

Ecuadorian Amazonia amidst Energy Transitions

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Introduction

After ten years of energy transition policies centred on slowly eliminating fossil fuel subsidies, in October 2019 the Ecuadorian government abruptly announced a rupture. In order to meet the conditions of billions of dollars in International Monetary Fund (IMF) loans, energy subsidies would be immediately ended and prices would rise to global market levels. Within a few days, citizens had blockaded every major road in the country and less than a week later, the government was forced to temporarily flee the capital. Upon its return, it entered into negotiations on live TV with Ecuador's Andean and Amazonian indigenous leaders who had been the key force behind the nationwide protests. After four hours of contentious debate, mediated by a United Nations facilitator, at around midnight the President agreed to abandon the IMF measures and reinstate the subsidies, thus meeting the indigenous leaders' demands and preventing the government's collapse.

Why did indigenous movements lead these pro-subsidy protests? Why would Amazonians, being those living at the epicentre of Ecuador's oil industry, join and indeed lead these protests with their Andean colleagues? And what went wrong with Ecuador's energy transition such that it would culminate in this kind of catastrophic failure? This chapter gives an ethnographic assessment, and a brief history, of what led to these events.



Figure 2.1. *The regions of Ecuador: Galapagos (Galápagos), Coast (Costa), Andes (Sierra) and Amazon (Oriente) regions.* © Chris Hebdon.

Four Shades of ‘Gold’

The East is not only a direction. The Amazonian Region is a reality. The Spanish searched for *El Dorado*, we Ecuadorians have found it. The black gold of petroleum, the green gold of the jungle, and the blue gold of the rivers constitute our *El Dorado*. So the soldiers and missionaries sensed it by painting the hopes of their hearts in their own blood. That’s how we all feel in marching decisively to work on Amazonian colonization. (Vasconez Salvador 1977: i)

The first sections of this chapter are titled in terms of yellow, green, black and blue ‘golds’, language used by the once brigadier general and government minister Colonel Oliverio Vasconez Salvador, as quoted in the epigraph above. Vasconez Salvador, who served as Minister of Agriculture and Ranching during the military dictatorship of President Guillermo Rodríguez Lara, presided over the largest expansion of outsider colonization into the Oriente in Ecuador’s history, only a few years after oil pumping took off in the early 1970s. His reference to Ecuadorian Amazonia in terms of ‘golds’ represents a dominant, and pervasive, view of the Oriente as a reserve of resources (see e.g. Plaza 1949). The first sections of this chapter read against the grain of Vasconez Salvador’s ‘golds’ to identify what lay within and beyond the scope of this long-dominant mode of ontologizing the Oriente (see also Gaechter 2007).

These sections about ‘golds’ contextualize the energy transition policies that the Ecuadorian government launched in 2007 and that broke down in 2019. These policies, called the *cambio de la matriz energética* (the shift of the energetic matrix, or *cambio* for short),

together constituted a plan to substitute electricity generated by fossil fuels with hydroelectricity, enough to meet more than 90% of Ecuador's projected demand. This chapter sets the *cambio* within a broad social and historical context focused on the Ecuadorian Amazon, and uses this case to assess the boundaries of the *cambio*'s energy transitions thinking.

The later sections of this chapter connect up Ecuador's case with broader questions about energy transitions and the anthropology of energy. In the conclusion, I consider the implications of Vasconez Salvador's depiction of the Oriente as a font of economic value or 'gold' rather than other kinds of value. I argue that thinking of energy as a source of money was a central, and limiting, dogma of the *cambio*. This metaphorical mapping of money, energy and resources thwarted and clouded out other kinds of energy thinking (e.g. ecological and thermodynamic) and practices (e.g. indigenous agroforestry, and distributed solar photovoltaics). Drawing from these threads, I argue that anthropologists should carefully examine how *multiple concepts of energy* are involved in energy politics in any social context.

Yellow: Bullion, Colonies and Labour

La Región Amazónica Ecuatoriana, commonly known within Ecuador as the *Oriente* (East) or *Oriente Ecuatoriano* (Ecuadorian East), is the largest of Ecuador's four regions (the Galapagos, Coast, Andes and Amazon), constituting 46% of the country's landmass. It is the region with the lowest population density, ranging from 0.5% of the country's population when Ecuador became an independent republic in 1830 to around 5% today (Delaunay et al. 1990). It is also the traditional homeland of ten indigenous linguistic groups that are legally recognized today as nationalities – Kichwa, Shuar, Achuar, Shiwiar, Cofán, Siona, Secoya, Sapara, Andoa and Waorani – that together composed the majority population of the region until the mid-twentieth century. Since the 1960s, the region has been the centre of Ecuador's fossil fuels industry, as well as the home of increasingly well-organized indigenous social movements (Sawyer 2004). Amazonia in Ecuadorian history has been considered to be a source of wealth – of labour, land, oil, hydroelectricity and, more abstractly, the nation's economic future. Over the past five centuries, Ecuadorian Amazonia has generally been treated as a 'zone of extraction' (Bunker 1985) for the state, settler-colonists, missionaries and multinational corporations, among others.

Much as the ambiguous name ‘the Middle East’ came from a non-local (Alfred Thayer Mahan, a US military officer), the name ‘Oriente’ speaks to extra-local power relations and begs the question: ‘East of where?’ As it was judged from the Andes and the Coast, the Amazon was ‘the East’. This had little to do with physical distance, as the Oriente begins less than 30 miles from the capital city of Quito; rather, it has to do with the normative ways in which the Oriente has been considered socially or ‘structurally distant’ (Evans-Pritchard 1940), and, in identity, less Ecuadorian than other regions. The region inspired hopes for loot and riches, but seldom has it been seen as a source of knowledge and culture – of new ideas as much as new resources, even when the region *did* contribute new ideas. Instead, the dominant idea – and one implicit in Vasconez Salvador’s quote – has been that the region needed to be made Ecuadorian (Fischer 2015) by becoming ‘real’ to non-Amazonians.

Since the sixteenth-century Spanish colony, explorers hoped the Oriente might contain the fabled city of gold, *El Dorado* (Hecht and Cockburn 1990). While no such place was ever found, the region did yield some gold and continues to do so today (Taylor 1989: 24). Yet it was those *searching* for wealth who brought the most disruption. Missionaries have been ceaseless outside agents in the region. Jesuit ‘reductions’ and *encomiendas* sought to concentrate Amazonian populations in pursuit of indigenous labour and knowhow. Slavery, debt peonage and other forms of labour coercion were common (Ford 2017). In the eighteenth and nineteenth centuries, extractive economies were formed around tobacco, vanilla, cacao, plant resins, agave, cinchona, tagua and sarsaparilla (Taylor 1989: 41). From the late 1800s until the 1920s, a rubber boom – driven largely by downstream Peruvian and Brazilian merchants, and linking up to a commodity chain that reached to London and New York – came and went with major consequences for the Oriente and little to no control by the Ecuadorian government, in part because it had expelled the Jesuits following the Liberal Revolution (del Pilar Gamarra 1996). Moreover, throughout these centuries, and for government, merchant and church officials alike, indigenous evasion, flight and rebellion were constant decentralizing forces (Muratorio 1987; Porras 1979).

‘Toward the end of the 18th century’, as the historian Ayala Mora (2003: 206) noted, ‘the Oriente was [seen as] a distant territory almost without administrative connection with the State, inhabited by indigenous peoples who had not submitted, into which but few adventurers ventured.’ Although the Amazon abuts the Andes and begins less than 30 miles away from Quito, the Oriente in the nineteenth century

was, as the historian Esvertit-Cobes described, almost ‘completely unknown in the rest of Ecuador’ (2008: 15). And as documented by Fischer (2016), most of what was written about the Oriente was by outsiders, many of whom had never visited it. Ecuadorian historian and statesman Federico González Suárez felt the separation between the Oriente and the rest of Ecuador to be so great that in his *General History of Ecuador* (1890: 10), he concluded that the region ‘has its own history which had to be told separately, because the events that took place in that region had no influence on the life of Ecuadorian society during the colonial period, nor contributed anything to its prosperity, nor to its decadence’ (Cobes 2001: 544).

This notion of the Oriente as a world apart has persisted up to the present day. As the poet and missionary Leonir Dall’Alba noted of popular attitudes in the late twentieth century:

We proclaim with pride that ‘We are an Amazonian country. It is we who discovered the great [Amazon] river!’ But the pride stays within that grandiloquence. For almost every Ecuadorian the Amazonian East is the last place that they would choose to live, and they look with a certain contempt or with a certain compassionate admiration on those who are born and live there. . .

The Oriente is looked down upon and unknown. Despite it being constituted by a varied range of climates, altitudes, vegetation, places of occupation and means of travel, everything is seen under a cliché of diluvian rains, unbearable humidity, sweltering heat, impenetrable jungle, savage people, tigers, anacondas, mosquitos, fast rivers without bridges, and lack of all comforts. (1992: 429)

Such ways of seeing the Ecuadorian Amazon through simplistic clichés of *lack* and *distance* reflects indifference, on the one hand, and, on the other hand, reticence to learn from and engage ‘eye to eye’ (Nader 2010) with Amazonian people and environments – a colonizing attitude running throughout the Ecuadorian *longue durée*. To become more Ecuadorian, the Oriente seemed required to yield golds.

Ecuador’s national shield (*escudo nacional*) at the centre of the country’s flag – approved by Congress in 1900 when the Oriente’s population was still majority indigenous – is a striking example of this sense of structural distance and hierarchy. In the foreground, the shield shows a steamboat floating in the Pacific waters of the port city of Guayaquil, Ecuador’s biggest commercial centre. In the mid-ground, the gulf’s waters rush downhill from mount Chimborazo, Ecuador’s tallest peak and a symbol of Andean civilization. As José Almeida Vinueza has noted, the shield paints an image of a natural



Figure 2.2. *The national shield of Ecuador (Commons 2010). Used under Creative Commons CCO 1.0.*

‘brotherhood and unity’ between the Andes and the Coast, imagining their shared cultural predisposition towards ‘modernity’ (Almeida Vinueza 1994: 204). Tellingly, neither the Galapagos nor the Amazon appears in the shield.

‘The graphic demarcation of the Amazon is particularly serious’, Almeida Vinueza continued. ‘It is a world that is “behind”, and despite its contiguity only appears virtually as the negation and dissonance of the national frontispiece’ (1994: 204). The shield contrives ‘a concept of country with its back to the Amazon . . . [a concept that has been] built up since colonial times that painted the Oriente as “savage”, “inhospitable”, and “empty”, [and] as the antithesis of “modernity”’ (ibid.: 205). Revealingly, Amazonians polled by the anthropologist Suzana Sawyer all thought that the national shield showed just the opposite: the Amazon River emanating from the Andes (Sawyer 2004: 38–39). For them, it was illogical that the national shield did not picture, or indeed feature, the Oriente.

The lack of state attention to, and control over, the Oriente has long been a cause of worry and embarrassment too (Fischer 2015). No moment coalesced these ambivalent feelings more than the 1941

invasion of Ecuador by Peru, resulting in the loss for Ecuador of over 200,000 square kilometres of the Oriente, a concession that was finalized in 1998 after nearly sixty years of militarization and intermittent war. It was, in part, events like these that spurred Ecuadorian efforts to colonize the Amazon with non-Amazonians.

Green: Land and Agriculture

There are many kinds of uneconomical agriculture. A typical case in our countries is ‘swidden’ . . . It is an ‘agriculture’ in which the farmer . . . plants . . . something for his most precarious existence without effectively contributing anything to the national economy. (Eichler 1983: 1)

Dreaming of converting the Amazon forest into a land of farms and industry, Ecuador passed its first colonization laws in 1850 and 1861. The 1861 law asserted ‘That the Republic abounds in unused, fertile and rich lands’ and invited ‘immigrants from Europe and the United States to colonize Ecuadorian lands’ (Alvarado 1953: 11). A few years earlier, Ecuador had attempted to sell parts of the Oriente to British creditors in order to settle debts. In 1911, the government signed a contract with the *Compañía Franco-Holandesa* for the settling of a colony and building of a railroad, which was thwarted by Peru (Taylor 1989: 47). Other colonization programmes – such as a programme for constructing an Andean-Amazonian railway – were also initiated before failing. All these colonization programmes reflected an entrenched desire to move the region’s economy away from the social power of indigenous labour and, in the process, to try and undermine autonomous indigenous futures.

Peruvian aggression from the mid-nineteenth to mid-twentieth centuries, as well as economic problems in highland Ecuador, further spurred Ecuadorian interest in defending and colonizing the Oriente. Initiatives from 1964 to 1994 – the period of agrarian reform and colonization (*reforma agraria y colonización*) – focused on making available for Ecuadorian settlers the supposed ‘green gold’ of rich and fertile ‘empty’ Amazonian lands (*tierras vacías*) (Barsky 1984).

Ecuadorian Amazonians are among the world’s most sophisticated forest farmers. Thus, the sleights of hand and tricks of mind used to make their agriculture illegible and seemingly ‘uneconomical’, as Eichler asserts in the epigraph at the start of this section, are notable. During this era of agrarian reform and colonization, statistics of land appropriations from the Ecuadorian Institute for Agrarian Reform



Figure 2.3. *Estimated distribution of lands (in grey) considered relatively empty in 1982 (redrawn from Delaunay et al. 1990: 61).*

and Colonization (IERAC) almost invariably did not count ‘empty’ lands as having undergone ‘agrarian reform’ (IERAC 1972). Indigenous lands were represented as having never been cultivated. When indigenous inhabitants of these so-called ‘empty’ lands ultimately attained land titles from IERAC, even they were counted as ‘colonists’ (Gondard and Mazurek 2001: 24).

This political myth of empty lands turned on the fiction of indigenous Amazonians being hunters and gatherers who do not practise agriculture. However, in fact, *all* of the Amazonian groups in Ecuador are expert practitioners of swidden, or shifting-field, agroforestry. Historical ecological studies have demonstrated widespread landscape transformation in the Amazon from swidden agroforestry over

thousands of years, amounting to the construction of a vast and sophisticated ‘cultural forest’ (Balée 2013). In Ecuador, many ‘empty lands’ were, in fact, past and often recent sites of swidden cultivation (Macdonald 1979, 1999; Rudel and Horowitz 1993).

IERAC sometimes did give title to swidden lands, but their criteria revealed their biases (Macdonald 1995; Whitten 1976). For example, to receive land titles, plots had to be kept deforested and producing cash crops or cattle for around five years (Macdonald 1979). IERAC’s ideal was permanently deforested field agriculture producing taxable cash crops. However, once cut and burned or mulched, swidden fields, and for good ecological reasons, are seldom farmed for more than two or three years before cultivation is shifted to another location and the plot is left to regrow forest – a process not of deforestation, but of a cycling flow of forest degradation and re-gradation (Ford and Nigh 2016; Fox et al. 2000).

This distorting squint biasing people against indigenous agroforestry still continues today. National land use maps label swidden lands as ‘natural forest’, ‘pasture’ or ‘undifferentiated miscellaneous’ (MAGAP/MAE 2013), all inadequate categories. National development planning does not reference swidden (SENPLADES 2013). Only at the local level in majority indigenous towns has some public policy value been shown for swidden gardening (Grijalva et al. 2011; Gobierno Autónomo Descentralizado de Napo 2017; Vizcaíno 2009).

The notion of needing a deforested Amazon to create ‘green gold’ turned on the fiction of rich Amazonian soils. But the region’s jungle soils degrade quickly if deforested and continuously farmed (Rudel and Horowitz 1993). While this had been well known since the works of Villavicencio (1858) and Wolf (1892) and repeated by Ecuadorian President Galo Plaza (1949), the agrarian reform and colonization programme rejected and ignored these scientific arguments about the nutrient poverty of Amazonian soils in favour of reviving the dream of ‘aggrandizing and enriching the country by means of colonization’ (Alvarado 1953: 17).

However, wanting the region’s forests to be something they are not could only be sustained for so long. In subsequent decades, settler farms routinely failed (Rudel and Horowitz 1993). And while settler families did become the majority population for the first time in the Oriente’s history by the mid-1970s, indigenous social movements in the 1990s achieved greater than expected land claims and also managed to end the agrarian reform and colonization programme (Sawyer 2004).

Black: Oil and Territory

Oil companies came to the Oriente in the 1920s, although Ecuador's oil boom, for reasons that have spurred much intrigue, did not begin until the early 1970s. Oil industry colonization since the 1970s has highlighted long-accumulating strains in non-Amazonian and Amazonian Ecuadorian relations, and particularly how indigenous Amazonians had well begun to consolidate a critique of the limitless logic of development as the search for golds.

Oil companies completed the first paved road into the Oriente, as well as its first airport, in the 1940s. On 26 July 1972, Ecuador's first barrel of oil was paraded through the streets of Quito in a day of celebration to 'sow the oil'. Here we see a weaving together of green and black golds, as the Amazon was to be 'planted' with oil, thus setting up a frame that encouraged the invisibilization of indigenous land uses such as swidden agroforestry. Accordingly, in 1973, a rewrite of the agrarian reform and colonization law intensified land expropriation just as oil took off in the northern Oriente (Cepek 2012).

One way in which Ecuador's oil was made to benefit citizens and businesses was through state subsidies on all fossil fuels, inaugurated in 1978. A no-exceptions subsidy, it ramified through virtually every aspect of Ecuadorian life, from plane, bus, taxi and private automobile travel to electricity, heating, food and beyond. In 2018, Ecuadorian gasoline at \$1.48 was three times cheaper than the worldwide average of \$4.46; a 15 kilogram tank of Liquefied Petroleum Gas (LPG) cost \$1.60 compared with more than \$23.00 in neighbouring Colombia. These subsidies have had broad popularity and nationwide protests have met all past governmental attempts to eliminate them.

For indigenous Amazonians travelling between downriver villages and upriver urban areas, these subsidies are important. They make bus and taxi travel less expensive. They help make it cheaper to, if owned, fill the tanks of outboard canoe engines, chainsaws and electric generators. LPG cheaply powers portable gas cookstoves. Yet while nearly all Ecuadorians have reaped the benefits of these low fossil fuel prices, Amazonian Ecuadorians have faced the consequences of oil drilling, extraction, transport and contamination in ways that other citizens have not. For most Amazonians, 'black gold' overlapped with and compounded rather than resolved issues from 'green' and 'yellow gold' periods. However, indigenous social movement organizing in the 1970s, 1980s and 1990s constituted an increasing force in Ecuadorian politics, one that has gone on to change the dynamics of the entire country.

National Indigenous Movements

The Amazonian *Runa* (Kichwa-speaking) community of Sarayaku's experiences offer an example of how such organizing occurred and affected larger currents in Ecuadorian society. Sarayaku – a village in Pastaza province about four hours downriver from the regional capital Puyo – is home to around 300 Runa families. During the land grabs of the agrarian reform and colonization era, Catholic Church officials in the village recommended that Runa residents go with the government's offer: 50-hectare parcels per family and the ceding of their lands on one side of the Bobonaza River to settler-colonists. Runa residents felt that this giveaway to the settler colonists was unfair and worried that the 'cracks' or interstitial areas between IERAC-titled parcels could act as channels for future state and colonist intervention and division of the community (Sirén 2004: 134–36). Residents created the Centro Alama de Sarayaku (the Sarayaku Centre of Friends) in 1979 to advocate for Runa priorities in IERAC's titling of land parcels. However, after a more than a decade of little success negotiating with IERAC, the Centro Alama began to advocate instead, and much more radically, for an unparcelized global title under Runa self-government. Soon, Sarayaku went on to found the Organization of Indigenous Peoples of Pastaza (OPIP), which eventually incorporated all the indigenous nationalities of Pastaza Province under one umbrella (Silva Charvet 2003), and locally it formed its first town government unaffiliated with the church: TaYJaSaRuTa (Tayak Yuyayta Jatachik Sarayaku Runa Tandanakuy, 'the Sarayaku People's Organization for the Uplift of the Culture of the Ancestors').

In 1988, Sarayaku detained government officials who landed in a plane to negotiate oil drilling by the ARCO Corporation. Residents blocked the village's only airstrip with logs. The community insisted that the officials were welcome to leave if they wished to walk the three days back to the airport through the jungle, thus not technically detaining them. During that week in which the officials were in Sarayaku, a set of principles for further discussions was negotiated, which came to be known as the Sarayaku Accords (Macdonald 1999, 2015). However, once the officials returned to the city, the Accords, which were said to be made under duress, were not heeded. In response to the lack of action, in 1992 OPIP led a march from Pastaza's provincial capital of Puyo to Quito on foot, some 230 kilometres away, which ended in front of the presidential palace Corondelet in the centre of Quito (Whitten et al. 1997). Within two years, Ecuador's

President Rodrigo Borja had approved global (unparcelized) land titles for each community of OPIP's constituents. Sarayaku's title for 135,000 hectares amounted to around 450 hectares per family, nine times more than the government's initial offer in the 1970s. By 1994, on account of continued indigenous mobilization and wider public discontent, IERAC was shuttered and agrarian reform and colonization officially ended. IERAC, with a modified mission in name but not so much in practice, was renamed ECORAE, the Amazonian Institute for Regional Eco-Development.

However, these hard-won Amazonian land titles were not to include subsoil or airspace sovereignty, as the central government maintained its claim to their exclusive ownership (Sawyer 2004). In the late 1990s and early 2000s, Sarayaku again faced the incursion of state-supported oil companies. One company, without announcement or consultation, planted pentolite explosives across a portion of Sarayaku's forest for the purpose of subsurface petro-testing. When residents kicked out the surveyors, the Ecuadorian military occupied Sarayaku, although, facing overwhelming community resistance, they were soon driven out. Sarayaku, collaborating with key nongovernmental organizations (NGOs) and lawyers, filed a lawsuit in the Inter-American Court of Human Rights that they won in 2012. The ruling ordered, amongst other things, indemnification for Sarayaku residents, removal of the pentolite and that the Ecuadorian government respect international law on prior and informed consent in the future (Macdonald 2015). The community received \$1.4 million in indemnification, providing a seed for further organizing.

Between 1994 and 2003, with land titles in hand, Sarayaku activists reflected on what real development should mean for them. Some came out with the idea that it means *sumak kawsay* ('beautiful living', 'living in plenitude', 'good living' or 'living well') (Gualinga Montalvo 2005; Viteri 1993, 2003). These pioneering Runa authors envisioned development as primarily a past achievement rather than a future pursuit, arguing that Runa culture and the Amazon forest were already developed, and that the task at hand was avoiding underdevelopment, and maintaining and improving conditions for beautiful living (Baker et al. 2017; Keleman-Saxena et al. 2017; Ludlow et al. 2017). The term was taken up by national indigenous federations in the 1990s and 2000s, and eventually came to be used as the guiding concept of the 2008 Ecuadorian Constitution. However, within a few years, the government began to insist that by rejecting oil industri-



Figure 2.4. *High-voltage electric lines in Ecuador in 2013, before the cambio.*
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alization and by supporting indigenous self-determination efforts across the Oriente, Sarayaku was going against the *sumak kawsay* of the rest of Ecuador. There was a recognition among Sarayaku's intellectuals that *sumak kawsay* was perhaps too abstract and portable, as it did not necessarily signal the centrality of forests to beautiful living. In response, the community created an amended concept of *kawsak sacha* or a 'living forest'. This concept, which remains key to the community's activism and self-determination initiatives today, has attempted to respond to the government's misuse of the term *sumak kawsay* and to reground its vision for beautiful living as inseparably tied to the wider economy of a healthy forest ecology (Baker et al. 2017; Keleman-Saxena et al. 2017; Ludlow et al. 2017).

Blue: Water and Electricity

In the decades since the start of agrarian reform and colonization and the oil boom in the Oriente, Ecuadorians experienced two military dictatorships (1972–79), the death of the first post-junta democratically elected President Jaime Roldós by probable assassination (1981) and, throughout the 1980s and 1990s, the neoliberalization of the nation's political economy, including widespread corporate privatization of electric utilities. By the late 1990s, a financial crisis marked the nadir of an economic situation so dire that millions of Ecuadorians decided to emigrate in search of work. Between 1994 and 2006, indigenous-led social movements organized protests, blockades and other civic actions that contributed to the resignation of more than ten Ecuadorian presidents before the ends of their full terms. During this same period, the extraction of oil by the state-owned Petro-Ecuador dropped by more than a third, while extraction by private corporations surged (Castro 2011: 60).

In the wake of these and related events, President Rafael Correa's landslide election win in 2006, and his party's platform for a twenty-first-century socialist 'Citizens' Revolution' (Revolución Ciudadana), represented a promise for a new era for Ecuador: no longer to be dominated by foreign powers or by the traditional Ecuadorian oligarchy, and no longer to pursue 'development' that did not contribute to the 'good living' of the majority of Ecuadorians, and especially the poor. Correa's Administration captured attention around the world by defaulting on billions in debt from the World Bank and refusing to renew a US military base in Ecuador because the US government would not reciprocally offer Ecuador a military base in Florida. Such actions were taken by many as signals that Correa was serious about breaking Ecuador away from US and European hegemony. Indigenous organizations and many NGOs were encouraged that Correa embraced the language of *sumak kawsay*, which was translated into Spanish as 'good living' (Baker et al. 2017; Ludlow et al. 2017). Beyond popular support at the polls, the president's platform was undergirded by a decade-long (2007–17) parliamentary majority held by his political coalition Alianza PAÍS (País Altiva y Soberana, 'The Alliance for a Proud and Sovereign Country').

Sovereignty was one of the most important goals of the Citizens' Revolution. Emphasizing the importance of public planning, the government intervened in 'strategic sectors' (nearly all of them resource sectors, such as mining, hydroelectrics and oil), a set of priorities that came to be named 'The Return of the State' (*El Retorno del Estado*)

(SENPLADES 2013). As President Correa (2009) wrote in his first book, Ecuador's past neoliberal decades had turned it from a 'banana republic' in the 1950s and 1960s – dominated by foreign corporations such as United Fruit – into what he called a 'non-republic' unable to control its own natural resources and political fate. For example, in the 1970s, the Ecuadorian government had planned out a hydroelectric-based electrical system for the country, but the vision stalled in the 1990s as a neoliberal wave shifted planning power to private businesses, which ended up building mostly fossil thermolectric power plants instead (Garzón and Castro 2018: 32).

By the beginning of President Correa's term, most of the country's electricity came from hydrodams (59%) and from oil-fuel and natural gas-burning power plants (40%) (CONELEC 2009: 19; CONELEC 2012). The new energy transition plans of the *cambio de la matriz energética* sought to reduce the contribution of fossil fuels to below 10% within a decade (2007–17), primarily by constructing new hydroelectric dams. Over the coming years, the government commissioned eight dams: Mazar Dudas (21MW), Quijos (50MW), Manduriacu (62MW), Delsi Tanisagua (116MW), Toachi Pilatón (253MW), Minas San Francisco (276MW), Sopladora (487MW) and the mega-dam Coco Codo Sinclair (1,500MW). Of this new hydroelectric capacity, 80.2% came from Andean rivers running east into the Amazon.

By late 2018, after nearly a decade of work, only 1,194MW or 43.2% of these projects had come online, upping Ecuador's hydroelectric contribution from 59% to 81.1% (ARCONEL 2018). However, the Mazar Dudas and Quijos projects were abandoned because of structural problems in 2015. All of the dams had cost overruns and corruption problems, which amounted to their electricity costing per megawatt between 40% and 84% more than that of existing Ecuadorian dams build decades earlier (Garzón and Castro 2018; Villavicencio n.d.). Catastrophically, by late 2018 the multi-billion dollar Coca Codo Sinclair mega-project had more than 7,000 cracks 'splintering the dam's machinery. Its reservoir [had] clogged with silt, sand and trees. And the only time engineers tried to throttle up the facility completely, it shook violently and shorted out the national electricity grid' (Casey and Krauss 2018).

Total financing for the hydroelectric and other projects of the *cambio* is estimated to have amounted to as much as \$19 billion, most of which was loaned from the People's Republic of China (Casey and Krauss 2018). As a condition of many of these loans, construction was to be done by the Chinese National Electrical Engineering Company using 30% Chinese labourers who – unlike their Ecuadorian

counterparts – were not unionized (Peng 2015). Ecuador agreed to pay off some of these loans in oil rather than dollars, according to an exchange ratio set, unfavourably for Ecuador, before the collapse of oil prices in 2014. Due to these petro-barter (Rogers 2014) arrangements, in recent years it is estimated that Ecuador has been sending around 80% of its total oil exports to China (Casey and Krauss 2018). In 2017, it was revealed that total debts during the Correa Administration had exceeded 40% of the country's GDP, in violation of the Constitution (Fontaine et al. 2019: 64). Amongst other fallout from corruption investigations, the once Vice President of Ecuador, Jorge Glas, was sentenced to six years in prison (Fontaine et al. 2019: 64).

Along with these problems in ramping up hydroelectrics, two other key aspects of the so-called energy transition or *cambio* – for improvements in the petroleum sector and in home energy efficiency – also faced problems.

Since the 1980s, Ecuador has not been able to refine all of the oil it needs to meet domestic demand, instead having to import petroleum, diesel and natural gas. By the start of the Correa presidency, 96% of all the energy produced by Ecuador's formal economy was in the form of fossil fuels and 4% was from hydroelectric and renewables; 64% of these energy commodities were exported, 28% went to meet domestic demand and 8% was lost in transmission (SENPLADES 2009: 114). And yet of these 28% of energy commodities used domestically in Ecuador in 2012, 83% of natural gas, 60% of diesel and 49% of gasoline had to be imported (MICSE 2013: vi). In 2016, after nearly a decade of *cambio* transition policies, 87% of all the energy produced in Ecuador was still represented by crude oil, and nearly 70% of this was exported (MEER 2017). Subsidies on imported fuels, in place since the oil boom of the 1970s, often cost the government in excess of 10% of its budget each year. Most subsidized of all, LPG in 2018 cost \$1.60 in Ecuador compared with an average 13 times more in neighbouring Colombia and Peru (Martínez-Gómez et al. 2017: 136). The central goal of the *cambio* was to eliminate these subsidies by 2017. While it didn't happen in 2017, by 2018 subsidy reductions had begun, courting mass public discontent and protests. In October 2019, the government effectively abandoned the *cambio* transition and opted for immediate IMF austerity and the bringing of subsidized energy prices to global market levels, as mentioned in the introduction of this chapter. Only by negotiating on live TV in a midnight session with indigenous movement leaders, including those from Sarayaku, was the government of President Correa's successor Lenin Moreno able to avoid a governmental collapse.

Among the *cambio* projects targeted at petroleum problems were a new mega-refinery, a maritime port, several oil pipelines and a gas liquefaction plant, as well as a programme of major repairs to the existing refinery. Enveloped in scandals after a decade of work and nearly \$3 billion invested, none of these petroprojects has yet been completed (Vistazo 2019). Only in energy efficiency have the *cambio* policies been able to register some tentative successes. Energy-saving compact fluorescent lights were made standard across Ecuador, which is more than has been achieved in the United States, for example. The government invested billions in encouraging the conversion of home cooking and heating appliances from LPG-powered to electrically powered versions (with a focus on promoting induction-electric stoves). To enable people's use of these stoves, participating homes could have their electrical wiring upgraded from 110 to 220 volts for free. By 2017, however, this programme, Ecuador *Cambia*, had only met 18% of its goals since beginning in 2014 (Universo 2017).

The hydroelectric, petroleum and energy efficiency aspects of the *cambio* taken altogether have been unpopular since they began. In part this is because the only aspect of it – energy efficiency – that required changes by most Ecuadorians was a lousy bargain. While touted as a positive and sustainability-oriented change by the government, a transition from cooking and heating with LPG (92% subsidized) to cooking and heating with hydroelectricity (also subsidized but only at 20%) implied more than a twelvefold increase in price for the average family (Martínez et al. 2017: 186). And this estimate does not factor in the cost overruns and failures of some of Ecuador's new dams, which will likely result in even higher prices. Moreover, the elimination of gasoline and diesel subsidies implied higher transportation costs for which the *cambio* policies provided no immediate solution.

Each part of the *cambio* has hinged on the other, and the uneven results and unconsidered complexities within each and amongst the whole have, in practice, hobbled the government's entire plan. The government wanted to fix its books, while paying little attention to what these changes meant in everyday life to different kinds of people. To avoid mass discontent at the elimination of fossil fuel subsidies, people needed to use electric stoves and heat, and simultaneously the government had to improve oil refining and transport. To reduce governmental expenditure on subsidies, fossil fuel infrastructures needed to be improved and dams needed to be built, while in short order citizens needed to start making the switch to electric. To soak up the supply of newly built dams, citizens needed to be using electri-

cal devices because the subsidies on fossil fuels had to be eliminated. Timing was essential, with these three aspects of the *cambio* taking place all on a short timeline. But with secrecy shrouding many of the constructions, and honest public reporting about their progress very scarce, most citizens were left in the dark and suspicious about what was really going on.

Moreover, 'blue gold', from the vantage points of off-grid Amazonians such as the Sarayaku Runa, did not even resemble a plan for a new horizon or shift. The tapping of Amazonian water flows while upping extraction from Amazonian oil deposits implied the re-inscription of old 'gold' patterns of discrimination. Paying for blue gold dams hinged on more black gold extraction and green gold grabbing, implying the continuation of the kinds of inequalities and indignities that had long been at the heart of Amazonian resistance to hubristic state control. In ways such as these, Oliverio Vasconez Salvador's 'four golds' have become increasingly recursive, with each being looped back upon the other and building force together. At the same time, these interconnections have exposed increasingly unavoidable fragilities.

All along, these four shades of gold have been versions of the same hegemonic framework in which that which lacks centralized control must have its nature changed by persuasion or force. The four preceding sections on different shades of gold have attempted to outline a brief history of the special place that the Oriente has had in Ecuadorian national experience. In large part, this has been as a zone of extraction (Bunker 1985) for labour, land, oil and water. In the following conclusion, I turn to explicitly drawing out how this way of framing and relating to the Oriente has hobbled Ecuadorian renewable energy solutions.

Multiple Energy Concepts

From the colonial period up to the present, the Oriente has been dominantly figured as a subordinate and distant part of Ecuador. Various forms of energy – from labour, land and oil to falling water – have been key objects of desire in the history of the region. Notably, however, outsider extractivisms have been centred on the accumulation of 'energy resources' as sources of wealth. Vasconez Salvador's rationale for colonization was explicit about this: the Oriente's value as a part of Ecuador could be reduced to its potential to yield exchange-values, or 'golds'. However, energy use-values, and espe-

cially the affordances of understanding energy thermodynamically, have not been central.

Energy ‘progress’ was tightly wound up with regional and racial hierarchies. Ecuador’s national shield, which was inaugurated in the early 1900s before the region became an increasingly controlled region of Ecuadorian economic production, seemingly does not show the Oriente. As Almeida Vinueza (1994) noted, the Oriente was not so much absent from the shield as it was figured as a kind of ‘virtual negation’ of Ecuadorianness. Not simply behind Ecuador on a scale of development, it has been treated as beyond Ecuadorianness. In this sense, the shield signified a deficiency *not* in the Oriente’s nature, but in the dominant conception of Ecuadorianness that could not include the Oriente as an equal (Coronil 1996). This ‘Oriente-ism’ – based on ethnic and environmental stereotypes and ancillary notions of remoteness, distance, emptiness, underdevelopment and primitiveness – suffused elite Ecuadorian energy thinking. Inabilities to question this mindset’s *logic of lack* prefigured inadequate results.

The Oriente has been constructed as a frontier of Ecuador, as a ‘periphery’ to the ‘core’ zones of the country, and one that could be subjected to colonial conversions without intercultural learning, mutual dignity and shared ownership. This was the ‘grand continuity’ that the Citizens’ Revolution and policies such as the *cambio de la matriz energética* assiduously avoided: Amazonian subordination was left outside the scope of the Revolution. Assumptions about differentiated social value – quite apart from questions of energy values – helped connect the *cambio* with existing social hierarchies and infrastructures that entrenched unequal systems of exchange (Hornborg 1998) not only within Ecuador, but also between Ecuador and other countries, such as the United States and China.

Notably, the indigenous social movements’ proposal for radically reimagining the conventional concept of development with *sumak kawsay* was instructive in terms of how it defined the important variables for a broader transition. It saw concept shifts, or cultural shifts, as mutually constitutive with power shifts. It considered the dearth of indigenous control over technological choices and ownership of economic enterprises to be rooted not in nature, but in a cultural problem. It broadened the scope of what was to be included in energy questions by starting from a more reflexive frame that questioned mentalities and priorities. *Sumak kawsay* activism aimed at the concept of Ecuadorianness that served as the condition of possibility for a history of technological revolutions that left the unequal

relationship between Amazonians and Others unrevolutionized. As its Runa authors from Sarayaku have argued (Sarayaku 2003; Viteri 1993, 2003), *sumak kawsay* represents a notion of development and progress that does not default to the assumption that nature and people suffer from *lack* (Baker et al. 2017; Keleman-Saxena et al. 2017; Ludlow et al. 2017). This counter to the conception of the Oriente as primitive and undeveloped did not seek recognition of Amazonian energy (though swidden agroforestry was described as the ‘central axis’ of *sumak kawsay* (Viteri 2003)). Rather, it was about challenging the Ecuadorian, and especially elite, common sense upon which the metaphorical downgrading and disparagement of Amazonian ‘beautiful living’ rested. Indigenous movements took up a broader call for values transitions (Almeida 1992; Sawyer 2004).

Similarly, the *cambio de la matriz energética* dwelt on many other values than energy per se. Far from a plan turning on thermodynamic, ecological or social energy concepts and priorities, the *cambio* was largely a financial plan made with traditional economic concepts that secondarily tried to incorporate certain insights from anthropology, ecology and thermodynamics (see e.g. CONELEC 2009). The *cambio* in this sense represented an honest Ecuadorian attempt to plan the energy economy in energetic rather than solely monetary terms, which highlights how the *cambio* also involved a transition to energy, or an ergoconceptual transition, within the government. But the conceptualization of energy that emerged from the *cambio* was still strongly entangled with conventional thinking about energy resources as money resources. It was difficult for many to break from decades, and even centuries, of commercial tradition and intellectually separate the logics of energy from those of the resource extraction industries.

During the most optimistic years of the Citizens’ Revolution, from around 2010 to 2014, certain actors in the government – and especially those working with the National Secretariat for Higher Education, Science, Technology and Innovation (SENESCYT) – were keenly aware of this conceptual slippage in which energy and money were both treated as resources and commodities. SENESCYT put out a vision for a properly Ecuadorian version of ‘ecological modernization’ that would turn on Ecuador’s transition from a raw materials exporter and finished products importer to a country based on an ‘eco-knowledge socialism of *sumak kawsay*’ (Ramirez Gallegos 2012). The Secretariat hired some of the world’s leading theorists in ecological economics, political ecology, free and open source commons, and Marxist world-systems studies (including a team led by

David Harvey). The disciplines of these scholars had been leading important debates for decades about whether energy could be understood as a ‘universal equivalent’ of value like money. While ecological economists such as Odum (1971) argued that energy could be understood as a true universal equivalent, political ecologists had countered that this approach was overly functionalist, too narrow in its theorizing of power and unable to amount to an alternative theory of economic value (Trimbur and Watts 1976; Hornborg 2001; Martínez-Alier 2001). However, scholars grappling with such questions often faced opponents in the government who tried to block their work. After years of publications, workshops and conferences, the leader of one group noted in a public talk that President Correa had not even been informed of their project’s existence (Charles 2015).

As Lohmann et al. (2013) have pointed out, it behoves us to discern when the concept of energy employed by a particular actor in a particular social struggle may itself be part of the problem (see also Caffentzis et al. 1980; Illich 1983; Angel 2019). They cite (Lohmann et al. 2013: 24–28), for example, a common difference between ‘little-e energies’, which are so entangled in the particular times and places of people’s lives that they may not even be called energies, and ‘big-e energies’, which are conceptualized *as* energy of a uniform kind that is abstractable and disentangleable from particular times and places. From other frames, we might consider a distinction between energy *mētis* and energy *techne* (Scott 1998), or embedded versus disembedded constructions of energy (Polanyi 1944; Illich 1983). In general, we could ask what are the multiple concepts of energy involved in any energy transition.

The *cambio* policies in Ecuador have tended to hinge on a concept of energy as abstract, uniform, disentangled and perfectly convertible between forms. Most notably, the *cambio* assumed that a variety of different entities and processes could replace each other: private and multinational corporations could (seemingly) be replaced with the state; Euro-American loans with petro-barter with China; offshore refining with domestic refining; fossil fuel-burning plants with hydroelectric dams; highly subsidized fuels with less-subsidized electricity. Yet the *cambio* plans shied away from an explicit analysis of the whole array of ramifications implied by such conversions.

Avoidance of a holistic anthropological and ecological analysis helped to insulate and obscure the *cambio*’s ‘failures of reach’, making it seem more wide-reaching and widely beneficial – and indeed more about energy in a holistic sense – than it could be, given its narrow commitments. Grid-bound hydroelectricity in particular was

not able, given the available means, to substitute for diesel and gasoline used in transport and a variety of portable engines, whether in the cities or in the countryside. When fossil fuels subsidy reductions began in 2018, protests began to be mobilized by everyone from bus and taxi drivers' and boat pilots' cooperatives to gas station owners, big industrialists, artisans, farmers and small businesspeople. In the 2018 protests as in the national blockades of October 2019, Ecuadorians have shown their scepticism towards the idea that the government lacks the money to let Ecuadorians reap an advantage from fuels extracted in their own country.

Hornborg (2016: 155) has noted that money may come to be treated as 'fictive energy', that is, it may come to be 'imagined as a vital flow that nourishes society'. Similarly, in Ecuador, a metaphorical mapping of energy and money as both types of resources has been part of dominant commodity-based visions for Ecuador's 'development' path, whether capitalist or socialist (Acosta 2012; Acosta and Villavicencio 2007; Correa 2012). It has been wrapped up in a belief in Ecuador's 'dependency' on natural resources as a 'lifeblood' to which the economy is 'addicted' (Huber 2013). Fossil fuels subsidies in particular acted as one such form of fictive energy, making money and energy appear as natural equivalents, while the elimination of the subsidies focused people's attention on the politics of the equalities and inequalities enabled by these semiotic correlations and their social infrastructural logics.

Framed within the ambitions of the Citizens' Revolution, the *cambio* was part of an attempt to create energy autonomy and break the 'inevitability syndrome' (Nader 1997; Hughes 2017) about Ecuador's seemingly unchangeable position in the global system. Yet in accepting oil-based financial arrangements and in leaving unresolved its internal disunion with Amazonia, the government also participated in reproducing and exacerbating many of the same unequal relations that it otherwise claimed to be trying to resist. It conceptualized energy solutions as separable from racial, ethnic and regional hierarchies. In continuity with the thinking about Amazonian 'golds', the *cambio* ceaselessly framed any kind of energy difference as signifying *lacks* and *gaps* – in the distance to the Oriente, in the level of development of indigenous peoples and in the value of centralized mega-projects over diverse distributed renewables. Indeed, the *cambio's* avoidance of distributed electricity such as solar and distributed agriculture such as swidden shares roots in the same pro-centralizing political agenda that continues to the present day.

Today, indebtedness built on oil (Sawyer 2004) has been compounded by debts built on hydrodams, land grabbing and minerals mining in increasingly interwoven ways. This quandary of technological change without social transformation signals a problematic tendency for governments to see mega-projects as a kind of ‘magic’ for resolving social problems, and to underestimate the entanglements of energy technologies in unequal relations spanning peoples, regions and the globe. Central dogmas in energy politics such as these are at the heart of what Wolf (1990: 587) has called ‘structural power’, or the habits that channel energy by shaping ‘the social field of action so as to render some kinds of behaviour possible, while making others less possible or impossible’. Indeed, the elite obsession with big-money centralized energy systems remains a key barrier to thinking anew about energy in Ecuador and beyond.

Ecuador’s energy transition policy since 2007, as this chapter has outlined, was presented as a plan to benefit the state and its citizens economically, yet immanent to the plan was also a narrow vision of infrastructural substitution and expansion that entrenched rather than transformed Ecuador’s inequalities within and beyond the country. It failed to achieve its own very limited aims. The narrow framing of the transition obscured processes, such as swidden agriculture, which may not have gone under the name of energy. It forestalled more durable investments in wind and solar and quotidian forms of energy efficiency. However, its struggles have also helped shine a light on the conceptual struggle to distinguish energy from resources. The *cambio* involved little actual study of Ecuador’s existing energy solutions and potentials, which would have required a reflexive questioning of what energy is and means in different contexts without assuming that each kind can be ranked according to a universal equivalent or standard. Far beyond just swapping technologies and channelling flows, the *cambio* had ramifications for virtually all Ecuadorians and every aspect of life, including in societies beyond Ecuador’s borders and other lives that were beyond the plan’s explicit scope. Just as these actual ramifications have been wide in scope, the alternatives to the *cambio* proposed by social movements have not narrowly been ‘energy’ alternatives per se, but more encompassing ones.

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