

RESEARCH ARTICLE

Community and informal institutions in reforms under crises: the odyssey of a 350-year-old functionally credible water commons

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Abstract

Although crises provide an opportunity for meaningful institutional change, the results often fall short of expectations because the reforms undertaken are informed by top-down, global-standard blueprints and fail to consider the informal, long-established, functionally credible institutions that exist at the local level. Seeking to explore how the interplay between formal and informal institutions can affect institutional change, the study focuses on Stagiates, a small community that has been struggling for more than 10 years against the uniform implementation of the 2010 administrative reform (prescribed in light of the Greek government-debt crisis), which threatens to dismantle their 350-year-old, functionally credible commons. To this end, the paper uses case study methodology, Historical-Institutional Analysis and Ostrom's Social-Ecological System framework. It concludes by emphasising the need for institutional analysis and policy to look more closely at the dynamic and complex dialectic between formal and informal institutions and the role that community needs, norms and values play in meaningful institutional change, paying due attention (as original institutionalism did) to the informality and the function-based social credibility of institutions.

Keywords: commons; crises; informality; institutional change; SES framework

Introduction

Acknowledging the crucial role of credible property rights for economic development, mainstream economics advocates the need for *formality*, i.e. the legal formulation and enforcement of 'global standard' type rights and rules (De Soto, 2000; O'Driscoll and Hoskins, 2003). However, while it may be relatively easy to specify by law such property rights, credible implementation is not simple, due to, *inter alia*, high transaction costs, inherent deficiencies of the legal system and the state apparatus, and lack of sufficient political and social support. In such cases, the outbreak of crises and critical emergencies provides an opportunity for meaningful institutional change (Ladi, 2014; North, 2005). Yet, the results are often underwhelming, especially when local specificities are overlooked (Boettke *et al.*, 2008; Roland, 2020).

In this context, Greece is an interesting case, due to recent reforms introduced in the wake of the 2009 government-debt crisis and the institutional deficiencies it exhibits (e.g. excessive formalism, ambiguous legal rights, long judicial procedures), which impede the accomplishment of reforms (Hatzis, 2018). The paper discusses certain implementation aspects of a major administrative reform

occurred in 2010, focusing on *Stagiates*, a small community in central Greece, that for more than a decade struggles against formality to maintain control of the, long self-managed, water resource. This is a clear case indicating that institutional change pass through local, often informal, channels and to be effective it must consider not only the individual and general public interest, but also local communities' needs, norms and institutions. If localities feel unheard, they may resort to reaction, opposition or even non-compliance with the reform provisions (Ostrom, 2005).

Given the foregoing, the study aims to delve into the interplay between formal and informal institutions and how this influences institutional change. To this end, it sets out to consolidate *Stagiates* as a *commons institution*, explore the dialectics between top-down–bottom-up, formal–informal institutions in the *Stagiates*' water governance conflict, and discuss the role of local institutions in institutional change. To do so, case study methodology, Historical-Institutional Analysis and Ostrom's Social-Ecological System framework are employed. Data sources are both secondary, mainly mass media, and primary, comprised by semi-structured interviews and informal discussions with stakeholders, and a questionnaire survey. Commons theory and institutional economics provide our conceptual framework. In addition, theoretical and empirical literature on public administration, reforms and water governance complement our understanding.

Although several academic disciplines use the term 'institution' there is no agreement on its definition – not even within Institutional Economics. To avoid misunderstanding, we join Hodgson (2006: 13) in defining institutions 'as durable **systems** of established and embedded social rules that structure social interactions' [emphasis added]. These rules have normative, 'deontic', connotations and are part of the culture of the community that shares the institution (Ostrom, 2005). They can be codified in laws, constitutions and formal regulations, legally enforceable by the state (constituting 'formal institutions'), or they can arise straight from social behaviour, practice and culture, without state mediation and legitimation, directly enforced by the community (constituting 'informal institutions') (Crawford and Ostrom, 1995). Although the distinction between formal and informal is not so clear-cut, since legal and non-legal rules are intertwined and mutually reinforcing¹ (Cole, 2017; Hodgson, 2006), this is useful for analytical purposes (Crawford and Ostrom, 1995). Thus, we refer to formal institutions when the rules are set and imposed by the state in the form of laws, regulations or procedures (referred to as legal rules or rules-in-form), and to informal institutions when rules emerge as norms, social practices or habits and imposed directly by the involved community (referred to as non-legal, 'working rules' or rules-in-use) (Polski and Ostrom, 2017).

The paper proceeds as follows. Section 'Public administration and water governance' lays the background, by first, placing the 2010 reform in the context of public governance's shifting paradigms and the Greek crisis requisitions, and then outlining the water governance trends as noted in the literature. Since the commons emerges as a powerful water governance institution, section 'Commons: a primer' presents the Ostromian-institutionalist perspective on the commons, which provides the theoretical and analytical framework for this study. The empirical study follows. We first present the confrontation storyline, then the results of a public-opinion survey on the issue, and finally the SES analysis, which comes to consolidate the *Stagiates* commons institution and to highlight its qualities. The final section concludes by stressing the need for institutionalist analysis and policy to look deeper into the dynamic interplay of formal and informal institutions, paying due attention (as original institutionalism did) to the informality and the function-based social credibility of institutions.

Public administration and water governance

Public administration (PA) refers to the formal arrangements by which governments implement policy, deliver public services and manage resources, presumably in the public interest (Johnston, 2015).

¹The development of legal rules, and their enforceability, reflect the prevalent societal values, customs and norms. This explains why many legal rules are socially or self-enforced, while others are not followed. Similarly, social behaviour and morality are influenced by formal institutions because of the legal sanctions and moral values the legal system prescribes.

Although dating back to antiquity, PA as a distinct research area emerged in modern times and evolved thereafter marking identifiable paradigms (Johnston, 2015). Each paradigm reflects the prevailing theoretical and ideological trends of the time, favouring different governance modes and arrangements (Osborne, 2010). Consequently, the effectuated regime varies from government to government, corresponding to the respective political ideology, international trends and local context (history, institutions, power relations, etc.).

The modernity PA model draws heavily on Weber's bureaucracy, advocating a highly formalised, specialised and impersonal hierarchical organisation with clear rules and authority lines, in which legitimacy² stems from the formality (legal credibility) it embraces (Lampropoulou and Oikonomou, 2018). It has been criticised for its strict adherence to formality and hierarchy, giving rise to rigidity and inefficiency (Johnston, 2015). These, coupled with the structural politico-economic changes of the 1970s, pushed towards a market-oriented approach. With the prevailing political ideology favouring deregulation, privatisation and public sector downsizing, the postmodern model of New Public Management (NPM) that emerged, promoted disaggregation and autonomisation of units, formation of internal market-style competitive environment and purposive application of private-sector managerialism (Hood, 1991). The model has been criticised for intraorganisational focus, emphasis on cost minimisation to the detriment of quality and for reduced legitimacy due to individualistic agency and abandonment of public service ethos (Osborne, 2010). Moreover, pathbreaking developments in information technology, economy and society (*inter alia*, the consolidation of the new global, multi-actor, networked economy, and the re-emergence of localism), led governments to reorient focus towards legitimacy enhancement, new-technology usage and embracement of social and environmental imperatives (Johnston, 2015), giving substance to the New Public Governance (NPG) paradigm (Osborne, 2010). The NPG endorses the 'pluralist' and 'pluralistic' environment of contemporary states and promotes collaboration, public participation, networking and horizontal linking based on trust and relational contracts.

Although scholars offer a compelling narrative of paradigm shifts indicating that NPM's market mentality was introduced to address bureaucratic deficiencies, to be subsequently replaced with NPG's pluralistic perspective, the reality is far more complex. Firstly, new models have emerged (e.g. the Neo-Weberian State, Digital Era Governance³) feeding into the public governance discourse, without, however eliminating the older ones, which endure (as they continue to address existing problems or due to path dependence and institutional inertia) and consolidate themselves (Ladi, 2014; Torfing *et al.*, 2020). In addition, particular aspects of the models can merge creating hybrids (Torfing *et al.*, 2020). Therefore, the governance regime that arises is a dynamic multi-layered patchwork of coexisting, competing and sometimes conflicting models and hybrids that interact with one another. The regime can vary in time and place, but also vertically in terms of administration level (national, regional, municipal). This means that, despite relevant pressures, lower-level administrative units may exhibit governance arrangements that differ from the national ones, causing tensions and disputes. Similar tensions may arise when local governments follow blindly central policies ignoring the local specificities.

Notably, despite growing criticism and alternatives, the NPM remains the most influential model (Osborne, 2010), supported by major international and supranational actors (IMF, OECD, World Bank, EU) as an exportable and effective blueprint to be applied worldwide. NPM has been paradigmatic in promoting neoliberal policies and reforms that largely overlook contextual factors and dogmatically promote administrative consolidation, marketisation, managerialism and privatisation of public and common goods in the name of efficiency. Moreover, its adherence to market/economic

²The literature highlights that public governance legitimacy rests on credibility, transparency, accountability, inclusiveness, participation and effectiveness in problem-solving, distinguishing two analytical dimensions: input and output (Hogl *et al.*, 2012). The former focuses on the governance processes and the degree of credence enjoyed, while the latter on the results and governance's purpose efficiency.

³For reviews see Torfing *et al.* (2020) and Lampropoulou and Oikonomou (2018).

values at the expense of the classical bureaucratic ones (equality, impartiality, political accountability, etc.) undermines citizen's trust and public sector legitimacy, and poses serious challenges in management that requires inter-territorial, cross-sector coordination (Hogl *et al.*, 2012). As such, Olsen (2006) argues that bureaucracy should remain part of the available repertoire as it infuses PA with public sector ethos (and so, trust and legitimacy) and promotes an ethically balanced regime. In this respect, and given the complex, pluralist and pluralistic nature of hybridity, the issue of values (as ethics, beliefs, ideology of individuals, groups, organisations) and value (the worth or impact of an activity) becomes incredibly important for theory and practice (Dickinson, 2016).

Turning to Greece, the deficits of PA have been documented at least since the 1950s, referring to as 'the great patient' (Varvaressos, 1952).⁴ Over time scholars have confirmed Varvaressos' popular quote, outlining a system plagued by extreme party-politicisation, political patronage, clientelism, corruption, formalism, high transaction and administrative costs, fragmented and inconsistent procedures, weak policing and enforcement mechanisms, low performance, low reform capacity, ad hoc regulation and lack of political commitment for meaningful change, etc. (EC, 2022; Featherstone and Papadimitriou, 2012; Hatzis, 2018; Kalimeri, 2018; Ladi, 2014), to be characterised even today as a 'unique' (OECD, 2011) and 'divergent' case (Lampropoulou and Oikonomou, 2018). This has been a major political issue that dominated public discourse and became part of all governments' reform agendas, especially after the restoration of democracy in 1974. Consequently, the bureaucratic-based Greek regime underwent a number of reforms leading to democratisation, decentralisation, modernisation and alignment with the prevailing PA models (Ladi, 2014; Spanou and Sotiropoulos, 2011). This became most apparent from the mid-1990s to 2009, when governments, under the pressures of European integration, promoted NPM-type reforms favouring cost-efficiency, privatisation, marketisation and managerialism. However, scholars (Kalimeri, 2018; Ladi, 2014; Spanou and Sotiropoulos, 2011) argue that this did not mark a solid transition to NPM, since, compared to other EU states, not only changes were incorporated with delay, but also eclectically, focusing on specific sectors. As such, the Greek PA regime has been a mixed patchwork, if not a hybrid, combining elements of both paradigms, albeit in a different mix at each time (Lampropoulou and Oikonomou, 2018).

Further reforms occurred in light of the 2009 government-debt crisis and the institutional adjustment that Greece was compelled to follow under supervision by the EU-ECB-IMF 'troika' in exchange for substantial financial assistance (Akrivopoulou *et al.*, 2012). In a sense, the crisis presented a 'critical juncture', an 'opportunity' to implement drastic structural reforms which in tandem with severe fiscal austerity measures would finally improve PA efficiency and restore state's credibility (Ladi, 2014; Spanou, 2020). All these reforms were, once again, informed by a 'blueprint' neoliberal mentality (*à la* NPM), promoting public sector downsizing, cost-cutting, asset privatisation and laissez-faire policies, packaged in austerity and fiscal discipline pacts, which had to be implemented promptly and comprehensively, hardly considering the local context and will (Lampropoulou and Oikonomou, 2018). However, the predictions proved optimistic, with Greek society eventually experiencing significant income loss, high unemployment, deep and prolonged economic recession, and eventually impoverishment, social unrest and political instability, generalizing 'The Crisis' (as called in Greek common parlance) to all aspects of life (Vasilopoulou and Halikiopoulou, 2015).

Considering the reforms' scope, efforts to assess success even in one domain, herein PA, is a 'titanic' task (Sapir *et al.*, 2014). Nevertheless, given that still today the reform propositions remain largely unchanged, citizens continue to rate low the public services, and trust in government declines dramatically since 2010 (EC, 2022; Greek Government, 2020), we can assume that little progress has been achieved (Kalimeri, 2018) (probably with the exception of administrative restructuring, asset privatisation and public service digitalisation). This implies that apart from formality, substantive change

⁴Professor Kyriakos Varvaressos (served, *inter alia*, as Finance Minister during Greece's 1932 bankruptcy, Governor of the Bank of Greece, Deputy Prime Minister in charge of the Marshall Plan, and director of the World Bank) was one of the most important figures of economic thought and politics in 20th century Greece.

presupposes changes in the mentality of what we perceive as a problem and how we can address it, and possibly in the prevalent social values and norms. In this sense a reform to be effective necessitates the recipients to embrace its objectives and internalise its promoted values and behaviours (ELIAMEP, 2018; Ladi, 2014).

Against this background, this study focuses on one of the reforms Greece implemented as a precondition of troika's financial assistance, known as the Kallikratis Programme (Law 3852/2010), which radically altered the country's administrative landscape by mandatorily merging all Communes and small Municipalities into fewer, larger Municipalities.⁵ As a result, the Communes (the lowest formal administrative unit under the previous regime) lost their official status and their responsibilities and assets transferred to the respective unified Municipality, depriving local communities of the rights to govern themselves and to self-manage their resources (Kalimeri, 2018). Our aim is, by focusing on this lowest, now unofficial, unit of local organisation, to reflect on the reform's legitimacy with regard to community self-governance and the capacity of local, informal institutions to condition institutional change. Moreover, due to space limitations our focal point concerns one, but critical, sector reorganised by the reform, the water supply.⁶ On this account, we selectively explored the mounting water governance literature (*inter alia*: Bakker 2007, 2008, 2010; Chenoweth, 2004; O'Donnell *et al.*, 2021; Renzetti and Dupont, 2003) to briefly note a number of key, and pertinent to our case, findings:

1. Water management is central to public governance and concern a decision-making process which should take into account the public needs, interest and rights, as well as the institutional and cultural practices (Bakker, 2010).
2. The engagement of local actors constitutes key determinant of successful water management since it increases compliance and provide more ecologically sustainable outcomes (Newig and Fritsch, 2009).
3. Apart from active public participation, 'adaptive' water governance (*aka*, a learning-based, flexible, socio-ecologically resilient structure) requires polycentric organisation, networking and collaboration, experimentation, and a holistic, bioregional approach (Huitema *et al.*, 2009).
4. A polycentric governance system, by involving multiple actors and governance levels, yields higher outputs compared to monocentric governance (Marshall, 2008; Newig and Fritsch, 2009).
5. The use of local assets and resources, including human capital, social capital and local knowledge, is of paramount importance for the efficient provision of high-quality water (Chenoweth, 2004).
6. There is no compelling evidence of private utilities outperforming public utilities or that privatizing water utilities leads to unambiguous improvements in performance (Bakker, 2008; Godden, 2008; Renzetti and Dupont, 2003).
7. Strategies informed by the principles and framework of the commons are more coherent conceptually and more successful in mobilizing and engaging the public (Bakker, 2007).
8. Community sovereignty, self-determination, democratic deliberation of all affected cultures, under conditions of adequate information provision, as well as networks and synergies, have been identified as the foundations for water justice among indigenous people who describe themselves as rights-holders rather than stakeholders (O'Donnell *et al.*, 2021).

⁵The Kallikratis Programme comes to conclude and consolidate the previous, also top-down, administrative reform introduced by the Kapodistrias Plan (L.2539/1997) which did not manage to accomplish the intended transformation (Kalimeri, 2018).

⁶Troika's financial assistance presupposed the country's commitment, to privatize, *inter alia*, specific public utilities, including selected public water companies (Pempetzoglou and Patergiannaki, 2017).

Commons: a primer

Common pool resources (CPR, *aka* common goods) refer to a specific kind of goods that due to non-excludability and subtractability have been considered to be at risk of overuse, degradation and destruction, a situation termed as ‘the tragedy of the commons’ (Hardin, 1968). Conventional economics’ solutions to the ‘tragedy’ concern the provision and allocation of credible (i.e. clearly defined and legally enforceable) private property rights to individuals (privatisation) or to state authorities (nationalisation), giving the ‘owners’ the incentives and power to enforce resource sustainability (Demsetz, 1967; Hardin, 1968).

However, these approaches have been criticised for impairing the real users, destroying the social relations and values that characterise local communities (i.e. the social capital), to the detriment of both these communities and the sustainability of the outcomes in the long-term. The most well-known exponent of this view is Elinor Ostrom, who, drawing on empirical research, established that communities, even in the absence of credible property rights, can successfully self-manage CPR, at least when certain qualifications (‘design principles’) are met (Cox *et al.*, 2010; Ostrom, 1990, 2005). Consequently, a third, more socially acceptable governance model emerges, ‘the commons’, where stakeholders, building on trust and reciprocity, overcome social dilemmas⁷ and collective action obstacles, to jointly formulate arrangements for collective management of their common goods, in a way that serves the collective interest and increases the overall net benefits (Ostrom, 2000, 2005, 2009). These are specific social constructs (rules, norms, shared strategies), local, normative and informal in character, which define and allocate rights and obligations among stakeholders and provide mechanisms for decision-making, policing, enforcement and conflict resolution (Ostrom and Basurto, 2011).

Commons as an institution

Overall, we perceive commons as an institution, a governance system alternative to public–private, state-market binaries, that communities democratically co-create for the sustainable utilisation of their CPR (which depend upon), as well as the preservation and reproduction of other related common goods, tangible and intangible (such as community culture, identity and collective knowledge)⁸ essential for the community’s existence and well-being.

Commons consists of three key components: a community (the ‘commoners’), its common goods and a framework of collective governance. The governance framework comprises a complex set of endogenous institutional arrangements (and compliance mechanisms) that emerge and evolve in the light of collective understanding, behaviour, practice, values and culture, aiming for the self-management of common goods, and the strengthening of the community and its emancipatory

⁷Social dilemmas are situations in which people must make choices acting either upon individualistic standards or for their collective well-being, which can lead to suboptimal outcomes for the group/society/humanity (Ostrom, 2005).

⁸Applying strictly the subtractability and excludability criteria, these ‘goods’ typically constitute either club/toll goods or public goods (depending on the degree of accessibility and openness they embrace). However, this classic economic categorization is quite problematic (De Moor, 2011) on the grounds that it associates certain goods with specific forms of property, it ignores that goods’ characteristics may change (e.g. due to technology) or that they appear in different, complex and intertwined forms (e.g. information, scientific knowledge, tacit knowledge) which do not fit uniformly or consistently within the simplified criteria of subtractability-excludability. Therefore, most of these goods can be qualified as CPR under certain circumstances (Ostrom and Hess, 2007; Hess, 2008), when their governance/management promotes open-access leading to situations that may compromise their integrity and quality (in toll goods), or when (in public goods) are being threatened by some kind of encroachment, ‘enclosure’ (that is, formation of private property rights to previously openly shared resources), privatization, or commodification, either due to overconsumption and increased scarcity or for ideological/political reasons, or even when vital aspects of commons, such as community’s cohesion and cooperation are endangered (all of which may lead to a ‘tragedy’ situation of resource degradation). Seeking to accommodate these concerns and place focus on cooperation, the latter Ostrom (2000, 2010a, 2010b) and other scholars (e.g. Cox *et al.*, 2010; Hess, 2008) broadened the framework and concept of commons to incorporate goods and resources shared by a group of people (community, society or even all humankind), that are subject to social dilemmas and require management and protection.

potential. In a sense, the forging of community and its empowerment to decide and act autonomously, is as important as the CPR preservation. This indicates that the commons is not an end product, but a dynamic and evolving social process (called ‘commoning’) in which commoners, imbued with the principles of reciprocity, solidarity, sharing and equality, (re)produce new social relations, values, mindsets, behaviour and collective knowledge, all of which constitute common goods requiring care and protection (Bollier and Helfrich, 2019; Stavrides, 2016).

Membership in the community may be defined, formally or informally, according to criteria (‘boundary rules’) perceived as essential for cooperation and community strengthening (such as, residence, credible interest and commitment, common identity, ideology, values or other cultural attributes of group homogeneity, or even recommendation by members), specifying different degrees of openness and inclusiveness that depend on the material conditions and the community’s attributes and institutions (Ostrom, 2005, 2010a). The community, on the basis of its values, norms and strategies (‘constitutional rules’) and the biophysical conditions encountered in each situation, specify property rights and permitted actions (‘choice rules’) that define roles (‘positions’) which are assigned (explicitly or implicitly, *de jure* or *de facto*), to participants (‘position rules’), individuals or groups, who act in light of the available information (‘information rules’), their capacity for agency (‘aggregation rules’) and the perceived costs and benefits (‘payoff rules’) of the available outcomes (‘scope rules’) (Ostrom, 2005; Ostrom and Hess, 2007). We should highlight that the protection and preservation of CPR constitutes a critical feature of commons and thus, its credibility and success depend not so much on formal/legal ownership, but on the provision and allocation of diverse, basically informal, rights⁹ to participants (Arvanitidis and Papagiannitsis, 2020). The way that these rights are defined and applied has a great impact on the distribution of benefits and costs, the perceived fairness of the allocation and, ultimately, on stakeholder’s engagement and the sustainability of both the resource and the commons institution (Shah and Garg, 2017).

Delving further into commons’ organisation, it becomes clear that scholars place emphasis on participatory decision-making, on power devolution to the lowest level of collective organisation and, in the case of complex systems, on organisation in a multitiered, nested and polycentric manner, i.e. across multiple, diverse, semiautonomous, overlapping, interlinked and cooperating decision centres, with partial authority, collectively capable of functioning as a coherent system (Carlisle and Gruby, 2019; Ostrom, 2010a). Coordination and decision-making are organised through various channels, such as meetings or assemblies (in-person or online), following democratic deliberation procedures. Decisions are reached making sure that all members feel heard (especially the dissenting voices) by either applying majority rule or seeking consensus. The latter, despite being more exhaustive and time-consuming, is the most usual choice (especially in small groups with close personal relationships) for cultural, ethical, ideological and pragmatic reasons, since it serves to enhance the community’s social capital, solidarity and cohesion (Dellenbaugh-Losse *et al.*, 2020; Stavrides, 2016).

Towards a commons’ pluriverse

Commons’ communication and outreach to society and officials is crucial to enhance its credibility, trust, acceptance and support of the public and the state, increasing the potential for synergies, collaborations and co-production¹⁰ (Dellenbaugh-Losse *et al.*, 2020; Ostrom, 1996). To be effective, such a strategy should clearly communicate the commons’ purpose, values, stance, actions and intended results. Moreover, the praxis of commons feeds into the socially valuable processes of learning and knowledge generation (Armitage *et al.*, 2008; Ostrom, 1996). By engaging in resource maintenance and management, democratic governance, collaborative synergies and social advocacy, commoners, through a spiral of ‘learning by doing’, acquire information and knowledge about the resource and

⁹Which can be overlapping, non-exclusive, temporary, periodic, or transferable.

¹⁰Co-production is a process in which externals to an organization contribute to its inputs in order a good or service of consequence to them to be jointly produced (Ostrom, 1996).

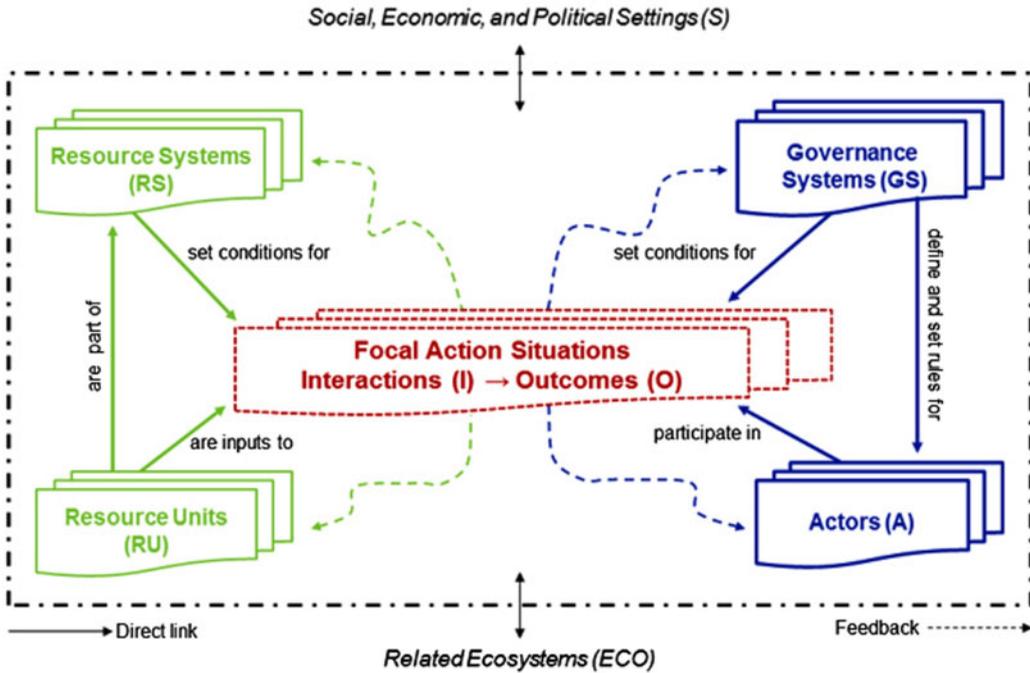
its upkeep, as well as social and civic competences, which subsequently convey (consciously or unconsciously) through their physical and digital interactions (e.g. social media), publications, educational activities, etc., to their peers, other groups or even to the wider public (Dellenbaugh-Losse *et al.*, 2020). In this sense, all commons embrace information and intellectual resources and produce and share knowledge goods (Hess, 2008) that yield social value, constituting a kind of 'knowledge commons'. This inquiry stream (*inter alia*, Frischmann *et al.*, 2014; Hess and Ostrom, 2007; Madison *et al.*, 2019) highlights the complex, layered and multifaceted nature of commons and invites us to explore them as dynamic knowledge hubs and spillovers, which advance multifaceted learning and education, the (re)production, use, preservation, management and dissemination of different kinds of intellectual and knowledge resources (including objects, facilities and infrastructure), and hence experimentation, innovation and creativity.

Methodological tools

Building upon Ostrom (1990), scholars (*inter alia*: Cox *et al.*, 2010; Ostrom and Hess, 2007; Wilson *et al.*, 2013) have identified and thematically categorised the qualities that characterise successful (i.e. robust, long-lasting, effective, etc.) commons. Thus, it is stated that clearly delineated, small-scale resources with predicable outputs/returns are managed more effectively. Relatively homogeneous and (socially and culturally) cohesive communities with clearly defined boundaries and participants' roles, thick social capital and collective action experience perform better, especially when they locate close to, depend on (intergenerationally) and share fairly and equitably the benefits and management costs of a threatened CPR. Regarding the commons governance, all arrangements should be decided collectively through democratic deliberative processes, in conformity with the local (socio-politico-economic) context, and provide for fair, clear, simple and low-cost mechanisms for monitoring, enforcement and conflict resolution. Finally, the right of the community to self-govern should be recognised by higher-level authorities.

Aspiring to provide a comprehensive analytical tool to delineate commons in its plurality, Ostrom (2009) developed the Social-Ecological System framework (SES). The bottom line is that actors are bounded-rational individuals making decisions about their CPR in a complex, dynamic, culturally imbued, social context. So, SES distinguishes various components and levels of analysis aiming to elucidate the constituent elements, relations, interactions and outcomes of a commons institution. In particular, it identifies *Actors* that extract *Resource Units* from *Resource Systems* developing appropriate arrangements within the respective *Governance Systems* in the context of *Related Ecosystems* and the wider *Social, Economic and Political Settings*. These together determine the matrix of *Focal Action Situations* where *Actors* in specific positions choose actions triggering patterns of *Interactions* that bring about *Outcomes* of all kinds (material or immaterial, including decisions, rules and institutions) which are evaluated and obtained feedback on to the system (Figure 1). Within each of these first-level analysis elements, there is a checklist of lower-tier qualities (independent variables indicating causal relationships with items of interest), which can be fully customised (expanded, discarded, etc.), allowing great flexibility in choosing the exact factors to be included (Ostrom and Hess, 2007, 2011).

It should be noted that SES acknowledges the multiple, different but interlinked, layers within a *single* commons, highlighting the multiplicity of (a) the related common goods, (b) the roles/positions, rights, obligations and arrangements developed, (c) the stakeholders performing these roles, and (d) the governance structures set (Hinkel *et al.*, 2015). This facilitates analysis in a holistic, systemic and dynamic way. Holistic in a sense that, while it enables to focus upon certain elements (by temporarily 'bracketing' others, i.e. momentarily relegate them to the periphery of the attention), it seeks to delineate the pattern of relations and emergent qualities of the system as a whole; systemic because it maintains that these elements which make up the 'holon' (whole) are dialectically interlined and can be truly comprehended only in terms of the latter; and dynamic because it perceives the system as intrinsically fluid, open and evolving due to internal dynamics and interactions both among



Source: McGinnis and Ostrom (2014: 34)

Figure 1. The SES framework.
Source: McGinnis and Ostrom (2014: 34)

parts and between the whole and its environment. Such a tool is particularly useful for the case at hand, because it enables not only to elucidate the components of the Stagiates commons but also to comprehend their connections and the complexity of the whole institution placing it within the ‘big picture’ of crises, reforms and dialectics of institutional change.

The Stagiates commons

Based on the Ostromian-institutionalist methodology, this section explores the interplay between formal and informal institutions focusing on Stagiates commons, a 350-years-old local institution of water governance that has been abruptly disrupted by the municipal authorities implementing the 2010 administrative reform. To this end, the study utilises both secondary information, collected mainly from print and internet media (including social media) and official publications, and primary information, collected through semi-structured interviews with representatives from the community and the municipal authority in charge, informal discussions with residents and an online survey open to all inhabitants of the municipality (discussed in section ‘Peoples’ views’). Interviews (and discussions) were conducted in January 2021 to corroborate the Stagiates storyline we produced based on secondary information and to elucidate unclear issues and participants’ views and attitudes regarding the resource, its governance and the community–municipality confrontation. Structured around these themes, questions were open-ended, adopting a flexible protocol that allowed participants to express their views in an informal and conversational manner. Each interview of four key community members lasted a couple of hours; it was recorded, transcribed and analysed contextually. The relevant municipal authority, i.e. the Municipal Water Supply-Sewerage Enterprise of the Enlarged Municipality of Volos (DEYAMB), allowed one interview (despite our request for more) with a high-ranked official, which lasted half an hour and was not recorded (as requested), but at a later time



Source: National Centre for Social Research, own elaboration

Figure 2. Stagiates after the 2010 reform.

Source: National Centre for Social Research, own elaboration

DEYAMB provided us with a document commenting on most of the issues that were to be raised in the interview. In both cases, there had been follow-up contacts with the participants in which we clarified issues, filled in gaps and verified the collected information.

The section provides an overview of the backstory and the events of the community–municipality confrontation, followed by the results of the public-opinion survey and the SES analysis which serves to consolidate the Stagiates case as a commons institution, assessing its role, functionality and legitimacy.

The confrontation

Stagiates is the smallest of the four villages that comprise the *Portaria* suburban municipal unit of Volos extended municipality (Figure 2), with 121 registered inhabitants, half of which live there throughout the year. The inhabitants have a *special* (cultural, affective, cognitive and behavioural) bond¹¹ with the spring *Kria Vrasi*, which constantly for more than 350 years has supplied the settlement (Andrianopoulos, 2020) with around 480–600m³ of water a day, more than enough to meet the needs of the residents (Community, 2021; DEYAMB, 2021). Until recently, the management of the spring and the supply network was in community hands, officially represented by the Stagiates Commune Council.

The administrative reforms of 1997 (Kapodistrias Plan) and 2010 (Kallikratis Programme) transferred the authority of water management from the community to larger administrative units, triggering situations that upset Stagiates' stability and way of life (Figure 3). The first event dates back to 2005, when the works of the then municipality of Portaria for a backup water supply network bypassing the spring brought the community and the respective authorities into confrontation (Community, 2021). A few years later, in 2009, the Mayor of Portaria sought the consent of Stagiates Commune Council to privatise part of the spring water. Residents reacted, the proposal was rejected thrice and the Mayor finally abandoned the plan (Community, 2021). It should be mentioned that the residents' reaction was organised into a grassroots movement called APODRASIS (Independent Pelion Action Group in Stagiates), which received support from other grassroots groups opposing water privatisation.

In 2010, the Kallikratis reform scaled up administrative consolidation merging nine neighbouring settlements into the enlarged Municipality of Volos, and transferring the authority of water management from all ceased administrative units (including Stagiates Commune) to DEYAMB. Adherent to

¹¹Several studies (e.g. O'Donnell et al., 2021; Strang, 2004) have shown that water is an element of the broader material-symbolic nexus, in that not only is a public utility and a productive resource, but also a medium around which a locality structures its social relations and reproduces its culture, arguing that this cultural dimension is an important reason for communities to maintain a critical role in water governance.

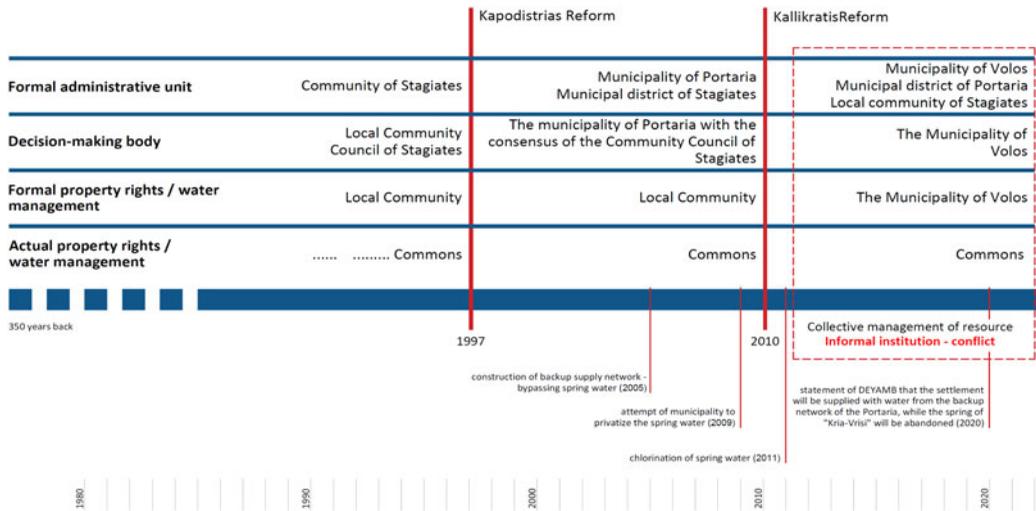


Figure 3. Timeline of the Stagiates water governance regime. Source: Own elaboration

its formal responsibilities and authority and invoking public health reasons, DEYAMB decided in 2011 to chlorinate the Stagiates water supply, although according to the legislation, chlorination is not mandatory for settlements of less than 3000 residents, which (if they wish) can apply other water disinfection methods. This unilateral action met the unanimous opposition of Stagiates that objected DEYAMB’s abrupt and unconsulted decision, underlining the negative effects of chlorination on water quality and human health (Shinde and Apte, 2020; Villanueva *et al.*, 2003). First the community reclaimed its status to self-manage their resource and when this was rejected by the municipality, it escalated reaction through a series of civic actions, such as awakening campaigns, petitions and organised protests, fundraising, recruitment of prominent public figures, lobbying, close monitoring and intervention in municipal council meetings, filing complaints (up to the national parliament), even disabling the chlorination facility, and most recently taking legal action against the Mayor. The Mayor’s response was fierce; he resorted to insults, verbal attacks and affronts and on 5/6/2020 he personally went to the settlement, accompanied by the police and the media, and changed the locks of all the public buildings (including the school, the library and the community centre where the community held events and assemblies) and threw away the belongings kept inside (Vittas and Georgakopoulos, 2020). Notably, shortly before this event, DEYAMB, based on a new Master Plan (which still remains unpublished), announced that it will terminate the Kria-Vrissi supply, to water the entire settlement through the Portaria network. In turn, the community Assembly¹² repudiated their own elected representative in the Municipal Council, declaring its authority as the only empowered decision-making body of Stagiates (Andrianopoulos, 2020).

In conclusion, a few key points should be noted. First, an intense public debate and civic actions have been organised across the country opposing the government’s commitment to privatise public utilities, especially water supply, in compliance with the neoliberal reforms imposed by the troika (Bieler and Jordan, 2018; Pempetzoglou and Patergiannaki, 2017). Second, as argued by both sides, the water quality constitutes a crucial point of the dispute. DEYAMB (2021) maintains that, according to measurements it holds, the water appears contaminated and possibly unsafe to consume (and so of low quality and value), the enterprise is liable to make it safe, and chlorination is the most appropriate

¹²The community Assembly emerged after the abolition of the Commune Council as an informal governance institution representing the entire community of Stagiates (Community, 2021).

method to do so. The community (2021) contests the reliability of DEYAMB's measurements (based on its own measurements), arguing that the water quality is excellent and the few, occasional, cases of measurements' higher values were due to delays in, its otherwise meticulous, maintenance of the network. Furthermore, it asserts that these allegations of contamination are part of the municipality's strategic plan to appropriate and exploit-privatise 'their water', as recent public statements by both DEYAMB's president and the Mayor have made apparent (Giannopoulos and Papantoniou, 2020; Vittas and Georgakopoulos, 2020). In any case, DEYAMB's claims of water's low quality come at odds with the fact that there had been initiatives to commercially exploit the resource by the Prefecture, the Commune authorities¹³ and more recently by Portaria's Mayor.

Third, authorities' attempts to privatise Stagiates water played a crucial role towards the mobilisation, politicisation and self-empowerment of the community that gave rise to both APODRASIS and the community Assembly. In a sense, the community's water resource became anew¹⁴ a focal point of local reference, pride and solidarity that rallied both the residents (the users) and a wider circle of sympathisers in the light of the hardship, frustration and anger that the national crisis brought. As such, the governance of the water resource constituted (and still is) a pivotal point around which the community organised a series of events (environmental, cultural, social, political, some of which are carried out on a regular basis) that not only have changed life in Stagiates for the better (Community, 2021; Zargani, 2020), but also enhanced the social capital, self-esteem, solidarity and collective ethos (in a sense giving rise to new social values, mentality and behavioural modes), which represent new common goods nourished by the community, constituting a rich cultural-knowledge commons.

Peoples' views

An online survey open to Volos inhabitants has been set up in order to assess the social support and credibility of both the formal water-management authority (DEYAMB) and the community. Due to the COVID-19 pandemic lockdown, the questionnaire was disseminated digitally (through social media and e-mail lists) to formal and informal networks (including scientific and professional bodies and social organisations) in a virtual snowball sampling manner, from 28/12/2020 till 25/3/2021. A total of 532 valid responses were collected, which for a population of 136,796 adults and a 95% confidence level corresponds to a confidence interval of 4.24.

The respondents' profile is typical and reflects the characteristics of Volos' population. The sample was almost equally split between males (48.12%) and females (51.50%), aged between 19 and 76 years (average of 38 years), and of various educational levels, from primary to postgraduate, with the majority having a university degree (44.67%) or above (33.27%). Regarding employment, 28.95% are civil servants, 23.31% work in the private sector, 17.67% are students and 19.74% are self-employed, while the rest are unemployed, retired, rentiers, local government employees and housekeepers. The average household size is three people, and the majority (50.94%) have declared a medium-income level. Finally, regarding political ideology, the sample was spread across the whole left-right spectrum showing a slight skewness towards the left.

Table 1 presents the results. The first question asked people if they are aware of the Stagiates case. In total, 82.89% responded that they knew about it, of which 34.77% had a full picture. Very few (6.39%) had never heard of it, indicating high public awareness, a result of the long dispute, regular media coverage and community actions. The next two questions assessed public views on alternative water governance regimes for small settlements. The question on who should manage the Stagiates water showed that the vast majority of respondents (86.28%) are in favour of some degree of community

¹³Specifically, in the late 1980's the prefectural authorities launched the development of a spring-water bottling plant, which was finally not completed due to budget overruns. A few years later, the Stagiates Commune authorities initiated to sell a spring-water quota to a private bottling company, but the project was cancelled by the community when it was felt that it would cause a water shortage in the settlement.

¹⁴In a sense that apart from its function as a means through which various social relations are structured, it has acquired a symbolic dimension, signifying the identity of the community and its struggle for self-empowerment and emancipation.

Table 1. Survey results

Q1: Do you know what dispute between the Stagiates residents and Volos Municipal Authorities is about?										
Yes, fully: 34.77%		Yes, but not fully: 48.12%			I have heard something: 10.71%			No: 6.39%		
Q2: Who do you think should manage the spring water of Stagiates?										
DEYAMB: 13.72%		DEAYAMB, with Stagiates (decisions by DEAYAMB): 16.35%			Stagiates, with DEYAMB (decisions by residents): 46.24%			Stagiates residents, in way see appropriate: 23.68%		
Q3: Water supply in small communities is best managed by:										
Municipal authorities: 21.05%		Independent management body: 18.42%			Private company (privatisation): 0.56%		Local community: 37.78%		Whatever inhabitants choose: 22.18%	
Q4: How do you meet your daily needs of drinking water?										
Tap water: 17.48%		Tap water with low-cost filter: 17.48%			Tap water with high-quality filter: 17.86%			Bottled water: 47.18%		
Q5: Evaluate your satisfaction of DEYAMB services: (<i>Mean: 4.13, Median: 4</i>)										
<i>0 (least)</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10 (most)</i>
8.83%	10.34%	10.53%	11.65%	11.47%	15.79%	12.22%	9.96%	6.20%	1.32%	1.69%

Source: Own elaboration.

involvement. In particular, 46.24% believed that management should be entrusted to the community in collaboration with DEYAMB; 23.68% replied that should be up to residents to decide; 16.35% indicated that DEYAMB in cooperation with the residents should manage the resource; and 13.72% stated that DEYAMB alone should undertake this role. The third question regarded water management alternatives for small communities generally. Almost six out of ten respondents indicated that local communities should have a decisive role in water management; 21.05% opted for local authority management, 18.42% chose management by an independent organisation under public control, and 0.56% indicated privatisation as the preferred alternative. Overall, very few people felt comfortable with DEYAMB to have full control, indicating consumers' low trust (also reflected in that those skeptical of community management opted for a state-controlled management body). Interestingly, one in five were in favour of empowering the community to make the final decision and hardly any supported privatisation. The last two questions examined DEYAMB's credibility. Question four asked how respondents cover their daily water needs. Almost half buy bottled water; 17.86% drink tap water filtered through a high-quality filter and 17.48% use lower-cost filters; and only 17.48% drink straight from the tap, making clear that there is an issue with Volos' water. The question of how satisfied people are with DEYAMB's services showed a relatively normal distribution of responses, skewed somewhat on the less-satisfied side of the scale (mean: 4.13/10; median 4/10).

Overall, we see that most of the respondents are well aware of the Stagiates case, given that it has concerned the local society for more than 15 years now and the community has communicated the issue extensively through a multitude of means and civic actions. Regarding DEYAMB's esteem, responses indicate low recognition, given that service appreciation is medium to low and few people trust drinking water straight from the tap, with the majority (even those of lower income) buying bottled water.¹⁵ Finally, as regards the water regime considered most appropriate for small settlements, people trust local communities (especially when there is sufficient communication, as is the case of Stagiates), or at least leave the decision in community's discretion, highlighting once again the low trust in (and credibility of) municipal institutions in taking full control over water supply. To some extent, this relates to the public's distrust of state institutions (see section 'Public administration and water governance') but also specifically of the municipal enterprise, which has often been accused of financial scandals and mismanagement, recently bringing it to the brink of bankruptcy (Hanou, 2021). It is also noteworthy that people are *en masse* rejecting water privatisation, which was to be expected given the devastating impact of the Crisis and the subsequent neoliberal measures (of privatisation and marketisation) on individual households.

The SES analysis

Despite its longevity, social support, community engagement and apparent effectiveness, the Stagiates commons is not officially recognised (or even tolerated), raising uncertainty, unrest and conflicts that threaten the resource, the cultural/cognitive common goods the community produces and the settlement's life. The current section applies a tailored, to Stagiates case, SES framework (see Figure 4) to outline the commons' constituents and to consolidate its role, significance and place in the institutional terrain. Pivoting on the *Focal Action Situations* the discussion addresses respectively the *Social, Economic and Political Settings* context, the *Related Ecosystems* affected, the *Resource Systems* and the *Resource Units* concerned, the key *Actors* involved and the *Governance Systems* formed.

The focal action situations

The *Focal Action Situations* concern the efforts of Stagiates to retain self-governance, or at least a decisive role in the management, of the common good after the changes of the Kallikratis reform.

¹⁵As Giannopoulos and Papantoniou (2020) report, the statistics of bottled water suppliers show that Magnesia (Volos' prefecture) accounts for more than 50% of the total consumption of bottled water in the entire Thessaly region, ranking it second in Greece (after Thessaloniki) in absolute consumption and first in per capita consumption.



Figure 4. Stagiates' SES framework (in *italics* are the discussed features, and in **bold** those with the strongest impact).

This essentially altered the property rights' allocation over local resources, privileging formality at the expense of bottom-up empowerment and informal workability. Based on its enhanced responsibilities and powers, and following its standard/formal procedures, DEYAMB (2021) decided on its own to chlorinate the water supply of all new municipal units under its jurisdiction. Although DEYAMB's concern and legal responsibility for public's health and equal treatment were among the reasons for its decision, the choice of the specific disinfection method was based on cost-effectiveness, since chlorination is the typical, most recommended and used method (meaning no information/transaction costs in exploring other options) with lower installation-operating costs compared to alternatives (White, 1999), and the company's relevant experience and expertise enables it to achieve economies of scale. Thus, chlorination was virtually the default blueprint to be followed uniformly for precautionary reasons (i.e. even if there was no contamination issue), which appeared to be the case in Stagiates, where, as DEYAMB (2021) acknowledged, the available measurements do not firmly establish that there is a substantial problem.

The chlorination's low cost, compared to the higher investment and monitoring costs of alternative methods, was also highlighted by the Community (2021) commenting on DEYAMB's decision. It argued also that this horizontal, one-size-fits-all solution is less suitable for small settlements like theirs, because it degrades water quality with possible negative health effects, a risk they are not willing to take, since they have already invested in an alternative disinfection method that works. Furthermore, it was maintained that DEYAMB's action to take control of water governance without any prior deliberation with the community was a strategic act to decouple it from its 'reference point' in order to eventually privatise the water. So, in essence, despite DEYAMB's probably multiple motives and drivers (e.g. public duty, adherence to formality, legal liability, display of power/authority, privatisation plans), the act was construed as an assault on the community, the commons and the CPR. This is because the spring is not simply a common resource, but a symbol of the community's solidarity, identity and culture, the flag of its long emancipatory course,¹⁶ and on these grounds cutting the community off from the spring and its water imperils the resource but mainly the community as a socio-cultural entity, with a series of collateral damages in the social capital, life, demographics and the economy of the settlement.

As Community (2021) stated, all these arguments were repeatedly and persistently brought up to the municipal authorities who refused to discuss the issue. In response, the community organised a series of civic actions to mobilise all citizens and prevent the consolidation of the new regime. Given the publicity of the matter, and the potential political cost, the municipal authorities contacted the community (in 2012) promising that they will abandon chlorination for a UV system (yet contractual obligations bind them to complete the work) and initiate public consultation with the other settlements (Apodrasistagiates, 2012). No further communication or such a consultation was ever made, leading the Community (2021) to conclude that the municipality has no real intention to reach a workable solution and the contact was an ostensible pretext to lessen social pressure and community's spirit, further undermining the residents' already broken trust to the authorities. Therefore, the issue of Stagiates' water remains today alive and well, at least from the community's perspective, and the end of COVID restrictions is expected to lead to a resurgence of action.

The social, economic and political settings and the related ecosystems

The *Focal Action Situations* have been informed by the wider *Social, Economic and Political Settings*. As mentioned, since 2009 Greece has suffered the longest and deepest recession of the post-war era, triggering public resentment, anger against the political class and social and political unrest,

¹⁶According to the community, this was driven by necessity rather than political ideology or stance, as historically the settlement's small population resulted in higher-level administrative authorities paying little attention to local problems and needs. This led the residents to take matters into their own hands, developing a strong cooperative/solidarity ethos. The argument seems plausible and partly explains why neighbouring settlements, which are all 'critically' larger, have had 'problems of collective action' despite facing similar challenges. They received much more support from the respective authorities, essentially undercutting their potential for collective agency.

generalising the Crisis on all life fronts (Vasilopoulou and Halikiopoulou, 2015). This resulted in a series of mass protests, riots and other (almost insurrectionary) acts, as well as numerous bottom-up solidarity initiatives and networks (e.g. social medicine clinics, soup kitchens, etc.) largely organised through the use of information and communication technologies (ICT). In the political front, people turned to non-conventional (extreme, populist) forms of political organisation, questioning the political regime and requiring more participatory and democratic governance in all administrative levels.

In turn, the Stagiates commons connects to other *Related Ecosystems*. These concern the irrigation ecosystem that extends beyond Stagiates providing freshwater to local (mainly small-scale, family-based) agriculture and arboriculture, and the human ecosystem of the nearby settlements, which face similar challenges but residents have been much less civically engaged. The control and pricing of all local water resources by DEYAMB, which is part of its Master Plan for rationalizing consumption (ERT, 2019), will raise the cost of farming, husbandry and rural living, having a negative impact on the production, economy and therefore, the demographics of all settlements (let alone its detrimental effect on residents' cohesion and trust to the local state). Correspondingly, the maintenance of the Stagiates commons will provide a point of reference for other communities to follow and facilitate generation and spread of collective knowledge to similar initiatives.

The resource systems and the resource units

The *Resource Systems* concern the spring and the local (stand-alone, community-developed and maintained) water-supply network around which the community bands together to (re-)produce its socio-cultural, knowledge-kind common goods. The size of the water system is small, the boundaries are clearly defined and the spring locates next to the settlement (at about 700 m crow-fly distance). The supply of water (*Resource Units*) is stable throughout the year while historical continuity makes the system dynamics sufficiently predictable. The water, long considered to be of excellent quality (Kordatos, 1960) and so of high value, is freely distributed to all households and to three public fountains (frequently used by non-residents who go to Stagiates exclusively to get drinking water; APODRASIS, 2020; Community, 2021). Based on long-established practice, there are no water meters on properties and all households share equally the costs of water provision (mainly for maintenance) regardless of their consumption, or the size of their property or household. The management of the water resource constitutes a pivotal point around which the community organises its social and cultural life, fostering a collective/solidarity mindset and behaviour.

The actors

The key *Actors* are the residents/community and DEYAMB. The former, few in number, have similar socioeconomic characteristics, most have lived there for generations and have extensive knowledge of the resource system and experience in collective action. As such, the community presents high levels of trust, solidarity and social and cultural capital. With the 2010 reform, the community forgone its formal administrative status (Commune), elected representatives (Commune Council) and the right to self-manage its resources, allowed to elect only one representative to Volos Municipal Council with limited capability to serve its interests. Therefore, the community created the community Assembly, an informal institution where residents meet in person and on equal terms discuss and make decisions on all matters of collective interest. Given the community size and proximity, assembly meetings and agenda are set during daily social encounters, and the relevant info circulates both through notices placed in the village-square noticeboard, and digitally, through smartphones and social media, allowing for further deliberation and debate. The Assembly does not have a legal form, a board or a chairman and the person who coordinates the meetings is elected each time. Decision-making seeks consensus and is postponed when opinions differ substantially. Since the Assembly lacks formal status, all economic means to implement its decisions (e.g. get accredited measurements of the water quality, do maintenance works, conduct an event, cover litigation costs, etc.) are sought each time required, with residents contributing money, labour, professional services, materials or anything else needed, in an equitable and fair way. In turn, DEYAMB is a non-profit, private-law, municipality-owned

company founded in 1979 (Law 890/1979) and amended in response to subsequent legislation (L.1069/1980, L.3852/2010). Headed by 11 Board members appointed by Volos Municipal Council, it aims at the rational management of water resources to meet equitably the needs of the enlarged Municipality with quality water (Government Gazette 1311/2022).

An offshoot of the community is the grassroots collectivity APODRASIS, a distinct, more flexible, agile and porous entity, that supports the Assembly in implementing its decisions and also engages in other social advocacy matters not specific to the settlement (e.g. environmental issues). APODRASIS consists of a cohesive core of highly committed and active community members plus other local supporters and secondary participants, such as solidarity groups, social activists, intellectuals, artists and political figures of national stature.¹⁷ The group has accumulated collective and civic experience and high levels of solidarity and mobilisation. Members extensively use ICT to communicate, share information and interact with each other and with externals. In terms of organisation, APODRASIS is open, informal and horizontal; anyone who embraces its values and purpose can join (and leave at any time), there is no formal statute, leadership or any hierarchical structure, and decisions are taken collectively following deliberative, direct-democratic procedures (Community, 2021; Giaka, 2019). The main issues on its agenda are the improvement of locality's quality of life and wider societal matters. Thus, apart from the water supply issue and civic actions in general, the group (co)organises various socio-cultural, ecological and political events, mobilizing residents and nearby communities (Zargani, 2020).

The governance systems

The 2010 reform has brought structural changes to the *Governance Systems*, setting up a more centralised, 'bureaucratic' and legalistic regime. All water governance functions and property rights were transferred from the community to Volos municipality, granting the municipal enterprise the power to decide unilaterally on all water-related issues within its jurisdiction. In this respect, DEYAMB is called upon to serve the interests of the municipal authorities by catering for the welfare of the whole municipality rather than each individual settlement (DEYAMB, 2021). Furthermore, DEYAMB is obliged to perform under a tight budget and a formalistic, bureaucratic and rigid framework that leaves little space for flexibility and discretion (in the sense that any derogation from Law can be seen as an infringement, placing legal responsibility on the specific person in charge). This bureaucratic rigidity, adherence to formality and legality, focus on the wider public 'interest' (at the expense of each community's) and content with the 'standard' mediocre quality, on behalf of DEYAMB (contrasting to community's flexible informality, functionality, genuine concern for their locality, deep resource knowledge and long self-governance experience), fuelled the community-municipality dispute and led to the development of a parallel, unofficial, bottom-up commons institution which effectively resumed water governance from the outset of the reform (Community, 2021).

Conclusions

This paper has sought to illuminate the complex dialectics between formal and informal institutions and the role community needs, norms and values play in meaningful institutional change. Our approach steers away from the neoliberal narrative that imposing a proper mix of formal, global-standard institutions is sufficient for development, stressing the need to unpack institutional change by looking closely at the interplay between top-down–bottom-up and formal–informal institutions. Since these dynamics do not exist *ex nihilo*, or out of context, the paper is drawn on Stagiates – a small community in central Greece that has managed water supply as a commons for some 350 years – to illustrate the gravity of informal institutions in institutional reform, especially when it is imposed coercively under crisis/emergency conditions and without due regard to the local context

¹⁷Raising awareness through various mass media (including national television) and recently bringing up the issue in the Greek parliament.

and manners. Our perspective in no way advocates that all local, culturally imbued, informal institutions should be retained. It simply states that institutional reforms should not ignore the prevailing, bottom-up non-formal arrangements and discard *a priori* the local 'working rules' and institutions that prove to be functionally efficient, in the name of market efficiency and global convergence. Accordingly, law provisions should leave space for bottom-up adjustment and flexibility.

Moving on to the case study findings, it became clear that water-supply management is a complex, multidimensional, socially and politically sensitive and debatable issue that has extensively occupied the public and academic discourse (*inter alia*: Bakker, 2008, 2010; Bieler and Jordan, 2018; Chenoweth, 2004; Renzetti and Dupont, 2003). Stagiates constitute an exemplary case because it concerns a long-established water commons that top-down reforms tend to transform it from a functional socially credible institution into a formalist, bureaucratic, managerial process (governmentalisation), if not a market-laden private utility (privatisation), with potentially detrimental effects to the community, the resource and the wider area. Before the 2010 reform, the property rights' configuration was enabling the community to self-govern its water resource in a sustainable, effective and beneficial way. Exogenously imposed institutional changes passed the common resource to municipal authority which, compelled by (or entrenched behind) statutory provisions, defies the sociocultural-symbolic function of the resource to rigorously enforce the required formality, setting off social unrest and conflict. Obviously, the problem lies in the rigidity of the law that leaves no room for reaching mutually acceptable solutions, possibly triggering opportunistic, rent-seeking behaviour on the part of the formal-property-rights holder. The dismantling of a functional and effective 350-year-old commons not only cuts the community off from a resource that it has invested in and depends upon, but also jeopardises its social relations, social capital and the micro-culture that makes it 'a community', with a series of potential collateral damages to the other common goods (cultural and knowledge related) that it produces, as well as to the life quality, economy and demography of the settlement. Undoubtedly, the implications for the resource itself are equally damaging; the commons literature has extensively demonstrated the detrimental effects of enclosures on the CPR and common goods in general. Given the complex, multidimensional and interconnected nature of commons, the loss of Stagiates commons is likely to have multiple and profound repercussions beyond the specific community, in terms of missed opportunities for generation and diffusion of collective knowledge, networks, synergies, ethos (of collaboration, solidarity, sharing, etc.) and other transformative forces.

While a long-term solution requires communities and society at large to highlight the issue pressing for statutory changes, in the short to medium term, compromises should be sought by exploring the available options allowed by law (e.g. on water disinfection for small communities). To this end, a solution that probably reconciles the Stagiates' needs and interests (in the sense that it does not cut them off from their valuable – in material, social, cultural and symbolic terms – common resource), with DEYAMB/municipality's public duty and legal responsibility (to protect the health of all citizens in an equal, fair, consistent and cost-efficient manner), and is in line with the *vox populi* (at least as our survey has shown), would be the formal authorities to grant the community a degree of control over water governance. This may involve conferring (informally) property rights to the community so that it can carry out operations either autonomously or in cooperation with the municipality (e.g. in the form of co-production and co-management), and have a strong voice (e.g. veto rights) in critical governance decisions (such as the choice of the disinfection method), in such a way that the community takes full responsibility for its decisions. However, it is questionable whether the relevant formal authorities in Greece embrace such a political and legal culture that takes the needs and will of communities into proper consideration and allows for meaningful deliberation and inclusive cooperation.

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