Technologies of water governance: an eco-governmentality perspective

Leonardo Rinaldi
School of Management, Royal Holloway University of London (UK)

Emilio Passetti
Catholic University of Milan (Italy)

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Abstract

Purpose – The purpose of this paper is to advance the understanding of the relationships between nature and society by focusing on water. The objective of this paper is to examine the role of water in modern society and how to is managed and controlled by discussing how and to what ends water is governed. It is argued that the provision of water management and governance services by organisations can be viewed as being a specific act of governing populations.

Design/methodology/approach – The paper presents a case study examining the provision of water governance by an Italian water management organisation in a distinct socio-ecological context. It employs a combination of in-depth interviews with the organization managers and comprehensive analysis of internal data made available by the case study organization and other related publicly available documents. The processes through which practices of account-giving and governance relate to each other are analysed with specific reference to water and conceptualised using an eco-governmentality theoretical framing.

Findings – The case reveals that water governance emerges as an expression of power rendered through the means of specific visibilities, rationales of government and mechanics of identity creations, acting as governing means that condition water use and practice. The case also unveils the practices and innovations that make (in)visible the impacts and interconnections of humans with water.

Originality/value – The paper introduces eco-governmentality theoretical framing to the accounting domain. It also investigate water governance practices in a unique socio-ecological context. By doing so, it unveils some challenges and tension in the governing process of water. The observed emergence of new ways of using accounting technologies and producing accounting narratives outside the domain of the accounting function and within a distinct socio-ecological context has important implications for understanding the role of accounting.

Research limitations/implications – The paper relies on a qualitative dataset, implying that when seeking to generalise or apply the findings to different contexts or organizational fields extensive care is needed. Additionally, the research is based on a detailed investigation in a distinct socio-ecological context that may limit its wider applicability. In spite of that, it adds to the growing academic literature on governance of water with particular reference to the broader socio-ecological implications.

Keywords – Eco-Governmentality, Water, Socio-ecological relations, Ecological rationales, Environmental sociology, Sustainability, Analytics of governance.

Paper type - Research paper.
1. Introduction

There is a growing global concern that current growth model coupled with the misgovernment of natural resources could ultimately put human development at risk (WCED, 1987; Gray and Bebbington, 2001; Rockstrom et al., 2009; Bebbington and Larrinaga, 2014). In response to this concern, the last two decades have seen the emergence of research that call for and provide with multiple accounts of ecological impact (Maunder, 1991; Gray, 1992; Cooper, 2004; Hopwood, 2009). As a result, a flourishing empirical and analytical literature that explores the entwined relationships between humans, organizations and their ecosystems has risen, indicating an increasing awareness of ecological issues (Hines, 1991; Shrivastava, 1994; Hopwood et al., 2010; Castree, 2013).

According to the OECD’s (2012), among the most urgent ecological challenges the global community will need to address there are the socio-economic developments, climate change, biodiversity, health, environment and water. While academic contributions to these ecological pressures have a long history in accounting research (Hopwood, 2009; Frances and Bettina, 2011; Francisco and Heather, 2011; Jill et al., 2011; Jonathan and Frieder, 2011; Markus and Suzana, 2011; Michaela et al., 2011; Patty and Carolyn, 2011; Stuart and Graham, 2011; Dennis van and Jacob, 2013; Gunnar and Kristina, 2013; Helen, 2013; Javed, 2013; Mark and Ben, 2013; Michael John and Jill Frances, 2013; Thomas, 2013; Ascul, 2014; Freedman and Park, 2014; Giner, 2014; Larrinaga, 2014) water related studies are rapidly gaining considerable prominence within researchers (Kurland and Zell, 2010). Echoing an early statement by the IPCC (Lewis and Russell, 2011), the UN-Water (2012) highlighted the centrality of water issues for sustainable development and their relation to a number of global socio-ecological challenges by explaining that:

“Water serves as the fundamental link between the climate system, human society and the environment. Climate change is severely impacting the hydrological cycle and consequently, water management. This will in turn have significant effects on human development and security” (UN-Water, 2012).

The last fifteen years have seen significant development in research on accounting and accountability systems for the management and/or reporting of water related issues (Jean, 1997; Abu Shiraz et al., 2007; Keryn et al., 2012; Eija and Matias, 2013; James, 2013; Egan, 2014a, b). Academic studies regard water as a critical issue in the enactment of sustainable development (Lewis and Russell, 2011). Within the water accountability domain, some researcher has risen the question of the existence of ‘water culture’ (Bijker, 2012) that both shapes, and is shaped by social forces. In this context, on the ground of the increasing importance of sustainable water use, research has investigated water allocation, (Frame and Russell, 2009), the emergence of water efficiency discourse (Egan, 2014a) and corporate water disclosures (Hazelton, 2013). Other studies, instead, have looked at water concerns addressing stakeholder management (Ogden and Watson, 1999; Harvey and Schaefer, 2001) and participation (Lennox et al., 2011) or policy initiatives like, for example, water industry privatisation (Ogden, 1995; Ogden and Anderson, 1999; Rahaman et al., 2007), regulation (Chalmers et al., 2012) or institutionalization (Moore, 2013; Egan, 2014b) and gender equality approaches to development (Unesco et al., 2015a).

Within the field of water governance (Bakker, 2012; Bijker, 2012; Pritchard, 2012), only a few academic studies seem to have looked at the relationship between water and the broader notion of power (see for instance, Marquardt and Russell, 2007; Russell and Frame, 2013). In particular, while the way in which accounting information connects with governing power is a question that has been variously addressed and conceptualised in the accounting literature (Miller and O’Leary, 1987; Armstrong, 1994; Miller, 2001; Neu, 2006; Russell and Thomson, 2009; Lapsley et al., 2010), little research seems to have looked at the role of accounting within practices of water governance in the sustainability of the socio-ecological system.
In addressing this paucity research the main aim of this paper is to deepen the theoretical and empirical understanding of the relationships between nature and society by focusing on water. The objective of this paper therefore is to examine the role of water in modern society and how to is managed and controlled by discussing how and to what ends water is governed. As a result, the practices and innovations that make (in)visible the impacts and interconnections of humans with water are uncovered, examined and critiqued.

The paper aim is addressed through an in-depth case study investigating and analysing the practices through which an organization operating in the water management industry in Italy (code-named TAP for confidentiality reasons) sought to implement to condition water use and practice. The case setting was chosen because firms such as TAP dominate the socio-ecological system in which Italian water management organizations operate. The paper unveil how water governance emerges as an expression of power rendered through the means of specific visibilities, rationales of government and mechanics of identity creations, acting as governing means that condition water use and practice. In doing so, it aims to make two key contributions to the literature.

First, the paper provides a theoretical contribution by suggesting a refined conception of governmentality to frame the analysis of the relationships between nature and society – particularly the governance of water within a socio-ecological system. The paper draws upon three bodies of research. The first is the Foucaulttian literature on governmentality as this provides useful insights into the analysis of modern power and the role of calculative practices in the construction of disciplined and docile subjects (Foucault, 1979, 1991). Secondly we draw upon the theoretical insights of Mitchell Dean, who has introduced a novel perspective to the analysis of power. Dean offer a holistic view of the “conduct of conduct” by combining the different analytics governing can take – visibilities, subjectivities, ways of thinking and ways of acting –to secure the governance of subjects (Dean, 2009, 2013). Finally we connect these two bodies of work to environmental sociology, a literature that describes and analyses the constitutive elements of ecological rationales of government.

We argue that ecology represents an effective lens through which we can highlight and investigate the interconnected set of logics and processes to be managed through a disciplinary microphysics of power (Miller and Rose, 1990; Foucault, 1991, 2007; Dean, 2009, 2013). Ecological rationalities, in fact, problematise the planet as a dynamic field on which human and non-human actions are structurally interconnected thus providing novel insight into nature-society relationships (Redclift and Woodgate, 2011). Secondly, given the increasing focus of governments, NGOs, communities and business organisations being afforded to water state, use, management and consequences (PWC, 2011; KPMG, 2012; IPCC, 2013; UN-Water, 2014; WaterAid, 2014), the approaches to water governance are coming under increased scrutiny with claims that they may actually disable as opposed to enable environmental accountability (Liu, 2015; Unesco et al., 2015b). Therefore, developing an understanding of how interactions between water and society are constructed by organizations, has the potential to shed light upon impacts of accounting and accountability on the challenges to safeguard the socio-ecological systems (Tregidga, 2013). Also, unveiling the rationales of these processes allows a deeper understanding of organizations’ effort to influence the governance of water by providing detailed insights into how the materiality of water and the discursive constructs surrounding water play a role in shaping human perceptions, contributes to the construction of identities, subjectivities and specific notions of citizenship (Hellberg, 2014).

Second, at an empirical level this is to our knowledge one of the first study to engage in in-depth case-based empirical work examining the calculative rationalities and practices that made water an element of power in a particular socio-ecological setting. Specifically the study provides detailed evidence of how discourses of conservation, preservation, resource management, manifest destiny, environmental problem solving and sustainability materialise in a complex
system of governing means. Water is revealed as constitutive element of both selves and conducts through the development of plans, maps, statistics, risk assessments and policies and the introduction of ecological discourses centred on conservation, preservation, resource management and environmental justice. The paper also reveals how TAP constructs subjectivities of water in support of the developing rationales and how this process conditions water use and practice.

In doing so the paper refines the conception of governmentality in accounting research to examine the relationships between power and the emergence of practices of management of life, particularly the formulation of water accounting and management.

The remainder of the paper proceeds as follows. The next session illustrates developments of governmentality research and is presented with reference to the works of Michael Foucault and Mitchel Dean. It also unfolds the concept of eco-governmentality both in terms of the ecological rationales and specifics ecological analytics of governance. Following this the research method is then outlined and is followed by the case analysis. The final section discusses the case findings in the context of the theoretical framework and suggests some future research directions.

2. Theoretical perspectives on the governing of socio-ecological systems

This section proposes an eco-governmentality theoretical framework for understanding and analysing the paper’s empirical material from perspective of the governance of water by drawing from Foucault’s work on governmentality, Dean’s insights about the analysis of power and extant environmental sociology research. This theoretical refinement provides a greater explanatory potential of the case study that reveals firstly how water can be understood as governing means (Foucault, 2010a; Bakker, 2012; Dean, 2013) and secondly the rationalities and practices used by modern government regimes that seeks to govern socio-ecological systems. We argue, in fact, that ecology represents one of the emerging rationalisation of government in this century (Malette, 2010) thus providing an effective lens through which the interconnected set of logics and processes of regulation and normalization can be unveiled and investigated (Rose et al., 2006; Jeacle and Carter, 2011).

A note on the semantic used in this study is important. This research takes on issues of governing, biopolitics and power. These concepts are used in sociological senses relating to influence socio-ecological practices, rather than the political sense. As a result, we are interested in power insofar as it is involved in the creation of the subjects within the process of governmentalization of water.

It also needs to be clarified that this paper wishes to focus on a single domain of eco-governmentality. It is acknowledged that water governance practices are not the only sources of power and influence of organizations’ socio-ecological practices. The economic, environmental, social and political situations can be many and changing. Still, since this paper seeks to understand socio-ecological practices through the lens of eco-governmentality, rather than mapping out all sets of impacts the focus has been kept deliberately narrow.

Starting from the insights of Michel Foucault, and further integrating the ideas and terminology of Mitchell Dean, the paper argues that the ways in which water become subject of governance (Foucault, 2007) depend upon an understanding and analysis of ecological discourses embedded into specific visibilities, ways of thinking and acting and mechanics of identity creations within organisations (Dean, 2013).

Drawing on these ideas we propose an eco-governmentality theoretical framework to examine the role of water in modern society by discussing how and to what ends it is managed and controlled.
2.1 Governmentality as a configuration of power

The first body of research used to deepen the theoretical understanding of how and to what ends water is governed is based upon the concept of governmentality proposed by Michel Foucault (Foucault, 1991, 2007, 2010b).

The transition towards sustainability is often depicted in terms of programmatic aspirations of reform (Bebbington and Larrinaga, 2014). As such, it involves the mobilising of several practices and forms of knowledge. For this reason, employing a combination of ecological rationales and the analytics of government to investigate the practices and innovations that make (in)visible the impacts and interconnections of humans with water might be expected to provide useful insights.

Foucault analyses the vast literature on government and discusses the variety of forms in which government can take place during his lectures at the College the France delivered between 1977 and 1979 (Rose et al., 2006). In the context of his study an important intellectual advance is the analysis of how power is operated in modern society, with the conceptualization of government as relations of power (Foucault et al., 1991; Foucault, 2007).

The introduction of this concept is very important in that it helps distinguishing the notion of conduct from that of domination (Lemke, 2011). The act of government, therefore, can be understood as an exercise of power and a management of possibilities “that undertakes to conduct individuals throughout their lives by putting them under the authority of a guide who is responsible for what they do and for what happens to them” (Foucault, 2007, p. 471).

The notion of population and the mechanisms for ensuring its guidance represent one of the main concerns of Foucault's research of the genesis of political knowledge. Consequently, the specificity of this modern form of government consists in the reflections of the conditions, the objectives and the aims of government (Lemke, 2011). One element that marks an important development of Foucault’s theoretical understanding of power is therefore the distinction between the political form of government and the problematic of government in general. He defined government in general as the “conduct of conduct”, that is any form of activity aimed to shape, guide or affect the conduct of some person or persons (Gordon, 1991). The novelty of this perspective lies in the view that within governmental action power operates in terms of rationalisation and is directed to certain ends. As a result, government could be also understood as concerning private interpersonal relations involving some degree of control. Hence the site of governance does not necessarily originate from the State but can be the home, the public setting or the workspace. Indeed, the space comprising organizations and their stakeholders can also be included as plausible sites.

Within the types of conducts that characterize government, Foucault attempts to separate the notions of governmentality regarding it as “a strategic field of power relations in their mobility, transformability, and reversibility” (Foucault, 2005, p.252). Foucault defines governmentality as “the ensemble formed by institutions, procedures, analysis and reflections, calculations and tactics that allows the exercise of this very specific albeit complex form of power” (Foucault, 2007, p. 108). Accordingly, governmentality embraces both actions of governance and the rationales and beliefs implicit in those actions. Dean (2009) also describes this a form of power as being related to “any more or less calculated and rational activity, undertaken by a multiplicity of authorities and agencies, employing a variety of techniques and forms of knowledge, that seeks to shape conduct by working through the desires, aspirations, interests and beliefs of various actors, for definite but shifting ends and with a diverse set of relatively unpredictable consequences, effects and outcomes.” (p.18).

Accordingly “an analysis of governmentalties [...] is one that seeks to identify these different styles of thought, their conditions of formation, the principles and knowledges that they borrow from and generate, the practices that they consist of, how they are carried out, their contestations
and alliances with other arts of governing” (Rose et al., 2006, p. 84). The novelty of this perspective lies in the view that power operates in terms of rationalisation and is directed to certain ends. This means that governmentality is not just about how organizations behave but also about the discursive structure that renders their practices meaningful through the construction of particular objects or subjects of governance (Joseph, 2010).

The governmentalties that seek to define, maintain and transform the relationship between organizations and socio-ecological systems represent the main concern of this paper. Accordingly, the following section introduces Mitchell Dean’s analytics of government framework.

2.2 An integrated approach to the study of governmentality

An insightful conceptual perspective for understanding water management as a form of governance of populations has been advocated by Mitchell Dean (2009) who provide a theoretical model to the investigation of governmentalties (Russell and Thomson, 2009; Spence and Rinaldi, 2014). While several high quality studies within the accounting literature have addressed the mentalities of government (Miller and Rose, 1990; Rose and Miller, 1992; Miller and Rose, 2008) the foundation of power (McKinlay et al., 2012; Dean, 2013) and the development of governable selves (Miller and O’Leary, 1987; Johansen, 2008; Miller and Rose, 2008), Mitchell Dean’s analytics of government framework (Dean, 2009) has the potential to provide valuable insights for investigating the often invisible forms thinking and acting behind water governance, and the role this may play in fostering disciplinary effects based upon socio-ecological practices.

Dean (2009) characterises this approach in terms of “analytics of government” for the investigations of the specific conditions under which regimes of practices come into being, are maintained and are transformed. It is therefore distinguished from other theoretical approach in that it sets these regimes of practice at the heart of the analysis and seeks to ascertain their intrinsic logic seeking “to concentrate upon the specific ways of governing and conducting ourselves” (Dean, 2009, p. 30). Dean’s framework analyses these practices along four interlinked yet relatively autonomous dimensions - (1) fields of visibility analytic; (2) techne analytic; (3) episteme analytic; and (4) identity formation analytic - that are useful to uncover of how water management and governance services contribute to shape forms thinking and acting and the role it may play in fostering disciplinary effects based upon social and environmental practices.

The focus of concern of the analytics of government is that the study of the governmentalties aims to shed light upon the cluster of power and relates to how the practice of government is made thinkable and practicable (Miller and O’Leary, 1987; Gordon, 1991; Dean, 2013). This entails developing an understanding of how power operates, of the different forms it takes and how they are mobilised, that is, an account of the discernable structure of rationalities and practices of government (Miller, 2001).

In the context of this paper, the analytics of government framework investigates the specific conditions whereby programmes of water management and water use practices come to light, are sustained and transformed through a set of regimes of practices that intend to condition water use.

There can be a wide range of co-existing regimes of practices in organisations. They comprise and often link collegial (e.g. committees, representatives, groups, categories), individual (e.g. customers, employees, managers, suppliers, shareholders) and institutional agents, so that we often attribute to them the traits of a system (e.g. reporting system, control system, information system, etc.). Regimes of practices are stimulated and moulded by a wide range of forms of knowledge (e.g. geography, geology, psychology, sociology, chemistry, medicine, accounting,
auditing, etc.) and have the potential to define the object of such regimes by systematizing apposite ways of dealing with it. Finally, they also have the ability to affect each other for support, antagonism and colonization forms to occur (Dean, 2009). The analytics of government framework help to provide a dynamic analysis that is not limited to the state or political institutions, but is placed in a more general context (McKinlay et al., 2010). It stretches to the investigation of the specific conditions under which particular forms of power emerge, exist and change; those that try to shape, mobilize and work through the choices, desires and aspirations of individuals and groups (Dean, 2009).

Dean’s analytics of government allow to critically reflecting on how the rationales and conducts are moulded and created, analysing them along four interlinked yet independent dimensions. By doing this, the paper overcomes the atomistic view of water governance practices by virtue of a holistic exploration of how these practices have evolved into technologies of government. Through a reflexive analytical framework in which Dean's analytically separable elements are intertwined this paper examines how the materiality of water has been employed to shape human perceptions in order to secure a set of specific ends of government (i.e. health, efficiency, productivity and discipline of populations). The four analytics of government are proposed as a heuristic to examine the systematic ways of exercising power and authority. This allows some interrogation about the ways in which water governance is constituted thus providing some directions about how it can become enabling rather than disabling of one organization's sustainability goal. It is this process which we observe combining Foucault’s and Dean's insights on governmentality through the theoretical lens of eco-governmentality.

2.3 Eco-governmentality

To develop and understanding of how and to what ends water is managed and controlled, this section examines the work of environmental sociology as a shaping and guiding process in the governance of socio-ecological systems. This body of research has taken on great importance in the political discourse identified with the contradictory relations between economic expansion and environmental disruption (Schnaiberg, 1980; Schnaiberg and Gould, 1994; Fischer and Hajer, 2005).

The increasing awareness of global environmental threats (Rockstrom et al., 2009) and the will to understand the shaping forces on human action (Bebbington and Larrinaga, 2014) have given rise to a new set of eco-épistémes that extend governing control to the entire ecosystem (Agrawal, 2005; Fischer and Hajer, 2005; Gandy, 2006; Rutherford, 2007; Ekers and Loftus, 2008; Sultana, 2009, 2013; Ward, 2013). As Hannigan (1995) argues, the environment as it exists in the political domain is the product of discourses about nature established by a wide range of bodies of knowledge that include biology, ecology, sociology, government agencies and the messages disseminated by environmental activists. An implication of this argument is that environmental concerns cannot be regarded as consistent in time and space but shifting and susceptible to stick on individual and societal awareness depending on the response to claims and contestations around the existence of environmental problems.

Nature therefore becomes constructed and assessed by discursive analyses and transformed into the rationality of natural rule (Luke, 1998). New ways of thinking and acting about natural and social bodies are being produced by governing apparatuses that make visible and accountable the various elements of nature and the related socio-ecological system that depend upon them.

On the one hand, scientific disciplines of “eco-management” rise from university programmes and specialised discourses about the ecosystem “create disciplinary articulations of “eco-knowledge” (i.e. environmental management and sustainability management studies) to generate performative systems” of disciplinary power over nature and society (Luke, 2005, p.104). The
corollary of this argument is the connotation of the ecosystem as an ecological infrastructure in that all natural resources – animate and inanimate – come to be imagined as commodities that individuals with “eco-expertise” can efficiently and effectively operate and valorise through strategies of highly rationalized environmental management practices (Power, 2004).

On the other hand, the representation of the ecosystem increasingly include constructs such as “population”, “health”, “life”, “sustainability” and “environment” and generate rationales of government aiming at making visible (and governable) the relations between the intrinsic ecological structures and processes of nature via the promotion of ecological rationales of government. For instance Malette (2010) emphasises how the paradigm of “environment” is increasingly shaped through inductive reasoning and mathematical predictive modelling, aiming to render calculable - and thus predictable and controllable - the complex relations that such paradigm entails. These forms of eco-representation comprise the formulation of ‘evolutionary patterns’ that bridge biological, social and economic arguments in which the less adapted organism (i.e. unhealthy, fragile, vulnerable and poor) is “naturally” doomed to succumb. Associate with this, there is the development of ranking practices based on geographical locations, ecological and ethnological distinction on order to manage the evolutionary complex of socio ecological systems (Foucault, 1991; Rutherford, 2007).

In this conceptualisation, socio-ecological systems (that comprises individuals, organizations and the ecosystem) can be identified, reduced, compared and analysed through technique of representation, interventions and economization (Miller and Power, 2013). Once the socio-ecological system is rendered understandable through these lenses, then it can be used to justify a variety of ends. For example, what is regarded as economically, socially and environmentally sustainable “centres on people’s and nature’s intelligibility to experts, managers, and investors” (Goldman, 2004, p.170).

One fundamental body of knowledge that enables the generation, calculation and circulation of specialised discourse about the ecosystem is the discipline of accounting. According to Miller and Power (2013) the role accounting is decisive in promoting the economization of organizational life by providing “processes and practices through which individuals, activities, and organizations are constituted as economic actors and entities” (p. 560). For example, the various elements of water cycle (i.e. water supplies, conservation areas, treatment processes and the social actors involved) can be turned into economic entities, and their operatives into economic agents. Their profit centres, cost centres, product or service lines, can be established and acted upon. More importantly, perhaps, is the discursive mechanism that accounting assembles and disseminates. As such, eco-managers are required or encouraged to thinking in terms of the economic costs and benefits of the decisions they take. In this paper it is argued that the combination of ecological and accounting discourses represents a form of power entwined to the modern administrative science and economic activities.

Eco-Governmentality brings new and innovative potential to the assessment of the investigation of water governance within socio-ecological domains for two reasons. First, the concept of eco-governmentality allows the analysis of the reciprocal constitution of power technologies and forms of knowledge (Foucault and Gordon, 1980; Foucault, 1982; Townley, 1993) on the one hand, and the regimes of representation and mode of intervention on the other (Foucault, 1991). Government becomes a space in which power is conceptualised, explained and justified though the means of ecological models and discourses, the specification of objects, the establishment of boundaries and the provision of motivations. As a result, problems of water governance can be framed through the rationalisation of ecological programmes for addressing them (Miller and O’Leary, 1987). Second, eco-governmentality focuses on the multiple and diverse relationships between the ways in which water governing apparatuses become institutionalised and how the various subjectivities are formed (Neu et al., 2015). The varied manifestations of power become...
the object of analysis showing how modern forms of water government and individuals contributes to the respective emergence and evolution (Foucault, 2007).

Against this background, we propose that ecological threats can be regarded as governing crisis resulting from human conduct that require fundamental socio-ecological changes. We argue that eco-governamentality can provide useful insights into various forms of intervention in the planet’s ecosystem and the problems of life and government. The research methods used to conduct the investigation are introduced in more detail below, while in the section that follows the analysis of the empirical material will examine how the environment has become a rationality of discipline making reference to the case of water governance.

3. Data and methodology

To provide context and to clarify the construction of governance for the purpose of this paper, the previous section has presented the eco-governamentality framework. This section discusses the research methodology and methods used to collect the empirical data.

The evidence of this research was collected using a case study organization, an Italian based water management company (code-named TAP), that will be anonymous for reasons of confidentiality. The managers’ views were used to develop an in-depth understanding of the rationales and practices that render visible (or obscure) the relationships between elements of nature and society.

In examining these relationships, the paper aims to reveal specific visibilities, ways of acting and thinking and mechanics of identity creations, operating as governing means that condition water use and practice. Thus shedding light on the governing activities undertaken within the socio-ecological system in which the company operates.

This research is interpretive in nature. The empirical material adopted to inform the analysis of this study was collected using semi-structured in-depth personal interviews with 18 full time senior managers and officers, at various levels, between June 2012 and October 2013 as the foremost body of data (see Table 1). The interviews were administered through a small set of broad, open-ended questions and were conducted by the researchers on TAP’s premises. Our initial respondents (senior Quality, Safety and Environmental officers) enabled the researchers to identify other respondents within the case study organization who were involved, at different levels, in the conceptualization and implementation of water governance practices.

Table 1: Synopsis of interviews undertaken

<table>
<thead>
<tr>
<th>Reference</th>
<th>Role</th>
<th>Date</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Chairman</td>
<td>27-10-2013</td>
<td>37 min</td>
</tr>
<tr>
<td>B</td>
<td>Chief Executive Officer</td>
<td>27-10-2013</td>
<td>33 min</td>
</tr>
<tr>
<td>C</td>
<td>Head of Human Resource Management</td>
<td>27-10-2013</td>
<td>35 min</td>
</tr>
<tr>
<td>D</td>
<td>Head of Public Relations</td>
<td>17-07-2012</td>
<td>55 min</td>
</tr>
<tr>
<td>E</td>
<td>Management Control System Middle Manager 1</td>
<td>8-06-2012</td>
<td>58 min</td>
</tr>
<tr>
<td>F</td>
<td>Management Control System Middle Manager 2</td>
<td>25-06-2012</td>
<td>55 min</td>
</tr>
<tr>
<td>G</td>
<td>Health and Safety Manager</td>
<td>29-06-2012</td>
<td>60 min</td>
</tr>
<tr>
<td>H</td>
<td>Customer Relationship Manager</td>
<td>29-06-2012</td>
<td>80 min</td>
</tr>
<tr>
<td>I</td>
<td>Quality, Safety and Environmental Manager</td>
<td>11-06-2012</td>
<td>75 min</td>
</tr>
<tr>
<td>J</td>
<td>Quality, Safety and Environmental Officer</td>
<td>4-05-2012</td>
<td>48 min</td>
</tr>
<tr>
<td>K</td>
<td>Head of Technical Investments and Efficiency</td>
<td>4-07-2012</td>
<td>57 min</td>
</tr>
<tr>
<td>L</td>
<td>Technical Investments and Efficiency Manager</td>
<td>4-07-2012</td>
<td>70 min</td>
</tr>
</tbody>
</table>
The reason for selecting managers for the interviews was twofold. On the one hand, the respondents had the power to take decisions capable of influencing the company's operations with regards to social and environmental practices and water governance. On the other hand, all respondent were expected to offer broader perspectives on TAP's activity. The search for new respondents ceased when saturation was reached, in terms of the identification of new insights (Bryman and Bell, 2012; Glaser and Strauss, 2012). The questions were designed to nurture a conversation about how water had been conceptualised and used to shape human perceptions in order to secure a set of specific ends of government.

The interviews were held in the local language and an apposite version of the interview guide was prepared and handed out. The use Italian (native language of both authors) helped the interviewees feeling at ease by overcoming the fears about discussing complex technical issues in English and allowing the evocative use of specific terms. As a result, this process added richness to the material and helped gaining further insight about the governing activities undertaken by TAP (Horton et al., 2004). All the interviews, which lasted between 33 and 98 minutes, were conducted face-to-face, were digitally recorded, fully transcribed, analysed and coded in Italian. Once key patterns and themes were identified, these were later translated into English.

Another body of data was obtained from the analysis of relevant documentation sources on issues related to water governance. Respondents provided part of this data while another part was gathered independently from both authors. This documentation was considered central for a thorough understanding the water governance and addressed the following areas: annual financial reports, annual sustainability reports, water network governance, quality management policy and procedures governance standards, regional regulations, reports to regulator, TAP's website.

The analysis of the data involved a meticulous reading of interview transcripts, interview notes and documents. Digital recordings of the interviews were listened in parallel to the reading of the transcripts in order to gather relevant insights about impressions, emotions and changes in tone of the respondents that were not captured by the transcriptions. Each transcript was analysed using the interview guide as preliminary framework and the emerging key themes were identified using a set of intuitively derived codes for each theme (O’Dwyer, 2002). The analysis of interview transcripts, interview notes and documents was developed along with the academic literature on water governance, governmentality and ecological sociology in an attempt to conceptualise the findings (O’Dwyer and Boomsma, 2015). Finally, quotations regarded as representative of specific key themes were identified from the transcripts in order to increase the explanatory potential of the findings.

The eco-governmentality framework was adopted as a lens to interpret the data. The entanglement of the four independent yet intertwined dimensions of the Dean’s model (fields of visibility, técne and épistémé of government, identity formation analytic) combined with the analysis of ecological rationales of government allowed a holistic understanding of how governmental power operates in the context of TAP, thus enabling the crafting of the narrative of the discussion section.
4. The case study context

The Italian water management system is a highly regulated setting characterised by a rather complex and heterogeneous landscape (Guerrini and Romano, 2014). The first comprehensive reform of water sector was completed in 1994 when a new national regulation for the reorganization of the integrated water service was enacted. The new legal framework (known as Law n. 36/1994) brought about four main innovations to water governance. First, it allowed the integration of the various vertical segments of water management through the establishment of the Integrated Water Resource Management (hereafter IWRM) defined as the "set of public services of collection, transportation and distribution of water for civil use, sewerage and purification of waste water" (Law n. 36/1994, art. 1, c. 4-f). Second, it identified the set of hydrologic units (Seaber et al., 1987; Berelson et al., 2004) to promote adequate size for the entities committed to manage the IWRM, thus overcoming the prevailing fragmentation of local water management (Law n. 36/1994, art. 8, c. 1-a, b,c). Third, it established an authority for each of the hydrologic units with the task of setting the regulatory framework, determining the tariffs for the provision of water services, identifying the managing subject of the IWRM and monitoring the work of the latter. Fourth, it established the economic character and the managerial nature of the water sector and the principles underpinning it (namely, efficiency and effectiveness).

Between the nineties and the late 2000s’ the process of reorganization of the institutional and regional local water services continued, even though the institutional structure of the industry itself is still very fragmented. While there are regions fully supplied by high quality drinking water all day all years through state of the art infrastructure, other regions have water supplied intermittently marked by obsolete mains and not always in compliance with the highest quality standards (Guerrini and Romano, 2014). In 2011 the water sector was further reviewed to comply with the principles of the Italian ‘Environmental Code’ (D. Lgs, n. 152/2006).

This change modified the industry in terms organization of water services (with particular reference to the protection of water users), the determination and adjustment of tariffs and the promotion of efficiency, effectiveness and transparency in the management of water services (AEEG, 2014). In 2013 the process of reorganization of the water governance was still being defined through the reduction of the number of local authorities and the subsequent legislative activities of the Italian Regions aimed at re-allocating the administrative functions. (AEEG, 2014).

The case study organization originated and operated within this highly regulated and evolving regulatory framework. Consequently its governance structure and practices were challenged by several moments of transformations.

To begin with, TAP very existence is the result of the enforcement of a regulation aimed at reducing the existing fragmentation of water governance practices and diverse organizational cultures. TAP, in fact, was the result of a process of mergers and acquisitions of a number of smaller municipal water utilities operating independently within the boundaries of a given hydrologic unit. Later, in the early 2000s, the then newly created local authority entrusted TAP for the governance of water in the topological area comprised in the unit. This area comprised over 50 municipalities and was populated by more than 700,000 people. This phase was the enactment of the national legislator’s economic rationale aimed at achieving economies of scale, thus enabling the entrusted organization to generate revenues, cover the cost of the service and ensure adequate return to the invested capital (difficulties met in the process). Finally, in accordance with the commitments set out in the entrusting agreement, TAP subsequently completed a public tender at European level for the selection of a private partner. This was the final moment of transformation that changed TAP from a public service provider that benefit all of society to a public-private partnership that serves the interests of the individuals who use the service.
5. Case discussion

The problematisation of TAP's water governance practices were set off by a succession of moments of transformation. These included: the transformation in the structure of the company (in that TAP is a joint-stock company which resulted from of a merge of several smaller companies owned by the local government operating in the same socio-ecological system, identified by the national legislation); the transformation of the overall aims of the company (which now are to achieve the business goals safeguarding the environment contributing to sustainable development of the specific socio-ecological system in which TAP operates); the transformation of the nature of the service implemented through novel tariff structures and communication for consumer engagement; the transformation of TAP's accountability realised through the implementation of stakeholder engagement initiatives and sustainability reporting.

All these moments of transformation combined drifted TAP from an informal approach of water governance based upon obligations, rights and entitlement to health (Cahill, 2005; KPMG, 2012; Hazelton, 2013; WaterAid, 2014) to a contractual form of water supply service rooted in the market economic notions of efficiency, effectiveness, demand and supply (among others). The transition to these new regimes of practices led to tighter water governance policies that spread throughout the socio-ecological system and challenged their existing operations. The implementation of the IWRM model, therefore consisted of a bundle of concepts and methods to "improve the effectiveness and efficiency of the activities and the pursuit of the satisfaction of its stakeholders understood as all subjects with direct or indirect interest in the activities of the company: staff; customers; shareholders; institutions; lenders; suppliers; environment; collectivity" (translated and paraphrased from TAP Sustainability Report, 2013).

In this context the bio-political investigation framed through the analytics of government framework demonstrated to be particularly helpful since it places TAP's regimes of practice at the centre of the investigation. The analysis seeks to uncover the hidden mentalities, rationalities and techniques that are behind a range of behaviors and mechanisms placed to govern water users, as well as water use (Gouldson and Bebbington, 2007; Hellberg, 2014). The following sections critically analyse the key aspects of the analytics of government, which we find in the case study organization.

5.1 Illuminating power and authority through “fields of visibility”

The first dimension of the analytics of government is known as the field of visibility. It consists of the peculiar characteristics and means by which a specific system of governance seeks to illuminate some object and obscure others. Management flow chart, maps, graphs and tables are examples of items that are meant to define object and subject of governance in that show how individuals, organization and the ecosystem are connected, relate to one another and are constituted within the socio-ecological space (Dean, 2009). Consequently, in applying this analytic of governance, the investigation seeks to identify the characteristic forms of visibility and thereby recognize and explain ways of seeing and perceiving subjects and objects in a water management regime of practice. In doing so the aim of the analysis is to understand how and why the attention is being directed to certain areas, or hidden from the view, by the actors concerned with the water management and use. In the context of TAP, the aim of the analysis is to critically investigate by what means and why TAP’s governance system seeks to illuminate some object and obscure others (Dean, 2009). The use of diagrams of power and authority, as Dean argues, has the potential to shed light upon the conceptual architecture of power, that is the set of relations of liberties and domination and the fixing of these relations into enduring hierarchical distribution. An element aiming to visualise fields to be governed is represented by the construction and maintenance of a table of organization.
“We basically mapped all the processes at the outset and identified a person responsible for each process. For each person responsible of the process a range of procedures, performance indicators and channels of dialogue and communication were identified” (I).

The table makes it possible to illuminate “who and what is to be governed, how relations of obedience are constituted in space and how different locales and agents are to be connected with one another, what problems are to be solved and what objectives are to be sought” (Dean, 2009, p. 41). In the case study organization, the table not only illuminate how constituted subjects are connected, relate to each other and are constructed in the specific reporting space but also provide internal visibility to sustainability programmes granted by the sustainability report.

“It’s a learning process for the whole structure but above all for the top team. That is, the numbers as such have little meaning and must be explained, must be analysed. [...]. I believe that greater communication at the management level and then the general participation of the entire company are being created by the [approach to] quality and the sustainability reporting” (E)

The establishing and implementing of a sustainability reporting process gives the promotion of selves and lifestyles visible internal credibility.

“Sustainability reporting and the four standards adopted have helped and encouraged [TAP] to implement a system that was consistent with the activities we are doing and that could give a positive message to the outside” (P)

Interestingly, while these practices are providing outward looking discourses of accountability, responsibility and sustainability aiming at the societal level, they resonate inwards. The collection of written numerical and narrative data from different departments of the company has numerous internal implications. First, this form of hierarchical observation and/or compilation of data render possible the construction of measures of location (e.g. means and medians), which in turn have the potential to establish the visible norms against which sustainable conduct is measured (Miller and O'Leary, 1987). Second, the data this mobilised and captured by computer files can trigger self-disciplinary effects, in that people at TAP can never be sure whether their actions “are being observed and calculated about in the present, or whether they will be calculated about and used in the future” (Neu et al., 2015, p. 53). It is worth observing, however, that the specific relations of power and authorities illuminated by TAP construct a defined space of visibility that shape the relationships between the constituted subjects and the information TAP could map and monitor.

At another level, while sustainability was an important part of the discussion there seems little doubt that TAP’s constructed discourses that render visible sustainability as an object. In fact, irrespective of whether the interviewees agreed or disagreed about its meaning or importance, they treated sustainability as instrumental, fungible or owned by TAP (Nussbaum, 1995). As an example of instrumentality, one of the interviewees referred to its rewarding system that involved compliance with social and environmental indicators expressed by norms and accreditation bodies:

Another indicator relates to the qualified suppliers, so the interest is to be able to qualify as many suppliers as possible and not discriminate against them. Qualify, however, means that they need to have the qualifications to be considered capable of negotiating with local and general government: they do not have to pay people under the table, which are in order with tax payments, that the workers are skilled for that type of work, who have the necessary equipment, which do not have convictions (P)

Compliance to a certain type of social responsibility co-constructed by TAP gives authority to TAP to influence the sustainability activities of suppliers (Spence and Rinaldi, 2014). Similarly, the visibility of certain sustainability practices granted by the adherence to specific accreditations (and the need to comply with their requirements), contribute to establish
disciplinary effects. The explicit reference to audit programmes and penalties for non-compliance with sustainability directives or performance (in the form of missing the benefits linked to their achievement) further increase the normalising potential of this field.

There is not such thing as sustainability balanced scorecard like in [the interviewees name another company within the industry]. But for example my reward is that I have to finish [the accreditation process] by June. If I have the certificate by June, my colleagues and I receive the reward, if not … (I)

TAP seemed to focus on economic rationality, social responsibility and sustainable development to as a discourse in which the notion of sustainability is articulated, justified, and disseminated. Thus constituting, sustainability as an object of that can be calculated, investigated, controlled and disciplined.

The same can be said for water. Water is envisioned to be a thing in itself, but also a carrier of values. It is variously conceptualised as something pure, important, invisible, bottled, fresh, essential, cheap but also expensive or to be protected, saved, controlled, treated, captured, investigated, understood, given, not-given, cleaned, taken, seen, regenerated, spoken about, sold, used, paid for or drunk. Finally, some interviewees see water as a service, a system, a discourse, and an element of life. These very diverse forms of objectification seem to reflect the diverse values and goals of those who are involved in governing water use and practices.

Sustainability is a very important element in this company because we do environment [sic], we do not make pipes. To do well in the environment means [...] to manage this company efficiently, it means to save money, manage the plants effectively, it means supply water consciously (I)

Sustainability seem to have become the political discourse that in TAP constitutes environment as the object of government while at the same time providing the rationale for the enactment of such government (Foucault, 1991; Rutherford, 1998). Concurrently, the environment is understood as the sum of practices and resources on which population depends and is nurtured by the belief that it can be governed by controlling and managing these resources through the application of a variety of forms of knowledge (such as for example political economy, geography, engineering or biology) guided by the principles of sustainability science (Bebbington and Larrinaga, 2014). While accounting and accountability practices provide the technologies that enable the classification, distribution and analysis of the objects deal with. As another the interviewee observed:

“We have a charter for services that sets out what are the quality standards that we must respect […], and the same standards are adopted by the local Authority to measure us. So we need to always improve these standards to provide a more efficient service, also considering that we are a company that operates under regulated monopoly [in the area]. That is, we have no competitors in the market, therefore, our duty to achieve the standards has become even more imperative” (Q)

The importance of calculative practices and accounting technologies in rendering visible the performativity of sustainability practices was further emphasised by the CEO who asserted that:

“the sustainability report contains a lot of numbers, a lot of data. In my view observing the differences over the years of improvements or deteriorations of indicators is helpful... Become something that is taken into account in the management process. [...] Then there is health & safety, training... Safety or training records [are kept to make sure] that every year there is at least that level anyway, but we always try to put things measurable. [...] In the technical area [it] may be time to fix, time to repair, response time ... [For water] we know how much water we take, because most of the water sources are measured, and we know how we charge for it” (B)

The examples presented here show how TAP’s governance system illuminates a specific architecture of power that creates and makes thinkable peculiar spaces and connections. Forms of social and phenomenological spaces, for instance, are entwined in the table of organization
that highlight specific subjectivities and the operation within TAP’s governance regimes of practice, providing internal legitimacy. At the same time the illuminated architecture highlight desired connection in the form of specific corridors and windows. Corridors show how constituted subjects are connected with each other whereas windows show where and how the organization breaks the enclosure of the interior spaces. For TAP, for example, the accounting spaces of the sustainability report and the “qualification” of suppliers seems emblematic of controlled power leaks aimed at influencing water use and practice or the activities of suppliers, respectively.

The fields of visibility referred to above highlight a particular formulation of water governance, focused on competitive market issues rather than on the broader set of obligations, rights and entitlement to health. In the following sections, we will analyse the remaining three analytics of government to investigate how this transformation unfolds in the regimes of practice deployed to govern to water use and practice in the socio-ecological context of reference.

5.2 Ways of acting for the attainment of rationales of government

The second level of enquiry is the técnica of government. It involves the technical means adopted by the governor - TAP - to achieve the ends of governance. Téchnes are specific ways of acting, intervening and directing constituted by certain kinds of expertise and know-how that rely on specific mechanisms such as techniques of accounting, systems of training and professional specialisms. Intervention is an important part of governance and it is in the action around interventions that we can observe how subjects are acted upon (Miller and Rose, 1990). Therefore this dimension looks at the “means, mechanisms, procedures, instruments, tactics, techniques, technologies and vocabularies with which authority is constituted and rule accomplished” (Dean, 2009, p. 42).

The técnica analytic allows the investigation of the ways in which the established visibilities of government are linked to procedures and technologies set up by TAP. The ecological rationales, the specific ways of acting to attain them and the governing authorities that relate to TAP’s water governance are illustrated and discussed further below.

An important of governing technology was aimed at educating (and normalising) water users and practices and was embodied in the “handbook of water saving”.

The handbook proposes offers ten simple rules to avoid wasting drinking water, while at the same time helping the environment but also our pockets. (official TAP's communication)

Formally conceived to educate water users towards an ecologically sustainable behaviours rooted in sustainability science, the toolkit seems to adopt a rather normative stance. In this context such técnica not only contributes to create the a new set of subjects of governance, the ecological subjects constituted by all those who “contribute to the conservation of water resource reducing waste” (TAP's official material) but also acted as a means of ecological citizenship used to divide water users (and practices) into populations on the basis of those who care about the environment and water, and those who do not (Spence and Rinaldi, 2014). The recognition of these “dividing practices” is important because they promote the construction and visibility of a dichotomy between what is deemed normal and what is not, thus legitimising the emergence and establishment of normalizing power (Kornberger & Carter, 2010, p. 333). As one of the interviewee pointed out:

I will give you an example: this year we are in a drought because it rained very little and right at the beginning of this summer the weather is crazy hot. It is very likely that we will to go into water emergency again... sooner than we estimated because [last] winter was not rainy... in some areas, [...] we already have problems, and [citizens] are already refuelling with [water] tankers. At this
stage, if citizens waste water or use it to water the lawns, flowers, etc. in my opinion they should be punished! (emphasis in the original) (Q)

It is worth observing that the norms of such dynamics are instituted and enforced by the standards put forward by TAP whereas social and environmental accounting practices allowed the measurement of deviance from the norms, becoming the tools for assessing the requisites of the emergent environmental/ecological citizen.

Another example of the educational way of acting grounded upon accounting/management forms of knowledge and operationalised by calculative technologies are represented by training courses. One interviewee noted:

"we started in 2010. [That year] we did the training for managers and supervisors, in which I took part and that lasted about a month and a half. We did five days with a trainer specific for the sector. After which we created [the lean organization]. [...] we have also attempted to train other people [at the lower level of the organization] taking on specific processes and trying to implement this methodology and these efficiencies straightaway" (P)

Programmes of governance such as the lean organization become key sites where economically inspired market orientated sustainability discourses are nurtured and disseminated. In addition to workshops and courses where managerial specialist language (including concepts such as ‘stakeholder’, ‘management styles’, ‘value creation’, ‘efficiency’, ‘effectiveness’, ‘investors’, among others) is deployed, these programmes provide participants with the necessary training on the need to adopt accounting and management calculative practices aiming at assigning value to natural resources.

In this context sustainability science becomes the instrumental knowledge to a technocratic ideal of administrative practices and water becomes the tool for the capillary diffusion of power effects across the population (Darier, 1998)

The following section investigates how certain visibilities, practices and forms of knowledge are linked to the water governance technologies set up by TAP to achieve the end of governance.

5.3 Ways of thinking underlying TAP’s spirit

In this section we explore how forms of knowledge, calculative practices, and expertise are given authority in the conception of TAP’s water governance process. The analysis of the epistéme of government refers to the discourses and rhetoric of expertise, language, and forms of thoughts applied in the practice of governing. Epistéme is hence understood as a specific form of thinking, relying on specific vocabularies and procedures for the production of truth (for example those derived from sociology, biology and environmental studies). One of the features of government is in fact that to “employ plans, forms of knowledge and know-how and adopt visions and objectives of what it seeks to achieve” (Dean, 2009, p. 43). In the context of water management and use, this has particular resonance since knowledge gathered in accounting and accountability regimes of practices is highly relevant.

A number of governing technologies were directed at promoting empowerment of water users as a political programme. The episteme of empowerment and the related technologies originally emerged in social programmes and reform movements and produced a technology of citizenship (Cruikshank, 1999). These are the multiple techniques of self-esteem, emancipation, consultation and negotiation used in community action and development programs, social and environmental impact studies, health promotion and community policing (Dean and Hindess, 1998).

This way subjects of governance are constituted as citizens in order to maximise their participation, actions, motivations in economic and political involvement. In the context of this paper, the empowerment epistéme offers novel and original insight into the interpretation of
water governance. Cruikshank maintains that the object of empowerment is to “act upon another’s interests and desires in order to conduct their actions toward an appropriate end” (Cruikshank, 1999, p. 69). Technologies for empowerment are mobilised in a wide range of rationales and practices of government that enable particular transitions (such as that from a right based to a contractual based water governance) to be constituted. These include ensure water security, availability, quality and distribution (CIWEM, 2011, 2013).

Empowerment in itself carries power potential and attributes power relationships: act upon others by getting them to act in their own interest. It is the nature and content of such interest that need further investigation. In effect, in order to be acted upon, those interests needs to be constituted within a specific ideological space. In the case of TAP, this space was inspired by a range of interrelated yet interdependent forms of knowledge, such as for example political economy - focused upon a rather narrow formulization of interest centred on production and price in markets - or shaped by emergent forms of knowledge such as sustainability science - concentrating on the broad sustainability agenda of the possibilities and interest to progress sustainable development) (Bebbington and Larrinaga, 2014). Depending on the field of inquiry, the location of the notion of interest is placed within the concepts of fairness, quality, customer satisfaction, risk, accountability and consumption.

One manager, for example, takes an ethical approach arguing that it is in the interest of current generations of water users within TAP’s ecological space to support (and as a consequence to pay for) the water service on the ground and is undertaken to serve the population. In this case, the accounting rationale behind the determination of water tariffs is portrayed as assisting in the question of equity between generations (WCED, 1987).

I think there should definitely be a public [investments] component on the general activities for the large-scale infrastructures. [For example] a work that will payback in a 1,000 years it is clear that should be taken by the general activities. In my opinion, however, being [TAP’s] an infrastructure that serves a community that exists now, that has its historical continuity that grows day by day […], it is fair that those who use the water today will pay and support the development and maintenance of the infrastructure that is also made of pipes that go into the streets or purifiers that purify today’s wastewater. (H)

The location of interest within the notion of customers (or users, as the terms are used interchangeably my the vast majority of the interviewees) has important reverberations both internally and externally for TAP. Internally, the primacy of the customer group, for example, seems to symbolise the importance of the commercial perspective for the company that, in turn, resonate into what is regarded as acceptable behavior and the management of operations within the company:

, […] there is still a large share of […] workers [within TAP], who come from the old [organizational structure] that have an old mentality. Not always negative, but surely more ineffective that thinks a bit more with the logic of the civil service who is afraid of the Court of Auditors, rather than with the logic of the professional company that is in a market that must try to make customers happy.” (H)

The distinction between the logic of the professional company operating in a market and the logic of the civil service conceptualises the mentality linked to the notions of efficiency, effectiveness, demand and supply as desired and compares it against that associated to right based water service provision, an arguably less desirable one. Consequently, internal actions promoted by TAP to change existing practices characterised by the old mentality gained legitimacy.

External reverberation concerns the formation and shaping of the identities of members of TAP’s socio ecological context. The constituted population of customers/users is attributed specific roles, qualities and statuses, through which governmentality operates. An important element
rests in the attribution of obligations and rights. While the main obligation is to fulfill the economic duty of paying the water bill on time, the association of individual water users to the category of customers becomes the only option available to make a complaint against inconveniences.

The main requirement of a claim is that only those who is a user can complain about a disservice [...] A customer account number is assigned to him when he becomes our customer, which is the code that he finds on the bill [...] this account is unique and [is the means with] which we are able to recognize him and [engage in] dialogue. [...] That is why we have prepared a form where we require him to write down his account, to transcribe his generality, otherwise we risked receiving complaints by people who are not account holder. But often [they] are not holders because they have never thought about updating the contract. Because, for example, a tenant has moved in a place where water was billed to the name of the former tenant. And he did not even dream of making the change in the contract, but if he does not become my user does not even have the right to complain. (Q)

The technologies of citizenship were considered very important at the various stages of TAP’s socio-ecological transformations and were complemented by calculative technologies concerned to monitor, compare and assess the performance of those whose activity is so triggered. (Dean and Hindess, 1998). To this aim, TAP implemented an increasing volume of technologies of performance such as key performance indicators and audit practices mobilised through databases and electronic systems as tools for linking conducts to the optimisation of performance (Miller and O’Leary, 1987; Power, 1997; Miller, 2001).

Another important epistéme of government was directed at fostering frameworks of surveillance and the making insecure subjects. Surveillance can be understood as a system of social relations in which private and public agencies, individuals and natural resources are all connected through technologies of seeing, monitoring and archiving (Nayar, 2015). In the case in hand people, institutions and water are linked through calculative systems of classifications - ranging from environmental budgets to water related KPIs - and discourses (water safety, water risk, debt with nature) that affect the relationship between the governor and the governed.

A means used by TAP to foster non-institutional form of surveillance is to account for stories to address, recognise and construct social conditions. As an example, the official communication of TAP account for a project known as fontanello (literally ‘little fountain’) that consist of the setting up of high quality water-kiosks that offer chilled still and carbonated water for free.

Started as environmental “good practice“ (emphasis in the original) the high quality water project carried out by [TAP], has now become a cultural phenomenon, an established habit for the families of the area and a growing practice. [...] (from TAP’s publicly available material)

The narrative highlights the success of the project with a profusion of quantitative performance indicators in support. These indicators provided a wide range of biological, demographic, social, environmental and economic information, that include, among others: the chemical composition of water distributed; the number of citizen supplied daily; the savings related to a hypothetical purchase of bottled water (from a given average cost); the amount of CO2 emissions and tonnes plastic equivalent tons of oil saved for the environment. To further emphasise TAP’s attainment the chairman of the company maintained that:

The high quality water project is one of the activities I am more proud of because not only the response from the people is very positive, but also because we do our part to protect the environment, to reduce the production of waste and consumption of energy. It is also a real opportunity for economic savings for the families in our area. By doing so we believe we can enhance a resource as drinking water that sometimes we tend to give a little ‘taken for granted’ (A)
The story puts people, water practices, sustainability and accounting figures under the spotlight and highlights the appropriate response to what this kind of surveillance reveals. By recognising specific conducts and its appropriate responses TAP constructs a restrained surveillance upon water practices that produces acceptance of rationales and technologies of domination as a cultural phenomenon because the population of water users have come to believe in them. The use of this informal framework of surveillance based on successful and inspiring water stories has the potential to heighten self-disciplinary behaviours through the enforcement of neighbourliness and citizenship-feelings by the water users to ensure certain conducts are established and maintained.

It is worth noting that among the information provided by TAP on the high quality water project there is also a quantitative and visual representation of the extension of area covered. The topological dimensions of the project seems to support interpretations of an attempt of TAP to signal, within a world of fixed distances and well defined proximities, the connections of an architecture of power drawn between individuals, groups and organizations (socio-ecological context) (Allen, 2009).

The analysis of governing practice through the episteme analytic proves the importance of a holistic exploration of TAP’s water governance practices. This lens highlights how specific ways of thinking are mobilized to support the end of governance. As it has been shown in the above analysis citizenship, empowerment and surveillance are conceptualised within the traditional ethos of the business.

### 5.4 Mechanics of identity creations (identity formation analytic)

The *identity formation* is the final level of analysis of within Dean’s model. Identity has always been an important aspect of organisational and social research (Miller and Rose, 2008). In order to understand how identity is formed the practices acting upon individuals and their conducts need to be investigated. Hence, this dimension of the framework explores how people and groups are taking on a particular role and what characteristic are associated with it. Stakeholder theory would submit a particular sample of actors and role as important in the attempt to govern water resources and use. Rather than assume these actor-identities as given, this study seeks to develop further knowledge and understanding of the characteristic ways of forming subjects over the water management within the sustainability accounting and reporting process. In this section we will examine how TAP ascribes, nurtures and endorses specific “identities, capacities, qualities and/or statutes to particular agents through which governmentality operates” (Spence and Rinaldi, 2014).

The particular ways in which TAP comes to construct identity is not incidental. The decision on how to act and why, in fact, derives from TAP’s reliance on its systems of classification that translate into significant distinctions between proper or improper, individual or collective and better or worse.

As a results TAP’s practices seem to foster what Weldes et al. (1999) labelled as “culture of insecurity”, to portray a socially constructed condition where “discourses of vulnerable subjects produce and invent technologies that are taken as the solution to the insecurity and vulnerability” (Nayar, 2015, p. 5).

Along with the making of insecure subjects, we will also explore the construction of the “ecological subject” through the notions of safety, economic savings and waste reduction.

Table x summarizes the key elements of the analytics of government we found deployed by TAP as discusses in the sections above.
Table x: The analytics of government mobilised within TAP.

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<thead>
<tr>
<th>Analytics of Government</th>
<th>Constituents</th>
<th>Deployed</th>
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<td>fields of visibility</td>
<td>means by which a system of governance seeks to illuminate some object and obscure others</td>
<td>- table of organization</td>
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<td>- environment as sum of practices</td>
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<td>- qualification of suppliers</td>
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<td>ways of acting, intervening and directing constituted by specific expertise and knowledge</td>
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<td>- normalization</td>
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<td>episteme of government</td>
<td>forms of thinking, relying on specific vocabularies and procedures</td>
<td>- citizenship</td>
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<td>- empowerment</td>
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<td>- surveillance</td>
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<td>identity formation</td>
<td>ways in which people and groups are taking on roles and what characteristic are associated with it</td>
<td>- the making of vulnerable subjects</td>
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<td>- ecological subjects</td>
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6. Preliminary conclusions

The general concern of this paper is the way in which the environment in general and natural resources like water, in particular, have been transformed into domains of discipline and obligations.

Within the limitations of a working paper and the preliminary stages of the analysis of data, the investigation of the TAP’s water governance programme is illustrative of the tendency to normalize and govern contemporary water use practices.

The case reveals that water governance emerges as an expression of power rendered through specific visibilities, ways of thinking and acting and mechanics of identity creations, operating as governing means that condition water use and practice.

By virtue of a holistic exploration of how TAP’s water governance practices and innovations make (in)visible the impacts and interconnections of humans with water, the research shed light into how water becomes the means to foster disciplinary effect and to facilitate the governance of populations.
Reference List


AEEG. (2014), Relazione annuale sullo stato dei servizi e sull’attività svolta, idrico, A.p.l.e.e.i.g.e.i.s., Autorità per l’energia elettrica il gas e il sistema idrico, Milan, available at http://www.autorita.energia.it/allegati/relaz_ann/14/RAVolumel_2014.pdf, (accessed 26 March 2015).


Foucault, M. (1991), "Governmentality", in Foucault, M., Burchell, G., Gordon, C. and Miller, P. (Eds.), *The Foucault effect: studies in governmentality with two lectures by and an interview with Michel Foucault*, University of Chicago Press, Chicago, pp. 87-104.


