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Promise of Water Abundance and the Normalisation of Water-Intensive Development in Cyprus

Serkan Karas

Department of Architecture, University of Cyprus, Nicosia, Cyprus; karas.serkan@ucy.ac.cy

Panayiota Pyla

Department of Architecture, University of Cyprus, Nicosia, Cyprus; pyla@ucy.ac.cy

ABSTRACT: Cyprus is the most water insecure of the European Union member countries. This is the case despite the fact that its water landscape – surface, underground and coastal – has been developed almost to its maximum, with large and costly dams, conveyors and desalination plants. This paper provides an historical and technopolitical perspective on this expensively built and precarious water supply regime. We demonstrate how water supply has been central to the formation of the Republic of Cyprus (RoC) from the end of colonialism in 1960, through to the 1974 division of the island, and then the 2004 integration of the RoC into the European Union. The paper exposes how, at critical turns, water infrastructure constituted a material practice that shaped the economy's motive powers, that is, agriculture and tourism. We examine how state actors and international experts promoted these economic activities in ways that relied heavily on water-intensive practices. This led, in turn, to the normalisation of large-scale, capital-intensive water supply projects that consolidated the power of a precarious republic whose control over its population was only partial. Environmentally harmful practices came to be accepted as inevitable or even as crucial for the very existence of the Republic; examples of this include illegal drilling for irrigation in the south-eastern area of Kokkinokhoria and supply of hotel resorts in the village of Ayia Napa and, the supply of golf courses with subsidised agricultural water. We conclude that, in effect, this material practice creates a long-term technopolitical dynamic that downplays or excludes demand-side water policies and ecological concerns.

KEYWORDS: Water regime, tourism, agriculture, direction, state, infrastructure, Cyprus

INTRODUCTION

Scenes of water bursting forth from the land, greenery, and forested landscapes are the archetype of heaven on earth and abundance. This is the dream of the Republic of Cyprus (RoC), the most water-stressed country in the European Union (Bixio, 2008; Hofste et al., 2019). The scenes are from the public information video entitled *The Killing of the Water Dragon* (Roditis, 2006), produced for the Press Information Office (PIO) of the RoC. The title refers to the well-known tale of St. George. In the tale, a dragon prevents access to the well of a town, and will allow the townspeople to approach it only if it is offered a sacrifice or gift. As the story has it, the dragon captures a maiden, asking for more bounty and making access to water even more precarious. St. George then intervenes and kills the beast, saving both town and maiden. The PIO video then goes on to present the 'spear of St. George' as it is embodied in the Water Development Department's (WDD) infrastructure: various dams, the Southern Conveyor, water treatment facilities, and desalination plants. It ends by showing the result of St. George's 'victory', that is, images of abundance such as cities bustling with people, pools overflowing with water, hotels packed with tourists, sheep grazing on green pastures, and a man playing golf. The message is obvious: all this abundance is a result of infrastructure that is being built, operated and managed by the WDD. A mere two years later, however, the promises of abundance failed dramatically, when the drought of

2008/2009 forced the WDD to buy water shipped from Greece to cover basic urban and tourism needs. In this paper, we aim to show that water management lay at the heart of the project of the RoC. In doing so, we unfold the long-term pattern of the repeated framing of water as a matter of survival, which made Cyprus the "most dam-dense country of Europe" (Kotsila, 2010; Evangelidou, 2011; WDD, 2011).

The making of the video is grounded in a four-decade-long history that is marked by a cycle of infrastructure-building that aimed to end water scarcity and achieve developmental goals. The current literature on the island's water regime concentrates overwhelmingly on socio-economic and policy studies (Koundouri, 2007, 2010) that provide little insight into the problem's technopolitical dynamics. Only recently has there been an interest in the role of water in the politics and geopolitics of the Cyprus conflict. These studies focus mainly on divided Nicosia and on the building of the water pipeline between Turkey and Northern Cyprus (Brouma, 2013; Hoffmann, 2018; Mason, 2020). Hoffmann (2018) also aims at a wider understanding of geopolitical patterns that affect water management on both sides of the island. His approach, however, does not include an extensive emphasis on the long-term patterns of decision-making in water management that interconnect conflict, geopolitics, state-formation, expertise and infrastructure. From the perspective of the history of architecture, we find studies concerning the political and spatial coproduction of expertise, water development and the nation-state, but these are generally restricted to the early postcolonial period (Michael, forthcoming; Pyla and Phokaidis, 2018). Thus, we find a gap in the literature with regard to the long-term dynamics that shape water supply. We place technology, expertise and political power at the epicentre of our analysis. To that end, we aim to utilise several concepts. First, we borrow the concept of the sociotechnical regime from transition studies literature. A sociotechnical regime is broadly defined as the 'rule-set or grammar' of processes, technologies, skills, corporate cultures, and artefacts embedded in institutions and infrastructures (Rip and Kemp, 1998: 340). The regime relates to shared cognitive routines, search heuristics and rules among groups such as engineers, scientists, policymakers, and end users who participate and contribute to the patterning of a sociotechnical system such as the water supply (Rip and Kemp, 1998; Geels, 2002, 2005). The main quality of a regime for us is its emphasis on stability. Regimes are technologically, institutionally and socially stabilised systems; they are characterised by lock-ins and path dependency, and they lend themselves well to approaches that examine long-term trends, patterns and paradigms (Geels, 2002, 2004; Geels et al., 2018).

Infrastructure is a prime site for analysing path dependencies or lock-ins in sociotechnical regimes. It allows us to see the opportunities and/or limits set up through organising nature, as well as how these shape visions and how they mobilise resources and people towards expected futures (Borup et al., 2006; Jasanoff and Kim, 2015). The effect of infrastructure is particularly important, as the tight coupling of infrastructure and economic activity can co-shape priorities across sectors and across the political spectrum, consolidating the direction of government practices (van der Vleuten, 2019).

The vitality of water as an historically scarce resource and the turbulent sociopolitical and territorial background of Cyprus oblige us to focus on the role of the state, adopting a materialist conceptualisation of its power.¹ Accordingly, the state is an assemblage that is "distinguished as whole by its ability and tendency to use logistical power – a form of material practice extending across multiple sites" to solve problems or exert power (Mukerji, 2010: 402; Joyce and Mukerji, 2017: 1-2); it does so by constructing various technological, legal, territorial and bureaucratic infrastructures (for logistical power see Joyce and Mukerji, 2017). Despite the constant experimentation in which the state engages and despite its continual reformulation in response to changing political circumstances, when logistical governance is established, it creates an 'inarticulate' environment that serves as a context for political action (ibid: 3).

¹ Within the relevant sustainability transitions literature, in configuring a focal regime, the emphasis has remained on the interplay between actors and forces. Having originated from, and being overwhelmingly represented by, Western European accounts, the literature considers state implicitly and frequently as an externality of the regime, within themes such as incumbency, regime destabilisation, power and politics (Johnstone and Newell, 2018: 73).

Over time, material practices of governance such as the construction of costly water supply infrastructure shape the perceptions and actions of "bureaucrats, experts of all sorts, and politicians" (ibid) who, in the case of Cyprus, are its successive governments, UN and international experts, the WDD and the Cyprus Tourism Organisation (CTO). The outcome is a series of policy choices that endorse certain modes of water practices, industrial paradigms, and/or developmental visions (ibid). For our analytical purposes, the study of the stability of the water management system is ultimately also the study of the continuity of government practices in the face of water scarcity.

The interplay between resources and states has occasionally been studied, frequently under the name of hydro-politics (for accounts of water management and state formation, see Carroll, 2012, 2015; Carroll and Freiburger, 2014). In most cases, transboundary resources such as rivers and river basins have attracted attention for their potential role in conflicts, international cooperation and diverse modes of governance. (Disco and Kranakis, 2013; Allouche, 2020; Bréthaut et al., 2022). In terms of water's role in state-building processes, Erik Swyngedouw's work on Spain stands out for its academic impact. Swyngedouw and Gottlieb's (2015) study – also long-term – engages with both the historical and the theoretical; it shows how water has been both a space for, and an object of, the modernisation debates that entangle multiple human and non-human actors. This approach could further realise the potential of a long-term historical perspective that can help understand the policy concerns of water management. In what way does the water management regime remain path dependent? What are the technological and political factors that reproduce similar framings of water, its supply and its use? These are questions that can be addressed by using the concept of regime in tandem with a long-term perspective. State formation, infrastructure and expertise, being constants of a regime, can sustain a dynamic that in the long run reproduces policy choices that transcend boundaries along the political spectrum. This approach aims to provide an historical perspective for academics, professionals and decisionmakers who are concerned about the transformation of water management in Cyprus.

The paper focuses on the perennial water problem of the RoC, with particular attention to critical episodes when state actors considered water scarcity to be life-threatening to the Republic and its economy. We consider the PIO video's metaphor of 'killing the water dragon' to be methodologically useful as it illustrates the dynamic of the water regime. The metaphor is repeated in archival records over a span of 50 years, connecting the postcolonial period of Cyprus's history with the post-division period and with the most recent period of European integration. Whether articulated openly or implied, the metaphor helps delineate the processes that take place when various state actors call for technoscientifically informed state intervention for developmental ends in order to (re)produce wider political consent. With regard to these episodes in Cyprus's history, we answer the following questions: Which expert framings, economic visions and political ends have been entangled with water supply? How and why was water used and/or envisioned to establish, save and foster industrial activities that were perceived to be critical to the survival of the RoC? How did the water supply infrastructure normalise and spread water-intensive practices in order to gain consent and consolidate state power, integrating various interests, demographics and/or regions in the face of ethnic antagonisms and power imbalances?

History in Cyprus is a delicate matter; terms, concepts and names must be used with great care. This paper discusses the workings of a state that exists under the internationally recognised name of Republic of Cyprus (RoC). A product of the British imperialist legacy, the RoC was established constitutionally as a bicomunal state in 1960. According to this constitution, political and public posts were allocated for each community on the basis of 70% Greek Cypriots and 30% Turkish Cypriots. The executive branch of the state involved a Greek Cypriot President and a Turkish Cypriot Vice President, both having the right to veto decisions coming from the Council of Ministers and bills from the House of Representatives. As part of the executive, the Council of Ministers adhered to the same quotas while working with an absolute majority vote. Five big municipalities – Nicosia, Famagusta, Limassol, Larnaca and Paphos – were also separated into Greek and Turkish municipalities (for a contemporary account of the 1960 Constitution,

see Adams, 1966).² In 1963, this ethnic structure ended in practice with the mass withdrawal of Turkish Cypriot representation from political and public posts. This was the result of an attempt to abolish and curb the many constitutional rights and powers of the Turkish Cypriot community, that is, the 13 amendments by the Greek Cypriot leadership of the first President Archbishop Makarios.³ The violence that occurred between 1964 and 1967 resulted in the spatial segregation and economic marginalisation of the Turkish Cypriot community into ghettos that occupied only 5% of the island (see Moudouros, 2020). The state system and its policies in every domain, particularly the economy, came to be a Greek Cypriot one (Kedourie, 2005). With the invasion by Turkey and the territorial division of the island into two ethnic sectors, the reality of this state of emergency, that is, a Greek Cypriot-governed RoC, appeared more permanent. From the end of the summer of 1974 to the present day, the RoC, ethnically speaking, has been a Greek Cypriot-administered state that governs the southern territories below the UN-controlled Green Line; 98.8% of the area's population is Greek Cypriot.

POSTCOLONIAL DEVELOPMENTALISM: WATER AND THE 'DEEP RURAL BIAS', 1960-1974

The postcolonial RoC inherited a statecraft that was influenced by the post-World War II development campaign of the colonial administration. It was aimed at a planned economic development that had been shaped by a long-established technocratic culture (see Karas, 2021; Karas and Arapostathis, 2016a, 2016b; Sioulas and Pyla, 2019). Since independence in 1960, the RoC benefited from UN technical assistance, because development promised to guard against communism and because the tensions between Greece and Turkey (NATO's two most eastern-flank countries) often cast the spotlight on Cyprus (for more on Cold War entanglements between the UN and Cyprus, see Pyla and Phokaidis, 2018). A 1961 report by UN expert Willard L. Thorp inspired the first of the five-year development programmes. Over the next several decades, these programmes would come to form the ideal frameworks, objectives, and priorities for the RoC's economic development.

The three initial five-year programmes clearly favoured the agricultural sector. Until the division in 1974, agriculture employed the majority of the population and provided the largest share of exports. For a young republic with a modernising agenda, agriculture was a ready source of export revenue that could cover investment costs in foreign exchange. It also helped to sustain the clientelist relationships amongst the Greek Cypriot peasantry and *enosists* (supporters of union with Greece) (Panayiotopoulos, 1999: 21-23). The 1961 Thorp report promoted the agricultural sector as the engine of the country and pointed to the 'water problem' as a constraining factor that needed to be dealt with immediately (see Thorp, 1961: 6-18). The Makarios administration eagerly picked up on the report's advice. The apolitical nature of UN technical assistance and its promise of unity through development worked to legitimise the continued implementation of the Thorp directives even after 1964, when Greek Cypriot political cadres were left in full control of the state (see above for the mass Turkish Cypriot withdrawal from the RoC's structures). The Thorp report also supported the reconciliatory narrative that, after 1967, urged Turkish Cypriots to return to the political and economic jurisdiction of the state. (Pyla and Phokaidis, 2018: 124). Water management and development were thus designated as state responsibilities (Pyla and Phokaidis, 2018: 118; Haravgi, 1967). The Water Development Department (WDD), which was the ministerial department responsible for water works and management, was tasked with the long-term accomplishment of the job.

² The House of Representatives, Communal Chambers and Public Service was distributed according to this ratio, even though Turkish Cypriots made up around 20% of the population at the time of independence.

³ President Archbishop Makarios was the leader of the Greek Cypriot community, the first President of the RoC and the Archbishop of the Cyprus Greek Orthodox Church. He gained popularity among the Greek Cypriot community during the anti-colonial struggle of the late 1950s, and he remained a key political figure until his death in 1977.

The administration and foreign experts⁴ defined water as the boundary object through which the state and the economy were to be assembled. The Second Five-Year Plan (1967-1971) prioritised water development, allocating the huge amount of C£8,650,000 (approximately US\$20,700,000 in 1967 figures);⁵ water was framed as, "a resource of vital importance that determines the rhythm of agricultural development" (Haravgi, 1968). This direction received immediate political approval as it also corresponded to broader agricultural demands. It was an open indicator of the ethnic divide, as it served the politics of Greek national unity; the unions and the state, both controlled by Greek Cypriots, were thus keen to cooperate closely. The powerful Greek Cypriot agricultural unions were giving full support to any state initiative that involved developing irrigated agriculture. The Enosi Kiprion Agrotou (the EKA, a left-wing union) would demand an even stronger state intervention in water development by fostering closer coordination with a fully empowered WDD (Haravgi, 1971).

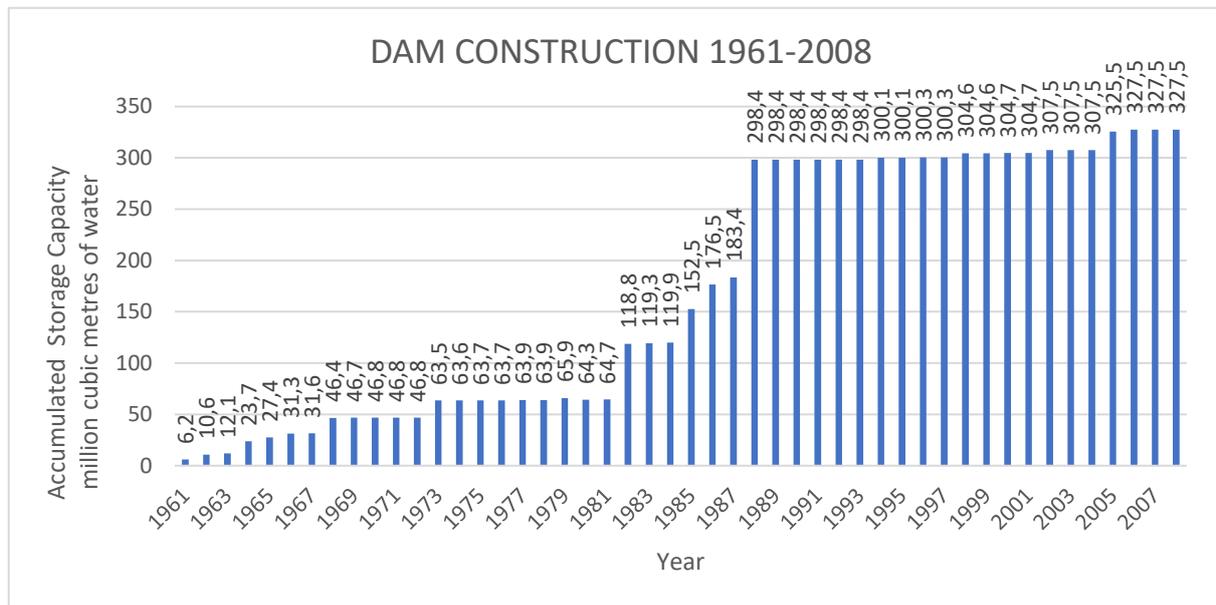
The outcome was the idea that the construction of a postcolonial state's economic and political motive force required that the water dragon be killed once and for all. This culminated in the large UN-funded technoscientific project whose mission slogan was, 'More Dams – More Water' (PIO, 1967). This goal became the rule for the water regime until the early 2000s. Extensive hydrological, land use, soil, and economic surveys were conducted by FAO experts (hydrologists, agricultural economists, soil engineers, dam and water engineers), supported by WDD technical staff. The survey data was then used to prepare what would be widely called the Cyprus Water Master Plan or, officially, the Cyprus Water Planning Project (CWPP). By 1972, the CWPP had assessed the existing water resources and had surveyed the hydrological cycle, the river basins, land use patterns and the agricultural economy. The CWPP proposed to dam all existing river catchments in order to supply the planned irrigation networks; its aim was to literally realise the campaign's motto of, "Not a drop of water to the sea" (Marin et al., 2018: 23). In the process, the WDD also emerged with greater expertise in hydrological knowledge production, dam design, and dam building. The latter had already been WDD's main occupation throughout the 1960s, with the campaign of small dam works (see Figure 1).

The plan presented the existing data as proof of the inevitable course of the economy. In 1968, agriculture was the largest employer (37.5%); it was also at the top in terms of contribution to the GDP (21%) and, most importantly, it dominated exports (51.2%). The CWPP emphasised the importance of exports to the developmental efforts of the new postcolonial state. It underlined the already established correlation between irrigated farming of citrus fruit and potatoes and foreign exchange revenues (UNDP/FAO, 1972a: 4-6, 10-12). The CWPP's hydrological analysis divided the island into river basin regions, shaping water-poor and water-rich districts (UNDP/FAO, 1972b: 33-37). This supported the concept of conveying water between regions, thus allowing irrigation beyond the local supply potential of water. This also gave rise to a state structure that comprised distinct and autonomous water regions. After the division of the island in 1974, this led both Greek Cypriots and Turkish Cypriots to pursue 'national' water policies that were focused on individual water regions, instead of collaborating on the basis of a unitary shared hydrological basin.

⁴ The Makarios administration and UN experts had similar futures in mind: both envisioned an economy powered by foreign exchange that was earned by agricultural exports and full employment. Besides the Makarios administration's interests in the peasantry, the UN experts also possessed a 'deep rural bias' that deepened the drive towards irrigated, water-intensive agriculture. The post-World War II development campaigns in colonies had forged an authority, and had generated experience, for the colonial agricultural and natural resource experts who found ample employment opportunities in the Food and Agriculture Organisation (FAO) and the UNDP (Hodge, 2007: 262).

⁵ This figure is in Cyprus pounds; these remained fixed to the value of pounds sterling until 1972 when the latter began to devalue, hence the £ symbol was often used.

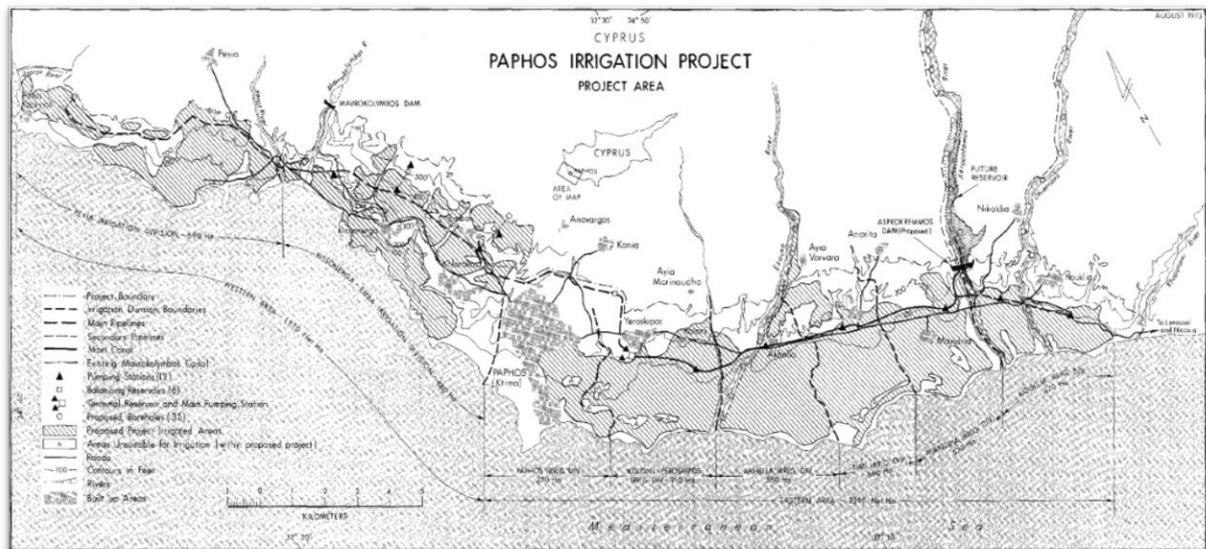
Figure 1. Reservoir capacity.



Source: WDD (2009).

The implementation of the CWPP began almost immediately, because it followed through on the promises it had made to the agricultural population. It was also a shortcut to cheap loans since, if accompanied by feasibility studies, individual CWPP projects easily attracted credit from international financial institutions, especially the World Bank. In 1973, the Paphos Irrigation Project (PIP) – the first infrastructure built under the CWPP programme, at a cost of US\$36.2 million – began to be implemented; it aimed to dam the rivers of the region in order to irrigate patches of land along the coast for intensive citrus and banana growing (WDD, 1982a). The WDD completed the PIP in 1983, surviving the division thanks to the commitment of the World Bank. The PIP was an example of how things worked in Cyprus in the context of ethnic strife and the subsequent division. It was initially designed on the basis of a pre-division governance model. Prior to the project’s launch in 1973, the Turkish Cypriot community negotiated collectively with the Makarios government and demanded community representation at the decision-making and executive levels of the project. The government formulated a Project Policy and Coordination Committee chaired by the Minister of Agriculture, with representatives from the Turkish Cypriot community and the UNDP Resident Representative (IDA, 1973). While both were officially equal political partners, the Greek Cypriot representation resided within the government, while the Turkish Cypriot representation was a separate political entity outside of the state system. Despite Turkish Cypriots comprising 40% of the population of Paphos, they occupied only 20% of the irrigated area. After the 1974 division, the exodus of Turkish Cypriots resulted in excess water potential for the RoC, enabling the establishment of golf courses in the region (see below).

Figure 2. Paphos Irrigation Project.



Source: WDD (1982a).

POST-DIVISION EMERGENCY ECONOMY AND THE SOUTHERN CONVEYOR PROJECT, 1974-1990

In 1984, a Cyprus Broadcasting Corporation⁶ (CyBC, locally known as RIK) produced an informative documentary, the *Southern Conveyor – Irrigation Plan*. Its narrator, who was a media icon of the agricultural world, Andreas Xinaris, outlines the water problem in the south-eastern region of Kokkinokhoria; he also presents its solution, the Southern Conveyor Project (SCP), which was under construction (Xinaris, 1984). In the documentary, all the elements of the dragon metaphor – the alleged looming 'catastrophe' in Kokkinokhoria and the 'saviour' Southern Conveyor – reveal themselves in practical simplicity. The programme begins with a landscape dominated by a plethora of windmills, a technology that was widely used in the region for pumping groundwater (see Anglokratia in Kleopas, 2015) and which is characteristic of Kokkinokhoria where irrigated potato farming is a regional trademark. Xinaris' camera moves along a dry June landscape dotted with patches of green. It zooms in and, to emphasise substandard means of water management, we see a veteran diesel pump roaring as it fills an open water tank. The camera then shows us a crew engaged in drilling a new irrigation borehole and presents the purpose of all these human and technological efforts: potato plants being drip watered. We then hear two potato producers from the village of Xylofagou. The first producer complains that the performance of the boreholes is in severe decline. He represents the local framing of the problem: the water extracted using boreholes and stored in water tanks is running out. The second interviewee gives the political framing of the problem and its solution. He emphasises that their potato exports are a large source of foreign currency income for the entire country, framing it as a national interest. According to him, the SCP will not only save millions of pounds and potato farming jobs; it will also stop *αστυφιλία* (the abandonment of the countryside and subsequent urbanisation) and will prevent the collapse of the Kokkinokhoria region. The camera then leaves the producers and arrives at an early SCP construction site where workers are laying large conveyors. The pipes (that is, the work of the SCP) link the irrigation pumps/windmills (the water problem), the potato plant (the source of foreign currency), the producers (Kokkinokhoria voters) to the office of the General Director of the Ministry of Agriculture, Andreas

⁶ The publicly owned CyBC was prominent at a time when there were no private TV channels.

Papasolomontos. He explains various measures taken since the 1960s by the WDD and by successive governments in the region, and he complains about the producers' reluctance to comply with these rationalisation efforts. The programme ends with the state's answer, its promise that it is going to kill the dragon: Papasolomontos, in his simple and technocratic style, uses the large map of Cyprus in his office to illustrate the technical and economic benefits of the SCP.

Figure 3. The Kokkinokhoria region of Famagusta District.



Source: Polignosi (n.d.).

All of the above were directly linked to the conflict on the island and its division in 1974. The division of Cyprus shrank the geography and the economy of the now ethnically almost homogeneous RoC. To survive as an independent state (even if it was no longer bicomunal), the RoC had to rebuild the war-hit economy and consolidate its legitimacy over the entire Greek Cypriot population. It had to integrate the important demographics of rural populations and dispossessed refugees into a national total. In its new reduced geography, water remained instrumental for the re-establishing of the state. The SCP, the biggest legacy of the CWPP, was undertaken in order to address three acute and expectedly worsening problems; it aimed to: appease and discipline agriculturalists, give tourism a sustained and long-term push towards growth, and avoid the political and welfare consequences of water shortages in Nicosia. All three of these objectives were meant to address problems arising from the conflict (WDD, 1982b: 52). Following the island's division, the southern part had lost its connection to its main water source, the Morphou groundwater supplies, while at the same time its population had been swollen by the refugee influx. Agriculturalists, the WDD and the government expected the SCP to save the potato plantations in the Kokkinokhoria region and to allow irrigated agriculture to expand. The producers had a large popular base in the region and the refugees had swollen their ranks; the latter had to be kept content and employed. The SCP's long-term and key beneficiary was the coastal tourism zone of Famagusta District, in Kokkinokhoria, that is, Ayia Napa and Paralimni (WDD, 1982b: 25); this area faced a water crisis as a consequence of the unchecked development of tourism. When the island was divided in 1974, more than 70% of the tourism infrastructure was lost. It had been mostly owned by Greek Cypriots and concentrated in the cities of Famagusta and Kyrenia. These owners were compensated by newly built infrastructure in southern Famagusta, right at the terminus of the SCP. Both tourism and potato cultivation had water

needs that surpassed the capacity of the immediate local resource, the Famagusta aquifer; long before division, in fact, the depletion of the aquifer was already causing salinization and deterioration of the soil and was threatening to undermine tourism. In short, after the 1974 division the sociopolitical and economic realities of the south were creating new pressures for the existing water regime.

Saving potatoes

Already by Cyprus's independence in 1960, potatoes had emerged as a significant source of foreign exchange income, and by 1965 they accounted for almost 20% of all agricultural exports (Yiassemides and Kunert, 1967: 6). Their demand for water was geographically restricted mainly to the southern region of the Famagusta District with its iron-rich, soft red soil, the so-called Kokkinokhoria (Red Villages). This resulted in a serious competition for limited water; it had to satisfy not only the town of Famagusta and the surrounding villages, but also the citrus and potato plantations.

State actors such as officials of the WDD and the consecutive ministers consistently defined the collapse of the Famagusta aquifer as a natural consequence. This argument was incorporated into other technocratic interventions that treated water shortage as a threat to the Republic itself. In 1968, for example, the Minister of Agriculture, Georgios Tompazos, used the rhetorical term 'catastrophology' (*καταστροφολογία*) to call for emergency action, that is, for state intervention in the 'revitalisation' of agriculture in Kokkinokhoria (see Section 1). By framing the situation as a natural catastrophe requiring government assistance, he and other such actors entangled the state in the production of the cash crops of citrus and potatoes by means of irrigation works. It is worth noting that these two products were mostly cultivated in Kokkinokhoria, a predominantly Greek Cypriot region; meanwhile Paphos, which had an unusually high concentration (40%) of Turkish Cypriots at least up to 1974, did not receive such state incentives or support (Panayiotopoulos, 1995: 26). Even as they created these inequalities, state actors normalised the over-pumping and "bad use of water" in Kokkinokhoria (PIO, 1968).⁷

After 1974, due to the island's division, Kokkinokhoria's water dragon grew more powerful as refugee settlements and cultivators and new tourism infrastructure put added pressure on the already depressed resources. After the division, the direction of agriculture remained the same, that is, the irrigated cultivation of high-value crops for export such as various vegetables, bananas, potatoes and citrus fruit. The potato crop, however, remained the champion of foreign exchange earners; politicians thus continued to appease the potato producers, who also represented a large body of voters, and a single agricultural product was influencing Kokkinokhoria's electoral balance. It is therefore no surprise that in the late 1970s this region received a great deal of attention, with its name being identified with the construction of the SCP. The AKEL party and its affiliates were instrumental in bringing into mainstream politics the expectation of large-scale water works for the region (Haravgi, 1979b).

Such significant demographic and economic activity could not be ignored as it threatened the political structure on which Greek Cypriot politics had been built since 1974. By the late 1970s, the sense of national unity among Greek Cypriots – which had been forged in the immediate aftermath of war and displacement – was already being challenged. This was the case even though Spyros Kyprianou, who became president in 1977 after the death of Ethnarch Archbishop Makarios, had managed to secure an alliance with the Makarios faction, especially with the left-wing AKEL. The Kyprianou government soon faced multifaceted opposition. The 200,000 Greek Cypriot refugees who were expecting results from bicomunal negotiations, hoping to return to their homes and properties in the north, saw their discontent deepen day by day, when negotiations reached an impasse (Tzermias, 2004: 808-13). The political opposition, the right-wing faction, which represented a third of electors, and was led by the veteran politician Glafcos Clerides increased its pressure on the Kyprianou government. The left-wing

⁷ As part of their effort to promote irrigation, the WDD periodically sought to valorise the aquifer with small artificial restocking works; the Ministry applied financial instruments such as funding and promotion of water-saving irrigation technologies.

AKEL party – also quickly became alienated from the president, thus shaking the stability of the government alliance. Particularly strong among agriculturalists, farmer unions, and the affiliated organisations, AKEL took a leading role in pressuring the Kyprianou government to move ahead on the SCP. They emphasised that the stakes were high, pointing out the slow destruction of the soil by brackish irrigation water. They were able to legitimise the long-term material practice of costly water supply infrastructure and thus to justify the materialisation of the SCP, the Republic's largest and most expensive investment, estimated at C£163 million (approximately US\$ 277,000,000 in 1984) (Haravgi, 1979a). A wide political and popular consensus gave the government the responsibility of mobilising the state to immediately save the region and its industrious inhabitants from their alleged despair and total catastrophe (Haravgi, 1980; Phileleftheros, 1981, 1984b). In the presidential elections of 1983, Kokkinokhoria became a required stop for all candidates; they made visits to confirm their dedication to the SCP and promised to speed up its construction (Simerini, 1983a). Even though the conflict had diminished the clientelist influence of the agricultural world, this geographical concentration of a particular product and a particular type of farmer in a region amplified the pressure on politicians to demonstrate their rural development policies.

The Minister of Agriculture of the second Kyprianou government, Nikos Pattichis (1978-1983), presented the state's (re)framing of the water issue as a matter of survival, one that must be solved at all costs. He responded to the growing criticism by the Kokkinokhoria farmers and left-wing organisations by assuring them of the state's full commitment to the SCP. He shared the view that the *υδατικό πρόβλημα* (water problem) in Kokkinokhoria was a 'natural consequence' of the ever-increasing area of irrigated agricultural land (PIO, 1981). Pattichis had no choice but to let the illegal drilling and pumping continue without condemnation, since politically hard times required populism. The state was anyway an accessory, since the WDD, foreign experts, and agriculturalists had rendered drilling boreholes a widespread practice around the island. It was particularly intensive in Kokkinokhoria, however, as the state had taken an active part in well-drilling since Tompazos' interventions. Kokkinokhoria had 3500 drilled wells; 40% were illegal, but they were also responsible for at least 60% of the total water supply. The irrigated agricultural area had more than doubled since 1960, while the annual amount of water required for irrigated agriculture had increased from 20 million cubic metres (Mm³) to 30 Mm³. The aquifer was only able to replenish an average of 10 Mm³ annually (PIO, 1981).

Unleashing tourism

Regardless of the SCP's public portrayal as the saviour of Kokkinokhoria and of potatoes, in effect its mission was the facilitation of tourism development, especially in Ayia Napa and Paralimni. The Republic was thus abandoning its prioritisation of agrarian development. After division, as in the 1960s, the Republic desperately needed foreign currency for capital investments; it needed to re-establish various sectoral infrastructures that had been lost to the northern part of the island, now occupied and no longer under its control. The tourism industry was one promising answer to this problem, and new hospitality infrastructure began to be built on the southern coastline. The new epicentre for the coming tourism bonanza was in Kokkinokhoria: the village of Ayia Napa and the town of Paralimni.

By 1980, tourism had emerged as the driving force of the economy, despite accumulating problems that threatened its own success. Hotel accommodation grew rapidly, but there was little interest in mitigating damage to the environment. Political cadres' priorities were directed towards economic growth and full employment as they served the emergencies of fast growth, foreign currency and employment of dispossessed refugees. Amid developmental concerns, another state actor, the Cyprus Tourism Organisation (CTO) – then a semi-governmental agency responsible for promoting the tourism sector and proposing related measures and policies – was tasked with studying the course of tourism. In 1981, an expert team from the Commonwealth Fund for Technical Co-operation (CFTC) completed a survey for CTO (CTO, 1982: 55). They expected that the "sheer magnitude of growth" of the sector since

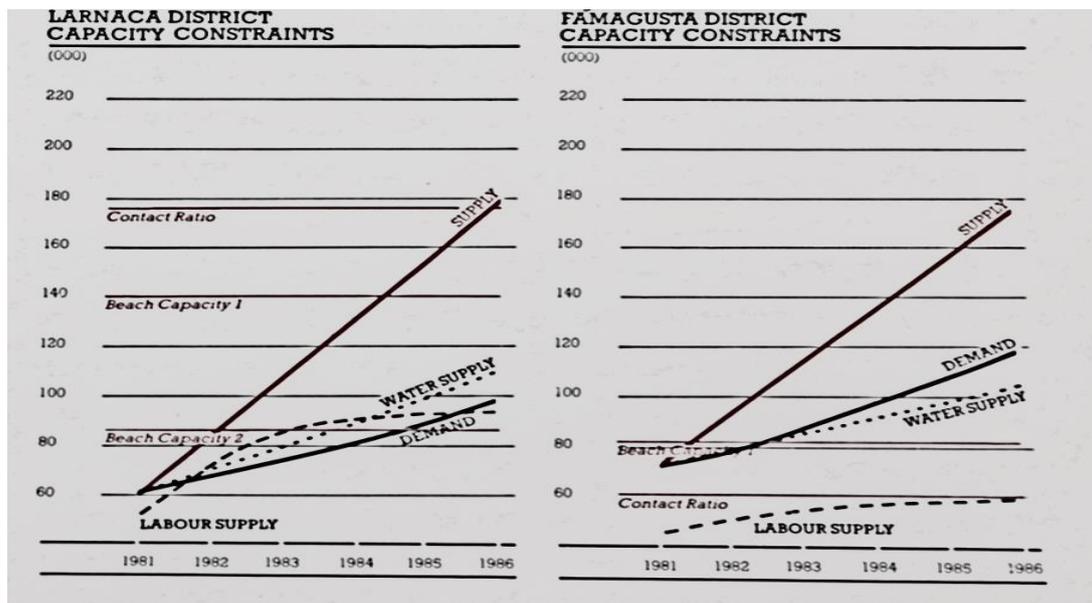
1978⁸ would continue in the coming years (Shankland Cox et al., 1987: 20). They warned about the risk of "rapid deterioration of the product and the environment", pinpointing water as one of three main long-term constraints on the growth of the industry (Simonsen et al., 1981: 111). Ayia Napa, for example, was already experiencing an acute water problem in the form of sharply declining quantity and deteriorating quality; the CFTC team expected substandard water quality to add a further negative influence on the tourism product (Simonsen et al., 1981: 71). The consultant engineers noted that shortage of water was already holding up the development of hotels in Ayia Napa and Paralimni (Preece, Cardew & Rider and ODA, 1980: 1,3).

Water supply thus officially became a restricting factor for tourism development. Tourism served multiple ends and interests in the restructuring of the post-division state. First, it helped offset the trade deficit and contributed a decent amount of surplus to the balance of payments. Second, the sector was integrating refugees into the society, both as unskilled labour and as hotel owners who had lost their property in the north. It employed more than 20% of Greek Cypriots, either directly or in related occupations. In 1986, 5.3% of non-agricultural workers were employed in hotels that were concentrated mainly in the two villages of Famagusta (Wilson, 1992: 101-108). Third, the tourism sector had a multiplying effect on the demand for the outputs of other local industries, especially construction, utilities and agriculture. Fourth, tourism continued to be the main source of foreign currency (47% of the total in 1995), which was much needed for the developmental aspirations of the state. (Panayiotopoulos, 1995: 32-33). The CTO thus reported to the government that the "development of the tourist industry in the southeast is largely... dependent on the provision of adequate water supplies" (Preece, Cardew & Rider and ODA, 1980). The water shortage in Ayia Napa and Paralimni was the burning issue in the background of the relationship between the SCP and Kokkinokhoria (Phileleftheros, 1983, 1984a, 1986). In their rare public appearances, industry actors portrayed a sector in deep crisis. Among the hotel owners, there was a unanimous understanding of the major obstacle to their very profitable enterprise: water (Shankland Cox and CTO, 1987: 54). It had become not only scarce but of extremely low quality. The water dragon in tourism meant scarcity as well as salinization. Western European visitors had low tolerance for brackish water flowing from their taps and some were already complaining and, reportedly, even leaving their hotels (WDD, 1982b: 100). The Ayia Napa Amelioration Council stated that the entire industry was just waiting for the SCP to save their business (Simerini, 1983b). The Fourth Emergency Economic Action Plan (1982-1985) inscribed the solving of the water problem in tourism development as a long-term state policy item. It confirmed that the SCP was the one and only solution to the threats against the development of tourism (Planning Bureau, 1982). This contributed greatly towards locking in the state's commitment to the tourism industry, as it was gradually established that the state was responsible for securing water supply on demand.

It was within this framework that the SCP became a reality, with a princely initial price tag of C£163 million (approximately US\$277,000,000 in 1984 figures) (WDD, 2000). The survey and designs were ready by 1982, while World Bank financing was secured in 1984 (Jackson and Bell, 1985). The SCP plan was to take place in two phases. Phase 1 was the collection of water from the large Kouris River basin in Limassol district (the Kouris, Kryos and Zygos Rivers) into the Kouris Dam; Phase 2 was the Dhiarizos-Kouris Diversion, that is, the diversion of water from Dhiarizos and Khapotami of Paphos District. The water would then be conveyed through a 110 km-long pipeline to the terminal Akhna Reservoir in Kokkinokhoria. Besides Larnaca, Limassol and Nicosia, the Conveyor would supply pressurised and metered irrigation distribution networks along its route from Akrotiri to Kokkinokhoria (WDD, 2000). By the completion of Phase 2 in 2002, the SCP system had integrated an estimated capacity of 100 Mm³/year (WDD, 2000). It also linked the greater Nicosia area by adding the Tersephanou water treatment plant and the Tersephanou-Nicosia conveyance system works (Wolff, 1988: 6).

⁸ By 1982, it had outstripped both agriculture and manufactured products, and by 1985 it was worth more than the combined total of all domestic exports.

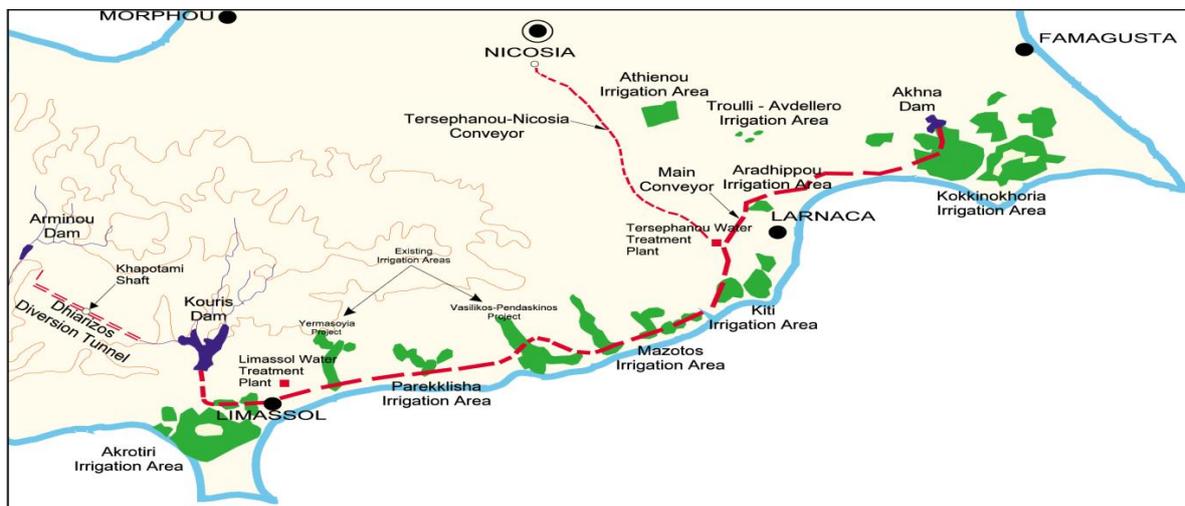
Figure 4. Capacity constraints on tourism (visitors per year).



Source: Larnaca and Famagusta Tourism Study (Halcrow Fox & Associates Tibbalds Partnership, 1982).

The irrigation works in Kokkinokhoria were completed by 1993, with significant modifications in their scope to incorporate the consequences of the conflict (Wolff, 1988: 6). Construction was already underway when, after negotiations with refugee and agricultural organisations, the government enlarged the irrigation network by 90% to provide increased added value and employment; the area covered was thus increased from 5120 hectares (ha) to 13,026 ha. This was a clear indicator for one of the aims of the SCP: to provide jobs to refugees (Wolff, 1988: iv). The opening of the Kouris Dam, the most impressive component of the SCP, was thus an opportunity for the WDD and the new president Giorgos Vassiliou – known as the 'technocrat of the economy' – to showcase the state's sophisticated problem-solving capabilities and its ability to provide better conditions for the new society that was coping with the division (RIK, 1989).

Figure 5. Southern Conveyor Project.



Source: WDD (2000).

UPGRADING THE TOURISM PRODUCT AND WATER INTENSITY, 1990-2005

By the early 1990s, Phase 1 of the SCP had been completed and the prospects for water security must have seemed very bright. The total water storage capacity of the Republic rose from 63.4 Mm³ in 1980 to 298.4 Mm³ in 1990. Outside of the SCP areas, the Paphos District was producing more water than it consumed through the Paphos Irrigation Project, despite experiencing an increase in tourism during the 1980s. With the additional Kouris water, Limassol was able to improve its water supply. The major urban centres of Larnaca, Famagusta District, and Nicosia could draw from the SCP, from the Vasilikos-Pendaschinos Project (a regional irrigation project of CWPP), and from groundwater. There was thus also a qualitative improvement of the water regime in terms of source variation and security. This complex of infrastructures, all operated and constructed by the WDD, induced a sense of water security. The dragon had finally been slain by local expertise and technology.

In the eyes of the citizens, social groups and economic interests, the state proved that it could mitigate the consequences of the island's division and of the subsequent development boom on the water regime. Through and with the WDD, successive governments demonstrated their determination to continue improvements by investing in extensive water infrastructure and building a capable management body that had the knowledge and expertise to operate it efficiently. This establishment of trust in state power led state actors to plan for futures where water would no longer be a problem. Tourism, by means of a new policy turn, came to be a grotesque example. The industry was the 'miracle' of the 1980s and by 1990 it was contributing 83.2% of the invisible balance of payments, while hotel and restaurant establishments alone made up 9.9% of GDP (1989). Tourists consumed native agricultural and semi-manufactured products. The industry also caused a boom in the construction sector, whose companies had faced a decline in overseas work due to the recession in the Middle East (Wilson, 1992: 103). Between 1980 and 1989, expenditure in the construction of tourist accommodation amounted to C£262.8 million (approximately US\$531.3 million in 1989 figures), or 9.9% of all construction (Christodoulou, 1992: 147). Tourism had become so vital that the government did not question its geographical constraints and resource-intensiveness.

By the mid-1980s, however, the path of the development, sustainability and profitability of tourism had become a serious concern (World Bank, 1986). The CTO was engaged in the preparation of a larger study to assess the sector and frame a comprehensive tourism development plan for the Republic. The study involved an appraisal of tourism development and of policy, constraints and potentials, with recommendations for future strategy and policy (CTO, 1988: 72). One of the three main recommendations of the study was to implement actions to attract high-income tourists (Shankland Cox et al., 1987: 200).

The completion of the CTO study coincided with the election of Giorgos Vassiliou as the third president of the Republic, supported by AKEL and other left-leaning parties. His election came at a time when Cyprus negotiations were heading towards a deadlock. A successful businessman Vassiliou offered a more liberal vision of both economic and political problems and, when the negotiations came to another impasse, Vassiliou focused on national policy items and economic development. In 1990, the government introduced a new tourism policy whose slogan was the 'improvement and upgrading' of the tourism product. The new policy meant the scaling-up of water use to a new level for the industry. The hope was that the sector would transition to a higher value-added level by attracting medium- to high-income clientele. The government aimed to finance only large and luxury accommodation units within the designated tourism development zones. Accordingly, the government would financially support new accommodation infrastructure of 4- or 5-star hotel units, A-class tourist villages, and complexes of A-class luxury tourist villas. This tourism infrastructure involved upgrading recreational facilities, which translated into extensive pools, water parks, and sports greenery facilities. In addition to accommodation, the state policy also promoted new tourism products such as marinas, theme parks and, most controversially, golf courses (CTO, 1990: 13-14).

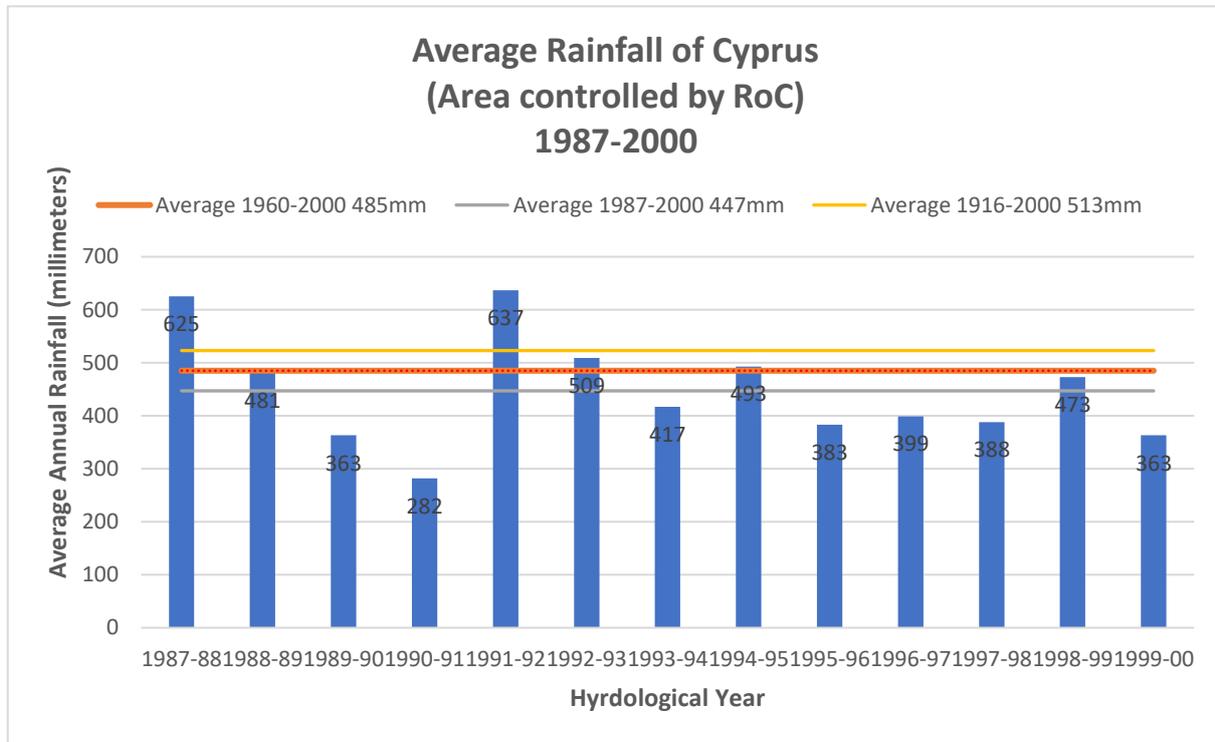
Before the new policy turn, the CTO had hired international experts, Cobham Resource Consultants, to provide the technocratic base necessary to justify policies in favour of golf course development. The consultants reaffirmed that from a financial perspective golf was the right project for Cyprus; they asserted that golf course development would increase the value of Cyprus's brand image. Besides rhetorical justifications, the consultants also provided hydro-economic arguments to support the new policy's material effects. To legitimise the whole graphic materiality of a golfing enterprise, the consultants lumped golf into the same category as agriculture, in the sense that both were economic activities aiming to generate foreign exchange and because they were in competition with regard to land use and irrigation (Cobham Resource Consultants, 1992: 7). The new definition connected golf and agriculture in terms of two parameters: water and labour. The consultants demonstrated several ways in which the existing extensively irrigated agriculture actually legitimised this new mode of tourism. First, they assured the CTO that the transformation of the natural landscape into golf courses comprising a mixture of organised local vegetation and large swathes of grass would not present a 'foreign appearance' in an otherwise semi-arid country. They argued that the Republic already possessed large areas of intensively irrigated crop production "with their strong green appearance", thanks to the extensive infrastructure resulting from the implementation of the Cyprus Water Planning Project. According to this logic, golf courses, as a "version of such intensive agriculture", would not stand out or provoke a sense of disturbing contrast between the semi-arid, water-stricken environment and lavishly irrigated golf grass (ibid: 28). No doubt the comparison with agriculture would serve as a readymade justification that could be used against an expected backlash about golf's competition for agricultural land and water.

The consultants advised encouraging the perception of golf as a form of extensive agriculture "whose crop consists of white balls falling in holes" (see Appendix D in Cobham Resource Consultants, 1992). They laid out a method of calculation to justify the irrigation of golf courses. They calculated the productivity of golf as an agricultural product in terms of its capacity to generate foreign exchange from a cubic metre of "critically constrained water" and labour time. They concluded that, on average, the golf product exceeded the performance of all crops except cucumbers. These calculations then helped justify the prioritisation of golf course development in particular geographical areas. Water prices, in combination with the availability of labour, pointed to the Paphos-Polis corridor as the most cost-effective region for initiating the product. This corridor possessed the water supply of the PIP and included large areas of previously cultivated farmland that were becoming redundant due to the rapid tourism development of the previous decade. Land and labour were not constraints since many Greek Cypriots had abandoned, or were ready to abandon, agriculture (Cobham Resource Consultants, 1992); furthermore, the absence of Turkish Cypriots multiplied the available arable land.

Three of the first four golf courses were built in the Paphos area and all were connected to the PIP irrigation network. These former agricultural lands were either within the network of the PIP or had been connected to it during its construction; some had even been allowed to illegally dam the river basin that supplied the PIP infrastructure (Tothemaonline, 2019). Here, again, the playing out of the consequences of the island's division is in the background; with the Turkish Cypriot population absent and 20% of the irrigation area abandoned, there were substantial amounts of surplus water that could be lavishly consumed. In 1999, two golf courses in Paphos consumed 2000 cubic metres (m^3) per day from the subsidised sources of the PIP, an amount equal to the daily consumption of 18,000 people (Phileleftheros, 1999). By 2019, the golf courses in the Paphos District drew 1.7 Mm^3 of water from both WDD infrastructure and private water licences to tap the PIP basin. This quantity amounted to the water capacity of the second-largest dam of the PIP, Mavrokolympos, and 8.63% of all the water needs of the city of Paphos (Nikolaou, 2019b). These figures appear excessive in light of the precarious rainfall pattern of Cyprus (see Figure 6). Historically, the islanders were used to experiencing drought every two to three years, but in the past 50 years these droughts have increased both in magnitude and frequency. Just in the 1990-2010 period, there were three multi-year droughts, one in 1990/1991 (two years), one in 1996 to 2000 (five years), and one in 2006 to 2009 (four years). Despite these figures, the diversion of

substantial water from dams to golf courses faced only a brief backlash during the late 1990s, and this was mainly by activists of the emerging ecologist party.

Figure 6. Decreasing rainfall trends and increasing frequency of dry years.



Source: WDD (2000).

TOWARDS A NEOLIBERAL EUROPEAN REPUBLIC: DESALINATION, MONETISATION AND MAKING THE DRAGON DISAPPEAR, 1994-2013

The three-year long drought between 1989 and 1991 tested the political and material limits of the WDD’s infrastructure (Ministry of Agriculture, 1991: 67). The WDD imposed emergency measures; it cut supplies to both irrigation and cities while resorting to boreholes to boost the urban and tourist water supplies. In 1991, the WDD began to consider desalination. The proposal of this quick techno-fix was suggestive of the deep problems ingrained in the 30-year-old, internationally backed and funded policy of 'not a drop of water to the sea' that was embedded in the individual infrastructure projects of the CWPP. While the CWPP created a large storage capacity and wide distribution network, it also deepened dependence on the existence of large amounts of rainfall. This, in effect, internalised the dramatic effects of climate change such as the 20% decrease in average rainfall and the longer and more frequent dry spells.

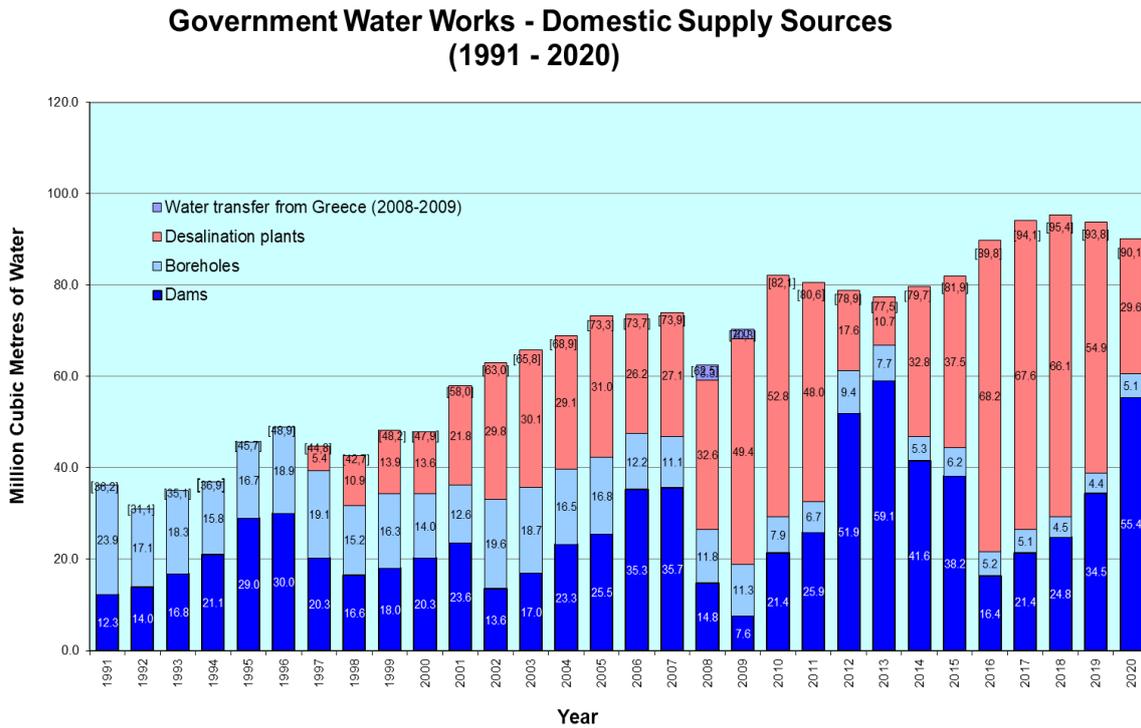
Especially with the SCP, state actors had already normalised the state’s responsibility to provide water without much regard to the financial and environmental costs. In these years, the water problem had come to be referred to as the 'second national problem', with the 'Cyprus problem' being the first. When framed thus, state actors had to handle it as an existential threat to the Republic itself. First, the government of President Vassiliou inscribed desalination into the Strategic Development Programme of 1994-1998 as a state priority. It was expected to mitigate shortages in emergency situations and to satisfy "permanent needs" in the long run (Planning Bureau, 1994: 115). As a techno-fix, it fit perfectly with the prior practices of state actors with regard to the water problem, that is, promising and bringing quick and

definitive solutions. There was already a technocratic base for desalination which secured it as a viable technological option. Desalination had figured in the CWPP, which foresaw that it would be introduced by 1985 so that all surface water could be allocated to agriculture. The WDD, on the other hand, had been closely acquainted with this technology in the early 1980s through various international expert surveys that it had helped conduct.

In 1994, the newly elected President Glafcos Clerides, saw water management as an opportunity for a politics of national unity that all Greek Cypriots could relate to. Clerides had to match his predecessor's economic and technocratic profile while making progress towards Cyprus's European Union integration. His alliance with conservative forces left him no liberal political support, while his Turkish Cypriot counterpart allowed little space for progress in the bicommunal negotiations. (For the negotiations during Boutros Boutros-Ghali's term as UN Secretary-General, see Tzermias, 2004: 959-60). He could nevertheless produce a positive agenda concerning another problem of nationwide importance, the water problem. It was this that underlay the Clerides government's ordering of tenders for a desalination plant at Dhekelia. It was intended to cover the water supply of the adjacent tourism centres along the coast from Larnaca to Ayia Napa and Paralimni, which was the region with the most intense water problem due to tourism (PIO, 1994). According to calculations by more ecologically concerned engineers, 20% of the available water from the dams (approximately 115 Mm³) was consumed by the tourism industry over a period of four months (Perdikis, 1995). During the severe drought of 1997, the Minister of Agriculture, Natural Resources and Environment, Costas Petridis, announced that desalination had become the backbone of the state's long-term water development programme to end supply problems (PIO, 1997c). President Clerides assured Cypriots that desalination would be a constant variable in the struggle against water scarcity and that its aim was the "independence of large urban and tourist centres from the annual rainfall" (PIO, 1997b). In a decade when political thinking was dominated by the 'national imaginary' of integration with Europe and/or Europeanisation (Theophylactou, 1995; Argyrou, 1996; Trimikliniotis, 2001), desalination fit in well. It was the technological paradigm of the 1990s, especially in Europe where it was emerging as a techno-fix for water-related social and ecological issues. At the same time, its implementation through economic models such as build-own-operate-transfer (BOOT) corresponded to the EU's drive to environmental modernisation through further monetisation of nature (Swyngedouw, 2013; Swyngedouw and Gottlieb, 2015)

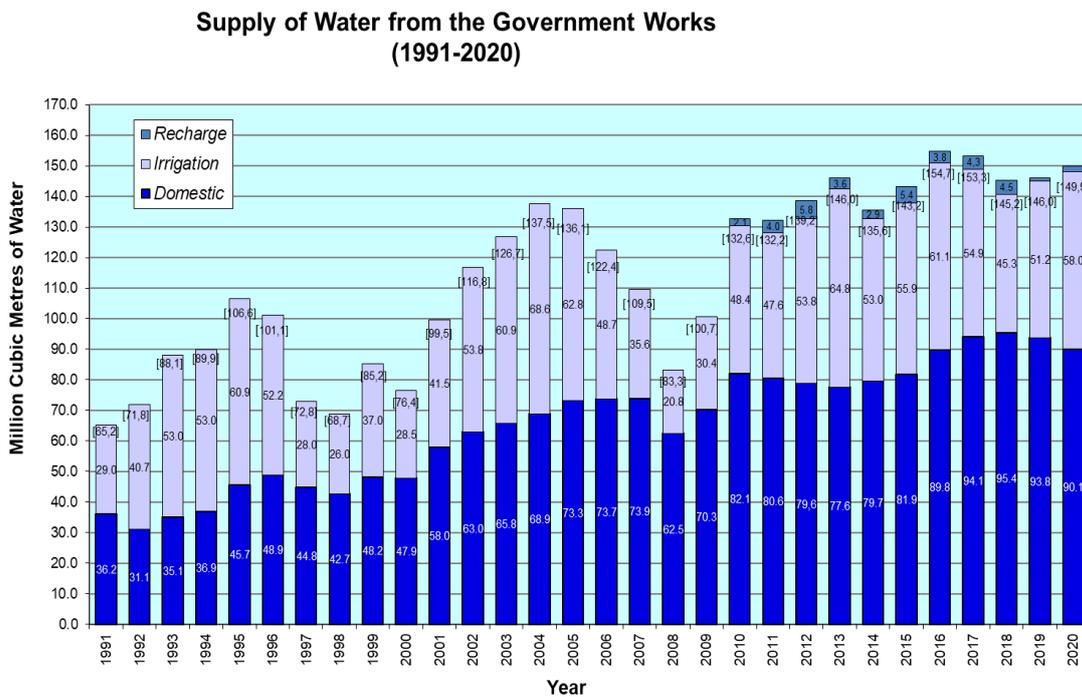
Desalination introduced private enterprise into the water regime through the neoliberal practice of BOOT (Birch and Siemiatycki, 2016). This arrangement allowed for private financing of targeted solutions to the water problem. Despite rhetoric which effectively claimed to be 'killing the water dragon', desalination in practice makes water scarcity invisible through devices of monetisation. BOOT contracts oblige the state to buy a predetermined amount of water, or they require payment for half of the costs even during years when the plants are not active. Through these stand-by payments, droughts are monetised, and risk mitigation comes at a high cost. By 1999 estimates, the four existing and planned plants would cost C£200 million (approximately US\$370 million) over 10 years if oil prices were stable – an amount almost equal to the entire cost of the SCP (Phileleftheros, 1999). For the year 2015, the stand-by costs of all four main desalination plants were almost €16 million (US\$17.4 million) (General Auditing Agency, 2016: 36-38). At another level, oil prices tie the water price to global fluctuations while also producing further costs in CO₂ emissions through the EU Emissions Trading System, another neoliberal invention. The 2018 figures put the four large desalination plants' electricity consumption at an estimated 9% of all the electricity generated in the Republic, making desalination the major industry end user. This consumption accounted for 436,000 tons of greenhouse gas emissions per year, which the Electricity Authority of Cyprus had to account for in its carbon trade budget (Marin et al., 2018: 86). Even after more than 20 years of its application, studies conclude that supplying water only through desalination, even excluding the environmental costs of CO₂, is costly under all scenarios (Zachariadis, 2010).

Figure 8. Share of desalination in total domestic supply.



Source: WDD (2020a)

Figure 9. Share of domestic users from WDD-managed water sources.



Source: (WDD, 2020b).

By the 2000s, desalination had been completely appropriated within the wider transformation of the economy on its path towards integration with the EU's neoliberal framework. First, it gave space for the golf development to create a niche within the country's legislation that bore possibilities for large-scale luxurious tourist accommodation but, most importantly, real estate, a sector which would become the locomotive force of development in the 2010s. Under the presidency of Tassos Papadopoulos, this became actual state policy: the development of golf courses was made part of a state strategy supporting the Republic's tourism industry (Ministerial Council, 2005). This came at a crossroads in the Cyprus economy: tourism revenue had begun to lag as the economic model was transitioning from export-led to consumption-led growth. The Papadopoulos government facilitated this transition. The adoption of the Euro as local currency encouraged financialisation, boosting the construction sector through low-interest borrowing (Trimikliniotis et al., 2012: 234); meanwhile, the increasing integration of Greek Cypriot society into the European market and community was also reinforcing ethnic separation on the island, and the future of the RoC and its economy were becoming increasingly tied to European Union membership (Tzermias, 2004: 995-1000). Within this context, the ministerial decree of 2005 legally encouraged the construction of five-star tourist facilities. Golf course developers were also licensed to build detached villas utilising the land with a building plot ratio of 0.2: 1. This translated into a large amount of water, not only for the irrigation of the golf course, but also for use by residents and tourists and by pools and greenery. A good example is the planned controversial Ayia Napa Forest Project – a complex that includes a luxury hotel resort, a golf course and real estate; it demonstrates how the existence of infrastructure fosters the normalisation of high water demand, not just for the golf course but also for tourist accommodation and real estate facilities. The total water consumption foreseen in the Environmental Impact Assessment Plan for the project was 0.7 Mm³, of which 0.5 Mm³ will be for irrigation alone (half for the golf course and half for the residential and hotel greenery).⁹ In theory, these water requirements will be covered from municipal sources but, to this day, no golf course development, despite being in 'water-rich' Paphos, has yet managed to survive without WDD infrastructure (see Chapter 15 in General Auditing Agency, 2016). The project, if realised, will thus be dependent on the dams and desalination plants of the WDD as well as on the effluent water of the Ayia Napa municipal treatment plant (I.A.CO Ltd Environmental & Water Consultants, 2018: 59-68).

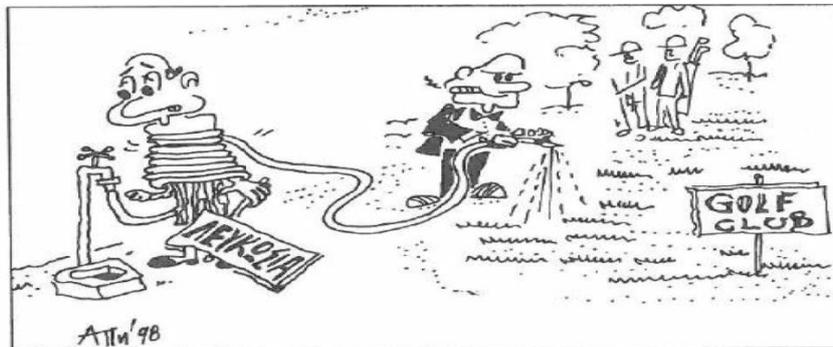
While desalination fitted easily into established state practice, unlike the dam policies its coincidence with golf course development gave rise to a brief backlash, especially from the emerging ecological movement, the Geological Survey Department, and engineers from the Cyprus Scientific and Technical Chamber. While the Cypriot case is an example of lack of alternatives to the dominant water management paradigm, this backlash was a rare instance of alternatives being voiced, especially by activists from among the early ecologists in the 1990s. They challenged desalination, not just because of its expensive production costs, but also because it did not consider the environmental and social impacts. Many argued that demand management, loss control, and conservation policies would render desalination obsolete. It was commonly agreed that the government was in fact producing this additional water primarily to sustain agriculture and golf courses (Theopemptou, 1998: 18; Fesas, 1998: 18-19; Phileleftheros, 1999). The materiality of the SCP system proved that expensive desalination water indeed favoured irrigation as it liberated dam water that was otherwise designated for domestic use, thus prioritising short-term political gains (Stefanou, 2008). In the long run, however, desalination even indirectly affected the former Ecological and Environmental Movement, causing it to drop water from its main political agenda.¹⁰ In addition to eliminating political opposition and new water policies, desalination also helped invalidate demand-side management initiatives. During the severe drought of 1997/1998, the Ministry of Agriculture, Natural Resources and Environment enacted water conservation measures that were aimed

⁹ Course irrigation: 266,675 m³; total irrigation for public and private greenery, as well as for hotel and residential greenery, 272,005 m³.

¹⁰ Interview with the former president of the Movement of Ecologists-Citizens' Cooperation (previously known as the Ecological and Environmental Movement), Giorgos Perdikis, on 26 February, 2021.

at deterring widespread water-intensive practices such as washing cars and pavements with water hoses (PIO, 1997a). Despite introducing them as laws and implementing them strictly, the Ministry promised that these measures would be temporary, as they indeed proved to be.

Figure 10. Nicosia being 'strangled' by a hose conveying water to a golf course.



Source: (CSTC, 1998).

CONCLUSION

The above analysis aimed to provide an historical framework for political decisions concerning water-management in the Republic of Cyprus. This framework underlies the political turmoil and uncertainty that led to the suspension of the RoC's bicomunal constitution and its governing solely by Greek Cypriots since 1974. We show that state formation, infrastructure, and expertise shaped decision-making and determined policy choices regarding the direction of the water management regime. We demonstrate that short-term political strategies for consolidating state power established longer-term patterns, and that water in this way became connected to the existential problem of the survival of Republic based only on the Greek Cypriot society and economy. During the lifetime of the Republic – as concerns, problems and imaginaries about the Cyprus conflict loomed in the background – state actors normalised the construction of costly water supply infrastructure; they assumed the duty of 'killing the water dragon' whenever there was a popular demand for increased water supply. In the first years of the Republic when bicomunal imaginaries were still alive, water was expected to support agriculture, which was a source of both foreign exchange and clientelist power, while also feeding nationalist cadres. Supported by foreign expert visions, the Republic adopted a long and comprehensive dam and irrigation works programme, that is, the CWPP. After the division of the island and the confinement of the Republic within the Greek Cypriot community, water remained an important factor in creating a new type of national unity and in forging the legitimacy of the compromised Republic. In that context, by the early 1980s the interests of agriculture and the tourism industry legitimised the realisation of the expensive SCP, proving how far the state was willing to go to kill the water dragon. The failure of the dam projects in the early 1990s led to the emergence of desalination as the definitive technological fix for the water problem, which by then was being considered second in importance only to the national problem of the geographical and ethnic division of the island. In the next two decades, with the transition of the economy into the neoliberal framework of the European Union, the commitment to desalination became further entrenched.

Successive governments, as well as the WDD and the CTO, promised abundant water for economic development and committed the water regime to a resource-intensive path. In terms of our metaphor, the outcome of the state's goal to kill the water dragon made the water-intensive nature of agricultural and tourist activities invisible. As far as the water regime is concerned, we can single out two

interconnected rules that dominated its path. First, bureaucratic and political cadres of the state approached water supply problems on the basis of knowledge produced earlier by foreign experts. This perspective normalised technocratic interventions, techno-fixes, and expensive infrastructure, and left no room for local deliberative processes. This immediately resulted in a one-sided understanding of water policy, that is, the exclusion of demand-side policies, ecological concerns, and questioning of the mode of production in motive force industries. The second prevalent pattern in the governance of the water regime thus came to be the silencing of those wishing to express alternative points of view; this was due to lack of both political will and of platforms for their vocalisation.

ACKNOWLEDGEMENTS

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