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Water Works: Megaprojects and Timescaling in Peru

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ABSTRACT

Driven by an increasing industrial and urban demand for water and other economic and political interests, the Peruvian State has invested heavily in water infrastructures. One such infrastructure is the Majes Siguas Special Project in the Department of Arequipa. This megaproject was envisioned already in the early twentieth century to supply the coastland with irrigation water and thereby developing agriculture in this arid region. The first stage of the project was built in the 1970–80's, but the second stage was not actualised until the 2000s and is still waiting to be built. Based on ethnography from fieldwork in the realm of the megaproject in 2016 and 2017, this article asks what happens when the materialisation of a megaproject is constantly deferred and explores how the promise it entails is sustained over time by analysing the social processes of temporal scale-making.

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Introduction to a Special Project

May 13 is the celebration of the Catholic Saint Our Lady of Fátima. On that very day in 2020, Peru was in countrywide lockdown due to the Covid-19 pandemic with increasing numbers of contagion. Notwithstanding, a group of local politicians, water managers, journalists and a *paqu* (an offering specialist), had gathered in the arid Siguas plains some 90 km from the city of Arequipa to declare reopened the works of the water megaproject Majes Siguas II. Standing next to the Pan-American Highway wearing safety helmets (proper of a work site) and facemasks (proper of a pandemic), the participants enacted a ground-breaking ceremony consisting of inaugural speeches and ritual offerings to restart one piece of the much-deferred infrastructural megaproject. By invoking the Catholic patron saint and making an offering also to the *pachamama*, or Mother Earth, in this inaugural event, the participants conjured a different

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future, promising to turn the desert surrounding them into lush farming fields and new towns thanks to the irrigation system to be built in this area. This vision was not a new one, but evoked a long past marked by desires for development in Peru and decades of social and political efforts in Arequipa to materialise them through this megaproject. The ground-breaking event held in May 2020 was not even the first one to bring life to the project. As we shall see in this article, it was only the latest instance of many a ritual that, along narratives and everyday practices in Arequipa's social and political life, contributed to keep up the vision of a long due megaproject on the verge of failure. Judging by the number of people present on the Sigwas plains on that day, the ongoing crisis sparked by the pandemic was not going to stop this longstanding promise from being conjured once more.

The Majes Sigwas Special Project in the Arequipa region, locally often referred to as simply *Proyecto Majes*, is a hydraulic megaproject with the purpose to build a water infrastructure to transfer fresh water over 100 km from the Andean highlands to the plains near the coast. It is one of Peru's largest megaprojects and has been in the making for the last 40 years. The first part of it, referred to as Majes Sigwas I, was built in the 1970-80's and has ever since supplied farmers, industries and inhabitants in the Colca Valley and the Majes plains with fresh water (Brandshaug 2019; Paerregaard 2019; Paerregaard, Brandshaug and Ullberg 2020; Stensrud 2021). The remaining half of the infrastructure, the so called Majes Sigwas II, was planned to be built in a second stage, but economic and political problems in the country put the plans on hold for decades however. Majes Sigwas II was re-launched only in 2006, yet the construction has hardly begun to the frustration of many an *Arequipeño*, ranging from politicians and bureaucrats to engineers and residents in the region. While not all people in Arequipa are in favour of this megaproject, nor is there any guarantee that it would benefit all inhabitants, there had been no organised protest to stop the Majes Sigwas II. Protests came instead a few years after the launch of the second stage of the megaproject from the neighbouring Department of Cusco. *Cusqueños* claimed that the water in the Apurímac River, which will supply the water infrastructure, belonged to them, and demanded the abandonment of the Majes Sigwas II (Stensrud 2016:570). In the Department of Arequipa, the controversies surrounding Majes Sigwas II concern rather the economic dimensions; how to share the alleged benefits, such as the job opportunities and revenues that the megaproject is supposed to bring, and compensation for livelihood or land losses. Similar to the contemporary roads built in Peru studied by Harvey and Knox (2015) and so many other large-scale infrastructural projects around the world, the *Proyecto Majes* materialises more than anything a promise, 'that which affords a ground of expectation of something to come' (Harvey 2018:80). But what happens when the materialisation of such a megaproject is only half way and its conclusion constantly deferred? How is the 'mega' of the project constituted and the promise that it entails constituted in and through time, and sustained over the years? This is what I aim to understand by analysing the temporal scaling practices at play in the making of the *Proyecto Majes*.

Megaprojects can be understood as a form of contemporary infrastructure delivery, that is, long term ventures of exorbitant economic costs carried out within

transnational frameworks of high organisational complexity, extending across vast geographies and causing significant social and environmental impacts (Flyvbjerg 2017; Schindler, Fadae and Brockington 2019), and sometimes contestation (Abbink 2012; Howe and Boyer 2016). Megaprojects are the means through which many a large-scale infrastructure is produced nowadays. As *projects*, they constitute a specific temporal form that is ubiquitous in contemporary society (Lundin 2016; Harvey 2018); a temporary organisation that is created to deliver something (Lundin and Söderholm 1995). The adjective *mega* indicates that this type of projects not only extend over large areas, encompassing global forces and local places (cf. Tsing 2005), but take many years to develop and build. More often than not, they are fraught with delays (Flyvbjerg 2017), if not suspended (Gupta 2018) or unbuilt (Carse and Kneas 2019). This type of projects tends to carry long histories and long-term desires and visions for a different future that people engage with either in support or against (Aalders, Bachmann, Knutsson and Kilaka 2021; Anand, Gupta and Appel 2018; Hetherington 2014, 2016). The megaproject as an organisational form of infrastructural delivery actualises scale in interesting ways, both in spatial and temporal terms, an aspect that has not yet received attention in the anthropological literature on infrastructure. Taking the *Proyecto Majes* –an infrastructural megaproject that stretches over many decades– as an ethnographic case in point, in this article I interrogate how what I call timescaling practices shape and sustain the promise it entails despite recurrent deferral.

This study is based on ethnographic material from fieldwork within the organisational realm of the Majes Siguan Special Project conducted over three months in 2016 and 2017. I studied the social history of the project, the current management of Majes Siguan I and the planning of Majes Siguan II yet to be built. I undertook participant observation among public authorities and at sites of the actual and planned water infrastructure, and conducted 19 semi-structured interviews and numerous unstructured conversations with public and private experts working on the megaproject. I also carried out archival research in the archive of the public agency AUTODEMA¹ that administers and operates the infrastructure, and in three private archives of former employees of the megaproject. During the entire period of intensive research (2016–2018) and in the years after, I have followed the events related to the project through email correspondence with interlocutors and through reports in mass media and social media.

Next, I will first outline the theoretical grounds for my analysis of the durability of the Majes Siguan megaproject. These grounds consist of the anthropology of infrastructure, time and scale. After having fleshed out what I mean by ‘timescaling,’ I will then turn to the ethnography, using an analytical framework consisting of three parts that captures the different timescales at play in the making of this megaproject. The first, ‘historical futures,’ draws on the trope by Harvey and Knox (2015) to analyse how the Majes Siguan project has been a long-standing vision of past desires and future imaginaries of development among politicians, experts and inhabitants in Arequipa and in Peru. The second part describes how the memories of the Majes Siguan I create expectations of the Majes Siguan II among workers and inhabitants alike, a

process conceptualised through the heuristic ‘present absences’ proposed by Carse and Kneas (2019) to capture the material and affective significance of the unfinishedness that the Majes project carries. For the final part, which deals with the short term organisational and political timescaling practices and artefacts that keep the project going despite multiple obstacles and constant interruptions, I propose the heuristic ‘punctuated projectification’ to denote the temporal dynamic inherent to the management of a contemporary megaproject. In the final section of the article, I present the conclusions and consider their implications for our understanding of contemporary megaprojects.

Water Scarcity, Infrastructure and Timescaling

In the twenty-first Century, the global demand for freshwater for industry, agriculture and domestic uses has steadily increased, prompting governments to look for large-scale infrastructural solutions. Modernist narratives frame water megaprojects as progress to the nation and much needed solutions to deep crises, not least in present times when climate change and environmental pollution limit this element vital to human and non-human existence (Crow-Miller, Webber and Molle 2017). Water has long been a matter of concern in Peru (Carey 2010; Regal Matienzo 1970). At present, climate change in combination with urbanisation, mining and agricultural expansion exacerbate an already precarious water supply situation (Bergmann et al. 2021) and have elicited different measures to meet this challenge (Andersen 2019; Ojani 2021; Paerregaard, Stensrud and Andersen 2016; Stensrud 2021). The *Proyecto Majes* is one piece in the larger landscape of Peruvian water governance and development politics.

Water has become a prolific object of anthropological research in recent years (Ballester 2019; Krause and Strang 2016; Orlove and Caton 2010; Paerregaard and Uimonen 2021). Several recent studies have used the lens of infrastructure to study social and political relations of water (for example Anand 2017; Carse 2014; von Schnitzler 2016; Whittington 2018). In this article, I follow this line of research applying it to the case of an infrastructural megaproject. I draw on the conceptual definition of infrastructures as ‘extended material assemblages that generate effects and structure social relations (...) through engineered (...) or non-engineered (...) activities’ (Harvey, Jensen and Morita 2017:5). Such assemblages are far from straightforward as the design, planning, projection and building of infrastructures are seldom undertaken from scratch. As we shall see in this article, the Majes Sigwas Special Project, as other infrastructural megaprojects, is temporally reframed, actualised and situated in socio-material relations of past experiences, present needs and future expectations from private and public stakeholders, political opposition and the citizenry alike (Harvey and Knox 2015; Harvey 2018; Jensen and Morita 2017). Temporality is thus a key property of infrastructures (Anand, Gupta and Appel 2018; Bowker 2015; Hetherington 2016) and especially when it comes to megaprojects owing to their long-term features.

In their seminal work, Star and Ruhleder (1996) point out that the *what* of an infrastructure is rather the *when*, meaning that an infrastructure comes into being only when it is put to practice for specific purposes by different actors (Harvey 2018:81).

Infrastructural assemblages are made through ‘temporal reckoning and interplay that take place as planners, analysts, politicians, speculators, displaced peoples and potential users are drawn into relation’ (Carse and Kneas 2019:14). Far from being a linear and homogeneous aspect that one would perhaps expect from phenomena associated with capitalist modernity (cf. Bear 2016), infrastructural temporalities are diverse and heterogeneous (Carse and Kneas 2019:15). This is not a new anthropological insight. Recent years has seen a temporal turn in the discipline (Bear 2016:488–490) even if this builds on previous anthropological work in theorising social time (Gell 1992; Munn 1992) and the time of ethnography (Fabian 1983). Contemporary anthropology conceptualises time as a relational phenomenon, more than merely a relative one (Ssorin-Chaikov 2017:4–5). Similarly, both water and infrastructures are relational phenomena from an anthropological point of view. Infrastructures are not only situated in time and out of time with themselves (Harvey 2018:82), but those temporalities are also multi-scalar, encompassing the long, medium and short term, the slow and fast rhythms, of organisational, social and political lives. In consequence, I address the multi-temporality of megaprojects through the concept of timescaling. By this concept I mean the short-, medium- and long-term social and organisational practices through which a megaproject is made in and over time. In contrast to other scholars using the concept of timescale (for example Wiggin, Fornoff and Kim 2020; Golomski 2022; O’Connor 2020) who take (time)scale as given, I think time through scale by following scholars like Tsing (2000, 2012), Jensen (2017, 2021) and Vonderau (2019) who argue that scale is constituted through discursive and material practices of scaling. I propose the concept of timescaling and the theoretical framework presented above to understand the durability of the Majes Sigvas Special Project, which, despite many changes, interruptions, controversies and replacements over the years, is still a promise in the making.

Historical Futures

The Majes Sigvas Special Project is a long-standing development project in the Arequipa Region. It is a megaproject that was envisioned long before the term was invented, emerging from the kind of history of ‘development projects’ that Gustavo Lins Riberio (1985) analyses in his seminal work on the Yacyretá High Dam in Argentina and conjuring the scales of the region and the nation, similar to the other ethnographic cases analysed in this special issue. In Peru of the early twentieth century, politicians envisioned that the desert plains of Majes and Sigvas west of the city of Arequipa could be transformed into fertile land to spur regional progress and contribute to economic growth in the country (Stensrud 2016:573). To achieve this, water was essential. Engineers at the time figured that water from the Colca River could be led through a tunnel to the Sigvas River to irrigate the plains, and this idea was studied and analysed throughout the first half of the twentieth century. Not until the 1970s and the military government of Juan Velasco Alvarado (1968–1975) did the idea materialise, however. The irrigation system was already from its inception designed to be built in two stages (see [Figure 1](#)).

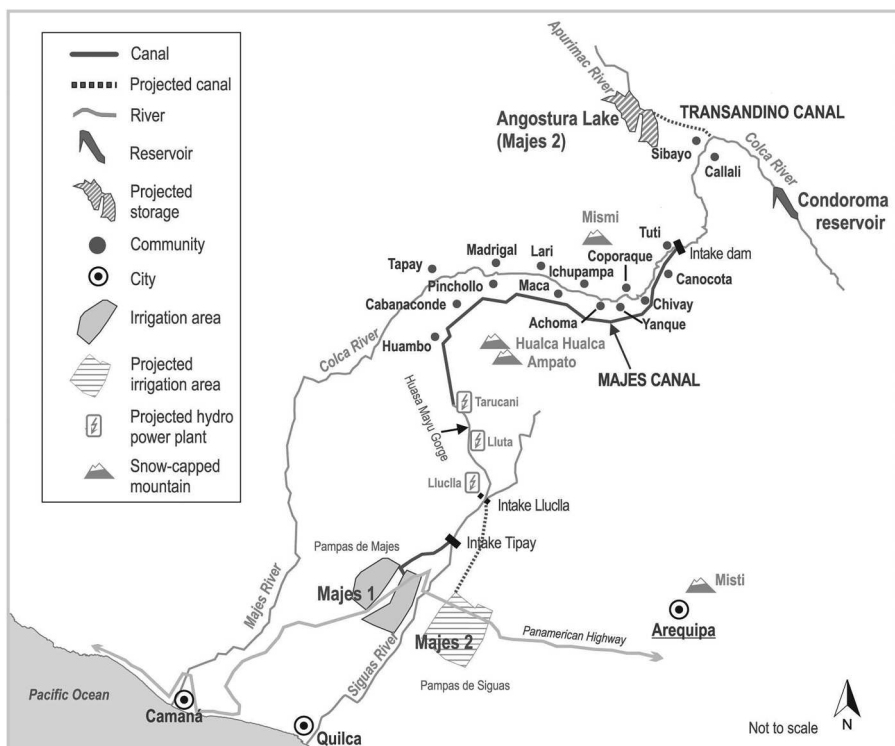


Figure 1. Map of Majes Siguas Special Project I and II. Source: Reproduced from Figure 1: The Colca-Majes-Camaná catchment and the Majes Irrigation Project, in Vera Delgado and Vincent (2013:196). Map by Juana Vera Delgado.

The Velasco government secured international loans to finance the first stage, Majes Siguas I. Starting in 1974, the transnational Majes Consortium (MACON) built the Condoroma Dam that captures the water in the highlands and the 101 km of tunnels, canals and intakes that leads the water to the irrigation grid used by the farmers in the Majes plains. The Majes Siguas I was designed and built at the time of Peru's land reform that took place in the end on the 1960s and 'became part of Velasco's endeavour to bring Peru out of feudalism and poverty and into an era of equality and progress' (Stensrud 2018:235). This reform nationalised land, water, banks and industry to reduce the power of the landowning elites as a means to spur economic development and achieve social justice. Velasco announced the reform on June 24, up until then celebrated as the Day of the Indian in Peru, and by the same token he changed its name to the Day of the Peasant (Yambert 1989) to forge 'a better nation that would be the owner of its own destiny' (Stensrud 2018:235). Peasants, in Velasco's view, were to have a special place in this emancipation from oligarchic and foreign interests. Hence, many if not all *colono* settlers in the Majes plains who were selected by lot had a background as small-scale farmers and landless

peasants. By the time of concluding Majes Sigvas I, in the early 1980s, the neoliberal turn had arrived in Peru. In contrast to the system of cooperative and collectively owned farms that had been introduced with the land reform the decade before, in the Majes Sigvas Special Project individual ownership was promoted, hence the *colonos* were offered to buy individual five-hectare plots of land for farming prioritising productivity over social justice (Stensrud 2016:576). The Majes Sigvas was imagined to benefit not only the region, but the entire nation (at the time afflicted by the escalating violent conflict with the guerrillas). The then sitting president (democratically elected) Belaunde Terry, who had been one of the early promoters of the megaproject in his previous government (1963-68), summarised its importance in his speech inaugurating the irrigation system in the Majes plains, on May 28 in 1983:

The history of Peru will register **for many centuries to come** in one single phrase, what is occurring here today, in May of 1983, thanks to the efforts of the people of Arequipa and of the entire Peru: [That is] ‘The **millenarian** thirst of the Sihuas and Majes plains have [today] begun to be stilled’. (Secretaría de Prensa de la Presidencia de la República 1983:197, my translation, my emphasis).

The president’s words exemplify how the megaproject is discursively scaled as a long-term vision by referring to the deep time of the dry desert that has for so long been crying for water to become a ‘green carpet’ (Ibid.:201), and by asserting the impact of the project in a distant future. This is the time scale of historical futures, a long-standing vision of past desires and future imaginaries of development among politicians, experts and inhabitants in Arequipa and in Peru where poverty and injustice are pervasive (cf. Harvey and Knox 2015). Two years after this speech, the president inaugurated the Condorama Dam in the highlands, which marked the conclusion of the Majes Sigvas Special Project’s first phase. Inaugurations of infrastructural projects are public rituals that not only produce social differentiation (cf. Gluckman 2002 [1940]), but stage infrastructures as temporal instances on the project timeline (Harvey and Knox 2015) and ‘render the new beginning auspicious’ (Harvey 2018:95). Such rituals can be enacted at different points on this timeline, generally to mark the completion of an infrastructure’s construction and launch of its’ functioning, like the examples from Majes I provided above. They are also performed to start off a project (or a phase of it), such as the ground-breaking ceremony described in the opening vignette to this article, which was the latest in a series of such rituals in Majes Sigvas II. Inauguration rituals are similarly used to boost political events (cf. Harvey and Knox 2015:192). The first ground-breaking ceremony of Majes Sigvas II, followed by several other in the years following, was held in the Sigvas plains on 6 February 2014 when the then sitting president Ollanta Humala reminded the audience that the many decades of waiting for progress were finally over and that money and jobs would from now on flow in to Arequipa – a promise that coincided with his plummeting popularity as a president since the year before (Chanduví Jaña 2013; Céspedes 2014). As Harvey (2018) reminds us: ‘The urge of presidents to inaugurate public works indicates the political purchase of infrastructural projects.’ (p.94). Inaugural rituals are, I argue, timescaling practices that merge both achievements and unfulfilled dreams from the

past with future visions and desires in the present, thereby creating the historical future that enables the expectations to be reproduced. In 1985, the then sitting president rested assured that Majes Sigwas II was soon to follow (Presidencia de la República 1985:565). Little could he know then that decades later this is still a future yet to come.

Due to economic and political problems in the country, the Majes Sigwas II was not actualised until 2006. Still considered a regional development project in the interest of the Peruvian nation, the focus had shifted from small-scale farming to high-tech agribusiness and exportation of industrially grown crops, as well as hydropower for export. Majes Sigwas II is planned to double the current water supply. The Angostura Dam to be built in the highlands will have a capacity of 1140 km³ water. The 18 km long Transandino Tunnel will be built to lead this water to the Colca River where it merges with the waters from the Condoroma dam and continues downhill. In the Sigwas plains, a new irrigation grid will be built to enable the development of 38,500 hectares of farming land and allow the extension of another 7000 additional hectares in the Majes plains. Two hydroelectric power stations are also planned and the foundation of a new city on the Sigwas plains (Field notes, January 2016, August 2017). In contrast to Majes Sigwas I, the second stage is undertaken as a public-private partnership in which costs are shared by the State and private investors. The private consortium is expected to build the remaining infrastructure in four years and once finished will operate the entire water system for 16 years, charging the water users for their consumption to recover the investment and make their profit, before the facility is transferred back to the State; a process that I have elsewhere referred to as a process of temporary commodification of the water infrastructure (Ullberg 2019).

In line with this model, the Majes Sigwas II was launched through public procurement in 2006. The transnational consortium Angostura Sigwas S.A.² tendered a bid and won the contract in 2010. The signboards that were placed at construction sites in the highlands and in the plains announcing that ‘Majes Sigwas II is now up and running’ and ‘Special Project Majes Sigwas Phase II: Angostura [dam] [made] Reality: Majes [plains] – Exporter [of goods],’ are still in place. They convey to the public that the hydraulic megaproject, which was envisioned as a regional development project already in the nineteenth century and the first phase of which was built in the 1980s, is finally coming to its completion. Since the past century, different politicians starting with Belaunde’s predecessors and continuing with his successors, have in public speeches referred to the long history of the *Proyecto Majes* and given assurances that the project will enable the potential progress that Arequipa and Peru harbour. Despite the interruptions in the building of the megaproject, the political discourses and the recurrent inaugural events reproduce and actualise these historical desires for future development and create a deep continuity of promises linked to irrigation and hydropower.

Present Absences

In February 2016, I accompanied Walter from AUTODEMA up to the highlands to participate in a meeting with villagers who would be affected by Majes Sigwas II. We had agreed to meet at 5 am at the public agency’s headquarters located in a quiet

area of the upper Cayma District in Arequipa and drive from there. At that early hour it was still dark when the morning guards at the entrance gates started their shift. Inside the entrance booth, they started the computer to check that the trip was cleared by the superiors, so that the Mitsubishi pickup of the latest model could leave the compound. They also checked my papers and my permission from the General Director of AUTODEMA that allowed me to carry out fieldwork and join the staff on the assignment. As we waited for the driver Juan to turn up with the vehicle, we stood inside the small booth and chatted with the guards. The oldest of the men had seen in my passport that I was from Sweden and pointed out that the Majes project had been a success thanks to *los Suecos*, the Swedes, referring to the Swedish company Skanska who had been part of the transnational consortium that built the first stage. He said that he had worked at AUTODEMA since 1982 and that he remembered that the Swedish engineers working in MACON, the international consortium that built Majes Siguas I in the 1970-80's, had been 'hard working and well organised people.' He recalled with nostalgia the 'good old times' when MACON had been in charge of building the water works and hired plenty of manpower from the region for this, meaning job opportunities for many people over many years. He hoped that the new private consortium Angostura Siguas would also create jobs when building the Majes Siguas II. While neither he, nor any of the other men present in the conversation, seemed convinced about this, they all acknowledged with nostalgia what the Majes Siguas I - the concluded first part of the yet unfinished megaproject - had left behind in terms of institutional forms, knowledges and new subjectivities. This is what Carse and Kneas refer to as 'present absences,' a heuristic that 'foregrounds the political, material and affective significance' (2019:17) of unfinished infrastructures.

When we left Arequipa at dawn, the thermometer indicated +20°C and promised a sunny day. Nevertheless, it both rained and snowed on our way up to the highlands, and there was a light fog as we approached the hamlet Pusa Pusa where the new Angostura dam is to be built (see [Figure 2](#)).

After a four-hour drive, we arrived at the village of Tarucamarca nearby, which is where the adduction tunnel will pass. The sun was out again, yet the thin air at 4200 metres above sea level was chilly. The building of the Transandino tunnel will affect 23 000 hectares of land in the area that the villagers in Tarucamarca use to herd their livestock. 51 families are registered as inhabitants, hence affected by the megaproject (Fieldnotes 25 January 2016). Most of them have moved from here decades ago to find work in the small towns in other parts of the highlands or in Arequipa, and they only return on the weekends. The few families (or members of families) that remain live on small-scale wool and meat production of alpacas, llamas and sheep. Majes Siguas II is both a threat and an opportunity for these families, Walter explained to me in the car on our way there. The construction work and the tunnel will disrupt both animal husbandry and affect ecosystems. At the same time, the construction is an opportunity to sell off some of the land and provide employment, albeit temporarily. Walter had worked in the megaproject since the time of Majes Siguas I in the 1970-80s. At the time of my fieldwork, he was the head of the Department of Community



Figure 2. Pusa Pusa, the hamlet that will be flooded by the Angostura dam (Photo by the author, February 2016).

Engagement at AUTODEMA. Among his duties was to negotiate with village members the acquisition of their land on which the facility is to be built. A key clause in the concession contract was that the entire land used for the megaproject should be acquired by the State before the Concessionaire would start the work. For this, the State needed the villagers to sell their land, but the ownership structure was not always clear and many times there were not even any land deeds registered. In many of these villages in the highlands, the land is owned collectively in so-called *comunidades campesinas*. This is a form of local agrarian cooperatives with collectively based land rights that has roots in the Inca Empire and was reinforced during the land reform in the 1970s that is still in place in contemporary Peru. The peasant population of such villages has the right to use the land, but not to sell it (Robles Mendoza 2004). In Tarucamarca, for example, the cooperative in place since the government of Velasco was still in force in 2016, hence, the inhabitants were commoners and had no title deeds. In exchange for making their land available for the megaproject, AUTODEMA assisted them with the legal procedure of getting individual title deeds in order to make way for selling. The Concessionaire's workers' camp was built on their grounds and the tunnel will be built below it. The hamlet of Pusa Pusa, on the other hand, will be completely flooded once the Angostura Dam is finished. In this hamlet, the peasant cooperative had not worked out and was since long dissolved, hence their land had been divided into individual properties many years ago. This made things easier for Walter as a representative of AUTODEMA, who in the previous year had made many trips to

Tarucamarca and other small villages to sort out property relations, negotiate with land owners. Here, and assist with legal assistance and paperwork. Many families saw the sale as an opportunity for a good deal, while others were more reluctant to give up their land that they in many cases used for grazing animals.

On the day I accompanied Walter to Tarucamarca, there was one particular family that he had arranged a meeting with to try to convince them to sell their land. Such meetings were generally held in a temporary office shared by AUTODEMA and the private consortium located in a small stone house in the middle of the village. When we arrived, several other people were also waiting to talk to *Señor Walter*. As we were about to enter the office, a young man shouted at him from outside another small house further up the village road. It was the son of the family that Walter was most anxious to talk to. He apologised to those waiting in the office and went up to the other house with his briefcase. After two hours, he came back down to the office with a smile on his face and a folder under his arm. Another hour later, in the car on the way back, he told me that the family's elder, an 80-year-old grandmother, had been adamant in the negotiations and demanded fair compensation for releasing the family's property. Among other things, she demanded that Walter 'get jobs' for her children and grandchildren in the tunnel construction, just as had happened at the time of Majes Siguas I in the 1970s, when her husband and other men in Tarucamarca and in many other villages in the region had been involved in building the Condoroma dam and other parts of Majes Siguas I. She also demanded that AUTODEMA buy not only their land at a good price but also their alpaca herd.

When the Majes Siguas I was built in the 1970s, the families whose land in the highlands was utilised for the infrastructure did not receive any economic compensation. Some of them had been among the families who received an allotment of five hectares in Majes (cf. Stensrud 2016) and changed alpaca breeding in the highlands for dairy production in the plains (Fieldnotes 26 January 2016). By granting their land and moving, they not only changed their way of life but exchanged hopes for a better future for an arduous sacrifice in a new place (Stensrud 2016). Those who had remained in the highland *sierras* since then did not intend to repeat the same mistake. The old woman in Tarucamarca and most other people in the surrounding highland villages claimed that the water and land to be used for the infrastructure belonged to them. In comparison to Majes Siguas I, they assured that this time, neither the Peruvian State nor the Consortium would be allowed to simply come and take it. The villagers' hopes that the megaproject would benefit them were as great as the fears of being left once again with nothing. This was why they put up a hard fight in the negotiations and appealed to the memories of Majes Siguas I in claiming their moral right for compensation. During the time of my fieldwork and before (cf. Stensrud 2016:570), several public demonstrations were carried out in different highland villages by residents demanding employment in the infrastructure works and economic compensation for their land losses and the negative impact that the infrastructure would have on their livelihood. Similar to the AUTODEMA employees who recalled the good old times of Majes Siguas I when employment was plentiful, the memories of the job opportunities that the first stage of the megaproject in the 1970-

80's had created loomed large among the residents, but to them, so did those of the losses (of land and livelihood). Such memories were constantly made present in the current negotiations and struggle that the local communities were engaged in regarding the Majes Siguan II. As Carse and Kneas (2019) suggest, the present absence of unfinished megaprojects can reshape the social and political life of communities involved. The Majes Siguan I has material presence through the water infrastructure and the memories from the procedures, gains and losses from building this first part of the megaproject loom large among by residents and AUTODEMA employees alike. The Majes Siguan II is present in the social and political imaginary, but less so in material terms. Initial steps have been taken to undertake the construction, for example, acquiring (some of) the land titles where the infrastructure will be built; building new roads and workers' camps in the highlands; and freighting the giant tunnel boring machine (TBM) that was shipped overseas from China up to the highlands. Yet, more than one decade after the concession contract was signed, only 27% of the total project is underway (Huamaní 2023). In this regard, Majes Siguan II is more absent than present since the megaproject is still unfinished, and the memories from the first phase shape the expectations and fears about the second. The recent past of Majes Siguan I and the possible future of Majes Siguan II mirror each other in the present absence of one finished phase and another yet to be built. This is a medium term timescaling that sustains the megaproject promise despite protraction.

Punctuated Projectification

The headquarters of AUTODEMA, the public agency administering and operating the Majes Siguan Special Project, is located in a small compound of a dozen single-storey wooden buildings shaded by jacaranda trees in a quiet area of upper Cayma District in Arequipa, in contrast to what one might expect from a million dollars' worth megaproject. At this agency, most activities were dedicated to the management of the existing water works and there were several different units to manage technical, economic and organisational matters of Majes Siguan I. Majes Siguan II, which was still at the planning stage, was run at a separate unit.

During my fieldwork in 2016 and 2017, a dozen of AUTODEMA employees and several external consultants worked hard here to live up to the agreements between the Arequipa Government (the Grantor) and the private consortium (the Concessionaire) in the Majes Siguan II contract so that the building could start. The civil engineers assessed the Concessionaire's actual building plans of the new dam, tunnel, and irrigation system. In addition to this, numerous other steps had to be taken. For example, as mentioned in the previous section, the land where the new dam and tunnel were to be built had to be acquired, which was a daunting task that involved not only Walter and his fellow sociologists to negotiate with the landowners, but also a number of lawyers to manage the paperwork and bureaucratic procedures. The environmental scientists, on their part, scrutinised the Environmental Impact Assessment that the private Concessionaire had submitted. The Archaeological Assessment required by law was another important task managed at this department. The

daily work here as at the rest of the agency and in any bureaucratic organisation, thus consisted mainly of reading documents, writing reports, phone or electronic communication, visits to the building sites and to other public agencies, and meetings within and outside the agency (Ullberg 2019). All these work practices constituted a particular order and a time plan towards a goal with minute planning that both the Concessionaire and the Grantor were to attain to. More often than not, however, the timetable was overturned because documents were lost, e-mails did not get through, cars broke down, meetings were cancelled, decisions were postponed, or employees did not finish on time as well as myriad other reasons. This was really megaproject business as usual; '*[m]ás de lo mismo*',³ as Daniel, one of the engineers at the AUTODEMA remarked when he told me about his work at the Majes Sigwas II department and about his experiences from working in other megaprojects in Peru.

From an organisational perspective, temporal practices pervade everyday life. The introduction of the five-day 40-hour workweek for the Ford Motor Company's factory workers in the early twentieth Century is often held up as an example of organisational time management (Brunelle 2017). The project is the predominant form of contemporary organisations and social life, prompting scholars to talk about 'project society' and 'the projectification of society' (Jensen, 2012; Lundin et al. 2015). As remarked in the introduction to this article, a project is a temporal phenomenon in itself, guided by a task to be achieved within a specific period of time, what Guyer (2007) calls a 'regime of dated time.' In such a regime, multiple artefacts and practices structure the activities and make the megaproject temporality. This is by no means a straightforward process, but one of constant punctuations, that is, breaks and interruptions of the plans, leading to delays and increased costs (cf. Flyvbjerg 2017). Megaprojects, I argue, are temporally constituted through punctuated projectification, that is, a dynamic between the project timeline and the punctuations. As we shall see next, actors therefore engage in timescaling practices as a means to overcome this dynamic and keep the project going.

The transnational consortium Angostura Sigwas won the public tender in 2006 to build the Majes Sigwas II in four years and run the entire Majes project for 16 years. The contract with the Peruvian State represented by the Regional Government of Arequipa was signed in 2010, and already in the first five years was amended twelve times. The 12th amendment signed by the parties in 2015 created the Consolidated Amended Text, in the megaproject realm referred to by its Spanish acronym 'TUO',⁴ which was one single document including the initial Concession Contract and all the amendments made afterwards. The amendments concerned agreements about technical, economic and procedural matters, and stipulated also new timeframes for the different steps taken in the project process. This in fact began with the first amendment that was signed on the same date as the very contract in 2010 (four years after the results of the tender):

[B]y means of which they [the parties] agreed to suspend the validity of all the obligations contained in the Contract of Concession referring to the preparatory studies, financial closing, the delivery and reception of goods, as well as the construction of works, [and] as a result, **the**

corresponding lead times provided for in the aforementioned contract were suspended.
(Proinversión and Gobierno Regional de Arequipa 2015: §1.2. My translation. My emphasis)

The recurrent amendments of the TUO contract, which consisted of adjusting details, renewing lead times and postponing deadlines a few months ahead, not only reveal the paper politics of megaprojects as an instance of bureaucracy and the power of a document (cf. Riles 2006; Hetherington 2011; Hull 2012). The amendments can also be seen as short-term timescaling practices, which were necessary to keep the contract in force and the project running in legal terms. This way, the commitment made by all involved partners that the megaproject was in the making could be upheld, despite obstacles and delays.

Meanwhile, the estimated costs of the megaproject to be shared between the private consortium and the Peruvian state, have almost doubled. In July 2021, the price tag was estimated close to US\$700 million (Mamani 2021). This is due to the latest of amendments of the contract, the *Adenda 13*, which was negotiated since 2017 and paralysed the project for years before it was finally signed in 2022 (AUTODEMA 2022). At stake were a number of issues, mainly regarding the improvement of the hydraulic infrastructure to increase the flow of water from the highlands and changes in irrigation technology to distribute it in the Siguas plains. Matters of financial responsibility and who was to pay for the increased costs was also a contentious point, discussed between the parties within the megaproject realm (Fieldnotes 21 August 2017) and in public media (cf. Vilca Begazo 2020). Only in 2021 was the budget spending approved by the Peruvian Congress and the Peruvian Government (El Peruano 20 July 2021) and new dates in the regime of project time were anticipated.

Right after this decision by the Ministry of Economy and Finances, the then sitting Director of AUTODEMA, Napoleón Ocsa Flores, hosted an outdoor press conference at the agency's premises in the Cayma district broadcasted live through the agency's public Facebook account. Ocsa and three other AUTODEMA managers sat side by side as a panel at a table with a small Peruvian flag swaying in the wind and the signboard with the slogan 'Majes Siguas II is now reality' at their back. Two young women dressed in the traditional and colourful costume from the Colca Valley in the highlands stood one on each side of the table. All of them wore pandemic facemasks covering their mouths and noses. Ocsa made a short presentation of the approval of the amendment after which the journalists were invited to pose questions to the AUTODEMA panel. One of the journalists present, clearly not trusting the renewed promise, wanted to know if the 13th amendment could guarantee that no more *plazos* would be given, that is, no more extended lead times and deferred deadlines in the project. Would Majes Siguas II be built now once and for all? Ocsa regretted the many delays of the project, but this time, he assured, things would change and this would set the Majes Siguas II in motion again. Lead times would be kept short for the coming milestones, such as the final acquirement of land in the highlands, the formal signing of the amendment the following month, the disbursement of funding to start the actual works with the dam and the tunnel. The round of questions and answers concluded with a photo session (see Figure 3). The AUTODEMA president



Figure 3. Press conference announcing the coming approval of the 13th Amendment at the AUTODEMA premises in Arequipa on 21 July 2021 (<https://www.autodema.gob.pe/proyecto-irrigacional-majes-siguas-ii-a-puertas-de-reiniciar-trabajos-tras-4-anos-de-estar-paralizado/>, accessed 3 August 2021).

Ocsa and his colleagues held up in front of the cameras a set of documents, presumably the 13th Amendment documents, as if conjuring new unmet deadlines and the forthcoming punctuations of the project.

In organisations and projects, decisions are made valid and trustworthy through contractual agreements and plans that materialise rules and structure time (cf. Nyqvist 2015). The press conference described above bears similarities with the inaugural events described previously in this article, as both work as timescaling rituals that bring the past and the future into the present and render the promise auspicious of a fresh beginning (cf. Harvey 2018). The difference between them is found in the different timescales that they evoke. The inauguration of Majes Siguan I configured the deep past of colonialism and distant future of progress, and the sod-turning ceremonies encompassed the medium-term timescale of Majes Siguan I and II. In contrast, the press conference was an enactment of bureaucratic routine, similar to the meetings that pervade contemporary organisational life (Sandler and Thedvall 2017) and work as ‘rituals of legitimation’ (Thedvall 2008). In temporal terms, the performative practices of press conferences and everyday meetings articulate with contracts, feasibility studies, plans and other artefacts to scale time in the short term, from week to week, and month to month. Within the public-private megaproject realm, both the routine practices and the performative events scale the punctuated temporalities of commitment between the engaging parties. The latest occurred in May 2023. Despite having signed the 13th amendment of the contract in 2022, the work was not resumed as agreed before the deadline. The public-private partnership of Majes Siguan II is now subject to arbitration by the Coordination and Response System for

International Investment Disputes of the Peruvian Ministry of Economy and Finance. To the project planners and managers that I interviewed in Arequipa, both the routine and the performative practices were part of the social life of a megaproject. Despite many a stalemate in the Majes Siguanas II, such short-term timescaling practices have kept the megaproject going.

Conclusion: Scaling Time, Scaling Hope

Infrastructural megaprojects such as the *Proyecto Majes* materialise hope and ambition, and are 'supposed to provide the stability necessary for the emergence of processes of a different order - alternately imagined as development, civilization, or simply progress ...' (Hetherington 2014:197-8). As such, they seem to embody prophetic or evangelical time, that is, a long-term time scale towards the extraordinary promises of the future (Guyer 2007; cf. Harvey 2018). Taking the Majes Siguanas Special Project as a case of such promise, it has been my aim in this article to unpack this megaproject and analyse how the expectations that such prospects entail, are upheld through practices of timescaling in its social, political and organisational realms. The ethnography presented here shows how the megaproject is temporally scaled by way of remembering the past, envisioning the future and projectifying the present in the long, medium and short terms. I have described how local, regional and national political leaders in Peru have in discourse and practice scaled time as 'historical futures' by evoking Catholicism, indigenous cosmology and longstanding postcolonial dreams for the Majes and Siguanas plains to turn into lush gardens in a distant yet thriving future of the *Arequipeños*. In the medium term, residents in the highland villages and employees of the public agency AUTODEMA have re-scaled the time of the megaproject as a 'present absence' by evoking social and personal memories from the recent past when Majes Siguanas I was built in the 1970-80's. These memories have shaped their expectations, fears and negotiations around the stakes in the near future of the megaproject's second stage and they shift the scale in drawing attention to those absences and stagnations. Finally, in the realm of the Majes Siguanas II management, there is a discrepancy between the 'regime of dated time' stipulated in the concession contract and the everyday work of AUTODEMA and the private consortium Angostura Siguanas that is full of obstacles and tensions structured by internal processes of project management as much as external social, economic and political events. This is what I call 'punctuated projectification' and I argue that in order to settle this discrepancy, actors engage in short term timescaling such as constant amendments of the contract and public press conferences to legitimise the new temporal terms and keep the megaproject running.

The contemporary megaproject as a form of infrastructure delivery is characterised by constant ruptures that tend to lead to postponement, deferral and delays, such as the ones described in the Majes Siguanas case. While they are not seen as signs of failure (cf. Alexander 2023), such ruptures, I argue, can be seen as, not the unintended consequences of an otherwise optimal design of an organisational form, but rather as an inherent feature of the logic of the projectification of work and society. From my

study it is possible to conclude that timescaling practices seem to enable this logic. By engaging in long, medium and short term timescaling practices, which are heterogeneous, non-linear, and characterised by both rupture and stagnation, the fiction of linearity and progress of the megaproject is reproduced. Timescaling thus contributes to the constant actualisation of the megaproject's promise in Peru, upholding expectations for a brighter future and conjuring postcolonial expectations for what Lindquist (2006) called a 'lost sense of tomorrow' (p. 216) in her analysis of hope in post socialist Russia. In Peru, the *Proyecto Majes* is after all, 40 years and more after its inception, still in the making.

Notes

1. The acronym stands for Autoridad Autónoma de Majes Sigüas (Autonomous Agency of Majes Sigüas in English).
2. The consortium was constituted in 2006 by the Spanish firm Cobra and the Peruvian firm Cosapi, but a corruption scandal in 2018 prompted Cosapi to sell its shares.
3. Literally 'More of the same' in English.
4. The acronym standing for *Texto Único Ordenado* in Spanish.

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