

RESEARCH ARTICLE

From Cadarese to Morasco: the creation of a Fascist hydroscape in alpine space after 1928

Sebastian De Pretto 

Department of Economic, Social and Environmental History, University of Bern, Bern, Switzerland
Email: sebastian.depretto@unibe.ch

(Received 31 October 2023; revised 7 May 2024; accepted 7 May 2024; first published online 19 September 2024)

Abstract

This article explores the socio-ecological impacts of Fascist hydropower extraction in the Alpine valleys of Italy, focusing on the Toce river basin during the interwar period. It investigates the conflicts between local communities and hydropower initiatives by private energy companies under Fascism, thereby revealing the regime's communication strategies rooted in its political ecology. By analysing newspaper articles, propaganda outlets and communal archival documents, the study uncovers statal and local perspectives on infrastructure development and its enduring consequences. How the political ecology of Fascism in a high-altitude hydropower construction site became an expression of Fascist modernity will thereby be shown. Despite objections from valley inhabitants, Fascist hydropower projects persisted, perpetuating socio-ecological inequalities after 1945. Even postwar efforts for compensation failed to address the long-lasting impacts on mountain communities. This research reveals the intersection of political ecology and modernist infrastructure development in Mussolini's Italy, and thus also highlights the legacies of Fascist resource extraction policies on the country's peripheral Alpine regions.

Keywords: Fascism; political ecology; high modernity; infrastructure; hydropower; environmental justice

‘Seemingly small things: but for the alpine farmer they are of paramount importance,’¹ complained an engineer from Ossola, a valley in Piedmont's north, in 1928 (Brocca 1928b, 1). His objection was directed at the construction of hydroelectric power plants along the River Toce, which came at the expense of crucial infrastructure and grazing land. After the opening of the hydroelectric power plant near Cadarese by power company Conti in 1928, the Milanese power company Edison transformed the Toce into a fully industrialised watercourse, encompassing the three valleys of Formazza, Antigorio and Ossola. The Toce originates in the uppermost basin of Formazza, flowing southward through the Antigorio and Ossola valleys, eventually passing through Domodossola before ultimately discharging into Lake Maggiore. Well into the postwar period, hydroelectric power from the Toce supplied a significant portion of the energy for the northern Italian industrial metropolises. Against the backdrop of historical context, this article explores why the above cited engineer perceived these intrusive interventions from the Italian hydropower industry as seemingly insignificant to others but as existential threats

to the riverine communities affected by them. To provide historical context for the engineer's concerns, this article first examines the development of hydropower in Italy in the years before and during the era of Mussolini's rule, aiming to elucidate the regime's communication strategies rooted in its Fascist ideology. Second, it addresses the local consequences of dam construction and the power dynamics between the central regime in Rome and peripheral mountain communities. This analysis seeks to reveal not only how Fascism industrialised entire river basins but also how life and work transformed in the valleys where watercourses became dammed and farmland submerged. The central thesis is that the Mussolini regime actively promoted the hydropower development as part of its political ecology through media channels, thereby employing its narrative of Fascist modernity. In the mountain valleys along the Toce, not only did a different perception of nature prevail due to extensive agriculture, but the regime also glossed over the damages resulting from its invasive hydropower schemes. Objections from valley inhabitants persisted, however, and continued even if they remained publicly unheard. It was only in the postwar years that mayors from Ossola and neighbouring valleys successfully advocated for adequate compensation from hydropower companies. However, the power relations inherent in Fascist hydropower infrastructures, along with the legal continuities of Italian energy policy after 1945, continued to prevent environmental justice for peripheral mountain valleys even in republican Italy. To delve into these conflicts over water resources, initially suppressed before resuming after 1945, the study focuses on the three neighbouring valleys of Ossola, Antigorio and Formazza, situated in the upper Toce basin at the northernmost border of today's province of Verbano-Cusio-Ossola.

The energy and economic importance of alpine hydroelectric power for Italy has been the subject of numerous studies, both at the provincial level (De Bertolini and Dori 2015) and on a national scale (Battista, Benedetti and Dragone 1992–4; Bolchini 1989). Most of these works primarily concentrate on the postwar decades or encompass the broader timeframe from the early twentieth century to the nationalisation of the Italian energy sector in 1963 (Armiero 2011; Barca 2010; Bonan 2020; Ciuffetti and Mocarelli 2021). Critical research examining the adverse effects of hydroelectric power on riverine communities tends towards contemporary examples (Armiero 2023; Reberschak 2003; Sirena 2020). Within the realm of historical research, there has been only scarce exploration of the damages and displacements resulting from the construction of hydroelectric power schemes during the Fascist era (Pedersoli 1973). Additionally, there is a dearth of studies focused on the mountain valleys of Verbano-Cusio-Ossola and the Toce River that rigorously examine the process of hydro-industrialisation during the interwar period. Existing studies either pertain to local economic and cultural history, concluding at the onset of the First World War (Chiaromonte 1985; Mortarotti 1985; Rizzi 2014, 2015), or they delve into the history of energy and construction companies active in the northern region of Lake Maggiore, without addressing questions related to socio-ecological impacts (Fortis 2003; Jakob and Stahel 1997). By investigating local repercussions of constructing hydroelectric power infrastructure in Ossola and its neighbouring valleys during the interwar period, therefore, this article seeks to resolve several research lacunas.

To comprehend the underlying ideology and communication strategy that propelled dam construction during the Fascist regime, this study draws on the book *Mussolini's Nature*, authored by Marco Armiero, Roberta Biasillo and Wilko Graf von Hardenberg (2022), as well as Ruth Ben-Ghiat's seminal monograph *Fascist Modernities* (2001). In their monograph, Armiero, Biasillo and Graf von Hardenberg elucidate the political ecology underpinning Fascist policies related to nature conservation and infrastructure, particularly hydroelectric projects. They unveiled 'the instrumental ideas and material uses of nature that Fascism developed to further its political agenda' (Armiero, Biasillo and Graf von Hardenberg 2022, 4). Consequently, Fascist political ecology can be generally

conceptualised as a socio-ecological approach shaped by ideology and force, and, within the context of this article, as an invasive infrastructural intervention in ecosystems for the purpose of harnessing resources in the interest of the nation. Furthermore, Ben-Ghiat's monograph highlights the diverse conceptions of modernity disseminated through various forms of Italian mass media during Mussolini's dictatorship. She demonstrates how Mussolini propagated his vision of a revitalised Italy as a cultural imperial power through films, literature and other mass media (Ben-Ghiat 2001, 17–93). This media-based indoctrination also included news outlets, where both domestic and foreign events were presented in accordance with the regime's overarching narrative of modernisation. Within this nationwide propaganda campaign, Fascism's political ecology played a crucial role, as Rome's media authorities presented large-scale infrastructural construction projects as tangible evidence of the seemingly unstoppable progression towards Fascist modernity. This article not only examines how the regime articulated its political ecology in Italian newspapers but also uncovers the local repercussions that were publicly concealed by this nationwide hydropower propaganda.

To conduct this investigation, I first provide the historical context of Italian hydropower expansion after the First World War. This reveals the legal, energy-economic and infrastructural foundations on which the Fascist regime built its energy policy after its seizure of power in 1922. This section points to the fact that the expansion of hydropower under Mussolini is not to be understood as his own achievement. The Fascist regime could expand its repressive and exploitative hydropower infrastructure only because the Italian energy industry had already invested significantly in hydropower since the Second Industrial Revolution, among other reasons, and influential liberal politicians had advocated for this expansion. The general consequences that adjacent communities in the catchment areas of hydropower plants had later to bear nationwide with the spread of Fascist hydropower infrastructures are also addressed at the end of this first section. Second, I elucidate how the Milanese power company Edison turned the whole Toce River and its tributaries into a hydroelectric powerhouse after 1928. Third, I examine newspaper articles originating from Ossola and its neighbouring valleys in the late 1920s. My aim is to identify local perspectives that provided commentary on Rome's infrastructure development policies in the alpine regions, where issues such as poverty and emigration were rife during that era. From such perspectives, it becomes evident how the local population harnessed the available natural resources and managed them through small-scale infrastructures. Moreover, the ramifications of Fascist infrastructure policy become more clearly discernible at the local level. Such ambivalent voices in regional newspapers were still prevalent during this early period of the Fascist reign, as the nationwide media campaign had not yet extended to all of Italy's peripheries. Fourth, I look at Fascist newspaper reports from the late 1930s, in which various authors, inspired by the ideals of Fascist modernity, extolled Fascism's political ecology while visiting the alpine dam construction sites. Fifth, I analyse correspondence and complaint letters from the municipal archives of Formazza, which began arriving in Rome from the 1930s and continued to be dispatched in the years following the Second World War. These documents contain damage claims submitted by the valley community to the Ministry of Public Works in Rome. This correspondence proves that complaints from the valleys affected by dam construction never ceased; in fact, it increased in the postwar period, when critical voices against centralist infrastructure projects were once again allowed to be expressed in public.

Italy's hydropower expansion after the First World War

As early as 1905, prominent politicians such as Francesco Saverio Nitti and Angelo Omodeo had already proposed the nationalisation of all rivers and lakes to facilitate

nationwide industrialisation (Nitti 1905). In line with their vision, Italy's abundant water resources were to be extensively industrialised to meet the country's rapidly growing energy demands. However, Nitti's call for the 'conquest' of hydropower could not be fully realised during the initial stages of hydropower development due to the absence of both political and legal foundations for nationalisation. The outbreak of the First World War served as a pivotal catalyst for the establishment of a centrally co-ordinated hydropower industry in Italy. Given the country's lack of domestic coal reserves and the urgent need for self-sufficient energy supplies to support the war economy and subsequent reconstruction efforts, the government in Rome sought comprehensive oversight. In 1916, the so-called Bonomi Decree, named after Ivanoe Bonomi, the minister for public works and later prime minister (1873–1951), was enacted to create a state-controlled system for granting concessions for new hydropower plants. The Ministry of Public Works in Rome was entrusted with issuing permits (Lacaita 2010, 17, 27; *Gazzetta Ufficiale* 1916), and energy companies were henceforth required to submit their project proposals to provincial civil engineering offices, which would then forward them to Rome for evaluation. Priority was no longer determined solely by the submission date of new plant proposals; rather, it was contingent on which projects were deemed by the ministry to be most aligned with the public interest (Barca 2006, 36; Lacaita 2010, 19–22). Although riverine communities received the option to appeal through a newly established court and received financial compensation for diverted watercourses, they had no ultimate authority in the allocation of access rights and concessions (Bonoldi 2006, 47; Celetti 2010, 190–198; Pavese 2004, 89, 95; Ratto 1917). Officially, compensation could amount to up to two lire per horsepower produced; however, practical disbursements were often significantly lower. In some instances, water taxes were never remitted at all (Sievert 2000, 87).

The Bonomi Decree exerted a significant impact, particularly during the war years; between 1917 and 1919, the Office of Public Works granted a total of 385 water concessions. Of these, 283 pertained to electricity production, a response to the growing demand for lighting and industrial needs. Private companies, often backed by financial institutions, demonstrated keen interest in water resources, primarily within the northern provinces such as Piedmont, Lombardy, Veneto and Liguria (Barone 1993, 228; De Rosa 1993, 949–950). Subsequently, from 1923 onwards, the Fascist regime leveraged the Bonomi Decree to further exploit the considerable potential of the nation's watercourses, collaborating with a select group of privately owned energy companies, collectively referred to as the *elettrocommerciali*. This oligopoly comprised companies such as Edison in Milan, the Società Idroelettrica in Piemonte (SIP), the Società Adriatica di Elettricità (SADE) in Veneto and the Società Meridionale di Elettricità (SME) in southern Italy. These energy enterprises effectively partitioned the water-rich mountain ranges across different catchment areas and, armed with both expertise and capital investments, transformed entire river systems into hydroelectric powerhouses (Galasso 1993). Between 1918 and 1932, the *elettrocommerciali* managed to increase hydroelectric production nearly fourfold, surging from just over 900,000 to 4.1 million kilowatts. By 1921, 91 storage reservoirs had accumulated 180 million cubic metres of water, with an additional 41 under construction. By 1932, the volume of dammed water had soared to 1,554 million cubic metres (Armiero 2011, 35; Pavese 2010, 211–212).

Under Mussolini's rule, the Bonomi Decree underwent two amendments, the first introduced in 1924 and the second in 1933 (*Gazzetta Ufficiale* 1933). In 1924, the enactment of Decree 456/1924 resulted in the nationalisation of all water resources in Italy and introduced taxation on their utilisation (Graf von Hardenberg 2010, 146). This amendment had a notable impact on the already poor rural population, further straining their modest household budgets. In 1933, legislation now offered compensation in the form of equivalent land for expropriated properties; it also restricted the autonomous resource rights of

small mountain municipalities and hamlets. With the new law, they were compelled to join consortia, within which they had to relinquish control over their hydro resources to serve the broader interests of the valley community and ultimately also of the state. Ultimately, these resources came under central supervision, as the fees paid by concessionaires were deposited into funds accessible exclusively to the consortia, under the oversight of the Ministry of Public Works. The expenditure of these water rates fell under the purview of central government control, establishing new financial dependency as a result (Graf von Hardenberg 2010, 145).²

Hydroelectric power in the Italian Alps substantially increased following the First World War, resulting in the construction of invasive dam schemes designed to store and distribute energy. Owing to the nationalisation of the country's water resources and the consequent limited participation rights of local authorities, hydroelectric companies resorted to expropriating residential and agricultural land for the development of these reservoirs. Artificial lakes impeded and redirected river flows, subsequently leading to a depletion of hydro resources available to local communities. Apart from using them as a source of drinking water, these communities relied on these resources for meadow irrigation and to quench the thirst of their livestock (Armiero 2011, 34–38). In Italy, industrial hydropower introduced a profound industrial intrusion into alpine ecosystems, a violent process succinctly expressed by James Sievert as 'a declaration of war on the Alps':

Dynamite blasted open holes on the battle front, temporary bridges carried troops (labourers) to their battle stations, and the corpses of dead trees and stone littered the war zone ... The river was taken prisoner. It would flow no more. (Sievert 2000, 85)

However, when the terrain or the dammed waters escaped this anthropogenic exploitation, catastrophic accidents occurred. Due to Rome's negligence towards remote communities and inadequate construction practices, dam failures led to tidal surges and floods, as in the cases of the Lombard Alps at Gleno in 1923 and Val Orba in 1935 (Armiero 2011, 41–43; Armiero, Biasillo and Graf von Hardenberg 2022, 79–81; Pedersoli 1973). Fascist hydraulic engineering policy industrialised remote mountain valleys, posed continued threats to communities residing beneath the dams even after these facilities were operational, and, as demonstrated in the case study that follows, submerged entire villages. This phenomenon, akin to the Stalinist transformation and devastation of landscapes resulting from large-scale technical developments such as hydropower infrastructures, was aptly described by Paul R. Josephson as 'brute force technology' (2002, 4–5). The same kind of invasive technology spread through the Italian mountain valleys affected by Fascist hydropower construction, thereby imposing repressive and exploitative 'hydro-social systems' on alpine communities (Swyngedouw 2015, 9). The Italian Alps, especially peripheral high valleys, were affected by this repressive transformation caused by hydropower facilities and infrastructures. Like the valleys along the upper Toce, these were agriculturally dependent, structurally weak regions that suffered from ongoing depopulation (Giusti and Toniolo 1932, 41–81; Giusti 1938, 16–22). In the lower-lying alpine valleys, industrial companies from urban regions sometimes invested in new production sites, such as Milan's Montecatini, which established an entire new industrial centre for aluminium production together with a worker settlement in Bolzano. However, just like the electricity generated from hydropower, the revenue from such industrial production sites mainly flowed into northern Italian metropolises like Milan (Bonoldi 2009, 222; Leonardi 2014, 37, 42; De Luigi, Meyer and Saba 1978, 77–78).

The River Toce: the development of a hydroelectric powerhouse

During the period from 1926 until the nationalisation of the Italian energy sector in 1962, the principal developer of the Toce basin was the Milan-based energy company Edison. The Toce represented one of Edison's largest catchment areas, alongside the Adda and the Liro-Mera in Sondrio, Oglio Superiore in Val Camonica, and the Noce in Trentino. In the 1930s, the Toce basin accounted for one-third of Edison's total energy production, rendering it the most significant income source for the company's northern Italian market. Although Edison extended its development to other river systems in Lombardy, Trentino and Piedmont during the 1950s and 1960s, hydropower harnessed from the Toce basin continued to be a primary energy source for major northern Italian cities such as Milan in the postwar era. When the expansion of hydroelectric power on the Toce ended in the 1950s, Edison operated 16 reservoirs along the river and its tributaries. Under the Fascist regime, Edison substantially augmented its hydropower infrastructure in Ossola, Antigorio and Formazza: 124,000 kilowatts in 1924, 291,000 kilowatts in 1933, and 530,000 kilowatts in 1949. By 1932, approximately 15 per cent of Italy's hydropower originated from the Toce, a figure that still stood at 13 per cent in 1949 (Fortis 2003, 648–683).

The extensive industrialisation of the Toce basin started in the 1920s with the establishment of a hydroelectric power plant near Cadarese in 1928 and Edison's acquisition of the Conti company two years earlier. The Conti company had been responsible for constructing most power stations along the river until the mid-1920s. Following the Cadarese project, Edison launched two other reservoir projects: one situated on the Morasco high plateau to supply the Ponte power station, and another near Agàro intended for the Goglio station. Although project planning began in the 1920s, another 20 years passed before the two reservoirs were operational. The design and construction of these two reservoirs extended until 1941. Edison faced financial constraints during the early 1930s, primarily due to the worldwide economic crisis, which coincided with a decrease in nationwide energy demand owing to the subsequent economic downturn. As the economy gradually rebounded in the mid-1930s and expensive projects became viable again, Edison's board of directors made the decision to resume work on the Morasco and Agàro projects. Yet these were large-scale, high-altitude construction sites at more than 1,500 metres above sea level, for which the necessary infrastructure had to be built first. After construction began in 1936, a network of newly paved roads, railways traversing steep terrain and cableways bridging impassable ranges facilitated the transportation of up to 1,200 cubic metres of concrete daily from Domodossola to the construction sites. During the summer months, workers processed the concrete on site. Prior to the arrival of workers and the establishment of transportation infrastructure in these high-altitude valleys, two settlements had already vanished, lending their names to the subsequently created reservoirs: Morasco and Agàro (Fortis 2003, 716–719; Zucca 2001).

Voices from the valleys during Fascist hydropower expansion

In 1928, Giovanni Brocca, a civil road engineer from Ossola, wrote two comprehensive newspaper articles addressing the precarious economic conditions in the mountain valleys of the region (Brocca 1928a, 1, 1928b, 1; *L'Ossola Verbania* 1926, 2). One key issue mentioned in his first article was the abundance of low-value pastureland owned by farmers that demanded costly and intensive cultivation (Brocca 1928a, 1). Indeed, farming in the mountainous areas north of Lake Maggiore had always been arduous. The rugged and impassable terrain, harsh climate characterised by heavy snowfalls and spring avalanches, extensive land fragmentation, and intricate ownership arrangements within valley

communities all contributed to demanding labour conditions with limited prospects for either innovation or enhancements (Chiaromonte 1985, 30). Another of Brocca's concerns, however, lay in the reforestation efforts initiated by the state to secure hydropower projects, reservoirs and power lines. This non-collaborative reforestation, as he argued, would further diminish the already unproductive land in these areas (Brocca 1928a, 1). In 1928, the Forestry Militia received money from the electric industry for reforestation in mountain valleys that had been developed for hydropower.³ The objectives were to prevent landslides around the constructed infrastructure, retain groundwater for the storage lakes and, in the 1930s, produce wood gas for automobile engines. Indirectly, however, the new forest areas also overgrew the mountain farmers' grazing and cropland, thereby excluding local agriculture (Armiero, Biasillo and Graf von Hardenberg 2022, 79–93). Apart from the construction of storage lakes and water pipelines, reforestation emerged as one of the most substantial interventions in alpine ecosystems through which the regime pursued its autarky plans via its political ecology. In addition to reforestation, Brocca identified the taxation of livestock as another impending burden for impoverished farmers, particularly those who relied heavily on goats, which formed the primary livestock in the valleys (Chiaromonte 1985, 68). Many difficult-to-reach mountain slopes, which were only good for grazing, would lose their value if cheaper sheep were used instead of goats, as sheep were less suitable for such steep terrain (Brocca 1928b).

Yet, Brocca believed that the hydroelectric power plants endangered the existence of the mountain farmer most of all. In the late 1920s, reservoirs had already flooded valuable pastureland such as the Cavalli pasture in Valle Antrona, the high plateau of Codelago in Baceno, and the Vannino and the Busin pastures in the village of Premia, as well as the Kastel and the Toggia meadows in the Formazza Valley. Newly planned dams, such as Morasco and Agàro, would now further exacerbate the problem. All these high pastures were crucial for the alpine economy, serving as vital oases in a stony and barren desert, according to Brocca (Brocca 1928b). Generally, the loss of any pastureland posed an existential threat to the entire valley economy, which depended almost exclusively on livestock and dairy farming. Agricultural cropping did not yield enough for self-sufficiency. And although there were already rich wood resources growing on the steep mountain slopes before the enforced reforestation, forestry and timber production had never reached their full capacity (Chiaromonte 1985, 63–67). Furthermore, storage lakes held back river flows, resulting in a lack of this valuable energy resource downstream. Fishing, mills, hemp manufactories and river trade between the Ossola mountains and Lake Maggiore were dependent on flowing water. Raft boats transported wood, cattle and dairy products down from the mountains and brought grain, salt, rice and wine back up the river from international markets. Some of the commodities were later traded further north towards Switzerland, making the Toce an integral part of transalpine trade networks (Rizzi 2014, 347–350).

Throughout the 1920s, various newspaper articles praised the construction of infrastructures such as asphalted roads and railway lines (*Il Popolo dell'Ossola* 1927, 2). Yet this kind of infrastructure, which came along with the first hydroelectric power plants of the Conti electricity company after 1922, also changed the social structure of the valleys. The declining agricultural sector offered ever fewer employment prospects, causing jobseekers to leave the high valleys for the industrial sites around Domodossola, which had developed steadily since the late nineteenth century with the expansion of energy and transport infrastructures (Rizzi 2014, 438, 454). After Conti, in co-operation with, Girola, the contractor, had installed water conduits from Lake Vannino to supply its first hydropower station, tour reports from regional alpine clubs admired the newly tarred roads, whose comfort, unfortunately, ended at the plant. From there, only old pack trails led them to the higher-lying hamlets. Once they arrived in these

German-speaking Walser communities, the Italian mountaineers described the villagers they encountered as not Italian, but rather as typical upland Swiss farmers in character and appearance who had preserved the original character of their Walser ancestors (*Avanguardia!* 1922, 1). In fact, the newly asphalted roads initially brought tourists to the upper Formazza Valley, where they could also admire La Frua, the famous Toce waterfall, which, however, dried up after the Morasco reservoir went into service in 1940 (*Il Popolo dell'Ossola* 1930, 2; *La Gazzetta del Lago* 1930, 1; *La Gazzetta del Lago* 1938, 8; *L'Ossola Verbania* 1926, 2; Spezia 1910). Writing about these new hydro industrial infrastructures, in his article Brocca also criticised the damage to older agricultural transport infrastructures. For instance, the installation of high voltage lines along the valley flanks displaced the so-called *palcrci*, the cableways used by mountain farmers to transport hay from their high-altitude pastures to lower-lying villages. As a result, farmers had to abandon some pastures entirely, as transportation via footpaths and mule tracks proved inefficient. These areas could not be afforested due to the stony soil, therefore losing their value to local agriculture entirely (Brocca 1928b).

Reservoir construction under Fascist political ecology

How did the Fascist regime depict hydropower development along the Toce? Ruth Ben-Ghiat's observations suggest that, beginning in 1936, Mussolini intensified his efforts to modernise Italy and its population. To this aim, the Fascist regime leveraged media outlets that were ideologically aligned to disseminate his plans for national self-sufficiency and to supplant the prevailing 'voice of the ghetto and the amusement park' with the 'voice of blood and the spirit' (Ben-Ghiat 2001, 7). During the late 1930s, local newspapers in the mountain valleys north of Lake Maggiore became integral to this nationwide media campaign. This was particularly evident in the context of the Agàro and Morasco reservoirs, whose construction began after 1936, coinciding with a period in which Mussolini utilised media coverage to showcase the ostensibly inexorable progress of Fascist modernisation through large-scale construction projects. One year after work commenced on these two reservoirs, regional newspapers frequently reported on visits by high-ranking party officials who inspected the construction sites along the upper Toce River. These visits involved representatives from the energy and construction sectors, as well as prominent engineers. During their inspections, the progress of construction was assessed, and the enthusiastic workers purportedly extended the Fascist salute to the visiting dignitaries. Notably, even high-ranking ministers from Rome attended the funerals of workers who had tragically lost their lives in accidents, participating in a final salute alongside their colleagues (*L'Azione* 1939, 2; *Il Popolo dell'Ossola* 1938a, 3; *La Gazzetta del Lago Maggiore* 1938a, 4; *La Gazzetta del Lago Maggiore* 1938c, 4; *La Gazzetta del Lago d'Orta* 1937, 4). The Fascist newspapers depicted Agàro and Morasco as emblematic of a collective commitment across all social strata, regardless of their social standing – whether they were ordinary labourers, high-ranking government officials or influential entrepreneurs. This portrayal of solidarity in the high alps conveyed the image of a united nation fervently engaged in reasserting its rightful position as an international power (Ben-Ghiat 2001, 6).

In his enthusiastic endorsement of the regime, the futurist writer Ignazio Scurto expressed his views in the newspaper *La Gazzetta del Lago Maggiore* when he visited the construction sites of Agàro and Morasco in the summer of 1937. Deeply impressed by what he believed to be the 'minds', 'hearts' and 'muscles' of Italy at work in these remote mountain valleys, he provided a detailed travel report (Scurto 1937, 4). Initially, Scurto visited the civil engineer Umberto Girola, the director of the eponymous construction company responsible for the construction of dams on the Toce for Conti and later

Edison, which also took on the Agàro and Morasco projects. Scurto described Girola as a powerful landscape builder who could ‘break through mountains, control waters, create forests’, but also ‘destroy landscapes’ and ‘build cities’. Contrary to the village tales, Girola was not portrayed by Scurto as a burly druid in a bearskin, but rather as a ‘modern’ and ‘self-assured’ yet modest, proactive and ‘optimistic’ civil engineer. Through his genius, this builder was now bringing life and ‘light’ to the secluded mountain valleys in the interest of Italy’s ‘common good’, where previously only the ‘roar of waterfalls’ could be heard (Scurto 1937, 4). In his report on Umberto Girola, Scurto embodied the ideal of a technocratic reformer who, with his scientific expertise, opened remote mountain valleys for the modernisation of Italy. The technocratic transformation of entire landscapes into energy- and resource-delivering powerhouses that served Mussolini’s autarky plans constituted a central feature of Fascist political ecology (Ben-Ghiat 2001, 63–93).

Subsequently, Girola guided Scurto to the construction sites of Agàro and Morasco, where steep highways had previously been built through deep ravines. Upon reaching the valley floors, the Fascist poet described in meticulous detail the technical specifics and the performance capabilities of the emerging dams, along with their secondary transportation and communication infrastructures. Everywhere they went, they were greeted by daring and muscular workers who saluted them in ‘flawless’ Italian with the Roman salute. With a stoic gaze, Scurto observed how these workers, seen as civilisational ‘pioneers’, tirelessly drove pressure tunnels into the rugged rock using cement and pipes, or skilfully handled heavy equipment at dizzying heights. Despite the arduous labour, the workers assured the visitors that, thanks to the regime’s work plans that had brought them here to serve the nation, they had never been happier or felt so free in their craft (Scurto 1937, 4). Again, the workers on the construction sites emerge as the vanguard of a modernised Italy, whose development showed no bounds even in the harsh high-alpine terrain. Through their purportedly impeccable Italian and the Roman salute, Scurto unified in these workers both the emerging Fascist Italian and the ancient legionnaire of the Roman empire that was to be rebuilt (Armiero, Biasillo and Graf von Hardenberg 2022, 2).

At 1,600 metres above sea level, Scurto did not anticipate such a ‘modern’ and ‘Fascist’ landscape. Where only falcons and chamois had previously lived, there now pulsed the ‘life of a great civilisation’. In the name of this civilisation, draughtsmen in simple construction barracks meticulously sketched ‘flawless lines’ on their blueprints. Radio, telephones and lighting were all readily available on the construction site. In the end, Scurto conveyed the impression of having arrived in new Fascist cities on the two high-mountain construction sites. With confidence and pride, he wrote: ‘These Roman works in conception and scale will remain as witnesses not only to the initiative and industriousness but also, like milestones, to the tenacious and continuous rise of the Italian people’ (Scurto 1937, 4).⁴ Another author, Ida Graggio del Longo, echoed Scurto’s sentiments when she reported her overwhelming impression of the construction sites on the Toce in 1938: ‘Dams, barriers, pipes, poles, waters, excavations, working labourers, cars darting about, engineers directing – it’s a world that has something fantastical and unreal about it’ (Graggio del Longo 1938, 8).⁵ In another article from the *La Gazzetta del Lago Maggiore*, the peripheral Ossola Valley was even designated as Italy’s new energy hub, where electricity should flow not only to Piedmont but also to Liguria, Lombardy and Emilia (*La Gazzetta del Lago Maggiore* 1938a, 4). What Ruth Ben-Ghiat identifies as ‘spaces of modernity’ in cinemas, colonies or political mass gatherings, where Mussolini showcased the order and hierarchy of a modernised Italy through mass media, also applies to the regime’s large-scale construction sites (Ben-Ghiat 2001, 3). Here, newspapers and newsreels could effectively illustrate the allegedly inexorable advance of Fascist modernity.

Compared to the dynamics of development and the virile creative energy that Scurto believed he was witnessing on the two construction sites, he portrays the doomed settlements of Agàro and Morasco as already extinct remnants of a bygone era. Although he does acknowledge the heavy sacrifice made by the villagers who had to abandon their beautiful and idyllic homeland, he describes their fate as simply inevitable in the face of Fascist progress (Scurto 1937, 4). Other newspaper articles also reported on the two hamlets, whose residents had already vacated their houses and lush flower meadows with their cattle to make way for Edison's expansion plans. At least the *podestà* of Morasco managed to commission the artist Remigio Paggi to draw the village centre before the drowning, so that the submerged houses could be preserved at least in the memory of future generations (*La Gazzetta del Lago Maggiore* 1937, 3; *La Gazzetta del Lago Maggiore* 1938b, 4; *Il Popolo dell'Ossola* 1938b, 3). Ultimately, the two reservoirs of Agàro and Morasco were intended to extract 'Italian energy' from the country's 'beautiful mountains' and thus support Mussolini's autarky campaign against international sanctions. Through hydropower generated from Agàro and Morasco, Italy was also to gain independence from coal supplied by its Axis allies (Scurto 1937, 4). Nevertheless, the regime's ongoing hydro energy imports from Switzerland did not align with Scurto's portrayal of Italy's ambitious construction efforts and thus were not mentioned by him (De Pretto 2023, 19). The intrusive disruption of the water balance in two high valleys and the subsequent decline of two settlements in the case of the Agàro and Morasco reservoirs align with Fascism's political ecology. Although the regime celebrated rural Italy in a folkloric manner, ecosystems and people living within it held value only when their resources could be exploited to fulfil Mussolini's autarky aspirations (Ben-Ghiat 2001, 3; Armiero, Biasillo and Graf von Hardenberg 2022, 179–180). From Rome's perspective, the hydroelectric potential of the upper Toce basin took precedence over the concerns of two hamlets in the remote alpine highlands. However, such asymmetric power relations between centres and peripheries are not unique to Fascist modernity but rather reflect a global technocratic progress paradigm that drove various political and ecological regimes during the twentieth century (Scott 1998; Parenti 2016).

Hydrological consequences for the Formazza Valley

In 1938, the inhabitants of Morasco had to abandon their homes since the entire plateau was submerged under 18 million cubic metres of water, and with it a hamlet, whose history stretched back several centuries. Founded as a Walser settlement in the early Middle Ages, Morasco thrived on livestock farming due to the poor soil conditions on the high plateau. During the Little Ice Age (ca. 1400–1850), it became a summer settlement used by the lower-lying villages for transhumance farming. The construction of a better road in the 1920s allowed families to remain on the plateau until Christmas to provide winter feed for their cattle. In the years leading up to the displacement, severe winters with heavy snowfall and avalanches caused significant damage in Morasco and its surrounding settlements.

The already impoverished valley community thus suffered greatly in the late 1920s, making it even harder to mobilise strong resistance to the construction of the dam. The valley inhabitants, however, did not have much time for objections. The Novara civil engineering offices announced Edison's Morasco and Agàro projects in the summer of 1930, after which the valley communities had only two weeks to oppose them. Neither the people from Morasco nor those from Agàro could afford the long journey to Novara, especially during the summer pasture season, meaning that they were unable to inspect the project files on the flooding of their villages in time, let alone file complaints against it (Zucca 2001). Nonetheless, in 1930, the Ministry for Public Works in Rome received

various petitions from the Formazza Valley. In the letters, the communities complained about land dispossession, insufficient financial compensation for the lost properties, safety concerns for villages directly below the reservoir, and insufficient water flow for livestock and agriculture.⁶ Two years later, the *podestà* of Formazza was still forwarding appeals from his community to the superior prefect in Novara.⁷

The opposition was fierce not only in Formazza, but also in the valleys of Antigorio and Ossola, since the flooding of Morasco and Agàro not only affected the two settlements but intervened in a valley-wide system of pastures connected by transhumance (Zucca 2001). In the end, resistance in the valleys was unsuccessful, and in Morasco, Edison compensated the farmers with 1.5 million lire for the loss of pastureland for 150 animals, which amounted to only about one per mile of Edison's average annual share capital between 1937 and 1939 (Rizzi 1998, 143; Bolchini 1989, 374). In 1939, faced with resettlement, an old resident of Morasco wrote in a letter that, although the construction work would be completed in two years, unavoidable misery and poverty would return to the valley. Overseas emigration to the USA was no longer an option, and only a few lucky people who were employed at the power plant had reliable incomes. Morasco was now going to be submerged, and there was no fodder for the many goats and cattle (Rizzi 1998, 143). The newspaper *La Gazzetta del Lago Maggiore* stated that the Formazza Valley, with its new storage lakes, had now become one single hydroelectric power plant, a '*valle elettrica*' (1937b, 3). Within this enviro-technical system (Pritchard 2011, 19), there was barely any space left for mountain farmers. In the end, Edison did not demolish the buildings of Morasco before they completed the reservoir. The flooded settlement remained visible at low water levels and served the expropriated valley residents as a painful reminder of their failed resistance. Concerning communal resource access under Fascism, Wilko Graf von Hardenberg observes that single villages under the Fascist state's multiplicity of power centres did have some room for manoeuvre to voice their interests (Graf von Hardenberg 2010, 155). An older study by Guido De Luigi, Edgar Meyer and Andrea F. Saba (1978) also showed that, in some cases, large industrial companies were indeed held accountable for their environmental damage, even during the oppressive 1930s, and had to compensate affected rural communities by paying indemnities and invest in less polluting production methods. In the Formazza Valley, too, the villages took advantage of such loopholes of power. Yet eventually, they were unable to assert themselves against the interests of the mighty Edison company.

In the years following 1945, the mayors of Formazza engaged in extensive correspondence with the Ministry of Public Works and the Ministry of Finance in Rome regarding the damages caused by hydroelectric power and their compensation claims (e.g. 2 February 1947).⁸ The municipal representatives expressed their concerns about the economic, social and environmental costs of the reservoir above their community and demanded increased financial indemnities from Edisonvolta – as the company was named after the takeover of the electrical company Volta in 1943. The reservoir had caused significant damage, not only drowning Morasco along with the most fertile meadows in the valley, but also drying up the famous waterfall La Frua and other ponds, leading to a decline in tourism. Fisheries along the Toce had also collapsed, and the meadows were no longer sufficiently irrigated. The lack of water resulted in a need for the costly construction and maintenance of canals and irrigation systems, whereas in the past, simple pipelines would have sufficed. Moreover, all the springs in the valley had dried up, causing a scarcity of drinking water. For instance, the hamlet of Canza lost its access to clean drinking water, for which they had to build a costly water pipeline. Furthermore, the arable land in the valley diminished as the former farmers from Morasco decided to move to the lower parts of the valley to farm. Expropriated families could not make large investments because Edisonvolta had compensated them with only 0.70 lire per square metre. In

addition, Edisonvolta refused to compensate them for damage caused by infrastructure, such as unexpectedly draining water from pipes into the river, causing damage to bridges and buildings along the river. Apart from the storage lake, power lines also stood in the way of the logging cableways, which meant that timber could no longer be transported down the mountain. Due to the numerous electricity pylons, the number of tall conifers decreased, and new ones would not regrow for a long time.⁹

The development of hydropower with the Morasco reservoir irrevocably harmed the valley instead of enabling any sustainable economic, agricultural or tourist development in the region. The mayor also viewed the roads constructed by Edisonvolta critically, as these routes solely served the needs of the energy industry. No one had enquired about the concerns of the local population during the construction of the roads; instead, more land was expropriated without compensation. Furthermore, it was mostly Edisonvolta's trucks that took up the roads, heavily restricting the local traffic of the valley residents. Yet the municipalities lacked the money to build new or better roads for their current needs. Edisonvolta hardly helped the unemployed farmers either. The hydropower plants could not make up for the resulting loss of jobs, since the company often subcontracted workers from outside the valley. Subcontracting, moreover, led to rising living costs in Formazza, since employees who lost their jobs after the power stations' commission did not necessarily move away.¹⁰

At least appeals in democratic Italy proved more effective than under Fascism. In 1956, Giulio Andreotti, at that time minister of finance, informed the mayor of Formazza that Edisonvolta had to pay the municipality as well as the province of Novara a higher annual water rate retrospectively. For the years between 1941 and 1956, the province of Novara was therefore awarded compensation of around 3 million lire and Formazza around 13 million lire.¹¹ For such a major company, however, this was a modest amount. Even in the economically and industrially troubled 1930s, Edison had paid annual dividends of up to around 158 million lire (1938) to its shareholders (Bolchini 1989, 374). Yet even those financial indemnities did not enable sustainable economic growth in the Formazza Valley, as shown by the letters of complaint that still arrived in Rome in the following years. In the early years of the new republic, the *elettrocommerciali* continued to dominate the country's energy sector and the mountain valleys affected by hydropower generation still had to carry the socio-ecological burden. Italy's energy economy, which had evolved since the early twentieth century and had consolidated its power over the alpine catchment areas, especially under Fascism, hardly changed until the nationalisation of the entire energy sector in 1962. To this day, neither mass tourism nor any rich agriculture has been able to flourish sustainably in Piedmont's northernmost valley. Rob Nixon's concept of 'slow violence', which, in contrast to explosive and immediate violence, is characterised as extended over long time spans and is enacted through a broad series of repressive measures, corresponds clearly with the repression committed by the Fascist regime and Edison against the valley inhabitants of Formazza, Antigorio and Ossola. As Nixon writes, slow violence often unfolds through the deprivation of essential resources or displacement processes, leading to an incremental decline of peripheral communities over time (Nixon 2011, 2–22).

Conclusion

Under Fascism, hydropower development in the Italian alpine provinces, which had its origins in the liberal era before the First World War and increased significantly shortly afterwards, transformed entire valleys into environmental-technical systems. This transformation stemmed from the regime's political ecology doctrine that disregarded the consequences for local communities that were reliant on the impacted areas' water, wood and

soil resources. In the mountain valleys exposed to invasive Fascist hydropower infrastructures, such as those along the Toce, different perceptions of nature collided. Giovanni Brocca and other valley inhabitants described the value of nature for the local population as their existential basis for a meagre, extensive agriculture marked by deprivation. The collectively cultivated land in the mountains demanded much from the mountain farmers and was mainly suitable for subsistence livestock and dairy farming. The available resources for local value chains were scarce, and a shift towards greater or more efficient yields was hardly possible beyond the fragile balance of sustainable soil management. Small-scale infrastructures also served alpine agriculture for the extraction and transport of local resources. Mule paths, *palorci* and irrigation canals had developed over a long time and were exposed to the forces of nature. The narrative of Fascist political ecology, which placed nature entirely in the service of Italy's aspiration for autonomy, stood diametrically opposed to local perceptions of the environment in the mountain valleys along the Toce. The exploitation of alpine resources through technologically advanced infrastructures appeared here as an expression of Fascist modernity, with ingenious engineers and virile workers performing a Fascist choreography on the high-altitude construction sites. With their cohesion and sacrifice, they defied the forces of nature and transformed the backward Italian hinterland into 'spaces of modernity'. The resulting infrastructures served as bridges to Fascist modernity, while fascinated futurists believed that they were witnessing the emergence of entire modern cities on the high plateaus of Agàro and Morasco. Networks and supply chains opened up by hydro energy, such as water pipelines, dams, roads and cable cars, were intended to develop allegedly backward areas, allowing their landscapes to be consumed by tourists and their water resources to be exploited comprehensively by the energy industry. In accordance with Fascist political ecology, these hydropower infrastructures aimed to subjugate the alpine ecosystem along the Toce and enforce on the local population a repressive hydro-social regime to maximise yields in the name of national regeneration and autarky. This transformation of the environment through technological and infrastructural interventions, intended to lead to a fascistisation of the landscape and of the people working and residing within it, constitutes a distinctive feature of Fascist political ecology (Armiero, Biasillo and Graf von Hardenberg 2022, 179; Kupper 2021, 148).¹²

Neither the local complaints from the late 1920s, when large-scale reservoir projects were planned along the Toce, nor the profound consequences for the people living along the river during and after the construction of these extensive projects mattered to the power plant operators or to the Fascist regime. The construction of reservoirs in the Formazza Valley led to forced resettlements, the loss of crucial resources, and the disruption of existing agricultural and transport infrastructure. Large-scale construction sites in the high alps, such as those in Morasco and Agàro, served the regime as showpieces of Fascist modernity. News outlets including newspapers extensively covered the development of such allegedly monumental infrastructure projects during the 1930s. At the same time, the media propaganda of the regime effectively stifled public criticism of the damages caused by dam construction, while agricultural livelihoods continued to suffer. Even the complaint letters from Formazza that reached the Ministry of Public Works in the 1930s did not provide relief for the endangered mountain farmers. After the fall of the Mussolini regime, the power connections enforced by these Fascist hydropower infrastructures continued to exert influence, as demonstrated by the numerous complaints from Formazza's mayors during the postwar period. The financial assistance granted to the affected municipalities by Finance Minister Andreotti in 1956 proved insufficient to foster sustainable development in agriculture or tourism. In the postwar years, dams and their distribution networks, managed by the *elettrocommerciali*, continued to provide electricity from the peripheries to the country's industrial metropolises.

Nonetheless, hydropower's socio-ecological and economic burden still fell upon the mountain communities in Formazza and its neighbouring valleys. Republican Italy built its energy sector on Fascist power structures, since the environmental, social and economic transformations caused by the infrastructures built during the *ventennio nero* proved to be irreversible. In Italy, the continuous repression of alpine peripheral regions through Fascist hydro infrastructures, therefore, constituted a direct legacy of Mussolini's rule beyond the political upheaval of 1945. However, such long-lasting power dynamics, crucial for the planning and construction of infrastructures that continue to exert slow violence beyond political caesura, were certainly evident in other world regions as well, necessitating comparisons with and further studies on different political regimes and their ideology-driven ecologies.

Acknowledgements. The author thanks the Swiss National Science Foundation (SNSF) for generously supporting this work.

Notes

1. 'Sembrano piccole cose: ma per il montanaro hanno una importanza capitale.' This and the following Italian quotations are translated into English by the author.
2. 'Norme modificative ed integrative agli artt. del Testo unico di leggi sulle acque e sugli impianti elettrici, no. 1775, riguardanti l'economia delle zone montane', 11 December 1933, Formazza Communal Archives, Communal Section 1898–1991, Category X 'Lavori pubblici, edilizia 1898–1991', Class 6 'Espropriazioni per pubblica utilità 1932–1990', Dossier AS 1706 'Espropriazioni' 1958–1990.
3. The Forestry Militia emerged in 1926 from the Royal Forest Corps and was tasked by the Fascist regime with monitoring forest use in protected rural areas. It was a militarisation under the guise of landscape protection, through which the rural population was subjected to a centralistic surveillance regime. In Rome, the Azienda di Stato per le Foreste Demaniali co-ordinated the monitoring activities of the Forestry Militia (Armiero, Biasillo and Graf von Hardenberg 2022, 95).
4. 'Queste opere romane nella concezione e nella mole, rimarranno a testimoniare non solo l'intraprendenza e l'operosa altresì, come pietre miliari, la tenace e continua ascesa del popolo italiano.'
5. 'Dighe, sbarramenti, tubi, pali, acque, scavi, operai che lavorano, auto che saettano ingegneri che dirigono, tutto un mondo che ha del fantastico e dell'irreale.'
6. Decree by the Minister of State for Public Works, no. 1741, 2 January 1947, Formazza Communal Archives, Communal Section 1898–1991, Category X 'Lavori pubblici, edilizia 1898–1991', Class 4 'Acquedotto', Dossier AS 1680 'Fiumi, rii, torrenti, recupero legname, richiesta e concessioni derivazioni d'acqua' 1909–1951.
7. Letter from the *podestà* to the prefect, no. 2198, concerning 'Espropriazione di terreni da occupare dalla Società Edison. A.S.E. Il Prefetto', Novara, 31 December 1932, Formazza Communal Archives, Communal Section 1898–1991, Category X 'Lavori pubblici, edilizia 1898–1991', Class 6 'Espropriazioni per pubblica utilità 1932–1990', Dossier AS 1705 'Espropriazioni' 1932–1952.
8. See, for example, letter from Giulio Andreotti, Minister of Finance, to the mayor of Formazza, concerning 'Decision on water rates', Rome, 27 April 1956, Formazza Communal Archives, Communal Section 1898–1991, Category X 'Lavori pubblici, edilizia', Dossier AS 1628 'Impianto Idroelettrico Morasco-Ponte' 1956–1988; letter from the mayor of Formazza to the Ministry for Public Works in Rome, Formazza, 20 February 1957, Formazza Communal Archives, Communal Section 1898–1991, Category X 'Lavori pubblici, edilizia 1898–1991', Class 3 'Elettricità', Dossier AS 1626 'Impianto Idroelettrico Morasco Sabione' 1956–1982; letter from the mayor of Formazza, Lino Mattli, to the Ministry of Finance Rome, concerning 'Allegato alla Domanda all'on Ministero delle Finanze – Direzione Generale del Demanio Pubblico – per la liquidazione dei sovracanonici idroelettrici a carico della ditta s. p. a. Edisonvolta di Milano per l'impianto di derivazione dal Lago Sabbione a favore della centrale Morasco', Formazza, 11 April 1960, Formazza Communal Archives, Communal Section 1898–1991, Category X 'Lavori pubblici, edilizia', Classe 3 'Elettricità', Dossier AS 1626 'Impianto Idroelettrico Morasco Sabione' 1956–1982.
9. Letters from the mayor of Formazza to the Ministry for Public Works in Rome, 20 February 1957 and 11 April 1960 (see note 8).
10. Letters from the mayor of Formazza to the Ministry for Public Works in Rome, 20 February 1957 and 11 April 1960 (see note 8).
11. Letter from Giulio Andreotti, Minister of Finance, to the mayor of Formazza, concerning 'Decision on water rates', Rome, 27 April 1956, Formazza Communal Archives, Communal Section 1898–1991, Category X 'Lavori pubblici, edilizia', Dossier AS 1628 'Impianto Idroelettrico Morasco-Ponte' 1956–1988.

12. In the 1930s, the focus of Fascist ecology shifted to these autarky plans, whose realisation was intended to unleash the hidden potential of the landscape and the Italians by regenerating Italy as a new Roman Empire. The reclamation of the Fascist people and the nature subjected to it shows similarities with the environmental policy of National Socialism. However, National Socialism devoted its ideology more prominently to its racial doctrines, antisemitism and war preparations (Kupper 2021, 149).

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Sebastian De Pretto is a Senior Scientist at the Department of Economic, Social and Environmental History at the University of Bern, as well as a Research Fellow at the Urner Institute Cultures of the Alps at the University of Lucerne. In his current postdoctoral project, 'Reservoirs and Resettlements in the Alps after 1918 – between Participation and Exclusion of Peripheral Societies', he is investigating the environmental and social history of industrial hydropower development in the Swiss Italian Alps. He has held fellowships at the Rachel Carson Center at the University of Munich, as well as at the Universities of Trento and Innsbruck. Prior to that, he obtained his PhD at the University of Lucerne on the memorial sites of the Abyssinian War in South Tyrol, and he studied history, philosophy and conflict studies in Basel, Bologna and Heidelberg. Sebastian De Pretto has published several articles on the environmental and social history of hydropower extraction in alpine countries such as Switzerland, Italy and Austria, covering the period of High Modernity (1880–1970). Additionally, he recently coedited an anthology on alpine infrastructure history in the Swiss historiographic journal *Traverse*.

Italian summary

Questo articolo esplora gli impatti socioecologici dell'estrazione idroelettrica fascista nelle valli alpine italiane, concentrandosi sul bacino del fiume Toce durante il periodo interbellico. Indaga sui conflitti tra le comunità locali e le iniziative idroelettriche delle compagnie energetiche private sotto il Fascismo, rivelando così le strategie di comunicazione del regime radicate nella sua ecologia politica. Attraverso l'analisi di articoli di giornale, degli organi di propaganda fascista e dei documenti archivistici comunali, lo studio mette in luce le prospettive statali e locali sullo sviluppo delle infrastrutture e le sue conseguenze durature. Si mostrerà così come l'ecologia politica del Fascismo sul sito di costruzione di una centrale idroelettrica ad alta quota sia diventata un'espressione della modernità fascista. Nonostante le obiezioni degli abitanti delle valli, i progetti idroelettrici fascisti persistettero, perpetuando le disuguaglianze socioecologiche dopo il 1945. Anche gli sforzi post-bellici per il risarcimento non riuscirono a affrontare gli impatti duraturi sulle comunità montane. Questa ricerca rivela l'intersezione tra ecologia politica e sviluppo infrastrutturale modernista nella Italia fascista, mettendo così in luce anche i lasciti delle politiche di estrazione delle risorse fasciste sulle regioni alpine periferiche del paese.