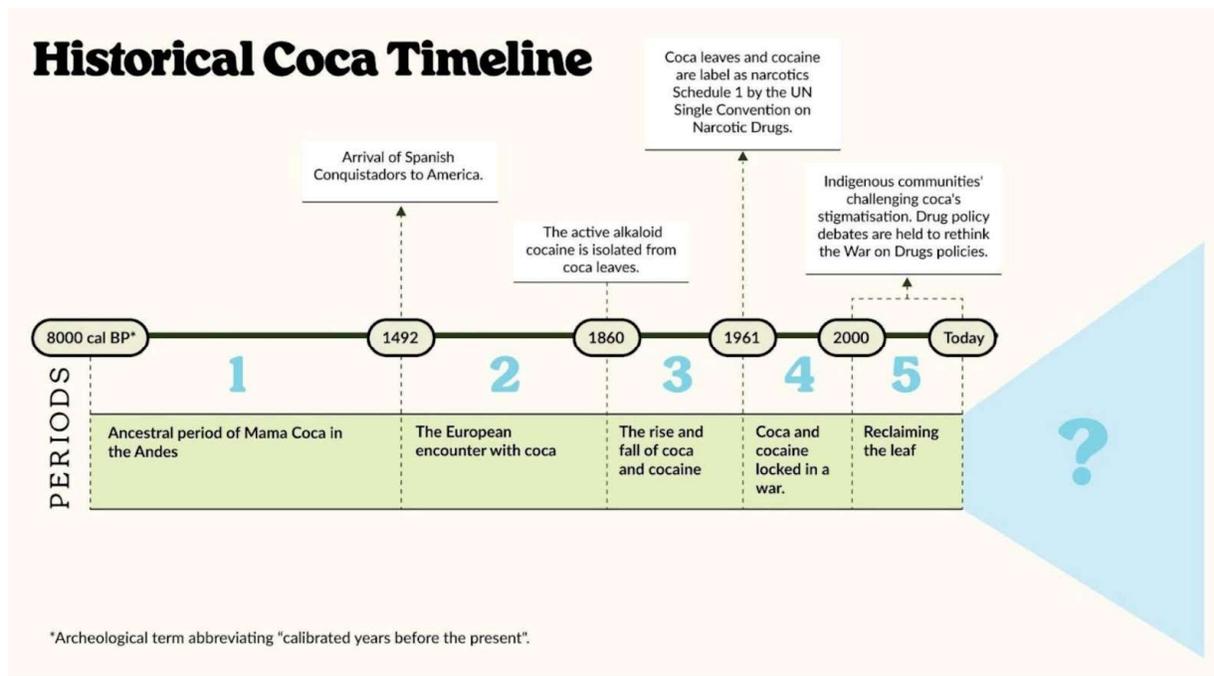


Fig 5: Historical Coca Timeline

Note: Graphic illustrating the five periods of the history of coca. Own work.

**Coca politics today: Colombia, Peru, and Bolivia's different perspectives on coca**

In contrast to Colombia, Peru and Bolivia have a higher percentage of people who consider themselves indigenous. Specifically, 26% of Peru's population and 41% of Bolivia's population identify as indigenous (Observa Igualdad, 2022; Departamento Administrativo Nacional de Estadística, 2019). This is one of the reasons why in Peru and Bolivia, coca enjoys a different legal and social status that allows the coca-chewing habit to be more accepted, and the commercialisation of coca-derived products has been allowed for decades. You can find products such as cookies, soft drinks, balms, teas, and flours derived from the leaf on the shelves of traditional herb stalls and supermarkets next to other 'superfood' products like maca, moringa, or matcha. Peru has the National Coca Company ENACO, a public state entity dedicated to the production and commercialisation of coca and her derivatives. ENACO is the company that sells the coca leaves that end up in Coca-Cola drinks worldwide (Geib, 2023; May, 1988).

Bolivia has been a leader of the coca resistance movement in the region. One of the crucial moments in the post-modern history of coca was the intervention of former Bolivian President Evo Morales (a former coca grower and active member of the coca growers' movement) at the United Nations Commission on Narcotic Drugs convention in Vienna in 2009 (see Figure 6). It was the first time, but not the last—Evo Morales would do it again in 2013 at the same conference and in other international spaces—that he carried and consumed coca leaf in front of all the world leaders attending the event while giving his speech in favour of the traditional consumption of coca and advocating for her removal from the UN category as a narcotic (Morales, 2009; Sárosi, 2009).



**Fig 6:** Evo Morales holding a k'intu of coca leaves at the UN

*Note:* Still photo of video footage taken at the United Nations Commission on Narcotic Drugs convention in Vienna in 2009. From *Morales is chewing coca at the UN - part 1 [Sub: ENG]*, by Drug Reporter - Rights Reporter Foundation, 2009. (<https://www.youtube.com/watch?v=FzuL5vHLMPA>).

In Colombia, however, the situation has been different. With indigenous people representing only 4.4% of the population (“Población indígena en Colombia,” 2019), an evident disconnection with our native ancestors, and the baggage of a 60-year-long history with war and drug trafficking, many Colombians perceive coca solely as cocaine. The United States' policies, particularly the failed War on Drugs, continue to have a detrimental impact on coca farmers, indigenous communities, and the land itself. Excessive militarisation, violence, incarceration, and forced eradication efforts disproportionately affect remote areas that are neglected by the Colombian state, where cultivating coca often becomes the sole means of providing for one's family. As community leader Maria Carvajal said: “Coca became vital to peasants, helping them sustain their families, fix bridges, build roads, build schools, and pay teachers. So, farmers do not plant coca because they want to, but because there is no other alternative.” (Mutante, 2021).

The War on Drugs' efforts have created an atmosphere of shame and taboo towards coca for most people within Colombia and internationally, who associate the leaf only with drug trafficking. Until just three years ago, I also referred to coca and cocaine as the same thing. I was completely unaware of her history of reciprocity with indigenous communities and carried shame when I became a migrant. Being Colombian abroad means having a lot of fear when crossing borders, constant terror that you will be denied a visa, excessive scrutiny at airports, and constant exposure to jokes or unsolicited requests at parties to buy cocaine from you. Now when I meet someone new, I like to ask this question to get a sense of that person's cultural perceptions and references to my home country: What comes to mind when you think about Colombia? Some people mention the telenovela *Ugly Betty* or the beautiful women of our country, which are contrasting points but are simultaneously talking about the same unhealthy obsession of my country with global standards of beauty—a few others talk about good coffee, football, and, more recently, reggaeton. But what most people answer right away, even with a certain excitement and usually accompanied by jokes, is a reference to the show *Narcos*, Pablo Escobar, or another connection of our country to cocaine.

### Coca's three horizons: A Glimpse into Future Possibilities

In the autumn of 2022, together with other Colombians living in New York City, we formed the collective *Liana*. One of Liana's projects is called *Coca Worlds*, which seeks to highlight artistic practices involving the coca plant and aims to foster dialogues to expand narratives about the sacred plant. With my background in futures design and social practice, I proposed exploring the futures of coca by applying diverse methodologies that provoke critical conversations and allow us to expand our imagination colonised by years of mainstream media, and assimilation of Western thought.

As part of Liana's first research and art residency, known as *Las Yerbas Apothecary*, the collective convened to watch four short documentaries concerning the diverse issues coca growers face in Colombia. After presenting the four shorts, we asked an audience of around 50 individuals from Colombia, Mexico, Peru, and North America to re-imagine the futures of coca using the Three Horizons method (see Figure 7 for photos of the exercise). The framework serves as a valuable tool to understand cultural changes, making us more conscious of how our individual and group intentions and actions actively impact the future. It offers flexibility in exploring the potential of the present moment and inspires innovative thinking and action in the face of an uncertain future (Wahl, 2017).

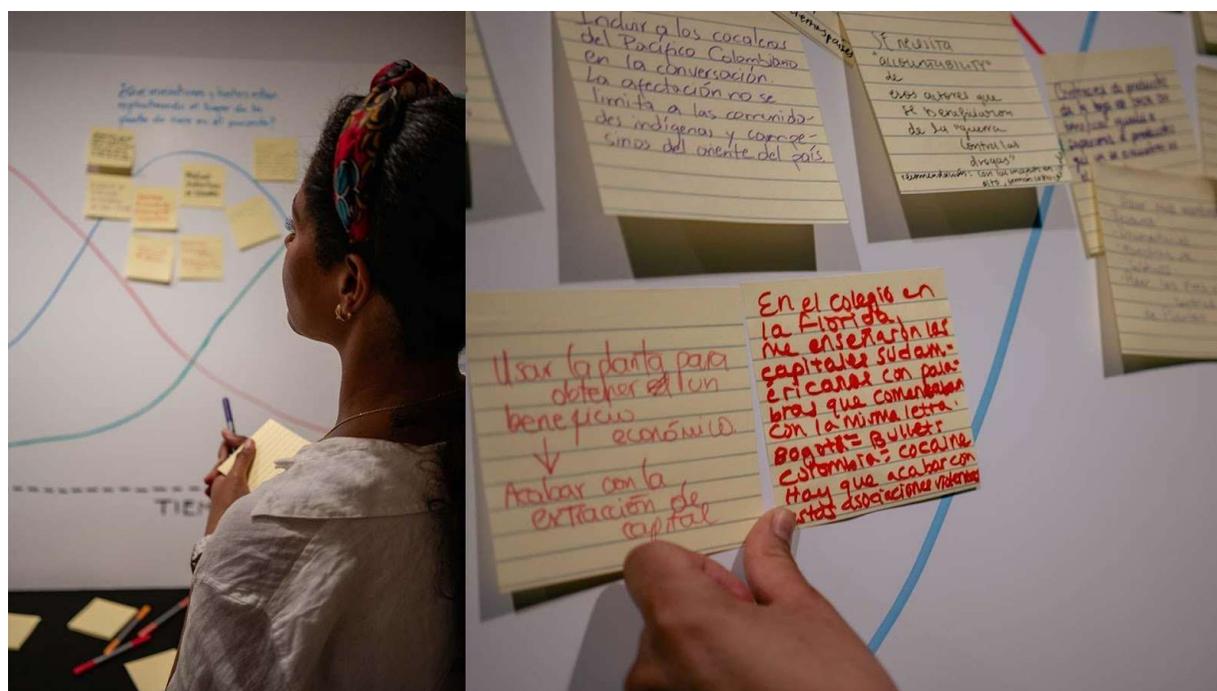


Fig 7: Three Horizon's board on the event Watch and Talk Coca

Notes: Participants of the *Watch and Talk Coca* event held on August 4th, 2023, added their ideas on the Three Horizons board about the future of coca leaf. Photos by Alejandro Jaramillo.

#### Horizon 1 (H1). Visualising participants' desires for change

Current system that has begun to show signs of decay or crisis. H1 is the horizon of business as usual and therefore requires transformation.

Participants' answers to H1 question: What practices must end for there to be another relationship with the coca plant in the future?

- "In my school in Florida, I was taught the South American capitals with words beginning with the same letter. Bogotá-Bullets, Colombia-Cocaine. We have to move away from these violent associations."

- “The leaf is not a drug”
- "That we continue to see cocaine consumption as a crime and not as a health issue, and regularise it."
- "The deforestation of the jungle for the planting of coca."
- "The jokes about cocaine to Colombians."
- "We need fewer Netflix series."

Participants stressed the need to dispel the coca plant from harmful stereotypes, often perpetuated by the media, linking Colombians to cocaine. They highlighted the importance of reevaluating the War on Drugs, which disproportionately affects regions where coca holds cultural and spiritual significance.

### **Horizon 2 (H2). Period of transition**

Culturally creative space for social, technological, economic, environmental and political viable initiatives that can disrupt and transform H1.

Participants' answers to H2 question: What initiatives and events are rethinking the place of coca in the present?

- “Coca growers express harassment from the Peruvian government. Support cocaleros, who are brave indigenous communities who defend coca as an ancestral medicine.”
- “Futuro Coca Festival in Colombia.”
- "Artistic visibility."
- “Visibility of the traditional use of coca.”
- “Films, shorts, music, narratives that talk about coca.”
- “Conscious drug consumption initiatives promoted by campaigns such as *Échele cabeza cuando te des en la cabeza* and *Apoya no castigues*.”
- “The creation of the association of growers of coca, marijuana, and poppy in Colombia—COCCAM.”
- “Hundreds of coca leaf products with benefits equal to or greater than products found on the market.”

Public discourse has seen the rise of political and grassroots initiatives advocating for the legalisation and regulation of coca and its derivatives. Artistic, civic, and academic movements are raising awareness of coca's traditional, nutritional, and medicinal uses. Participants highlighted the importance of the Futuro Coca festival in Colombia (July 2023) and community resistance efforts in Peru and Colombia to protect indigenous traditions and influence national policies. Ongoing research and public health campaigns were also noted, promoting informed drug consumption and the inclusion of drug users in legalisation discussions.

### **Horizon 3 (H3). The future that participants imagined**

Visions and perspectives of a viable world. This horizon does not pretend to predict the future but rather allows us to engage in conversations and imagine a possible world.

Participants' answers to H3 question: How do we imagine coca futures?

- “I envision the future of coca, knowing where she comes from, knowing what she means. She is not cocaine, She is Mama Coca. There are so many uses for her. She is so sacred. So, I think one way to start is to educate ourselves and decolonise how we perceive coca.”
- “Legalisation of coca and cocaine. Regulated sale in pharmacies around the world. Ample research in pathologies.”
- “Respect for the user. Involve cocaine users in these spaces. Expand, extend the conversation beyond the academic circle.”
- “Journalistic projects that connect the origin of coca with the cocaine consumer. It has to be a change of mentality just like how we have begun to consume other products with more awareness.”
- “Openness to the world. Travelling the world, healing the word, and accompanying it.”
- “Accessible and moderate regulation that allows the production, distribution and commercialisation of coca leaf products.”
- “A greater awareness, appropriation, and relevance of the relationship of coca with spiritual practices and the rapprochement with nature. Decolonise coca and the way she is perceived. Use her in our day-to-day.”

- “Indigenous and peasant governance. Let the community be the leaders.”
- “Include the coca growers of the Colombian Pacific in the conversation. The impact is not limited to the indigenous and peasant communities in the east of the country.”
- “Developed countries at risk of food security, committed to the purchase of crops that can replace coca and create alternatives for peasants. Create benefits for farmers.”
- “Reparations are needed.”
- “Resisting capitalism, creating spaces with the peasants at the centre. Contribution to the environment and climate change.”

The responses we received from the public can be grouped into three categories: (1) Education that restores our relationship with the plant, (2) Decolonialism and reparations, and (3) Increase research on the leaf for medical use.

***Education that restores our relationship with the plant.*** Participants emphasised the need for educational spaces to promote understanding of coca's ancestral significance, extending beyond academic or policy spaces to a wider public, including cocaine consumers. Proposals included innovative strategies like mobile academies to share coca-related knowledge worldwide.

***Decolonialism and reparations.*** Participants advocated for reparations to communities harmed by the War on Drugs, aiming to address food insecurity, infrastructure, education, healthcare, and environmental damage. They emphasised the need of the U.S. government and businesses to recognise their roles in profiting from coca as an act of reparations. Additionally, they called for indigenous and peasant farmers, including Black coca growers in Colombia, to lead in the regularisation, production, and commercialisation of coca products. This vision supports local communities' sovereignty and raises concerns about industrialising coca in ways that may repeat colonial patterns, similar to the legalisation of cannabis.

***Increase research for medical use.*** Moreover, the participants envisioned a future for coca that hinges on heightened research efforts geared towards medical applications. This future embodies a fusion of scientific and traditional knowledge, fostering innovative breakthroughs in healthcare practices that harmoniously integrate these two realms.

## **In-Depth Examination of Horizon Two Initiatives**

As part of my research, I scanned signals of change—such as emerging trends, technologies, products, policies, events, and ideas that hint at future directions—and organised them into the STEEP model (social, technological, economic, environmental, and political).

### **Social**

- The Futuro Coca festival was the first event of its kind held in Bogota, Colombia, in July 2023. The festival served as a hub that gathered gastronomic exponents, designers, ecologists, artists, audiovisual producers, indigenous leaders, and the general public to exchange ideas about coca (Jaimes, 2023).
- For decades, Latin American artists have explored and expressed the complexities of the coca leaf through various mediums, fostering critical discussions on her connections to drug trafficking, and broader global impacts.
- Notably, consuming mambe and coca chewing has begun to gain popularity among urban dwellers in Colombia. This trend has notably entered privileged circles with access to academic, political, or artistic realms, where discussions surrounding these practices have found a receptive audience.

### **Technological**

- Veronica Akle is a professor of Neuroscience at the Faculty of Medicine at the University of Los Andes in Colombia. Alongside indigenous peoples, she is at the forefront of a medical research endeavour examining

potential applications of the coca leaf in addressing cardiovascular and pulmonary conditions, as well as attention-deficit disorders. Their innovative approach blends ancestral wisdom with contemporary scientific methods (Futuro Coca, 2023).

### **Economic**

- Indigenous communities continue to use coca in food products (teas, cookies, soft drinks, flour), which have thrived commercially, bolstering their economic sustainability. Recently, coca leaves have also gained popularity among celebrated chefs, upscale restaurants, and urban entrepreneurs, leading to innovative culinary creations in Colombia (Díaz, 2023).
- In 2021, Coca-Cola sent a letter to *Coca Nasa*, an indigenous project of the Nasa people in Colombia dedicated to the preparation of foods based on coca leaves. The letter requested the removal of the word “coca” from their product *Coca Pola*, the first coca leaf beer made with coca (Pola is a common word to refer to beer in Colombia), citing trademark violations. Coca Nasa answered with another letter requesting Coca-Cola to remove the word from Coca-Cola's brand and questioning their authority to use the term, which indigenous peoples had been using for millennia before the multinational even existed. There hasn't been any reply from Coca-Cola probably due to fear of bad press (Woods & Wong, 2023).
- In 2023, plummeting coca leaf prices in Colombia are causing severe hardship for farmers, impacting their ability to provide for their families. Factors contributing to the decline might include the growing problem of fentanyl addiction in the United States and the new Colombian president's conciliatory approach towards coca growers. In response, farmers are shifting to alternative crops or abandoning coca cultivation altogether (Sánchez, 2023; "Parts of Colombia are now awash with cocaine," 2023).
- Some peasants who used to grow coca in Colombia are changing their crops for cannabis due to the rise of demand for the plant from international companies from places where recreational consumption is already legal (F. A. Avila-Castillo, personal communication, August 23, 2023).

### **Environmental**

- Coca crops contribute to the deforestation and contamination of fields and water sources (Mowbray, 2022). Tropical areas comprise the vast majority of deforestation globally, and this plant loss contributes to climate change (Ritchie, 2024). Because of the persecution of the leaf coming from the War on Drugs, some coca farmers hide their plantations in national protected areas (Mowbray, 2022).
- Coca farmers engaged in the illegal production of cocaine heavily depend on fertilisers and pesticides to boost leaf production, which can impact both the land and the health of the cultivators (Gatopardo, 2023).

### **Political**

- In March 2023, the government of Bolivia presented a formal petition at the UN conference of the Commission of Drug and Narcotics (CND) in Vienna to remove the coca leaf from the list of narcotics (Maihold, 2023). The World Health Organization (WHO) is set to conduct a thorough examination of the coca leaf in the coming year. Depending on the results, the WHO will propose changes to its UN drug classification. The recommendations will undergo approval by the CND, with voting expected in 2025 (Walsh & Jelsma, 2023).
- In 2020, Colombian Senators Marulanda and Valencia introduced a bill to legalise and regulate coca cultivation, aiming to address issues linked to drug trafficking. The goal was state control to mitigate violence, corruption, deforestation, and lack of trust. The bill aimed to protect children, decriminalise consumers and uphold indigenous rights. The bill was voted against in 2021 after two debates (Marulanda & Valencia, 2020).
- The first-ever left-wing president of Colombia talked in favour of the legalisation of the coca leaf and against the War on Drugs politics in the 77th General Assembly of the United Nations in 2022. Gustavo Petro's speech marks a significant change in Colombia's position on pivotal issues and its relations with the United States (Manjarrés, 2022).

### A Causal Layer Analysis on Coca

As a critical futures research method created by Sohail Inayatullah, Causal Layer Analysis (CLA) is concerned with exploring alternative futures by delving into the vertical dimensions of a topic and involving various layers of analysis (Inayatullah, 2004).

On Thursday, 13th of September, 2023, I facilitated a CLA workshop with Colombian migrants in New York working on the coca plant from different disciplines—artists, historians, biologists, and lawyers (see Table 2 for results of the CLA exercise). I asked the following questions to explore the four levels of the methodology:

- **Litany:** Trends or issues frequently inflated for political agendas, leading to emotions of helplessness and apathy.
  - What are the current news headlines and trends around coca?
- **System:** Systemic causes of the issues presented in the litany level.
  - What do you think are the triggers behind those headlines?
- **Worldview:** Discourses that support and legitimate the problem. These can come from ideologies, stakeholders' interests, or worldviews.
  - What are the mainstream discourses around the headlines?
- **Metaphor:** Deep narratives that tap into the subconscious and often evoke emotional aspects of an issue. It prioritises visual imagery over linguistic aspects.
  - What are the myths people hold about coca?

**Table 1:** CLA workshop analysis and potential solutions

CLA levels	Problem space	Solutions towards preferable futures
Litany	1. Headlines often frame coca as synonymous with drug trafficking and criminal activity, reinforcing negative stereotypes.	1. Implement a solutions journalism approach that not only focuses on what is wrong but also critically exposes background context and examines how people address shared problems.
System	1. The cultivation of coca for cocaine production is linked to the absence of alternative income and employment opportunities, social class divisions, and structural racism. 2. New drug policies tend to be developed in a top-down manner, excluding coca farmers, indigenous communities, and cocaine consumers from decision-making processes. 3. The predominant response to the high demand and production of cocaine has been primarily militaristic and punitive.	1. The government adopts a participatory, decentralised approach in crafting drug-related and public policies, involving the directly affected. 2. Integration of indigenous and Black heritage studies in the educational system of Andean countries. 3. Legalisation and regularisation of coca-based products. 4. Accountability and reparations for the harm caused by the War on Drugs and the prohibition of coca. 5. Holistic drug abuse treatment, addressing societal issues, respecting individual rights to alter consciousness, and promoting informed drug use.
Worldview	1. Western and scientific approach has a long history of neglecting the ancestral wisdom and life experiences of indigenous peoples worldwide. 2. Individualistic and stereotyped view of drug addictions.	1. Western and scientific approach has a long history of neglecting the ancestral wisdom and life experiences of indigenous peoples worldwide. 2. Individualistic and stereotyped view of drug addictions.

---

Metaphor/Myth	<ol style="list-style-type: none"> <li>1. Coca and cocaine are the same and produce the same effects.</li> <li>2. All Colombians are drug dealers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Coca-Chic: Coca consumption reframed as a trendy element of modern, eco-conscious lifestyle, and ethical consumption.</li> <li>2. Coca-Healing: Highlight coca’s medicinal properties and its role in traditional healing practices, aligning it with the global shift towards holistic health and wellness.</li> </ol>
---------------	---	---

---

**Three Alternative Scenarios for Mama Coca**

After workshops and analysis, I've created three scenarios reflecting diverse themes explored from this research. Using Three Horizons, I captured participants' preferable futures and areas for change. The STEEP model highlighted current social, technological, economic, environmental, and political shifts in coca. CLA workshops further analysed the vertical dimensions of current changes, offering potential solutions aligned with participants' envisioned futures. The resulting scenarios showcase varied possibilities for the future of coca, inviting readers to reflect on their perspectives (see Figure 8).

1. **Counterfactual:** Scenario crafted to demonstrate how individual actions and historical twists can reshape the future trajectory. It provides insights for handling future behaviors and achieving our goals.
2. **Probable Future:** A scenario that expands on the current trends of coca continuing business as usual.
3. **Preferable Future:** Illuminates a scenario where solutions to existing challenges align with the envisioned preferences of participants. This presentation offers a glimpse into the feasibility of realising these preferable futures.

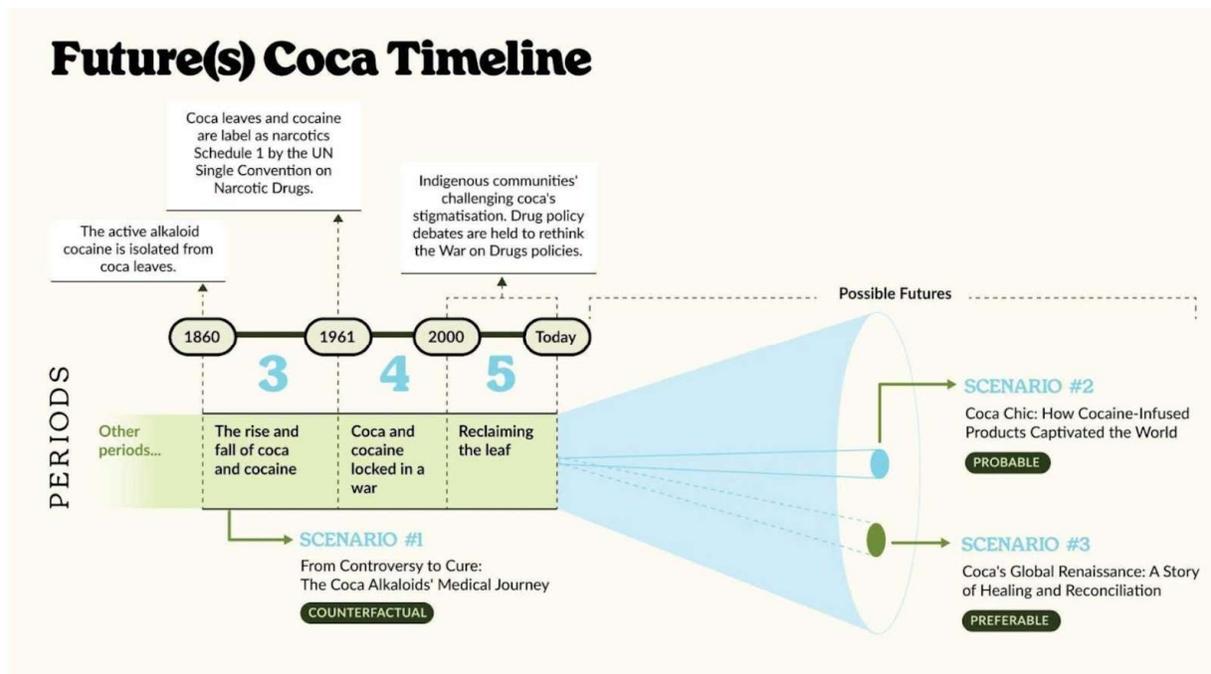


Fig 8: Three alternative scenarios

Note: Graphic illustrating the three alternative scenarios of coca. Own work.

**Scenario 1: From Controversy to Cure: The Coca Alkaloids' Medical Journey (Counterfactual story)**

Topics:

- Extended medical research
- Integration of indigenous knowledge

Following the isolation of cocaine from coca leaves in 1858, medical research on the alkaloid gained popularity in both the United States and Europe. At the age of 28, the ambitious Freud, keen on staying abreast of the trend, conducted self-experiments and documented the physiological effects of cocaine in his 1884 paper "On Coca" (Howard, 1884). This groundbreaking research explored the potential therapeutic uses of cocaine for conditions like melancholia and morphine addiction, as well as its applications in local anaesthesia.

However, Freud's work faced opposition, notably from his adversary Louis Lewin, who contested Freud's findings in light of his exploration of mind-altering plants. Other doctors joined in, documenting the addictive properties of cocaine when misused.

Recognising the controversy surrounding his work, Freud embarked on a journey to South America to understand the plant's origins. Freud returned to Europe after 18 months and decided to deepen his experiments. After five years, he published the results of his research, emphasising that the Indians chewing coca habit show no signs of psychosis or addiction. He also detailed experiments with lower doses of cocaine paired with talk and cathartic therapy (that he learned from his mentor Josef Breuer), yielding impressive results in the treatment of melancholia, hysteria, and other nervous afflictions.

Freud's research sparked a societal shift, challenging prevailing negative views of cocaine. People began to recognise the alkaloid's potential for medical use, and Freud is now regarded as the father of psychopharmacology and psychoanalysis. His work paved the way for the development of medications addressing depression, attention-deficit disorders, and various other conditions.

More recently, the exploration of Truxilline, one of the thirteen alkaloids present in coca, is being tested as a stimulant for commercial purposes, offering the potential to compete with caffeine and nicotine.

### **Scenario 2: Coca Chic: How Cocaine-Infused Products Captivated the World (Probable future)**

Topics:

- Industrial agriculture dominated by global corporations
- Excessive consumption culture
- Narrow standards of beauty

The groundbreaking response of removing coca leaf from the UN list of narcotics paves the way for legalising edible products, teas, protein powders, and various other coca-leaf-based products worldwide. As the world embraces this newfound freedom, the consumption of coca-base products skyrockets. The coca leaf is now hailed as a superfood, sought after for her unique properties.

Multinational corporations, who see a golden opportunity in South America, venture into the business of coca cultivation and the production of diverse coca-based goods. In their quest for profit, they clear vast swaths of Amazon rainforest for industrial coca plantations. To meet the growing global demand for coca, they use artificial lighting systems to accelerate plant growth and heavy pesticides and fertilisers, which have detrimental effects on the soil, poison rivers and create numerous health problems for people nearby. As the water supply dwindles due to coca cultivation, communities begin to protest, clamouring for access to clean drinking water. A strange consequence of this coca craze is that being Colombian suddenly became the coolest thing in the world.

Personal DIY kits that allow individuals to separate cocaine from the dried coca leaf from the comfort of their homes emerge. This invention raises alarms among drug lords, corporations, and corrupt politicians who see their profits threatened. A wave of innovation sweeps through the world, leading to the creation of various devices for coca leaf consumption, much like the myriad gadgets for coffee enthusiasts. Machines that produce mambe in just two minutes with pre-made ingredient packages become all the rage.

In the cities, poporos and traditional-looking bags to carry coca leaves become the latest fashion trend. Urban enlightening rituals where people gather to consume coca leaves and mambe become the new main source of tourism in Colombia. The allure of coca products also captivates women worldwide, who see the suppression of hunger properties of the leaf as a good tactic to shed pounds. Influencers and celebrities use social media to promote these products, sparking a cultural phenomenon.

### **Scenario 3: Coca's Global Renaissance: A Story of Healing and Reconciliation (Preferable future)**

Topics:

- Indigenous Governance
- Education on historical heritage
- Reparations and accountability
- Medical research

After years of advocacy across communities, and nations, the UN removes the coca leaf from its controlled substances list. This historic decision is publicly announced in Vienna, accompanied by a UN apology for the harm inflicted on people and territories. The announcement triggers a widespread transnational celebration in Andean and Amazon countries, prompting calls for a comprehensive strategy involving public participation in crafting coca-related policies. Simultaneously, the UN establishes a dedicated group tasked with implementing reparations for individuals and territories affected by decades of prohibition.

As part of the reparations and reconciliation efforts, governments, medical research labs, Coca-Cola, and Angelo Mariani's descendants are urged to contribute funds back to coca-cultivating communities. The entrusted funds are

placed under the stewardship of the Federation of Cocacultivators (Fedecoca), a newly formed body representing indigenous communities and coca farmers in Colombia, Bolivia, Ecuador, and Peru. Fedecoca directs these funds towards safeguarding territories from deforestation and industrial agriculture, supporting education, healthcare, infrastructure, and fostering active participation in the development of global policies for the cultivation, production, and trade of coca-based products.

Fedecoca also embarks on a mission to promote a comprehensive understanding of coca's history and indigenous traditions, starting in schools. Ministries of education begin incorporating these teachings into their curricula. This move triggers more people in Colombia to begin to reconnect with their indigenous and Black origins. This change is supported by the Colombian Government, which introduces a public policy offering DNA tests to all citizens for free to determine their indigenous and African heritage.

Coca medical research done in the intersection of traditional knowledge and modern science yields a groundbreaking discovery: another alkaloid in the coca plant has the potential to reduce symptoms of depression. This revelation reshapes the world's perception of coca, transforming her from a symbol of prohibition to a source of healing and cultural revival. The Colombian Congress is in the third and last debate to approve the legalisation of cocaine, leading to a rift in its law enforcement relations with the United States.

## Conclusions

This research has shown that the integration of history in the educational system and beyond is essential, as well as involving the entire population to avoid elitism or discrimination (Duque-Gómez et al., 2022). In Colombia, history was only added to the educational system in December 2017 as part of a wider social studies module, reversing a 1994 law that had removed history classes from school curriculums (Caselli, 2018). In a world saturated with shallow information and short attention spans, it is easy to feel helpless. Yet, history shows that small actions can spark influential movements, emphasising our collective power to shape an uncertain future.

Coca's history not only emphasises her distinction from cocaine but also sheds light on a broader issue—the need for many Latin Americans to reconnect with their ancestral heritage. The process of assimilation, rooted in colonial times and reinforced by nation-state formation and capitalism, has profoundly influenced Latin American lives. The rejection of indigenous and Black roots is tied to a colonial legacy that values productivity, wealth accumulation, social validation, competitive power dynamics, detachment from the land, individualism, and neglect of communal bonds. Unfortunately, unless of recent European ancestry, most Colombians remain largely unaware of their heritage, creating a significant historical gap for those with mixed backgrounds dating back to colonisation.

Exploring our Latin American heritage does not require us to abandon modern lifestyles. Instead, it presents an opportunity for harmonious coexistence with our cultural diversity. While indigenous communities globally have embraced formal education, learned non-indigenous languages, participated in politics, and incorporated aspects of the modern world, this cultural integration has not been reciprocated equally. I believe it is feasible to find a balance between modern and ancestral traditions without romanticising indigenous communities or dismissing them as superstitious. It is imperative that we respect their intergenerational knowledge transfer, ancestral healing practices, and wisdom, even if they diverge from conventional scientific norms. The futures of Latin America are deeply intertwined with those of indigenous and Black communities.

In the three scenarios above, I explore the amplification of events from diverse perspectives within our historical context. This mirrors the potential impact of our choices. We could contribute to the expansion of the existing industrial complex and corporation's hegemonic power that governs our system—transforming the coca plant into a popular commodity and turning us into passive consumers, akin to the current trend with psilocybin mushrooms. This could lead to significant social and environmental consequences such as large-scale deforestation and excessive water use, similar to issues observed with cannabis cultivation.

Alternatively, we have the option to amplify a different narrative. By aligning with activists advocating for historical justice, and striving for reciprocity and reparations, we contribute to a more sustainable future. Reparations and accountability, in this context, become crucial concepts. It is essential to leverage our privileges to give back, whether through dedicating time, financial resources, land, or apologies. Reparations should also extend beyond humanity and encompass rivers, oceans, mountains, other animals, and plants. Notably, the planning and execution

of reparations must be thoughtful and involve active participation from all affected parties.

As we contemplate the future of the coca plant, it becomes evident that our actions today will shape its trajectory. Embracing change requires fostering hope and critically assessing established norms for alignment with evolving values. It is not enough to merely question; we must act purposefully, contributing to a narrative that reflects our commitment to sustainability, justice, and thoughtful reparations. Moving towards a future where coca-derived products, including cocaine, are legalised doesn't mean endorsing them. It could involve regularisation, indigenous governance, increased research on plant properties and potential medical uses, and a shift in addressing drug addiction from punishment to health. Communal action and public policy changes are necessary.

### Acknowledgements

I would like to express my gratitude to Juan Pablo Caicedo for generously inviting us to participate in his exhibition project, *Coca Worlds*, and to Angélica Cuevas for her energy that ultimately brought us together to establish Liana Collective. Special thanks to Tatiana Arocha for sharing her knowledge of the coca leaf derived from her art, and to Cristina Pescoran for her insights on coca abroad. Thanks to Elliot Montgomery for encouraging my submission, and to Radha Mistry for her feedback on the research methodology.

My deepest thanks to Darian Woods and Alisha Bhagat for their feedback on my manuscripts. I'm grateful to Canal Projects Gallery—especially Sara Garzón, Maya Hayda, and Andrew Lee—for their support in making *Las Yerbas* a success and facilitating participant engagement. Thank you also to the participants of the *Hable y Veá Coca* events for sharing their perspectives.

Lastly, I express profound appreciation to the activists, indigenous communities, and coca farmers for their unwavering dedication to preserving their traditions and culture. Your resilience is truly inspiring.

### References

- Allen, C.J. (2002). *The Hold Life Has: Coca and Cultural Identity in an Andean Community*. Washington: Smithsonian Institution.
- Blickman, T. (2014, August 5). *Coca leaf: Myths and reality. A beginner's guide to coca*. The Transnational Institute. <https://www.tni.org/en/publication/coca-leaf-myths-and-reality>
- Departamento Administrativo Nacional de Estadística. (2019). *Población Indígena de Colombia*. <https://www.dane.gov.co/files/investigaciones/boletines/grupos-etnicos/presentacion-grupos-etnicos-2019.pdf>
- de Lestrang, A. (2018). *Coca Wine: Angelo Mariani's Miraculous Elixir and the Birth of Modern Advertising*. United States: Inner Traditions/Bear.
- Díaz, L. (2023, August 5). *Destigmatizing Coca: The Sacred Leaf Reaches the Culinary Arts*. *El País*. <https://english.elpais.com/culture/2023-08-05/destigmatizing-coca-the-sacred-leaf-reaches-the-culinary-arts.html>
- Dillehay, T., Rossen, J., Ugent, D., Karathanasis, A., Vásquez, V., & Netherly, P. (2010). *Early Holocene Coca Chewing in Northern Peru*. *Antiquity*, 84(326), 939–953. <https://doi.org/10.1017/S0003598X00067004>
- Drug Reporter. (2009, May 11). *Morales is Chewing Coca at the UN - Part 1 [Sub: ENG] [Video]*. Youtube. <https://www.youtube.com/watch?v=FzuL5vHLMPA>
- Drug Science. (2022, April 27). *The Drug Science Podcast | Episode 62 | Blood of the Cocaine War with Wade Davis [Video]*. Youtube. [https://www.youtube.com/watch?v=BZIxrrOH\\_pE](https://www.youtube.com/watch?v=BZIxrrOH_pE)
- Duque-Gómez, L. F., González-Valencia, G. A., & Santisteban-Fernández, A. (2023). *What Do You Think About the Future? Students' Imaginaries in Colombian PostConflict*. *Journal of Future Studies*, 27 (4). [https://doi.org/10.6531/JFS.202306\\_27\(4\).0002](https://doi.org/10.6531/JFS.202306_27(4).0002)
- El mundo indígena 2020: Bolivia (2020, May 25). *El Grupo Internacional de Trabajo sobre Asuntos Indígenas (IWGIA)*. <https://www.iwgia.org/es/bolivia/3736-mi-2020-bolivia.html>
- Emisora de Paz. (2023, February 28). *La ruta del mambe: Un camino espiritual para los pueblos indígenas de la*

- Amazonía. Radio Nacional de Colombia. <https://www.radionacional.co/cultura/tradiciones/hoja-de-coca-y-el-mambe-tradiciones-de-pueblos-indigenas-en-amazonas>
- Futuro Coca. (2023, July 27). COCA TALKS Edición 1 [Video]. Youtube. <https://www.youtube.com/watch?v=RCpSSEFTUug>
- Gatopardo. (2023, March 30). A Mano Limpia: El Doble Precio de la Coca en Colombia [Video]. Youtube. [https://www.youtube.com/watch?v=UgJ\\_Zd9jb08](https://www.youtube.com/watch?v=UgJ_Zd9jb08)
- Garrido-Lecca, X., (2022). *Lecturas Botánicas: Erythroxylum Coca*. Temblores Publicaciones.
- Geib, C. (2023, March 2). The weird (and wired) truth behind what’s really in Coca-Cola. Eater. <https://www.eater.com/23620802/cocaine-in-coca-cola-coke-recipe-gastropod>
- Greenwood, V. (2016, September 23). The little-known nut that gave Coca-Cola its name. BBC. <https://www.bbc.com/future/article/20160922-the-nut-that-helped-to-build-a-global-empire>
- Henman, A. (1978). *Mama Coca*. Hassle Free Press.
- Howard, S. (1884). Uber Coca: Freud's Cocaine Discoveries. *Journal of Substance Abuse Treatment*, 1(3). [https://doi.org/10.1016/0740-5472\(84\)90023-0](https://doi.org/10.1016/0740-5472(84)90023-0)
- Inayatullah, S. (2004). *The Causal Layered Analysis (CLA) Reader. Theory and Case Studies of an Integrative and Transformative Methodology*. Tamkang University Press, 576 pages.
- Jaimes, D. (2023, August 25). Futuro Coca: Imagining a new future for coca in Colombia. Talking Drugs. <https://www.talkingdrugs.org/futuro-coca-imagining-a-new-future-for-coca-in-colombia>
- Karch MD FFFLM, S. B. (2017). *A Brief History of Cocaine*. Ukraine: Taylor & Francis.
- Lee, B. (2020, January 9). Not-so-grand strategy: America’s failed war on drugs in Colombia. Harvard International Review. <https://hir.harvard.edu/americas-failed-war-on-drugs-in-colombia>
- Lewin, L. (1998). *Phantastica. A Classic Survey on the Use and Abuse of Mind-Altering Plants (Cover)*. Park Street Press. <https://books.google.com.br/books?id=5GPthV9MyccC&lpq=PP8&hl=pt-BR&pg=PP2#v=onepage&q&f=false>
- Maihold, G. (2023, May 5). Error histórico: Prohibición internacional de hoja de coca. Deutsche Welle (DW). <https://www.dw.com/es/corrigiendo-un-error-hist%C3%B3rico-la-prohibici%C3%B3n-internacional-de-la-hoja-de-coca/a-65519278>
- Manjarrés, J. (2022, September 22). Colombia’s president Petro challenges US anti-drug policy in UN speech. Insight Crime. <https://insightcrime.org/news/colombias-president-petro-challenges-us-anti-drug-policy-in-un-speech>
- Marulanda, I., & Valencia, F. (2020). ABC Proyecto de Ley Regulación de la Hoja de Coca y sus Derivados. Coca Regulada. <https://cocaregulada.com/wp-content/uploads/2020/08/ABC-PL-CocaRegulada-.pdf>
- May, C. D. (1988, July 1). How Coca-Cola Obtains Its Coca. The New York Times. <https://www.nytimes.com/1988/07/01/business/how-coca-cola-obtains-its-coca.html>
- Morales, E. (2009, March 13). Let me Chew My Coca Leaves. The New York Times. <https://www.nytimes.com/2009/03/14/opinion/14morales.html>
- Mowbray, S. (2022, July 13). El impacto medioambiental de la cocaína en el mundo. Mongabay. <https://es.mongabay.com/2022/07/el-impacto-medioambiental-de-la-cocaina-en-el-mundo>
- Mutante. (2021, March 17). Con Balas y a la Brava: El Estado Contra los Cocaleros [Video]. Youtube. <https://www.youtube.com/watch?v=rvAn-468iw8>
- Observa Igualdad. (2022). Participación política de los pueblos indígenas. Jurado Nacional de Elecciones. <https://observaigualdad.jne.gob.pe/poblacion.html>
- Parts of Colombia are Now Awash with Cocaine (2023, August 4). The Economist. <https://www.economist.com/the-americas/2023/08/04/parts-of-colombia-are-now-awash-with-cocaine>
- Pereira, E. (2012). *Um Povo Sábio, Um Povo Aconselhado. Ritual e Política Entre os Uitoto- Murui*. Paralelo 15.
- Ritchie, H. (2024). *Not the End of the World* (1st ed., p. 121). Little, Brown Spark.
- Rydell, P., & Everingham, S. (1994). *Controlling Cocaine: Supply Versus Demand Programs*. RAND. [https://www.rand.org/content/dam/rand/pubs/monograph\\_reports/2006/RAND\\_MR331.pdf](https://www.rand.org/content/dam/rand/pubs/monograph_reports/2006/RAND_MR331.pdf)

- Sánchez, C. (2023, July 24). The Coca Business's Collapse has Crushed Rural Colombia. *El País*. <https://english.elpais.com/international/2023-07-24/the-coca-business-collapase-has-crushed-rural-colombia.html>
- Sárosi, P. (2009, May 15). Chewing coca at the UN. *Drug Reporter*. <https://drogriporter.hu/en/chewing-coca-at-the-un>
- The White House. (2022, July 14). ONDCP Releases Data on Coca Cultivation and Production in the Andean Region [Press release]. <https://www.whitehouse.gov/ondcp/briefing-room/2022/07/14/ondcp-releases-data-on-coca-cultivation-and-production-in-the-andean-region>
- Thornton, C. (2022, September 7). The U.S. Has Led the War on Drugs Abroad for Decades, and It's Been a Staggering Failure. *The New York Times*. <https://www.nytimes.com/2022/09/07/opinion/colombia-drug-war-us.html>
- UNODC's Illicit Crop Monitoring Programme (2006). *Coca Cultivation in the Andean Region. A Survey of Bolivia, Colombia and Peru*. (p. 110). United Nations Office of Drugs and Crime. [https://www.unodc.org/pdf/andean/Andean\\_report\\_Part4.pdf](https://www.unodc.org/pdf/andean/Andean_report_Part4.pdf)
- Wahl, D. C. (2017, June 7). The Three Horizons of innovation and culture change. *Regenerate The Future*, Medium. <https://medium.com/activate-the-future/the-three-horizons-of-innovation-and-culture-change-d9681b0e0b0f>
- Walsh, J., & Jelsma, M. (2023, October 17). Coca chronicles: Bolivia challenges UN coca leaf ban. *WOLA. Advocacy for Human Rights In The Americas*. <https://www.wola.org/analysis/coca-chronicles-bolivia-challenges-coca-leaf-ban>
- Woods, D., & Wong, W. (Hosts). (2023, August 18). *Coca Cola v. Coca Pola* [Audio podcast episode]. In *The Indicator*. National Public Radio. <https://www.npr.org/2023/09/18/1197954152/coca-cola-v-coca-pola>