Utilities Policy 43 (2016) 4–13

Contents lists available at ScienceDirect

Utilities Policy

journal homepage: www.elsevier.com/locate/jup

Seven elements affecting governance and performance in the water sector

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ARTICLE INFO

Article history:
Received 18 November 2015
Received in revised form
22 February 2016
Accepted 3 April 2016
Available online 18 June 2016

ABSTRACT

A number of studies have emphasized that governance has many components, including accountability, autonomy, role clarity, policy coherence (especially as related to objectives), stakeholder participation/engagement, professionalism (capacity), and transparency. This study identifies seven elements affecting infrastructure performance: institutions, interests (stakeholders), information, incentives, ideas, ideals (priorities placed on objectives), and individuals (leadership). It describes how these seven interrelated elements determine how effectively a regulatory system responds to challenges.

1. Introduction[2]

Governance has become a term used for describing the institutional arrangements affecting organizations and nations. According to Hufty (2011) it relates to "the processes of interaction and decision-making among the actors involved in a collective problem that lead to the creation, reinforcement, or reproduction of social norms and institutions." Thus, governance affects procedures and outcomes at many levels of political and economic activity. The OECD *Inventory of Water Governance Indicators* (2015) identifies seventy-eight reports providing indicators related to water governance. Some are related to the sustainability of water systems, while others focus on service provider performance, data bases, guidelines, and assessment tools. The purpose of this article is to identify key elements affecting (and affected by) water governance. These seven elements provide a conceptual framework for analysing the determinants of water sector performance. These elements include *institutions*, *interests* (stakeholders), *information*, *incentives*, *ideas*, *ideals* (priorities placed on objectives), and *individuals* (leadership). Since the terms all begin with the letter "I", the listing is easy to remember. More importantly, the listing is relatively comprehensive—enabling the analyst or policy-maker to incorporate a wide range of elements into policy analysis.

The catalyst for this list started with sentence by Leighton and Lopez (2013, pp. 189–190); they identify *new ideas* as one determinant of political, social, and economic change:

> "*Ideas* become powerful not simply because they are conceived by academic scribblers and then filtered into society by intellectuals but because political entrepreneurs [*individuals*] discover ways to implement those *ideas* into society's shared *institutions* and ultimately change the *incentives* that drive human behavior." [italics added]

This sentence identifies *ideas*, *individuals*, *institutions* (rules of the game), and *incentives* as central to influencing social and economic performance. Adding *information* (benchmarking data and financial statements), *interests* (stakeholders), and *ideals* (values reflecting prioritized objectives) to the list, we obtain seven elements that affect regulatory (and sectoral) performance. These elements form the context in which decisions are made regarding initiatives that attempt to improve outcomes in any sector, including water. Thus, regulatory governance is about the organizations, coordination, tools, disciplines and practices that influence the quality of the regulatory frameworks. Water governance is broader since it considers all the tools of water policies, but also, in his broad meaning, all the sub-sectors of water (water services, as well as water resource management, water for agriculture, and environmental, health and safety regulation).

Institutional arrangements characterizing governance affect how these seven elements influence water sector performance. For example, capacity-building within organizations affects how ideas are generated and transmitted. Similarly, access to financial and

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[1] The author is grateful from comments by referees and the editor. Remaining limitations and inconsistencies are the sole responsibility of the author.

[2] This paper expands on two of the author's UN reports: Berg (2013, 2012).

http://dx.doi.org/10.1016/j.jup.2016.04.013
0957-1787/

operating information depends not only on procedures for collecting and authenticating data, but also on whether transparency is valued and implemented. The impact of incentives depends on realistic targets and well-designed rewards and penalties. These points linking governance to performance will be developed more fully following the literature review. The set of elements builds upon earlier approaches to the analysis of governance, and provides a comprehensive framework for characterizing the unique contexts facing infrastructure decision-makers around the world.

Governance can be evaluated at many levels. Ideally, Boards of Directors of water utilities provide oversight of utility managers as they evaluate business plans, corporate performance, and managerial incentives. Government ministries engage in governance when they establish policies that are then implemented by various agencies, including sector regulators. The processes utilized and outputs produced by regulators also involve governance. In a recent examination of regulation of water utilities (Berg, 2013), the author concluded that the sector regulator has to be embedded in an adequate and consistent institutional framework in order to have a positive impact on performance. Sector regulation (one element of water sector governance), by itself, is no guarantee of performance improvements in the drinking water supply and sanitation sector. Many developing nations can be characterized as having dysfunctional systems—where water resource management is nearly non-existent, water quality standards are not enforced, environmental impacts of wastewater discharges are ignored, non-revenue water remains unacceptably high, collections are low, and coverage is improving at a very slow pace. Deficits in governance can explain some of this weak performance.

Case studies and empirical analyses suggest that without significant changes in the supporting institutions and in governance arrangements, the standard tools of regulation will not be effective. This conclusion is disturbing, especially for developing countries, since it means that the establishment of a regulatory agency might raise hopes, but ultimately, the agency's rules are unlikely to improve performance without additional—politically difficult—initiatives. The framework suggests that the associated governance structures of both regulators and operators play major roles in the provision of information, the creation of incentives, and the achievement of key performance objectives.

The framework also suggests that without broad institutional support, even a technically competent regulatory commission will find itself marginalized by political forces that are far stronger at the national level. If the local "regulator" is the municipal commission, lack of professional skills and political cronyism further exacerbate the problem. This study argues that the seven "I"-elements affect governance and infrastructure performance: ultimately *individuals* work within *institutions* to gather *information*, address the concerns of special *interests*, develop and respond to *incentives*, listen to and create *ideas*, and help policy-makers meet national *ideals* and objectives.

An industry observer said "to have effective regulation, you must have utilities that can, in fact, be regulated". The problem boils down to getting a broader set of institutions to support regulatory and managerial actions that promote good sector performance. This means getting the *governance structures* right (rules of the game) and the *substantive actions* right (play of the game). Conflicts among stakeholder groups (special interests) usually arise in the politically-sensitive water services sector, so the regulator also needs to develop tools for conflict resolution. Citizens with low abilities to pay for service (one special interest in relatively poor countries) present particularly challenging problems: those receiving service are likely to be subsidized currently and those without service desire to come onto the network on similar terms. Yet funding operating costs (let alone investments) is often problematic for developing countries. Thus, observers of the water sector generally conclude that since the institutional environment matters, there is a need to establish a comprehensive set of governance reforms if sector performance is to be improved. These changes may need to go beyond the immediate responsibilities of the Water Ministry or the regulatory agency. Nevertheless, an autonomous regulator (in a context where there is sound governance) can often facilitate initiatives that lead to lower costs, improved service quality, and greater network coverage.

On the other hand, when both operations and oversight are part of the same organization (whether a ministry or municipality), pressure for strong performance is unlikely since reforms represent a public admission that past procedures were inadequate (at best) or corrupt (at worst). This study examines regulatory governance and corporate governance, including for state-owned and municipal utilities since these ownership arrangements characterize much of the industry in the developing world. Note that the *regulatory system* goes beyond the regulatory agency and the water utility operator to include stakeholders that are in a position to support, block, or blunt reforms that would improve performance. In particular, domestic politics can limit the effectiveness of regulatory institutions.

One way to educate the citizenry about actual performance levels (and limiting the impact of political rhetoric) is through greater transparency. Transparency is enhanced by better information achieved via annual reports from operators (including business plans that identify the financial sustainability of operators, given the policy objectives developed by politicians and implemented by regulators). In addition, yardstick comparisons (through benchmarking) help identify strong and weak performance by operators (or by geographic divisions of a national utility). Furthermore, accountability to Boards of Directors and to those setting infrastructure policies (and designing incentives) reduces the likelihood that lax management or poor regulation will be allowed to continue. Finally, and participation by affected parties (special interests) can be achieved through public hearings, public consultation processes, workshops, and consumer advisory boards (OECD, 2015a). Broad citizen awareness can help the regulator can gain leverage against those benefiting from current dysfunctional arrangements.

2. Literature review

The complex elements affecting existing patterns of infrastructure performance (and associated changes required for genuine reform) are captured in the recent OECD (2015b) overview of regulatory governance in the water sector. The OECD list presented below reflects an emerging consensus regarding the key elements of water governance. It is presented below, along with short descriptions of how the elements relate to the three foundations of good governance: effectiveness, efficiency, and trust (through engagement).

2.1. Effectiveness

1. **Clear roles and responsibilities** for policymaking, policy implementation, operational management, and regulation (while fostering co-ordination across authorities);
2. **Appropriate scales within basin systems** (to reflect hydrological realities, local conditions) to achieve long-term objectives;
3. **Policy coherence** through coordination across user groups, and recognition of sustainability constraints;
4. **Capacity** of responsible authorities, ensuring professionalism, expertise, adaptability, and on-going training programs

2.2. Efficiency

5. **Data and information** produced and shared in a timely, consistent, comparable manner to guide, assess, and improve water policy (defining and collecting data, fostering coordination, and drawing upon stakeholders)
6. **Financing** necessary to meet social objectives (through revenues, sustainable and predictable funding sources, and transparent processes for budgeting and strategic planning)
7. **Regulatory Frameworks** built upon sound legal and institutional structures, with appropriate regulatory tools and resources—enabling rules and incentives to be promulgated that promote efficiency;
8. **Innovative governance practices** based on lessons from pilot programs, using modern technologies when appropriate—with evidence-based decisions;

2.3. Trust and engagement

9. **Integrity and Transparency** involving accountability, codes of conduct, and examination of gaps using well-established tools, such as integrity scans and risk analysis;
10. **Stakeholder engagement** for informed and outcome-oriented contributions to water policy design and implementation, using stakeholder maps and attending to under-represented groups—with capacity-building as one element;
11. **Recognizing trade-offs across users**, rural and urban areas, and generations with attention given to non-discriminatory participation, public discussions of benefits and costs of various policies, and evidence-based assessments to guide decision-making;
12. **Monitoring and Evaluation** through well-resourced, autonomous institutions, with an emphasis on timely and transparent reports that promote improvements in both policy development and implementation.

2.4. The OECD framework focuses on how institutional arrangements

(a) promote accountability across the different organizations that develop policy and operate utility systems;
(b) enable those monitoring water utilities to access and analyse information;
(c) facilitate the design of incentives for improving sector performance; and
(d) ensure the consideration of stakeholder interests (customers, operators, government ministries, non-government organizations, etc.). It draws upon the many governance studies published in recent years.

As part of its effort to promote principles, the OECD *Water Governance Initiative* (WGI) produced an inventory (OECD, 2015c) of water governance indicators that identified twenty-four different initiatives from a number of organizations, including the United Nations, World Bank, various regional development banks, NGOs (such as Transparency International, World Wide Fund for Nature, World Resources Institute, and other groups), and academic groups. In addition, the inventory identifies six databases and five guidelines. Rather than providing an in-depth survey of these frameworks here, a few of the approaches will be highlighted to illustrate the diverse methods and conceptual frameworks. Many studies have utilized elements of regulatory processes or sources of agency legitimacy (decrees or legislation) as indictors of regulatory excellence (and effectiveness). However, one could argue that the high performance of the sector itself is perhaps the best indicator of sound system of regulatory governance. Of course, limited funding for the agency, lack of legal authority to obtain benchmarking data, low income levels, or political interference could also explain poor sector performance—even if regulatory processes are otherwise sound. Also, poor management or union constraints could harm cost containment. So we cannot judge the regulator solely on the basis of *sector performance*—the entire regulatory system needs to be accounted for. Nevertheless, an undue emphasis on process should be avoided as well.

This point implies that it is unreasonable to evaluate a regulatory agency without including information on sector performance. Of course, when regulatory performance partially depends on the performance of utilities, the ultimate evaluation needs to recognize the multiple causal factors. Some "evaluations" of regulators focus on *process* (the how of regulation) ignoring *actions* (what the regulator does) and *outcomes* (what the entire regulatory system achieves). Such methodologies are flawed, since they place a premium on process over substance. Nevertheless, it is possible to evaluate regulatory governance by itself, recognizing that sector performance is the indicator that matters to citizens.

A number of methodologies have been utilized in characterizing regulatory systems and regulatory agencies (one of the organizations contributing to sector outcomes). Those discussed below illustrate the range of approaches and direct attention to the fact that (independent) external groups are evaluating agencies that implement national infrastructure policies. Extensive rankings of agencies have been prepared for states in both Brazil and India focusing on regulatory processes, for example. Another approach involves surveying high level decision-makers (stakeholders) to obtain perceptions of about regulatory and policy risk. A number of groups have proposed regulatory assessment instruments that provide comparisons of legal systems and associated clarity of regulatory authority, regulatory autonomy, capacity-building, tariff design, financial sustainability of the agency, and regulatory strategies towards key stakeholders.[3] We can expect to see these methodologies utilized by international organizations and investors as they evaluate prospects in developed and developing countries.

2.5. WRI good governance indicators: institutional transparency, participation, accountability, and capacity of indian regulators

One initiative, funded by the World Resources Institute, establishes a set of sixteen policy indicators and fifteen regulatory indicators, focusing on social and environmental impacts of processes (Dixit et al., 2007). In this approach to institutional effectiveness, there are four to eight elements driving each governance indicator. For example, the "Effective functioning of the legislative committee" indicator is evaluated in terms of eight elements: (1) disclosure of interests, (2) active committee, (3) reasoned reports, (4) proactive committee, (5) public consultations, (6) transparency of submissions to committee, (7) transparency of committee reports, and (8) reporting by executive. The emphasis on process is understandable, but the level of detail required for data collection is

[3] New surveys and assessment tools keep emerging. With a budget of over $3 million, the new Africa Infrastructure Country Diagnostic (www.infrastructureafrica.org) conducted studies and collected data on infrastructure in East and Southern Africa—from Egypt to the Republic of South Africa. The World Bank Institute draws together aggregate indicators from thirty-seven sources for its aggregate governance dataset (including institutional assessments, corruption perception index, doing business indicators, investment climate assessments, country risk, and a public integrity index).

excessive. Developed to evaluate Indian electricity regulatory commissions (and then extended to several nations), the framework provides a set of indicators. However, assessing decisions and sector performance would seem to be crucial if one were to gauge the actual effectiveness of a regulatory system. The WRI approach by itself elevates form (procedures) over substance (incentives incorporated in regulatory rulings and the outcomes that reflect the complex interactions among stakeholders).

2.6. Regulatory governance: institutional autonomy, decision making, decision tools, accountability—assessment and measurement of brazilian regulators

With support from the World Bank and PPIAF, a team of Brazilian researchers developed an assessment tool that was then applied to twenty-one regulatory agencies in Brazil. Agencies were ranked based on agency design and regulatory processes (Correa et al., 2006). The tool evaluated four main categories (where the number of questions is shown in parentheses: I. Autonomy (26); II. Decision-making (22); III. Decision tools (27); and IV. Accountability/Control (21). There are a total of 96 questions, but indicators are also based on subsets: a regulatory governance index (83), a more parsimonious index (43) and a de facto index (28). As in the case of the Indian study, the entire set is very comprehensive. For example, IV-21 in the Accountability category asks the time it takes for the agency to make a decision: the interviewer seeks maximum, minimum, mean, and mode (within four categories): up to one month, one to six, six to twelve, more than twelve months. Similarly, questions in the Autonomy category ask about ministerial interference (I-5 and I-7), the jobs directors held prior to appointments (I-21) and their post-term jobs (I-24). In the Decision-making area, the survey asks who makes ten different types of decisions (II-2), where different weights are given to the seven authorities listed. Although the survey is very comprehensive, providing a vast amount of information on processes, it suffers from the same limitations as the WRI study of India. In both cases, determining the weights to be given the myriad of factors is a difficult task and the implications for sector performance are not part of the study.

2.7. WGA world governance assessment–surveying local stakeholders

The World Governance Assessment started at the United Nations University in 1999 and has been operating as a project at the Overseas Development Institute in London since 2004: sixteen countries are evaluated in their large study, focusing on six principles in six areas (Hyden et al., 2008). A book reports results from a questionnaire that utilizes 41 questions and is divided into 7 parts. The project involves a country reporter who interviews leaders from ten stakeholder groups: Government, Parliament Civil Service, Business Media, Religious Organizations, the Legal and judicial field, Institutions of higher education, Non-governmental Organizations, and International Organizations. As such, the compilations represent comprehensive evaluations of the policy process. There is no focus on performance or on particular sectors: the research "examines rules rather than results." The six principles, reflecting universal values inspired by the Universal Declaration of Human Rights, are (1) participation, (2) fairness, (3) decency, (4) accountability, (5) transparency, and (6) efficiency. The Team created proxy indicators for these concepts. Field tested twice, the instrument continues to evolve (although the project seems to have concluded). The framework is particularly useful for characterizing the divergent perspectives of different special interests (stakeholder groups), focusing on political morality rather than economic efficiency.

Another application of stakeholder surveys involves the evaluation of Asia Pacific telecommunications regulatory agencies. The *Telecom Regulatory Environment* (TRE) Survey covers eight Asian economies (India, Pakistan, Bangladesh, Sri Lanka, Maldives, Thailand, Indonesia, and the Philippines). Surveys are given to senior level decision-makers who have a high level of knowledge about the regulatory and policy environment in their nations (e.g. CEOs and CFOs). Agencies are then given scores based on these stakeholder perceptions about seven dimensions of regulatory reform affecting conditions in mobile, fixed, and broadband (each assessed separately): market entry, access to scarce resources (such as spectrum), interconnection, tariff regulations, anti-competitive practices, universal service obligations, and quality of services. Similar information-gathering processes are likely to arise in other regions and other sectors, as market participants seek comprehensive, quantitative indicators of the regulatory environment.

2.8. Actors, arenas and policies

An Inter-American Development Bank project examined the political economy of factors affecting sector productivity (Murillo et al., 2008). While the study applies to any sector, the framework offers valuable perspectives on performance. This approach to evaluating the performance of economic institutions focuses on "stories" that emerge from different perspectives. The research team proposes to gather information from participants representing key socioeconomic interests, using structured surveys. Their multi-dimensional matrix includes (1) Political Actors (key socioeconomic interests), (2) Mechanisms utilized by socioeconomic actors (organizations and individuals) in their political demands (including campaign contributions and media campaigns), (3) Venues: arenas of the policymaking process, (including political institutions), and (4) Policy domains (policy areas—time frames, institutions, and historical context). The framework was designed to be utilized by the IADB for a project on "The Political Economy of Productivity." The focus is on developing an understanding of the political economy environment which affects both regulatory processes and sector performance.

2.9. Institutional assessment: sector laws, policies, administration, and performance

A classic World Bank-funded study of the water sector by Saleth and Dinar (1999) contains a comprehensive questionnaire to be administered to country experts, specialists, and policymakers. The purpose of the instrument was to obtain a cross section of information on national characteristics. The questions ask about Water Law, Water Policy, and Water Administration. The resulting indicators are then used to link institutions to actual sector performance. Here, performance is taken to be multidimensional: physical performance (supply and demand), operational performance (production efficiency and ease of making sector allocations), and financial performance (cost recovery and pricing efficiency). The approach underscores the importance of moving beyond issues of accountability, transparency, and inter-agency conflict resolution to outcomes. Policies are based on the law, and the administration/implementation of those policies affects sector performance. The framework yielded a database that was used in subsequent empirical research. The approach illustrates the value of evaluating an entire regulatory system rather than focusing only on processes utilized by a sector regulator. It also demonstrates that qualitative information can be incorporated into econometric studies. Thus, it provides a useful basis for subsequent policy analyses.

2.10. Drivers of change: sector governance and political economy

The UK Department for International Development funded the Overseas Development Institute (ODI) to develop a framework for evaluating how donor groups can evaluate (and improve) governance in the water sector. The methodology applies to other infrastructure sectors as well. The project adopted an interdisciplinary approach to governance: emphasizing the changing role of government, the impacts of institutional complexity, and relationships among different levels of government, key actors, and civil society. The *Drivers of Change* approach considers process issues, the framework identifies important political forces acting upon the sector (Warrener, 2004). It also acknowledges the importance of incentives in determining sector outcomes: (1) Who determines who gets what, where, and how? (2) What are the incentives that influence these actors? (3) What are the external factors that interact with these incentives? (4) How do these change over time? Key issues include government effectiveness, financial management, transparency, engagement of civil society, and pro-poor policies. Thus, the framework emphasizes the "big picture." Subsequently, related reports have extended this early work. For example, See *Improving Governance and Fighting Corruption in the Electricity Sector: A Sourcebook*, World Bank: Energy Sector Board. Chapter 12 identifies a number of frameworks for evaluating governance.

2.11. Infrastructure regulatory systems[4]

This World Bank book by Brown, Stern, & Tenenbaum is the "gold standard" for assessing the effectiveness of infrastructure regulatory systems. The volume provides a comprehensive listing of critical standards, carefully defines terms, and provides numerous links to the literature. Three types of evaluations are included in the volume's appendices. The increasing level of detail provides insights into institutional design, the regulatory process, market structure, and other features of the electricity industry. The questions could be adapted to address issues in other infrastructure sectors as well. The purpose of the assessment tool is to extract background information and to highlight areas of concern. The approach incorporates regulatory governance/process indicators into the survey; however, the surveys include a number of questions about market structure as well. Furthermore, the volume emphasizes the importance regulatory decisions. Rules and incentives affect actual infrastructure performance. The emphasis on both substance and process gives the framework a balance that is lacking in some other survey instruments. Governance indicators need to capture both the role of citizen participation and the clarity of regulatory responsibilities. Some of the frameworks described above give minimal attention to links to actual sector performance, perhaps because of the complex interrelationships among institutions, information, incentives, and special interests.

Brown et al. (2006) emphasize three meta-principles regarding regulatory systems: *credibility*, *legitimacy*, and *transparency*. In addition, these authors explicitly recognize *efficiency* as a fourth meta-principle. After all, if policy can create a positive-sum game, then it is easier to get buy-in from stakeholders. However, without incentives and penalties, poor performance is likely to result. Strong incentives include bonus pools, management performance contracts, bonuses for meeting realistic targets, and replacement of poorly performing managers. With such incentives, efficiency becomes a serious task for managers and staff. Executives tend to only manage what they measure, so targets are one way to focus attention on key outcomes. Improved performance in the sector means that more resources can be devoted to poverty alleviation without creating new fiscal burdens. While far more politicians have run on a platform of fairness than on efficiency, the latter deserves to be highlighted when considering the links between regulatory governance and sector performance.

2.12. OECD Water Governance Initiative (WGI: governance principles and governance gaps)

As has been already noted, perhaps the most comprehensive set of studies related to regulatory governance has emerged from the OECD *Water Governance Initiative* (WGI). The work identified twelve principles for good water governance that promote effectiveness, efficiency, and trust and engagement; these principles would apply to all infrastructure sectors: The OECD framework captures most of the elements affecting sector performance that were identified in the other approaches summarized above:

- **Regulatory Frameworks:** country studies (detailed procedural surveys for India and Brazil),
- **Stakeholder Engagement:** perceptions of special interests (emphasized in the WGA survey),
- **Policy Coherence:** the political economy of institutions (reflecting the role of special interests in politics, as in the IADB study),
- **Monitoring/Evaluation and Water Basin Scales:** the interaction of law, policy and administration (in the World Bank evaluation of water institutions and sector performance),
- **Innovative Governance:** the incentives affecting sector performance, especially as new situations require the adaptation of institutional arrangements (UK's Overseas Development Institute), and
- **Clear Roles and Responsibilities, Financing, and Integrity/Transparency:** the interplay of broad public policy, regulatory incentives, and infrastructure operations (Brown et al., 2006)
- **Data and Information:** used in developing aggregate indicators of governance and in the empirical studies linking specific governance indicators to sector performance.

The other two elements (trade-offs across users, regions and generations, and capacity/professional skills) are noted in some, but not all, of the earlier studies).[5]

[4] The South East Europe Benchmarking Report at http://ec.europa.eu/energy/gas/benchmarking/doc/2/sec_2003_448_en.pdf has many features identified in the Brown, Stern & Tenenbaum framework. It contains both regulatory process elements and sector performance elements. A questionnaire developed by Pierce Atwood is available at http://www.seerecon.org/infrastructure/sectors/energy/documents/benchmarking/questionnaire.pdf. Another set of indicators and an associated multi-criteria model of water resources sustainability (reflecting technical and governance elements) is presented in Marques et al. (2015). For factors affecting transparency, see NERA (2005).

[5] Both regulators and operators fall short when their governance systems miss the mark. As part of its project, the OECD also identified multi-level governance gaps in water policy related to water resources management and to the delivery of water services (OECD, 2012). These related to unclear roles and responsibilities for developing and implementing policy, mismatches between hydrological and administrative boundaries, pervasive information asymmetries, weak technical skills, inadequate funding for investments and operations, lack of clarity regarding priorities (given limited resources), and limited engagement of the public for providing input into policy processes and regulatory decisions. The OECD has developed a set of national case studies as it applied the framework to Latin America, the Middle East and North Africa, and other regions of the world.

3. Additional governance principles: process, substance, and style

A forthcoming Brookings volume identifies a parallel set of principles. The volume draws upon a Conference at the University of Pennsylvania Program on Regulation. Coglianese and Shapiro (2015) summarized the twenty papers presented at that event. Many of the ten characteristics they identified as being associated with regulatory excellence have counterparts in the OECD's dozen, but several reflect a recognition that "style" matters almost as much as "substance" (while processes are understood to be key elements that provide a firm foundation for evidence-based rule-making). The characteristics are listed below, followed by some elaboration regarding the regulatory style:

- **Mission clarity:** mirroring the first OECD principle;
- **Autonomy:** captured in the twelfth principle;
- **Intergovernmental cooperation:** implicit in the third and seventh principle;
- **Sound decision-making:** reflected in the fourth, fifth, and twelfth principles;
- **Expertise with humility:** professional capacity is noted in the fourth principle;
- **Boldness:** related to the eighth OECD principle—promoting innovative initiatives;
- **Responsive, robust enforcement:** implicit in first, seventh, and twelfth principles;
- **Agility, learning, and adaptation:** captured in the fifth, eighth and eleventh principles;
- **Transparency and Public engagement:** mirroring the ninth and tenth principles;
- **Reputation:** an outcome implicit in the ninth and twelfth OECD principles (based on the organization's track record—its achievements).

The elements that stood out for this student of regulation were the emphases on humility, boldness, and agility—representing modest but pro-active approaches to policy. Some regulatory commissions tend to be reactive, as regulators wait for issues to arise in a specific context, so they can be addressed in a rate hearing. Such caution may be quite appropriate where infrastructure coverage is nearly 100% and citizens have incomes enabling most to pay their bills, passivity may result in inefficiencies becoming enshrined in utility managerial practice. While process and substance are well-represented in the literature on regulatory governance, *style and boldness* have not been given much attention. Economists tend not to focus on individuals when evaluating regulatory processes, yet leadership style does make a difference, as argued below.

3.1. Humility

Technicians (economists and engineers, for example) might have a tendency to over-estimate abilities and under-estimate the complexities of building, operating, and regulating infrastructure networks. Technicians often utilize a jargon that can seem like a foreign language to citizens and politicians. Thus, public engagement often involves more speaking than listening; such one-way communication in a regulatory setting does not necessarily promote public understanding of past trends, current performance, and realistic objectives (targets) that reflect feasible budgets. Reinhold Niebuhr noted that decision-makers often do not recognize the "fragmentariness of all human wisdom, the precariousness of all historic configurations of power, and the mixture of good and evil in all human virtue." A recognition of this truth places humility at the foreground—a characteristic that some might interpret as a "weakness" but, in fact, represents a quality that gives credibility to the individual and the organization he or she represents.

3.2. Boldness

Political and financial constraints limit the actions of a regulatory agency accountable to the Legislative or Executive branch of government or a utility accountable to a Board of Directors. An innovative policy (recommended in the OECD's eighth principle) can be disruptive and is likely to be opposed by stakeholders who perceive that they are hurt by the initiative or who feel they had no input into shaping the ideas associated with the policy. Nevertheless, the water/wastewater sector is in crisis in many nations—-calling for leadership that promotes pilot programs, more extensive benchmarking, and new incentives that improve sector performance. These actions require both boldness and creativity. Of course, the situation does not justify initiatives that might damage the legitimacy of regulatory institutions. Nevertheless, continued poor performance is unacceptable, given the close links to citizen perceptions regarding legitimacy and to a sense of social fairness. Bold (incremental) initiatives are called for when the water sector is wasting resources or when social conflicts are present.[6]

3.3. Agility

Agility is the ability to adapt to new situations. Assets in water and wastewater can have lives of many decades. Storage, production and delivery capacity costs are a greater share of total cost for water and wastewater than for energy or for telecommunications. So *agility* would seem to be relatively difficult in a sector where variable costs are relatively low. Yet network maintenance, water safety, non-revenue water, and collections all have implications for current finances and the long term financial (and environmental) sustainability of utilities. This implies that operators must be responsive to opportunities that move utilities closer to the efficiency frontier. Similarly, those developing and implementing policies must be alert to new developments so that regulations incentivize managers and consumers to behave in ways that promote better sector performance. For an organization to be responsive to changing circumstances, its leadership team must be agile.

If we are seeking a comprehensive set of principles and features that characterize good governance, I would add two more features to the list that characterize good leadership—*authenticity* and *compassion*.

3.4. Authenticity

Some individuals are well-grounded: their tone is respectful and the words they use come from the heart. When representing an institutional position, spokespersons tend to draw lines rather than speak about complexity—those grey areas that characterize policy-

[6] For example, in situations of extensive poverty and lack of supporting governmental institutions, it is necessary to give particular attention to *conflict resolution institutions* and extensive *capacity building* within civil society. The sector regulator is one of the organizations that can take responsibility for promoting inclusive social *engagement*. In addition, such interactions can mitigate conflicts by identifying grievance-related and greed-related conflict drivers (Brinkerhoff, 2011). The former are based on perceived unequal treatment, ethnic/religious/regional divisions, and lack of security. Greed-related conflicts emerge from battles over natural resource rents, high unemployment, and stagnant economic growth. Workshops that help all stakeholders understand legitimate grievances provide a mechanism for beginning to acknowledge and address issues.

making in water and other infrastructure sectors. When grand rhetoric or narrow ideology substitute for evidence and shared ideals, the message is meaningless. Listeners and readers might find their prior beliefs confirmed, but genuine performance improvements are unlikely to occur as a result of rhetoric. Authentic two-way communication requires a balanced and accurate description of the current situation, a deep honesty in conveying that message, and a willingness to listen… and to be changed. While this element of style has not been given much attention by economists, psychologists and communication specialists recognize the power of this personal characteristic (Erickson, 1995).

3.5. Compassion

We might not initially think of this quality as being essential for those individuals developing and implementing infrastructure policy. However, the World Bank's Pro-Poor Growth Agenda suggests that reducing both poverty and inequality contribute to meeting the objective of increasing social justice (Ravallion, 2004). Politicians traditionally promise programs that improve access to water and sanitation, but the funding seems (somehow) to be forgotten after the election. So analysts should insist that compassion be more than words: it is captured in budgets, funds, and in actions of politicians, utility managers and regulators. Of course, compassionate behaviour is not always easy to identify. Doing good things with other peoples' money is not particularly ethical: there needs to be some social consensus supporting targeted subsidies to legitimize a pro-poor approach. One-thousand bandages that reduce bleeding might leave the current situation relatively unchanged, compared with a program that reduces the source of those wounds (say, by reducing corruption and/or violence). However, the sequencing of the treatment has differential implications for current and future citizens. Ultimately there is the question of balancing compassion with efficiency and sustainable growth, where the timing of outcomes affects current and future citizens differently. Such generational issues can be very difficult to resolve.

Thus, it can be argued that humility, boldness, agility, authenticity, and compassion warrant more attention by those developing metrics for evaluating the governance of regulatory institutions and assessing sector performance. These "style" qualities might not have been emphasized in economic analyses because they reflect attitudes and behaviours of *individuals*. Economists, unlike some historians, tend to be uncomfortable with giving too much importance to individuals; yet time and again, we see how individuals make a difference in initiatives to improve sector performance. McCraw (1984) documented the roles of individuals like Alfred Kahn in the deregulation movement in the United States. In his role as Chair of the Civil Aeronautics Board, he translated ideas into policies that dramatically altered the airlines industry. Case studies from the developing world would identify other professionals who have challenged the status quo and implemented reform policies.

4. An integrative approach linking institutions and incentives to sector performance

Fig. 1 outlines seven elements affecting sector performance. The interactions among key actors/stakeholders are constrained and/or incentivized by governance systems between and within Ministries, operating utilities, and regulatory commissions. The terms in italics underscore the complex set of features comprising the seven elements.

4.1. Ideas

Ideas matter: each of us brings *conceptual frameworks* to our decisions; new perspectives can serve as catalysts for activities that improve the regulation, operation, and financial sustainability of water utilities. Decision-makers are often "fighting fires": reacting to supervisor's request, meeting a deadline, or responding to a crisis. When individuals fight fires, they are stuck with current fire-fighting equipment. The question becomes one of devoting resources to developing new tools for fighting those fires. There is even a deeper issue: who is examining the pattern of fires (emergencies or political interventions), so they can be predicted or their sources identified? Stepping back is essential if those in positions of leadership are to "stir" the agency and "steer" it towards favorable outcomes.

Ralph Waldo Emerson said, "People only see what they are prepared to see." Past experiences place blinders on us: "Believing is seeing". Researchers call this confirmatory bias. We tend to discount or misinterpret facts that are inconsistent with our own world view. Cases from other nations remind us that we all wear blinders and need to interact with others to better understand our own situation. A wise person once said: "Don't believe everything you believe." Yet we all are attached to our prior ideas, beliefs, and values. We are all comfortable with what is familiar. Listening to others (engagement) is one way we can begin to see the validity of other viewpoints and the value of new ideas, resulting in organizations working towards a shared solution rather than trying to dictate a preferred strategy.

4.2. Institutions

Social Structures and *Organizational cultures matter*: the sector regulatory commission is one component of the regulatory (and governance) system, which includes the legislature, courts, utilities, unions, and the laws that establish *roles*, *accountability*, and responsibilities for these organizations. Yet, behind these organizations are sets of traditions, the *rule of law*, and political arrangements that affect organizational interactions and sector performance. Behavioral norms are often taken for granted, yet these, too, represent part of the institutional inheritance for a nation. Institutions can be said to reside at several levels: broad social structures (reflecting *cultural norms* and customs) and formal organizations (such as regulatory agencies). For now, let formal organizations fall into the *interests* (or stakeholder) category. Informal institutions are the "norms and customs regulating socio-economic life". As such, they are mechanisms that facilitate cooperation or mitigate conflicts among sets of individuals: such structures become part of the social order, setting rules and procedures for solving problems. Without *political capacity* that facilitates consensus-building, it is difficult to have long term planning required for infrastructure. As part of the cultural context for governance, institutions include the customs and accepted patterns of behaviour that encourage or discourage a wide range of actions. North (1990) and Ostrom (2010) are just two of the eminent scholars who have highlighted the role of *social structures* in affecting economic outcomes. They underscore the role of *organizational governance practices* (such as *autonomy*, a component in the OECD principles) in affecting the behaviour of decision-makers.

4.3. Interests

Stakeholders matter: In the broader meaning of the term, institutions can also be organizations, such as courts or regulatory commissions. Such entities are established to fulfil specific functions: they emerge from complex sets of circumstances to address

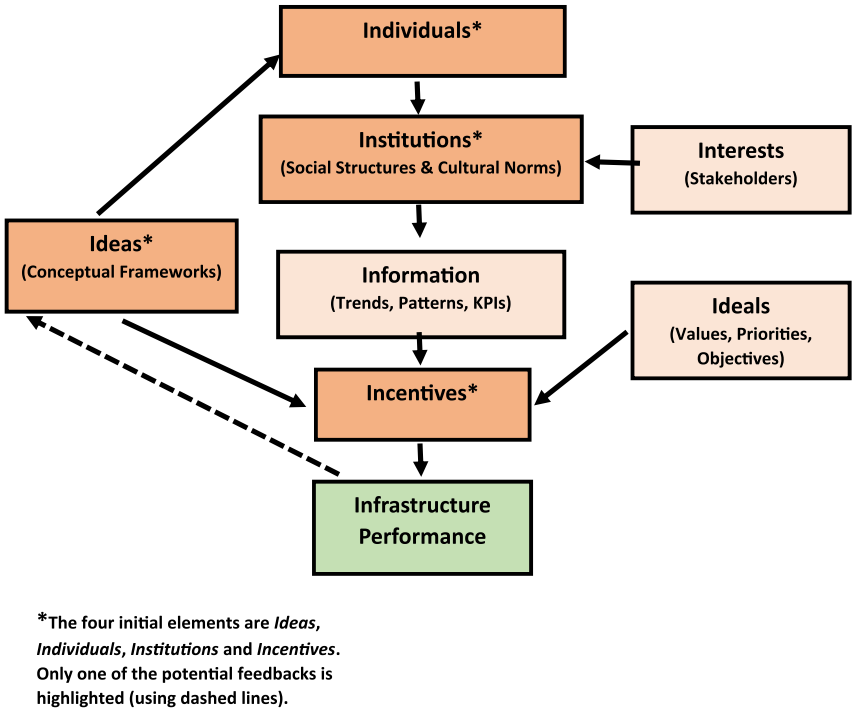

Fig. 1. Seven elements affecting infrastructure performance.

salient issues. Regulatory organizations generally have formal mandates, limited resources, and a culture that includes incentives, shared values (or ideals), and a structure of decision-rights. Both sector regulators and state-owned water utilities are formal organizations embedded in a social structure, so we will include these organizations as *interests* (or stakeholders). A primary responsibility of oversight agencies (like sector regulators) is to balance the interests of consumers, operators, and government. That task requires careful *stakeholder analysis* and forums that facilitate *public participation* in the regulatory process.

Special interests can be concentrated or diffuse—which gives them incentives to participate (or not) in policy forums and political campaign financing; they can have significant influence or be (relatively) apathetic bystanders who are affected by infrastructure policies. There exist a large number of stakeholders concerned with how potential changes in the water sector will affect their benefits and costs. Current institutional arrangements lead to a particular set of outcomes that favor some stakeholders and have negative impacts on others (through non-availability of service, low service quality, or other features of sector performance). The challenge for those seeking to improve sector performance is to identify a coalition of special interests which can work together to reduce the information asymmetries that tend to characterize infrastructure so regulatory agencies can create incentives for good utility performance.

4.4. Information

Information matters: the collection and authentication of data are necessary to identify trends, understand current patterns of performance, and determine realistic targets for utilities. It is said that "the fewer the facts, the stronger the opinion." One way to reduce the divisive role of rhetoric is to introduce information about the *costs and benefits* of different policy options, including the *incidence of those costs and benefits*. Holding managers accountable for weak performance is only possible if data on performance trends and best practice are widely available for analysis. That requires data collection, verification, and analysis. Information on *past trends*, *current patterns* across comparable utilities, and *best practice* enable the establishment of *realistic targets* when establishing good incentives. Without data on key performance indicators, cost of service regulation would only enshrine high costs in high prices. Price caps that reduce prices for inefficient firms can provoke investors to pressure management to improve performance, so those incentives are clear. For state-owned utilities, low prices also punish customers who will now receive poor service and punish unserved citizens, since less funding is available for network expansion. In addition, identifying high performance infrastructure operators (that are achieving *financial sustainability*) singles them out as ones who will not waste donor funds. Identifying utilities with weak performance provides citizens with a basis for pressuring owners of privately owned utilities and of state-owned enterprises local politicians to replace poor managers.

4.5. Incentives

Incentives matter: decision-makers behave in accordance with payoffs associated with different outcomes; every regulatory rule rewards or penalizes actions affecting utility performance. *Implementation* (another I-word) matters as well. Information is, of course, the basis for realistic goals and associated incentives. Targets (*Objectives*) should not be too easily met, nor should they be unrealistically high if the targets are to affect behaviour. Furthermore, the rewards must be commensurate with the effort required to meet targets. In addition, citizen expectations need to be managed—these stakeholders need to be made aware of trends and what is truly possible. When trends are visible and rewards are established, managers focus on ways to keep the numbers moving in the right direction; incentives associated with benchmarking motivate decision-makers to be more proactive.

4.6. Ideals

Values matter: when we are clear about our *objectives* and communicate those priorities to stakeholders, the resulting dialogue can clarify our goals and promote greater consensus regarding sector objectives. The four additional features of sound governance (humility, boldness, agility, and compassion) involve trade-offs. For example, acting boldly could mean acting precipitously—without adequate preparations. Excessive humility could signal a lack of confidence that leads citizens to reduce their support for performance improvement initiatives. In addition, stakeholder input represents an important source of information about how different objectives might be prioritized. Those currently receiving service want improvements in service quality; those without service seek access (often at unrealistically low prices). These multiple (and competing) objectives must be reconciled by those developing and implementing a coherent (internally consistent) set of public policies. For example, regulators need to establish the tariffs according to projected service delivery and levels of service quality. Simultaneously, regulators need to balance those objectives with the goal of increased access by low-income consumers: Pro-Poor Agenda.

4.7. Individuals

People matter: ultimately, leadership is essential for improved sector performance; no matter how dysfunctional or inefficient current arrangements are, someone is benefiting from them—overcoming institutional inertia and narrow special interests requires strong leadership. One can argue that such leadership should not be authoritarian, but display humility, agility, authenticity, and compassion. Furthermore, one person cannot do everything. Each individual generally represents some organization that is part of a Guiding Coalition whose purpose is to introduce changes in current institutional arrangements. Ultimately, however, *individuals* move the situation forward. Policies are not self-implementing. The governance features of institutions determine transparency, accountability, autonomy and the authority required for sound policy development and implementation. Nevertheless, the process requires leadership—from individuals at all levels of organizations. Those exercising leadership both "stir and steer"; they make sure that issues get raised and addressed and they guide the organization once the appropriate strategies have been identified. If the political, economic, and social conditions are ready for change, leadership can help organizations develop *initiatives* (programs) that improve infrastructure performance. Fig. 1 attempts to capture these elements, showing how different elements relate to other features of the decision-environment.[7]

[7] Leaders face particularly challenging situations where extremely low incomes or past conflicts contribute to fragile states with low institutional maturity. *Capacity-building* and *Stabilization/Reconciliation Programs* are necessary to support infrastructure programs when there is a lack of trust within civil society and vast numbers live in vulnerable (or even desperate) situations (Jones and Howarth, 2012). Nations falling into the category of fragile states have many elements that make funding, constructing, and operating infrastructure facilities exceedingly challenging. In such situations, the link between development and security generally needs to be included as an element in the set of factors affecting infrastructure performance. To make the framework applicable to fragile and conflict affected states, we should include initiatives promoting *direct investment* (for network expansion and remediation) and *operational changes* by utilities. Political rivalries involving regions, ideologies, ethnic groups, or special interests can create a kind of paralysis within state structures, leading to lost opportunities for improving infrastructure. See new material at www.regulationbodyofknowledge.org on regulatory effectiveness in fragile states.

4.8. Concluding observations

Although regulation is not divorced from politics, it should not be married to politics either. One lesson the emerges from this overview of governance is that "regulators need to think politically without being political." (Jamison and Castaneda, 2014). Given the social importance of access to infrastructure, those involved in making the regulatory system work cannot ignore politics. "Independent" regulatory agencies are not fully autonomous: not only are they both stakeholders and umpires, but they are accountable to legislative, executive, and judicial authorities—where each could be characterized as having their own "special interests" (as stakeholders). The sector regulator must fulfill the requirements of the law or the decree that established the agency; in most nations, decisions are subject to judicial appeals—ensuring that the agency follows due process. Ideally, agencies should be insulated from day-to-day political meddling (including patronage requests). Nevertheless, regulatory leaders cannot ignore the political climate in a nation.

One recommendation that emerges from previous work is that regulators should place a premium on transparency and consistency in the regulatory process, since cash flows will be driven by their decisions. The agency's credibility depends heavily on data collection and analysis, adhering to schedules, keeping promises, and behaving with integrity. In addition, a dash of *humility* promotes the public awareness that the challenges faced by infrastructure decision-makers are complex and (often) involve major resource commitments. Reputations are made over time, and can be lost quickly. It has been said that regulators should only promise what they can actually deliver, and then they must deliver on their promises. To do otherwise leads to public apathy (at best) and public antipathy (at worst). The same point applies to politicians, although their time horizon tends to be focus on the next election. Infrastructure assets, on the other hand, last for decades—so infrastructure decision-makers must have much longer time horizons.

The Seven I elements identified in Fig. 1 are not original: they appear in one form or another in most frameworks that attempt to identify characteristics (or principles) of governance that affect the performance of water sectors. For example, *predictability* and *transparency* are two elements lacking in many regulatory jurisdictions. Regulators need to be consistent in both the process and in the substance of decisions. Transparency implies clear rules and functions that give operators confidence in the professionalism of those providing oversight. The public is seldom fully aware of current infrastructure policies and rules. Best practice regulatory institutions need to take a more active role in educating the public and in communicating sector developments to all stakeholders. Improving governance is the foundation for establishing better incentives to promote efficiency. If the regulatory process is transparent, stakeholders (including political leaders) will better understand regulatory decisions.

Finally, I want to direct attention to features that (in my opinion) warrant more attention by those analysing the institutional arrangements that promote improved water sector performance, including those responsible for the excellent OECD initiatives. Many studies of regulatory governance focus on processes—the *how* of regulation. Some studies address policies and incentives (regulatory substance)—the *what* of regulation. Few studies consider the role of individuals and the style they bring to processes and substance. Individuals can bring qualities like humility, boldness, agility, authenticity, and compassion to governance. These qualities will differ across people, cultures, and socio-political contexts, yet I believe that case studies will reveal the special role played by those providing leadership—as elected officials, managers, and

regulators. Ultimately, *individuals* do matter, even if it is difficult for economists to fit them into our models. Individuals operate within the institutional milieu, come up with ideas, and translate them into action. Individuals gather information and devise strategies for dealing with special interests. Ultimately, the values of individuals are the basis for prioritizing water sector outcomes and determining the incentives that promote the achievement of shared objectives. Each of the seven elements identified here has impacts on governance and performance, but perhaps the most elusive (and important) is individuals.

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