



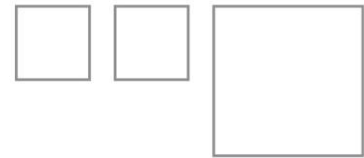
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Federal Department of Economic Affairs,
Education and Research EAER
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Swiss Confederation

Review of success stories in urban water utility reform





Foreword

Infrastructure is more than contract signing and cornerstone laying. Once the ribbons are cut, adequate operation and maintenance is required to reach the life-time potential of the built assets. In many countries, the reality is far from this ideal; public utilities struggle to sustain their infrastructure systems. Daily work is dominated by fire-fighting problems, rather than by good business conduct. Most utilities are not used to regularly maintaining their assets, strategically planning their investments or developing their business. As a result, the quality of service is poor and clients are reluctant to pay. This in turn starves the utilities of the necessary means to hire and keep qualified staff, repair and replace assets when necessary, and undertake strategic investments. It is difficult for utilities to break this vicious cycle on their own.

SECO supports public infrastructure utilities in partner countries to improve their business practices. Technical assistance to improve the service delivery of water utilities has always been part of SECO's projects in infrastructure financing, but the approach has evolved. In 2010, SECO decided to incorporate "**Corporate Development**" measures more systematically in its infrastructure portfolio. Since then, a number of projects in Latin America, Africa, South East Europe and Central Asia have been developed. They combine grant-financing for physical infrastructure with comprehensive Corporate Development measures in the areas of operations, financial management, human resources, organization and customer relationship management.

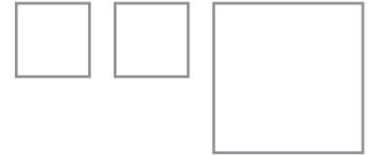
SECO strives to continuously improve the Corporate Development of utilities. The present study "Review of success stories in urban water utility reform" was commissioned in 2015 as a follow-up to an independent evaluation of SECO's Corporate Development activities. The purpose of this study is to learn from successful utility turn-arounds. Eight successful cases were identified and studied. We wanted to learn "what makes a successful case" and to draw lessons for our programs. While this report primarily serves for internal purposes, we believe it contains also interesting findings which could also be useful for our partners, consultants and the general public.

This report offers three key analytical elements:

First, **15 success factors**, which are divided into first-order, second-order, contributing and sustainability factors. The factors can help assess the projects and the sector context and provide a basis for systematic monitoring.

Second, the **two reform phases** which illustrate the long-term character of successful utility reform. Overall, the process may last 15 years or more. Awareness of this long-term character of utility reform is essential in setting realistic expectations for Corporate Development programs, which often are implemented in phases of 2-4 years.





Third, **five essential roles donors have played** in successful utility reform. This typology can help donors to clarify and assign responsibilities between donors, their headquarters, field offices and consultants.

Finally, the attached "**Tool for Analysis and Dialogue**", summarizes and illustrates the above mentioned three key elements. It shall serve as a practical guide in all project cycles. It is expected to be most useful in the analysis and monitoring of the sector context and in the dialogue with partners. We hope it will serve also your purposes.

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Head of Infrastructure Financing

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Review of success stories in urban water utility reform

Final Report

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Acknowledgments

This report is the product of an assignment from the Swiss State Secretariat for Economic Affairs SECO. It presents a review of success stories in urban water utility reforms. Through the review, SECO seeks to deepen its understanding of the evolutionary process of successful urban water utility reforms and infer ways to improve its offering to urban water utilities which want to emulate the success stories.

The review covers urban water utilities, in which SECO had no prior involvement and no contacts. To be able to review these utilities, we relied on the goodwill and support of their management teams and development partners. We are pleased to say that all utilities and development agencies responded positively to our call and extended their support – a wonderful illustration of development cooperation.

For our productive and insightful field missions, we thank Augustin Boer, Mihai Dorus, Andi Dumitras, Milgo Malaquen, Sam Ogutha, Roland Werchota and Mihnea Zamfir. We also thank our interviewees, who responded willingly and openly to our queries, providing us with a wealth of information and insights. Finally, we extend thanks to the Asian Development Bank, EBRD, GIZ and the World Bank, who suggested and linked us with utilities and shared valuable documentation.

Of course, at the end of the day, the report is our valuation of the collected information. And as the adage goes: all errors or misinterpretations are solely ours.

Geert Engelsman
Michel Leushuis

Acronyms

ADB	Asian Development Bank
AFD	French Development Agency
AIMF France	International Association of French-speaking mayors in France
DMA	District Metered Area
EBRD	European Bank for Reconstruction and Development
GIZ	Gesellschaft für Internationale Zusammenarbeit GMBH
IDA	Intercommunity Development Association (Romania)
ISPA	EU's Instrument for Structural Policies for Pre-Accession
JICA	Japan International Cooperation Agency
MELF	EBRD's Municipal Environmental Loan Facility in Romania
MRD	Maintenance, Replacement and Development Reserve (Romania)
MUDP	EBRD's Municipal Utilities Development Program in Romania
NRW	Nonrevenue water
NWSC	National Water and Sewerage Company (Uganda)
O&M	Operation and Maintenance
ONEA	National Water and Sanitation Company of Burkina Faso
PPWSA	Phnom Penh Water Supply Authority
SCADA	Supervisory Control and Data Acquisition
SECO	State Secretariat for Economic Affairs (Switzerland)
SOP	EU Cohesion Fund financed Sectoral Operational Program in Romania
UFW	Unaccounted for water
UNDP	United Nations Development Program
UWASAM	GIZ's Urban Water and Sanitation Management Program (Kenya)
WHO	World Health Organization

Executive summary

Introduction

For SECO, as for other development agencies, improving water service delivery in developing countries has proven possible, but difficult, and worse: an uncertain endeavour. Over the years, SECO has experienced that water utility reform is a complex undertaking, in which many elements must fall into place in the right way and at the right time to achieve success. Much is known about what these elements (the key attributes of successful urban water utilities) are. However, it remains much less clear how successful utilities acquire these attributes and evolve towards success: what triggers reform, what are the dynamics of change, what development phases do these utilities go through and with what kind of development assistance?

Through this Review of success stories in urban water utility reforms, SECO wishes to deepen and share its understanding on the underlying evolutionary process. The purpose thereby is not to uncover the holy grail of urban water utility reform, but rather to identify practical ideas on how to mould the many necessary elements in the development of water utilities successfully together. The Review constitutes a follow-up to an independent evaluation of SECO's own support to urban utilities and was conducted during the second half of 2015.

The Review included (i) in-depth case studies of three successful, publicly-owned, water utilities: APA Vital (Iasi, Romania), Nyewasco (Nyeri, Kenya) and PPWSA (Phnom Penh, Cambodia); (ii) a cursory study of five successful water utilities: Haiphong (Vietnam), Manila (Philippines), NWSC (Uganda), ONEA (Burkina Faso), and Tartu (Estonia); (iii) a review of relevant development literature; (iv) the experience and judgments of leading water supply sector specialists; and (v) a cross-check of the findings with the outcome of the independent evaluation of SECO's corporate development of public utilities.

Level of success attained by urban water utilities in developing countries

The Review shows – unequivocally – that urban water utilities in developing countries can provide high-quality services, achieve high coverage rates, and operate efficiently: covering their operational, maintenance and (partially) investment costs. The table below presents the financial and operational level at which a selection of urban water utilities operate (and these utilities are no exceptions – there are more – in a diverse set of political economies).

Key performance indicators of successful urban water utilities

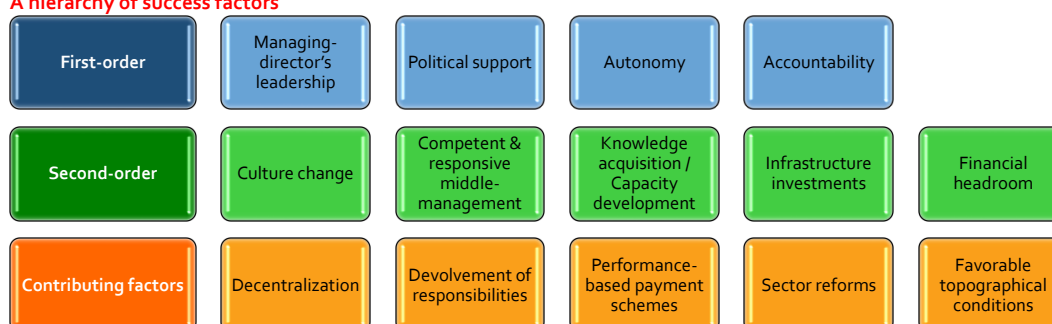
Utility	APA Vital	Nyewasco	PPWSA	Haiphong	Manila (East)	Tartu
Year	2014	2014	2014	2014	2012	2014
Availability of service (hrs/day)	24	24	24	24	24	24
Coverage ratio (% population)	63%*	85%	85%	96%	89%	99.8%
Metering (% of customers)	99.62%	100%	100%	100%	100%	100%
Collection ratio (% of bills)	100%	100%	99.9%	99.8%	n/a	99.9%
NRW (% of production)	27.15%	19%	7.76%	14%	11%	13%
Operating cost coverage (rev/exp.)	1.11	1.26	2.81	1.45	n/a	2.22
Staff (# per 1.000 connections)	18	5	3.15	4,1	1.4	8

* APA Vital is a regional operator. Its coverage ratio in the urban centres is near 100%.

Success factors or key attributes of successful urban water utilities

The Review distinguishes first and second order success factors. Both levels are necessary to achieve success. The difference is that the first order factors are a pre-requisite for the second order factors to materialize or to be utilized effectively. In addition to these necessary conditions, there are supportive factors of success, i.e. factors which can contribute to success, but are not necessary per se.

A hierarchy of success factors



On the success factors

Long-serving, capable and charismatic managing-directors play a pivotal role in successful utility reforms. They visualize an end-result, initiate concrete reform steps, lead-by-example, change staff mentality, promote young, promising staff to key positions (building a competent and responsive middle-management) and institutionalize the reforms. Importantly, they negotiate support from the local and national political leadership; support which has to be provided explicitly, vocally and unabatingly throughout the reform process.

Successful utilities are managed without political interference in their day-to-day operations and have access to the water tariff revenues. This autonomy has, in all cases, been formalized through the corporatization of the utility. Noteworthy is that such formal corporatization of the utility can, but does not have to, occur at the very outset of a reform program. Management autonomy can to a large degree exist without formal corporatization. The corporatization is rather a milestone: a confirmation of the political support to the reform efforts of the utility.

Management autonomy only works for the benefit of the customer and the tax-payer, when a utility's management is incentivized and made responsible to that end. The Review distinguishes three principle sources of accountability: (i) intrinsic motivation and personal pride on the part of the managing-director; (ii) the utility's principal who embraces the vision of a well-performing utility; and (iii) development finance institutions (which trigger accountability through stringent reporting requirements, loan covenants and personal attention).

The first-order success factors trigger a culture change and create fertile ground for the built-up of operational and financial management capacities. Successful utilities seek – through varying combinations of efficiency improvements and tariff adjustments – to create financial headroom to pay their staff decent salaries and make targeted expansions of their network to improve service delivery and increase the revenue base. Donor-financed infrastructure investments are critical to rehabilitate debilitated infrastructure and allow for more ambitious expansions of the network.

All successful utilities ultimately charge cost-covering water tariffs. The timing and frequency of these tariff adjustments varies greatly: from a single adjustment at the end of the reforms to annual adjustments starting at the outset of the reform process. Interestingly, successful utility reforms can occur without (nation-wide) sector reforms, the introduction of performance-based payment schemes, and the decentralization and devolvement of responsibilities, even though there are instances where these measures have contributed to success.

Initiating reforms and the dynamics of change

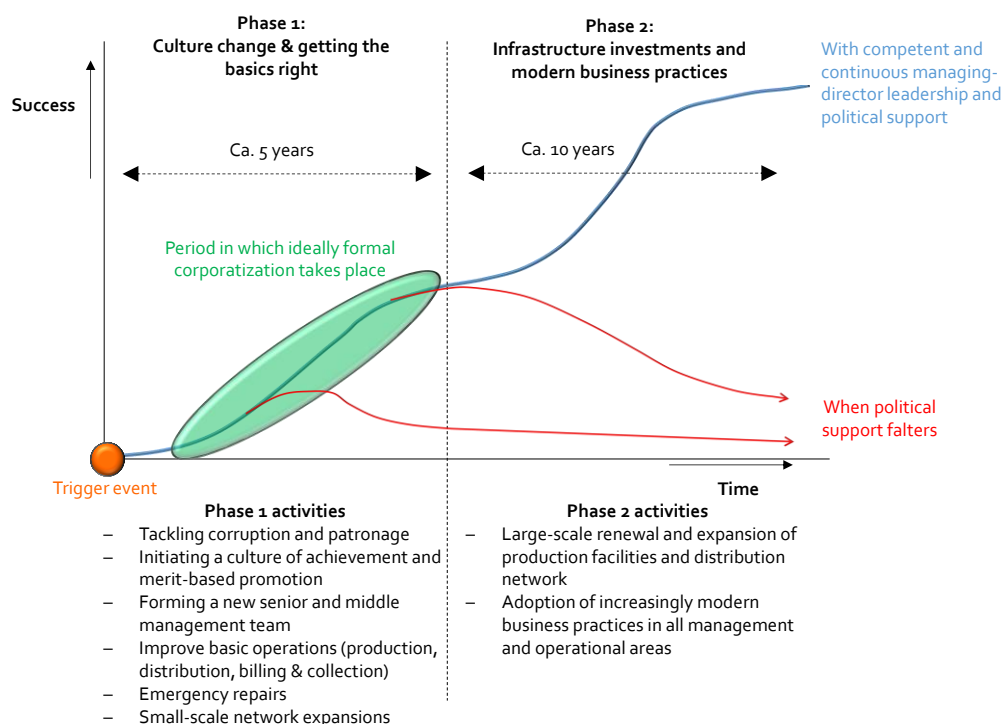
The Review confirms a previous World Bank finding that utility reforms originate externally, with a utility's principal seizing an opportunity or responding to an incident or imminent breakdown. Initiating reforms is a surprisingly manageable collective action problem: reforms are effectively decided upon and shaped by five principal stakeholders: the managing-director, the mayor, the ministry of finance, the sector ministry and one development agency.

Reform momentum is maintained through (i) the managing-director's drive, vision and charisma; (ii) the reporting requirements and loan covenants of the development agency; and (iii) outside political pressure. Interestingly, customers only play a marginal role in the early days of reforms and are often consciously kept out of the equation as long as the service levels remain dismal. Only after service levels improve are customers mobilized and do they evolve into an important, supportive political force.

Two distinct development phases

The Review identifies two distinct development phases in successful urban water utility turnarounds. The first phase resolves around cultural change and getting the operational basics right. The second phase entails large-scale infrastructure investments and the adoption of modern business practices.

The two-phase model of utility reform



Sustaining reforms and maintaining success

The continuity of the first-order success factors after the initial reform steps ensures the persistence of reform efforts. Sustaining reform efforts is not very different from initiating the reforms efforts (accept that it benefits from the momentum gained by first successes). Equally, once success is achieved, it can be maintained through the persistence of the initial success factors. Additionally, success can be fortified by (i) the establishment of systems and working procedures which guide management and staff actions; (ii) diversifying accountability through the public listing of the utility or the issuance of bonds; (iii) vesting intrinsic value in the water utility by making it part of a city's identity; and (iv) supportive sector reforms.

Role of development agencies

The Review identifies five distinct roles development agencies play in a water utility turnaround. Whilst performing these roles, development agencies do not avail of any unique tools or aid modalities. The five roles are:

1. **Instigating change and staying the course.** By making loan-financing conditional on continually improving operational and financial performance, the introduction of cost-covering tariffs, and/or institutionalizing financial autonomy, development finance institutions can usher in (specific) reforms or maintain momentum in the reform process.
2. **Facilitating dialogue and decision-making.** Development agencies can create a platform to engage the principal stakeholders and guide them – through expert sessions and an open dialogue – through the decision-making and reform process. Such meetings can also be instrumental to galvanize opposition to the reforms.
3. **Interlocutor.** The lead specialist from the development agency is an important counterpart of the managing-director and key staff. They act as a sounding board, share experiences from working with other utilities, and (importantly) dialogue with them on the operational and financial performance of the utility (identifying areas of success and ones which require attention).
4. **Knowledge sharing.** The sharing of knowledge with a utility by development agency experts, consultants and twinning partners allows a utility to verse itself in the nitty gritty detail of the daily operational and financial management of the utility or the implementation of specific reform measures.
5. **Financier.** For ultimate success, utilities also need to invest in the rehabilitation, renewal and expansion of the intake, production and distribution infrastructure. Development agencies provide much needed finance for these investments.

If the story is so clear, why is the practice so difficult?

The Review paints a pretty clear picture of the dynamics of change, the development phases in a turnaround process and the key attributes of successful urban water utilities. It is tempting to distil out of this story line a unique road to success, which every urban water utility – eager to emulate the success stories – should travel. Most water sector experts recognize that such a road does not exist and that each utility needs to go through its own development process.

A closer look at the success stories and factors brings several key features to light. First, even in the first-order success factors, there is a hierarchy: the reform-minded managing-director and the explicit support of the local and national political leadership to the reform *precede* the decision to provide a

utility autonomy and hold it accountable. Second, the ownership and leadership of the managing-director and his political principal are – at the end of the day – *voluntary*: they themselves need to feel the urgency of reform and the incentive to make the decisions which herald in the changes. Third, the utilities truly *evolve*, with the pieces of the puzzle slowly falling into place, through a concerted effort, but one that is neither fully planned nor controlled by any one of the principal stakeholders. The reforms are transformational and endogenous in nature, driven by competent and audacious local leaders.

These features point towards the importance of (continuous) local and national ownership of the turnaround process, which also implies that the turnaround process is dependent on the developments in the local and national political economy. This, combined with the endogenous nature of the turnaround process and the time required to evolve into a modern utility, is why the practice of utility reform is indeed difficult, context-specific and uncertain in its outcome.

Looking forward

The purpose of the Review is to identify practical ideas on how to mould together the many necessary elements for the successful reform of water utilities. The Review offers four such ideas. First, in the initial stages of a reform process the focus should be on winning over the managing-director and the (local) political leadership. Such ownership and leadership is more likely to prevail if (externally-financed) reform efforts are locally led and address the preferences and immediate concerns of the managing-director and the political leadership.

Second, where local leadership emerges and prevails over time, development agencies can help by empowering the change makers *inter alia* through facilitating an in-country dialogue and collective action process, capacity building, providing man- and brainpower, and results-based financing. For the assistance to remain effective, it is vital to be perceptive of what is happening within the utility and its (political and social) environment and be ready to tweak the assistance to the circumstances at hand.

Third, following such a tailored, demand-driven, politically astute approach allows development agencies to apply the two-phase reform model, i.e. to start small and focus the assistance on emergency measures, getting the basic operations right and facilitating culture change, before scaling up the support – when initial success is achieved and local ownership and leadership prevails – to large-scale investments and the adoption of increasingly modern business practices.

Fourth, the Review's analytical framework, collected data, extended success factor model and the two-phase development graph provide practitioners an emerging tool (published separately by SECO) to: (i) assess where a utility is located in its development or reform process, as well as the (political) context in which it operates; and (ii) conduct a structured dialogue amongst the stakeholders on reforming the utility. (Note: this emerging tool and underlying models should not be used mechanically, e.g. the absence of success factors does not mean a development agency should not engage; it suggests that the development agency should look for entry points to trigger the emergence of success factors.)

In conclusion, the Review unequivocally shows that it is possible for underperforming urban water utilities in developing countries to evolve into modern service providers with high-quality service delivery and a solid financial performance. This does require hard work and a deft touch of competent and audacious local leaders (in particular from the managing-director), the competent support and push from a development agency, and the acceptance that the road to success is bumpy and long, requiring perseverance and a healthy portion of good fortune.

1 Introduction

1.1 Background

For SECO, as for other development agencies, improving water service delivery in developing countries has proven possible, but difficult, and worse: an uncertain endeavour. Over the years, SECO has experienced that water utility reform is a complex undertaking, in which many elements must fall into place in the right way and at the right time to achieve success. Much is known about what these elements (the key attributes of successful urban water utilities) are¹. However, it remains much less clear how successful utilities acquire these attributes and evolve towards success: what triggers reform, what are the dynamics of change, what development phases do these utilities go through and with what kind of development assistance?

Through this Review of success stories in urban water utility reforms, SECO wishes to deepen and share its understanding on the underlying evolutionary process. The purpose thereby is not to uncover the holy grail of urban water utility reform, but rather to identify practical ideas on how to mould the many necessary elements in the development of water utilities successfully together. The Review constitutes a follow-up to an independent evaluation of SECO's own support to urban utilities (Engelsman and Leushuis 2015) and was conducted during the second half of 2015.

1.2 Methodology

The Review included (i) in-depth case studies of three successful water utilities: APA Vital (Iasi, Romania), Nyewasco (Nyeri, Kenya) and PPWSA (Phnom Penh, Cambodia)²; (ii) a cursory study of five successful water utilities: Haiphong (Vietnam), Manila (Philippines), NWSC (Uganda), ONEA (Burkina Faso), and Tartu (Estonia); (iii) a review of relevant development literature; and (iv) the experience and judgments of leading water supply sector specialists.

The Review also cross-checked with the (earlier mentioned) independent evaluation of SECO's corporate development of public utilities (Engelsman and Leushuis 2015), in particular to (i) the successful utility reforms in Khujand (Tajikistan) and Pogradec (Albania); and (ii) the Municipal Infrastructure Program in Albania (a promising, programmatic, results-based approach to utility reform, pioneered by KfW and SECO).

The Review focussed on publicly-owned utilities, as these are the utilities that (i) SECO tends to work with; and (ii) serve (or attempt to serve) over 90% of the world population and were responsible for 1,21 billion people gaining access to piped water between 1990 and 2007 (Schiffler 2015). The 8 (abovementioned) success stories comprise water and sewerage companies, except for PPWSA and Haiphong which supply drinking water only. The Review focussed on the water supply side of the business, although some of the collected performance indicators cover the utility as a whole.

For the three in-depth case studies, we charted: (i) a chronology of key events; (ii) the operational and financial performance of the utility over time; (iii) the political economy of the reform process; (iv) the

¹ See for example Baietti, Kingdom and van Ginneken (2006), van Ginneken and Kingdom (2008), Locussol en Fall (2009) and Chiplunkar, Seetharam and Tan (2012).

² Throughout this report, we use – for clarity's sake – the current names of the water utilities under review, even when we refer to a time (often before corporatization) when they operated under a different name.

discretionary reform measures; and (v) the chronology and budgets of the official development assistance to the utilities.

The fact finding, process tracing and political economy analysis for the three in-depth case studies were conducted through a thorough documentary review and semi-structured, key-informant interviews. The latter were guided by SECO's review questions³ and the theory and practice of political economy analysis⁴. Field visits were undertaken to APA Vital (Romania) and Nyewasco (Kenya). The review of the other reference utilities consisted of a cursory document review and one or two telephonic interviews with leading experts involved in these utilities' turnarounds.

1.3 Limitations

The Review had two main constraints on information gathering. First, the budget allowed for one-week field missions to Iasi (Romania) and Nyeri (Kenya). The Phnom Penh case was developed solely through documentary review and telephonic interviews with development partners.

Second, the performance turnaround of the three main reference utilities started in the early to mid-nineties. While available documentation partly covered the review questions, data gathering depended to a considerable extent on the rich, albeit possibly imperfect recollections of the interviewees.

We are confident about the quality of our information, having taken care to triangulate our findings. Still, it has proven difficult at times to (i) pinpoint the exact timing of activities and chronology of events; and (ii) obtain a detailed recollection of the political decision and cooperation processes. As such, the Report's findings and conclusions should be treated as indicative, not conclusive, and worthy of follow-up research and validation.

1.4 Reading guide

Chapter 2 details the level of success attained by the reference utilities and the factors contributing to this success. Chapter 3 examines how utilities evolved towards success and the different development phases they went through. Chapter 4 addresses the role of development agencies in the successful turnaround stories. Chapter 5 reflects on the prevailing perception that utility reform is a complex undertaking. Chapter 6 returns to the purpose of the Review and offers ideas on how to approach urban water utility reforms in development countries. The report's annexes include the case study descriptions and the methodological underpinnings of the Review.

³ See Annex A for the full set of review questions.

⁴ See Annex G for an introduction in political economy analysis.

2 The key attributes of successful urban water utilities

Review questions

How successful are the 'success stories'? How realistic are good and sustainable results from corporate development? What are common success factors of well-performing water utilities and how do they impact (the corporate development of) the utility? Is it plausible to have constant ownership and commitment from recipient utilities? How to improve the services of a utility, if the municipality has an opaque administration and a weak public finance management, not performance oriented? How to deal with the omnipresent political risks to corporate development?

We answer the above review questions in three steps. First, we describe the level of success attained by successful urban water utilities and comment on the realism of SECO's expectations of utilities' reform. Second, we list the success factors: the critical elements underpinning the success. Third, we answer the specific review questions on the continuity of ownership, the relationship between utility and municipality, and the omnipresent political risks.

2.1 The level of success attained

Through its support to urban water utilities in developing and transition countries, SECO aims to increase the sustainable access to potable water for the urban populace. As a means to this end, SECO seeks to transform the recipient utilities into 'independent competence centres for water ... and become modern customer oriented and self-financing service providers with transparent procedures, professional staff, appropriate tariff structures and up-to-date equipment' (SECO 2010). In response to the Independent Evaluation of SECO's Corporate Development of Public Utilities (Engelsman and Leushuis 2015), SECO's management raised the question whether it sets the bar too high for itself.

This Review shows – unequivocally – that this is not the case: SECO's objectives can be achieved. The examples of APA Vital, Nyewasco and PPWSA – but also Haiphong, Khujand, Manila, NWSC, ONEA, Pogradec and Tartu – show that (i) very high service and operational efficiency levels can be achieved, (ii) these utilities operate autonomously and cover their operational, maintenance and (partially) investment costs; and (iii) these utilities have adopted and consistently apply modern business practices, including amongst others multi-annual budget planning, state-of-the-art billing and leak detection programs, merit-based human resource management and the external auditing of the annual financial statements. The table below highlights the financial and operational level at which a selection of these urban water utilities operate.

The utilities covered in this Report are not unique. Interviewees have pointed to other success stories, including the urban utilities in Bangkok (Thailand), Brasov (Romania), Colombo (Sri Lanka), Da Nang (Vietnam), Durban and Johannesburg (South Africa), Kuala Lumpur (Malaysia), Lusaka (Zambia), Medellin (Colombia), Monterey (Mexico), Montevideo (Uruguay), Tanga (Tanzania), Quito and Cuenca (Ecuador), and the national water utilities in Botswana (WUC) and Tunisia (SONEDE). Reading through this list of success stories, it becomes apparent that success can be achieved in a diverse set of political economies.

Table 1 Key performance indicators of successful utilities

Utility	APA Vital	Nyewasco	PPWSA	Haiphong	Manila (East)	Tartu
Year	2014	2014	2014	2014	2012	2014
Availability of service (hrs/day)	24	24	24	24	24	24
Coverage ratio (% population)	63%*	85%	85%	96%	89%	99.8%
Metering (% of customers)	99.62%	100%	100%	100%	100%	100%
Collection ratio (% of bills)	100%	100%	99.9%	99.8%	n/a	99.9%
NRW (% of production)	27.15%	19%	7.76%	14%	11%	13%
Operating cost coverage (rev/exp.)	1.11	1.26	2.81	1.45	n/a	2.22
Staff (# per 1.000 connections)	18	5	3.15	4.1	1.4	8

* APA Vital is a regional operator. Its coverage ratio in the urban centres is near 100%.

2.2 The success factors

We distinguish first and second order factors of success. Both levels are necessary to achieve success. The difference is that the first order factors are a pre-requisite for the second order factors to materialize or to be utilized effectively. In addition to these necessary conditions, we distinguish three supportive factors of success, i.e. factors which can contribute to success, but are not necessary per se. We describe these first-order, second-order and supportive success factors in three dedicated subsections.

First-order success factors

1. **Managing-directors** undeniably play a critical role in the successful utility reforms. They visualize an end-result, initiate concrete reform steps, lead-by-example, and institutionalize the changes. Importantly, in all examples, the managing-director had direct links to the political leadership, was adept in playing the political game, and aptly shaped the political support he⁵ received. In the examples of APA Vital, Khujand, Nyewasco, and PPWSA, the managing-directors had a very personal, engaging, emphatic management style, making staff feel at ease.
2. All successful managing-directors received serious, explicit and continuous **political support**: locally (from the municipal mayor) and nationally (either from the prime-minister, as in Phnom Penh, or from ministries, as in Iasi and Nyeri). This political support allowed managing-directors to pursue reforms and expressed itself in (i) the explicit and vocal backing of unpopular decisions (such as tariff increases or a metering program); and (ii) general non-interference in the utility's management. In Nyewasco, the political support emanated from a vision of better water services and the wish to stem the money flow from the municipality to the utility. In APA Vital, the conditional availability of EBRD infrastructure financing and the associated promise of better water services played a significant role in mobilizing political support. It is unclear what triggered the political support to PPWSA, especially as there was strong popular and elite opposition to the reforms.
3. In all examples, utilities were managed without political interference in their day-to-day operations. Moreover, utilities could avail themselves of the revenues from the water consumption charges. This **autonomy** has, in all cases, been formalized through the

⁵ All reference utilities had male managing-directors.

corporatization of the utility. Such formal corporatization of the utility can, but does not have to, occur at the outset of a reform program. In Nyewasco, the reform process indeed gained momentum after its corporatization. The reforms were however well under way in PPWSA, when it was formally incorporated at the end of 1996. APA Vital was an autonomous entity long before its turnaround. Whilst autonomy is critically important, formal corporatization should rather be seen as a milestone: a confirmation of the political support to the reform process and goal.⁶

4. Autonomy is not enough to reform utilities (as shown by the case of APA Vital). Autonomy works, when a utility's management feels accountable to achieve results. From this review, we distil three sources of **accountability**. First, formal accountability of management to a utility's principal, which – in most cases – is the local government. This formal accountability to the utility's principal leads to effective reforms, if and when the principal embraces the vision of a well-performing utility. Second, the managing-directors of all reviewed utilities were highly committed to turning the utility around, which creates a sort of accountability to one-self: the managing-directors do not want to disappoint themselves. Lastly, many utilities (like APA Vital, Khujand, Nyewasco and Pogradec) felt a strong accountability to external financiers, such as EBRD and KfW, invoked by these institutions' stringent reporting requirements, loan covenants and personal attention.

Second-order success factors

5. A key feature of APA Vital, Nyewasco and PPWSA is the **change in organizational culture**. Ek Sonn Chan of PPWSA and Joseph Nguiguti of Nyewasco successfully abolished corruptive practices within the utility, addressed non-payment of water bills and instituted merit-based human resource management. Nyewasco institutionalized a 'culture change program', in which all managers and staff participated. In APA Vital, the culture change that occurred was more subtle. The EBRD reporting requirements and loan covenants invoked a new way of working and, importantly, perspective on managing and operating a water utility, making the adoption of modern business practices logical (and not just an externally imposed necessity).
6. As a means to change the organizational culture of the utilities, the managing-directors of APA Vital, Nyewasco and PPWSA appointed young, ambitious and promising staff to key management positions. In APA Vital, these staff were recruited externally. In PPWSA, staff were promoted from within. These new managers received training, and – based on performance – gained more responsibility and accountability over time. This strategy led in all three cases to a **loyal, well-qualified and stable middle-management**, which executed, internalized and institutionalized the reforms.
7. Generally, internal knowledge of running, let alone turning around a utility was scarce at the outset of the reforms (with the exception of Joseph Nguiguti of Nyewasco, who brought 20 years of water utility experience with him to the helm). All interviewees acknowledged the invaluable **knowledge transfer** of the leading water sector experts from the development partners, their consultants, as well as through water operator partnerships. The institutional

⁶ Note that corporatized, but publicly-owned utilities can still be politicised. An argument posited by Citroni, Lippi and Profeti (2015). Political interference can either be direct or run through a politically appointed board of directors. As such, adherence to the corporatization idea is as important as the corporatization itself.

and cultural changes incentivized staff and management to learn and improve, creating fertile ground for the capacity development programs of the development partners.

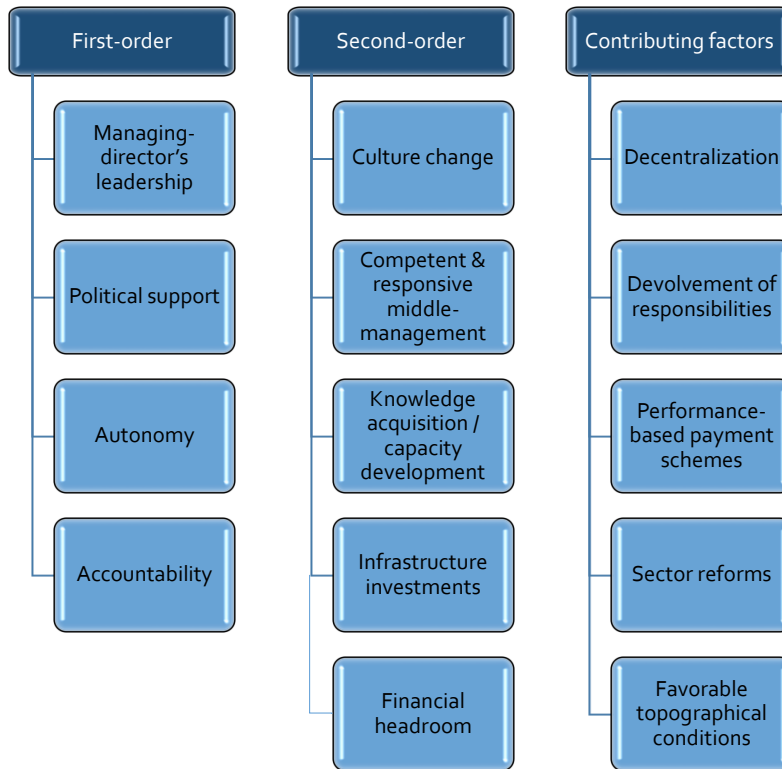
8. There is only so much that institutional and organizational changes can achieve. A broken pipe is a broken pipe. To stem leakages, pipes need to be replaced. To expand services to new customers, the water intake, water treatment capacity, and distribution network need to be expanded. All reference utilities benefited from grant, loan and internally financed **rehabilitation, renewal and expansion of physical infrastructure**.
9. Improving the operational and financial performance of a utility requires money to invest in staff, systems and infrastructure. All utilities created **financial headroom** through varying combinations of efficiency improvements and tariff adjustments. All utilities ultimately charge cost-covering water tariffs. In terms of the timing of tariff adjustments: APA Vital raised tariffs at the outset, PPWSA at mid-course, and Nyewasco at the end (when it started servicing the KfW loan).

Contributing, but not necessary success factors

10. A number of utilities, **decentralized operations** to local service areas (Haiphong, Manila, and NSWC), **devolved responsibility** (for example for leakage detection) to dedicated staff teams (PPWSA) and introduced **performance-based payment schemes** (Haiphong, Manila, NSWC and PPWSA). It appears that these innovations worked very well in these utilities, increasing ownership and focus of staff. That these interventions are not an absolute must, is suggested by APA Vital and Nyewasco, which introduced none of these innovations during their turnarounds.
11. The successful turnaround of APA Vital and Nyewasco preceded nation-wide sector reforms. In fact, their success informed the subsequent **sector reforms**, which – once institutionalized – strengthened the political legitimacy of APA Vital's and Nyewasco's institutional set-up and continuous reform efforts. This relationship between utility reforms and sector reforms is not always present. In Chili and Colombia, sector reforms enabled urban water utilities to improve operational and financial performance. PPWSA pretty much remains without a supportive institutional sector framework (although Ek Sonn Chan, now state secretary in charge of the water sector at the Ministry of Mines, Industry and Energy, is currently working on comprehensive sector reforms).
12. APA Vital, Nyewasco and PPWSA have **abundant water resources**. And APA Vital and Nyewasco also have access to **gravity water**. These topographical conditions clearly ease the turnaround process as they provide for lower operational costs of supplying water and hence more easily creates financial headroom.

The graph below provides a graphical representation of the success factors.

Graph 1 Summary representation of the success factors



The above diagram (or roster) invokes the question if it can be used to measure the prevalence or emergence of success factors. The challenge for this is twofold. First, one can monitor the parts and the individual actions and measures taken therein, but the value of these actions and measures depends on the whole (i.e. the balance between the parts). Second (related), there is no measuring rod to judge these individual actions and measures against. Assessing the emergence of success (factors) ultimately requires expert judgment. The roster can, of course, be used as an aid, as an art checklist to assess the prevailing situation in a utility.

2.3 Ownership and political risks

This subsection addresses three specific review questions, which emerged in response to the Independent Evaluation of SECO's Corporate Development of Public Utilities.

Is it plausible to have constant ownership and commitment from recipient utilities?

The continuous improvements in key performance indicators over a fifteen to twenty year stretch and the prevalence of that success at APA Vital, Nyewasco and PPWSA suggest that it is possible to have constant ownership and commitment from the utilities. Without ownership, such improvements would hardly have been feasible. The interviews confirmed that the political support to the three utilities never abated.

Textbox 1 Stable leadership

This continuity in ownership and commitment is, in no small part, the product of the remarkable stability (and undying commitment) of the leadership in the utilities. APA Vital has had two managing-directors since 1996 (whereby the current managing-director was already second in command since the same year). Moreover, the current deputy managing-director started in the utility in 1995 as head of the project implementation unit for EBRD-financed investments.

Joseph Nguiguti has led Nyewasco from 1995 until 2014. The financial and technical directors are in place since 2002 and 2003 respectively. Ek Sonn Chan managed PPWSA from 1993 until 2013 and was supported by a core of long-time managers and staffers. And these three utilities form no exception: Haiphong, NWSC and Tartu all had managing-directors with very long tenures.

How to improve the services of a utility, if the municipality has an opaque administration and a weak public finance management, not performance oriented?

The straightforward answer to this question is corporatization. Placing the utility at arm's length of the municipal government, assigning it an own corporate identity, and giving it jurisdiction over its own revenues ensures that the water utility can institute its own financial administration and reporting system and operate – administratively and financially – independent of the municipality.

We can also take a slightly different angle to this question. How supportive can and will a municipality be to the professionalization of its water utility if it does not strive for the same professionalism within its own administration? In a few instances, most notably Haiphong and Tartu, the professionalization of the utility has gone hand-in-hand with the modernization of the municipal administration. For the other utilities in our sample, this appears not to have been the case. Professionalization of the municipal administration is not a prerequisite for successful water utility reform.

How to deal with the omnipresent political risks to corporate development?

The three in-depth case studies show that the best mitigation against the risk of political interference is to have the local government's support. Still, even these three utilities are not immune to political interference. Local governments do change and remain the utility's principal. Political support thus has to be renewed (time and time again).

In the case of Nyewasco, customers greatly value the availability of potable drinking water and accordingly have vested the current institutional set-up, which has delivered potable water, with intrinsic value. This makes it politically salient to support Nyewasco as an autonomous institution.

Textbox 2 The politics of water

Water utility reform is inherently political. Whilst water is consumed privately and has many of the characteristics of a private good, water is also (i) a social good: everybody – the rich and poor alike – need water to live in dignity and good health; and (ii) a public good or common pool resource: water degradation effects all and water scarcity means that one's consumption diminishes the water consumption potential of others. Taking water utility reform out of the political arena is therefore neither 'attainable nor desirable ... [and] creating and mobilizing political commitment ... is critical for success' (van Ginneken and Kingdom 2008).

In 2012, PPWSA was listed on the Cambodian Stock Exchange. This requires PPWSA to abide by the corporate governance standards of listed corporations and limits the space for political manipulation. In Medellin, Colombia, a powerful business community exerts pressure on the political leadership to refrain from unproductive meddling in the utility's management.

The above examples of Nyewasco and PPWSA of limiting the risk of political interference concern utilities, which – at that time – were up and running. But what happens when a utility is still trying to get to its feet? We take from the in-depth case studies the importance of a well-connected and politically apt managing-director. But also the ability and saliency of showing results in two to three years. APA Vital, Nyewasco and PPWSA all showed marked improvements in operational and financial improvements in a relatively short time-frame.

A World Bank study (van Ginneken and Kingdom 2008) adds to this picture the following measures to prevent political meddling and allow the 'idea and purpose' of reforms to take hold.

- Bringing in a diverse set of stakeholders from the start and developing the reforms in a consultative, inclusive and joint manner. (The reviewers add: *co-designing* a reform process creates commitment and ownership amongst stakeholders (Ackoff 1999)).
- Publicly communicating the why and how of the reforms, as well as the intermittent results to the general public can create broad buy-in and prevent politicians to short-circuit the reforms for their own political gains.
- Strengthening the public's eyes, ears and voice through consumer or community-based organizations, which can act as 'watchdog' and 'advocate'.
- Including, whenever possible, private financing of infrastructure investments, as private financiers will hold utility managers, its board and owners to a high-level of accountability and transparency. (The strength of this idea can be seen by the impact EBRD reporting requirements and loan covenants had in APA Vital).

3 How have successful utilities evolved towards success?

Review questions

How have successful utilities evolved towards success? What triggered the turnaround? What is the underlying process of change? Which development phases can be distinguished? What steps does a utility need to take and in what sequence? How did the key performance indicators evolve over time, due to what steps and (corporate development) actions? What is the interplay and leverage between corporate development, technical assistance and physical investments? How are the reforms sustained over time? What incentives should be in place to ensure success? What are key positive and negative contextual factors?

The previous chapter detailed the key attributes of successful urban water utilities, as well as the critical measures contributing to success. This chapter turns to how these measures are decided upon, by whom these decisions were made, and how – over time – the key characteristics of successful urban water utilities came into being. We first look into what initiates reforms and the subsequent dynamics of change. We then examine more closely the development (phases) successful urban utilities go through. We conclude with an assessment of how reforms and success are sustained.

3.1 Initiating reforms and the dynamics of change

What triggered the reforms?

In all reference utilities, the water supply infrastructure was in a deplorable state and the service levels dismal before the start of the reforms. This situation persisted already for longer and does not, alone, explain why these utilities embarked on a reform course. It has proven quite a challenge to identify the concrete set of circumstances which initiated the reforms. This is what we learned.

In Iasi, the World Bank was offering support and insisted on a technical assistance trajectory to precede any infrastructure financing. This support offer fell on deaf ears. The EBRD offered an US\$8 million emergency loan to rehabilitate the infrastructure, accepting – at face value – the development plans and feasibility studies of the utility. This EBRD offer was embraced and – unknowing to the utility at the time – kick-started the reform process through the stringent reporting requirements and loan covenants attached to the loan.

In Nyeri, the reforms evolved much more gradually. GIZ and Nyeri municipality had been working since 1987 to improve the water supply services in town, mainly through capacity building efforts. In 1995, Nyeri reorganized – on instigation of GIZ – the water supply services in a dedicated municipal department, at which time discretionary (organisational and technical) measures were taken to improve the financial and operational performance. The reforms truly gained momentum when in 1997 the utility was incorporated (to qualify for a KfW loan and with assistance from GIZ). Throughout, the Nyeri mayor and town clerk had shown strong political support to improve the water services in town.

In Phnom Penh, we have been unable to ascertain what triggered or motivated the mayor of Phnom Penh to appoint Ek Sonn Chan as managing-director. In Haiphong, the city government responded directly to heavy community protests about the poor quality of water services. And in Kampala,

changes were mustered in, through the appointment of a new managing-director, by the Ministry of Water, Lands and Environment, as the World Bank pulled out and the utility was on the verge of bankruptcy.

The above examples confirm a previous World Bank finding that reforms 'originate in the external environment' (van Ginneken and Kingdom 2008). They also show that reforms can be seizing an opportunity (as in the case of Iasi and Nyeri) or a response to an incident or imminent breakdown (as in Haiphong and Kampala).

The dynamics of change

Despite the multitude of stakeholders involved in the provision of water and sanitation services, the reforms are effectively decided upon between a maximum of five principal stakeholders: the utility's managing-director, the municipal mayor, the ministry of finance, the sector ministry and one development agency. The roles are as follows: the municipal mayor and sector ministry can muster in change and provide vital political backing to the reform process. The ministry of finance is critical to obtain a sovereign guarantee on external loan financing. And the managing-director and the development partner shape the reforms and decide on discretionary reform measures.

Textbox 3 The managing-director's foresight

The managing-directors in APA Vital, Nyewasco and PPWSA owned the reform process from the start. The Independent Evaluation found that ownership on the part of the managing-director was not always a priori present (even in successful turnarounds). Instead, ownership grew over time, with management slowly embracing the outcome target and the value-added of corporate development in response to: a repetitious discourse on the operational and financial performance, the prospects and potential of the utility, and the management experiencing the benefits of corporate development support (especially prone to happen, where this support was demand-driven).

The above finding suggests that urban water utility reform is – at least in its early stages – a surprisingly manageable collective action problem. This notion is confirmed by one leading water sector expert, who stated that once collective agreement is reached, operationalizing the reform agenda and deciding on individual measures is easy and straightforward. (This finding does not imply that other stakeholders do not exert influence on the reform process, but only that these five stakeholders tend to be dominant.)

What keeps the momentum going after the initial changes and reform steps are made? We can distinguish three sources of energy. First, the managing-director's drive, vision and charisma (as in Nyewasco and PPWSA), which push the reform agenda forward. Second, the reporting requirements and loan covenants of the development agency (as in APA Vital). Third, outside pressure, as in the case of NWSC in Uganda (which for years, after the reform process started, was on the nomination to be privatized by the Ministry of Water, Lands and Environment) and Medellin in Colombia (where a strong business community exerted continuous pressure on the political leadership to stay the reform course).

Cultural norms

Iasi, Nyeri and Phnom Penh have a history of free water provision by the state. This practice had its roots in natural endowments (an abundance of water resources), customary practice (in Kenya, of taking free surface water) and ideology (it is the role of state to provide for public goods for free). The history of these three cities also show that these cultural norms are amendable. Customers accepted –

even if with some resistance at first – the need to pay for potable water. Customers recognized the value of clean water to health, the costs involved in producing potable water, and the right of the utility to disconnect the water connection upon non-payment of the water bill.

The voice of customers

As noted above, change was generally mustered in by a select group of principal stakeholders. With the exception of Haiphong, customers only played a marginal role. While the principal stakeholders felt an intrinsic motivation to serve the customers (which increased further as billing ratios and water tariffs rose), they did not actively involve customers in the reform process (with the exception of publishing summary information bulletins) as long as the service levels were dismal. Only after the service levels were improved did Nyewasco and PPWSA reach out to the customers and mobilize their support for further improvements and cost-covering water tariffs. Once universal and high quality water services were provided did the customers in Nyeri and Phnom Penh become an important political force to maintain the success. Customers never featured strongly in our interviews on the turnaround and success of APA Vital (even though APA Vital had a state-of-the-art customer care and billing center).

3.2 Development phases and impulses

Two distinct development phases

Through the clutter of reform measures and development assistance, one can distil two distinct development phases in the turnarounds of APA Vital, Nyewasco and PPWSA. First, achieving cultural change and getting the operational basics right. Second, large-scale infrastructure renewal and expansion and the adoption of increasingly modern business practices. We expand on both phases below.

1. Culture change and getting the basics right

As already noted in Chapter 2, the managing-directors of Nyewasco and PPWSA faced up to corruption and patronage and initiated a culture of achievement and merit-based promotion. They did so at the very start of their tenure (in PPWSA) or once the managing-director had the authority (upon corporatization, in the case of Nyewasco). This created, in three to four years, a new organizational culture and a capable, exemplary, management team. The cultural change in Iasi occurred, as also already noted, much more subtle through the changes in work methods and attitudes invoked by EBRD's engagement, reporting requirements and loan covenants.

In addition, early reform efforts concentrated on the basics of utility operations: know one's customer, meter the customer's water consumption, bill the customer, and collect the outstanding bills; make an inventory of production facilities and distribution network, conduct emergency repairs and implement small-scale, low-costs expansions to increase service levels and expand the revenue-generating customer base. The immediate results of these early reform efforts is to raise revenues, reduce costs and create headroom for further investments in both infrastructure and staff (for example training and instituting performance-based remuneration). These basic measures also built technical capacity and form a solid preparation for implementing and managing larger-scale investments.

All three utilities show that significant operational and financial improvements can be made prior to major infrastructure investments. A picture, which also emerged from the Municipal Infrastructure Program in Albania (Engelsman and Leushuis 2015).

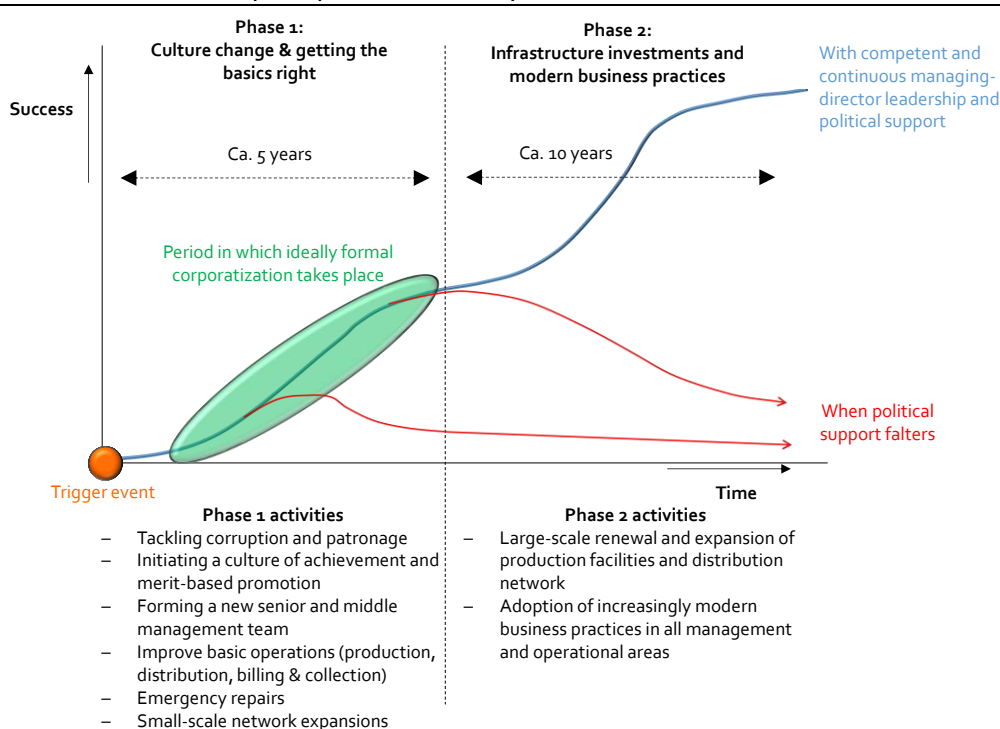
2. Large-scale infrastructure renewal and expansion and adoption of modern business practices

Once the utilities had their house in order and built up a basic team of qualified and ambitious professionals, they were ready to take on large(r) and externally-financed investments to renew and expand the production facilities and distribution network. PPWSA, which started the reform process in 1993, received major grant financing for rehabilitation works from JICA and the French government in 1995 and was able to loan-finance by ADB, World Bank and later AfD from 1997 onwards. Nyewasco implemented a KfW-financed, €10.2 million investment project in 2003 – 6 years after the incorporatization of the utility and the reforms gained momentum.

In this second phase, the utilities also adopt increasingly modern management and operational business practices. For example, Nyewasco implemented electronic billing, automated pumping stations, and energy use audits, and established an ISO-accredited water quality testing laboratory. PPWSA amongst others computerized all financial transactions, adopted comprehensive management information systems and implemented the SCADA system.

The graph below gives a graphical representation of this dichotomy in the turnaround of a utility.

Graph 2 The two distinct development phases in urban utility reforms



The above dichotomy should not necessarily preclude major infrastructure rehabilitation works early in a turnaround process. In some cases, the disparate state of the infrastructure simply requires immediate actions to provide water services at all (for example, where utilities have been hit by an earthquake or torn by war). Such initial rehabilitation work should however be focussed and accompanied by organizational changes to ensure long-term effects. APA Vital is a case in point. A small-scale emergency loan of €8 million was accompanied by an effective corporate development program. Afterwards, APA Vital implemented ever larger externally-financed investment programs. In conclusion, infrastructure investments should be undertaken in lock-step with corporate development (and not vice-versa).

Smooth sailing

The picture, which emerged from the interviews and the analysis of key performance indicators is the steady improvement in operational and financial performance over the years and the lack of major fall-backs. In the words of a leading water sector expert in Kenya: 'it has been smooth sailing all along', which has also been the case for APA Vital and PPWSA.

The key performance indicators of PPWSA confirm the importance of getting the basic operations right: within a period of 5 years, PPWSA improved in-house metering from 12% to 95% of all customers, improved the collection ratio from 48% to 97%, more than halved the number of staff per 1000 connections, raised (in the fifth year) the water tariffs, and as a consequence improved the operating cost coverage from well below 100% to 161%. PPWSA experienced a sharp drop in NRW between ultimo 1998 (56%) and ultimo 2001 (22.5%). This followed major, JICA and ADB financed, renewal of supply and distribution networks, as well as a World Bank supported leakage detection program.

The key performance indicators of Nyewasco highlight the importance of infrastructure investments for expanding coverage: after the KfW-financed investments came on line in 2006, the coverage ratio increased from 40% in 2006 to 73% in 2008. Staff numbers decreased gradually at Nyewasco. The nonrevenue water show a few beeps (for which we have no explanation), but over the last twelve years has been gradually improved from 59% to 19%.

Our dataset for APA Vital is less extensive than those of PPWSA and Nyewasco, especially for the first 5 to 10 years of the reforms. The collection ratio improved, in a haphazard way, from 73% at the outset of the reforms (in 1995) to 100% in 2002. The operating cost coverage shows a marked improvement between 1995 and 1998 (from 120% to 172%) to subsequently move up again and stabilize in the 105% - 115% range.

The decrease in the operating cost coverage after initial improvements can be seen in all three in-depth case studies. This decrease is explained by the utilities' outward expansion to the more rural, scarcely-populated areas of the municipality, where providing water services is concomitantly more expensive.

Where APA Vital stands out from the other two case studies is the annual adjustments in the water tariff. The water tariff increased ten-fold – also due to a situation of hyperinflation – between 1995 and 2000. The water tariff nearly tripled between 2000 and 2005 and subsequently doubled between 2005 and 2015.

Success achieved in 10 years

There is no unique definition of success. It is therefore difficult to pinpoint exact moments in time, in which the three utilities can be said to have been successful. It is fair to say however that all three utilities achieved success within ten to twelve years.

- After 10 years, PPWSA ran an operating ratio of 26%, measured a NRW of 17%, had quadrupled the number of connections and reduced staff numbers to five per 1000 connections. After 6 years, PPWSA had already achieved near universal metering of water connections and a 100% collection rate.
- After 12 years, Nyewasco ran an operating ratio of 66%, reduced the NRW to 31%, improved the coverage ratio to 70%, and had shed two-thirds of its staff (measured per 1000 connections). Nyewasco had metered 100% of its customers in the first few years of the reforms and prior to the corporatization of the utility in 1998.
- APA Vital achieved 24/7 water supply, full metering and 100% collection efficiency within 10 years. In 2010, the first year for which we have NRW data, NRW was 30%. APA Vital remains, in comparison, overstaffed with 17 staff per 1.000 connections as of 2015.

3.3 Sustaining reforms and success

In this subsection, we tackle the questions as to what sustains the reforms efforts and, once success has been achieved, what ensures the sustainability of the success.

Sustaining the reform efforts

The managing-directors of APA Vital, Nyewasco, PPWSA, Haiphong, NWSC and Tartu all had very long tenures (see also Textbox 1 on page 19) and stayed a force of change throughout their engagement. Moreover, the continuous improvements in the financial and operational performance of the utilities, coupled with the political aptness of the managing-directors, ensured continued political support for the reform efforts. Finally, APA Vital and PPWSA received recurrent infrastructure (loan) financing, which maintained its accountability to its external financiers.

In short, it is the continuity of the first-order success factors after the initial reform steps, which ensured the persistence of the reform efforts. As such, sustaining the reform efforts is not very different from initiating the reforms efforts (accept that sustaining reform efforts can benefit from the momentum generated by first successes).

Sustaining success

More interesting is how the utilities maintained success once success was achieved and new managing-directors came to the fore. Although our three in-depth case-studies are not perfect references, they are informative nonetheless. (The three reference utilities are not perfect, because APA Vital still enjoys the same leadership, which has been more or less at the helm for the past 20 years; Nyewasco's change of leadership took place 18 months ago and PPWSA's 2½ years ago.)

We take from this Review the importance of:

1. **Capable and stable middle-management.** APA Vital, Nyewasco and PPWSA all have been able to retain staff and built up a core group of highly qualified and motivated senior staff and managers. As the ultimate operators of the utility, this core group hold an important key to the continuous successful operations of the utility.
2. **Establishment of systems.** The reforms have produced systems and working procedures for all areas of operation and management, which now guide management and staff's actions. This point was particularly stressed by Nyewasco, which keenly pointed out that the utility continued to perform after Joseph Nguiguti left after 20 years and the utility was managed by the Technical Director – on an interim basis – for over a year. (Given that the Technical Director formed part of the abovementioned core group of long-time senior management and staff, this is not too special a feat and Nyewasco's systems still need to be truly tested on their resilience under a new managing-director, who was appointed in the autumn of 2015.)
3. **Diversifying accountability.** PPWSA has been listed in the Cambodian Stock Exchange in 2013. The diversification in shareholding and the rules governing publicly traded companies ensures the continued application of modern business practices and protects the utility against undue political interference. Similarly, in Latin-America, Sabesp (Sao Paulo) has been publicly listed and EPM (Medellin) has accessed the bond market.
4. **Public support.** The value residents place on clean water and the association they make between having access to clean water and the reformed water utility make for a strong political force to maintain and protect the current status quo against undue political interference. In the words of Frances Fukuyama, the utility's themselves and their institutional set-up are 'vested with intrinsic value' by the beneficiaries, which is 'a uniquely human characteristic' to do (Fukuyama 2011). This value of clean water and the current institutional set-up was in particularly stressed in Nyewasco and PPWSA
5. **Sector reforms.** In the case of APA Vital and Nyewasco (and possibly in the near future for PPWSA as well), their successful turnaround and the manner in which this has been achieved have informed a new institutional framework for the sector as a whole. This new institutional framework provides the utilities with additional political legitimacy and legal protection against undue political interference or mismanagement.

4 How have development agencies facilitated success?

Review questions

How have development agencies facilitated the turnarounds? What role did the development agencies perform during the reform process? What is the interplay between the external environment and development assistance support? What are approaches to urban utility reforms that proved consistently successful? What official development assistance (aid modalities, activities, budget) was provided over time and cumulatively?

For SECO, it is not enough to understand the process and success factors of change. The critical issue is how SECO can influence the emergence of the success factors and facilitate the reform process. This chapter studies the part, the development agencies – involved in the three in-depth case studies – performed.

4.1 The role of development agencies

The three in-depth case studies show five distinct roles development agencies played in the turnarounds.

1. **Instigating change and staying the course.** The EBRD, KfW and ADB/World Bank leveraged their loan-financing, to APA Vital, Nyewasco and PPWSA respectively, with stringent conditions on operational and financial performance (APA Vital and PPWSA), introduction of cost-covering tariffs (PPWSA) and financial autonomy (Nyewasco and PPWSA).

For APA Vital, these loan conditions single-handedly ushered in the reform process and strongly contributed to sustaining the reform process. For Nyewasco, the externally imposed corporatization gave the reforms the momentum on which a well-qualified team of staff could build.

It appears that PPWSA did not need the ushering of ADB, the French government, JICA or the World Bank and rather used these external programs to convince local opposition of the need for the reforms. In short, development agencies can create an opportunity for change or even trigger reforms, but do not in all circumstances need to do so.

2. **Facilitating dialogue and decision-making.** This role predominantly shows up in the case of Nyewasco. Through its national Urban Water and Sanitation Management Program, GIZ had the means⁷ and the platform to engage all principal stakeholders in Nyeri (as well as two other towns) and guide them through expert sessions and an open dialogue through the decision-making process. These meetings were instrumental to galvanize opposition from the municipal council to the corporatization of the utility.

⁷The Urban Water and Sanitation Program consisted of a three-person program secretariat at the Ministry of Local Government in Nairobi. The secretariat was led by one international urban water utility expert, who was supported by two local experts. The program also had the funds to deploy international and national consultants, conduct workshops and capacity building activities, and arrange for study tours.

APA Vital also shows the value of the development agency engaging in the in-country dialogue on the reforms. In this instance, our interviewees referred to 'strong lobbying' of the local political leadership by the EBRD rather than an open dialogue process.

3. **Interlocutor.** In APA Vital and PPWSA, the lead specialist from the development agency was an important counterpart of the managing-director and the project implementation unit⁸. They acted as a sounding board, shared experiences from working with other utilities, and (importantly) engaged the managing-director and the project implementation units on the operational and financial monitoring reports (which gave meaning to these monitoring reports and triggered the reporters' thinking).

The Independent Evaluation also highlighted the importance of a utility management having access to a sounding board, exhaust valve and interlocutor, particularly through the examples of Khujand (Tajikistan) and the Municipal Infrastructure Program (Albania). In both instances, the role of interlocutor was shared by the development agency (EBRD and KfW respectively) and a long-term corporate development consultant. (Engelsman and Leushuis 2015)

4. **Knowledge sharing.** The sharing of knowledge by development agency experts, consultants and twinning partners with the utility was especially heralded in APA Vital and PPWSA. Both utilities had extensive external backstopping for at least the first 6 to 8 years of the reforms and, importantly, valued this. The support covered all the nitty gritty detail of operationalizing and implementing individual discretionary measures (customer surveying, metering, billing, leakage detection, NRW programs, tender support, investment management, etc.). In Nyewasco, the knowledge sharing was a much more concentrated effort, covering a period of two to three years, in which the utility was incorporated and its institutions built up from scratch.
5. **Financier.** As noted in chapter 2, all utilities rehabilitated, renewed and expanded the intake, production and distribution infrastructure, which – ultimately – is also a critical ingredient of the success. These investments programs could not have been financed from the utilities' own resources (directly or through a commercial bank) and probably neither from the local or central government's budgets. The development agencies role as grant or loan financier was thus critical.

What stands out from the above discussion is that, in the three reference cases, the lead development agency played each of the five roles at one point or the other. This observation suggests that it is important for a development agency to be able to perform each role, as this will allow it to respond to a utility's need when it arises. Having said that, a division of labour between development agencies is possible. This is best illustrated by the case of Nyewasco, where KfW and GIZ closely cooperated. KfW leveraged its loan-financing with the demand for corporatization. GIZ acted in parallel as facilitator and knowledge bank.

⁸ The project implementation unit was set up to manage and implement the development agency financed investment program.

4.2 Approaches, tools and volumes of official development assistance

The development assistance to APA Vital, Nyewasco and PPWSA contained no unique aid modalities, approaches or tools. The effective use of this classical development assistance resorted in the client receptivity or ownership (see chapter 3.1) and the positioning or role of development agency (see section 4.1).

Table 2 illustrates the type of assistance, which was provided to the three utilities. This assistance was provided through consultants (all) and water operating partnerships (PPWSA). This is the same type of assistance that SECO traditionally provides to urban water utilities. It can be considered a toolbox, which can be utilized when relevant and with the intensity commensurate to the recipient's receptivity and capacity.

Table 2 Content of official development assistance

Grant-financing		Loan-financing
Corporate Development	Technical Assistance	Infrastructure investments
<ul style="list-style-type: none"> - business planning and organization - metering programs - staff training - leak detection programs - human resource management - work procedures (in all areas of operation) - financial planning & forecasting - tariff (methodology) setting - study tours - customer care <ul style="list-style-type: none"> o information campaigns o call centres o customer offices o expanding payment options o Etc. - computerized management information systems (customer, billing, finance, accounting, etc.) - Advanced management information systems <ul style="list-style-type: none"> o SCADA o cost accounting o remote meter reading - Etc. 	<ul style="list-style-type: none"> - feasibility studies - detailed design - project implementation unit support: <ul style="list-style-type: none"> o tender procedures o works implementation o works monitoring and completion o project management o technical training - calibration and water meter repair workshop - preparation of water pressure management/control system - Etc. 	<ul style="list-style-type: none"> - raw water intake - (waste) water treatment plants - water pumps - raw and bulk water meters - distribution network (primary, secondary and tertiary – renewal and extensions - Etc.

The table below highlights the known volume of official development assistance received by APA Vital, Nyewasco and PPWSA. What stands out is that Nyewasco received far less externally-financed infrastructure investments than APA Vital and PPWSA.

Table 3 Volume of official development assistance

	Corporate development/ technical assistance	Grant-financed infrastructure investments	Loan-financed infrastructure investments
APA Vital, Iasi, Romania <i>Between 1995 and 2014</i>	- € 425,000 (EBRD TA)	- € 143.7 million (EU including project preparation TA) - € 17.25 million national budget grant	- € 41.85 million (EBRD loans)
Nyewasco, Nyeri, Kenya <i>Between 1995 and 2014</i>	- Unknown	- Not applicable	- €10.2 million - (KfW loan)
PPWSA, Phnom Penh, Cambodia <i>Between 1993 and 2012</i>	- Unknown (part of the US\$ 98 million of grant financed infrastructure investments).	- US\$ 98 million (Multiple donors)	- US\$ 125 million (Multiple donors)

5 If the story is so clear, why is the practice so difficult?

The previous chapters paint a pretty clear picture on the dynamics of change, the development phases of successful turnarounds and the key attributes of successful urban water utilities. It is tempting to distil out of this story line a unique road to success, which every urban water utility – eager to emulate the success stories – should travel. Most water sector experts recognize that such a road does not exist and that each utility needs to go through its own development process.⁹

A closer look at the success factors brings several key features to light, which explain why successfully turning around a utility is difficult. First, most of the success factors can be discussed and decided upon (almost in technocratic fashion) by the principal stakeholders (e.g. lending the utility autonomy) or achieved through concerted effort (e.g. creating financial headroom for the utility). The two exceptions are the managing-director's ownership of the reform goal and agenda, and the political support extended to a reform-minded managing-director. This ownership and support has to come from the managing-director and the political leadership themselves.

The managing-director's ownership of and the political support to the reforms can be triggered by opportunity (as in Iasi and Nyeri), a response to an incident (as in Haiphong or Kampala) or mustered in by changes in the national political economy (as in Chili and Colombia), but is always *voluntary* and cannot be introduced by development agencies¹⁰. At the end of the day, the managing-director and his or her political principal need to feel the urgency of reform and the incentive to make the decisions, which herald in the changes.

Second, the above observation suggests that even in the first-order success factors, there is a hierarchy: the reform-minded managing-director and the explicit support of the local and national political leadership to the reform *precede* the decision to provide a utility autonomy and hold it accountable. One leading water sector expert noted dryly that political support is 'condition number one'.

Third, in the three case-studies, the managing-directors and their political principals had – at the outset – a clear vision, namely to improve the water supply and make the utility less dependent on the municipality. These visions were however not detailed, nor was a benchmark defined. The utilities simply started to improve operations and slowly but surely put all the building blocks of a modern operating utility¹¹ in place, while (importantly) maintaining political and public support. As a result, over a 10 to 15 year period, these utilities evolved to their present day status. The exact end-point was not foreseen at the outset. The reforms were transformational¹², driven by competent and audacious local leaders. This observation highlights the endogenous character of success: utilities truly *evolve*, with the

⁹ In the experience of the World Bank, successful reforms are the product of a 'long process of limited, but sufficient institutional change ... [and] no tool in isolation can turn around failing utilities, neither is there a sure fix recipe to combine these tools for success' (van Ginneken and Kingdom 2008).

¹⁰ As also evidenced by the fact that the carrot-and-stick approach deployed by the EBRD and KfW (as well as other development agencies) gains traction in one locality, but not in others.

¹¹ 'Modern' refers to a utility, which is run in a rational and merit-based manner, in which patrimonialism, nepotism and corruption have no place. Based on Max Weber's definition of the modern state, quoted by Fukuyama (2011).

¹² Transformational change distinguishes itself from mere change. 'Change is situational: the move to a new sight, the reorganization of a team, the revision of a plan. Transition is psychological ... a [collective] process by which people unplug from an old world and plug into a new world'. (Bridges 1991)

pieces of the puzzle slowly falling into place, through a concerted effort, but one that is neither fully planned nor controlled by any one of the principal stakeholders.

These features point towards the importance of (continuous) local and national ownership of the turnaround process, which also implies that the turnaround process is dependent on the developments in the local and national political economy. This, combined with the endogenous nature of the turnaround process and the time required to evolve into a modern utility, is why the practice of utility reform is indeed difficult, context-specific and uncertain in its outcome.

6 Looking forward

*'Building a [modern] institution is not like building a hydroelectric dam or a road network. It requires a great deal of **hard work** to persuade people that institutional change is needed in the first place, build a coalition in favour of change that can overcome the resistance of existing stakeholders in the old system, and then condition people to accept the new set of behaviours as routine and expected.'* (Fukuyama 2011, emphasis added)

'Exerting the slightest of pressure is the most effective way to overcome resistance ... only when one is neither pretentious nor too resolute are we able to open up for others.' (Sennet 2012, emphasis added)

The purpose of the Review is to identify practical ideas on how to mould together the many necessary elements for the successful reform of water utilities. What has the Review revealed in that regard, and what practical tools does it provide us?

First, in the initial stages of a reform process the focus should be on winning over the managing-director and the (local) political leadership. As noted, this is the 'condition number one'. It is a generic human trait that one is more inclined to take initiative and move forward on issues that are close to one's heart and mind and lie in one's sphere of control. As such, ownership and leadership on the part of the managing-director and the political leadership is more likely to prevail if (externally-financed) reform efforts: (i) address the preferences and immediate concerns of the managing-director and the political leadership; and (ii) the managing-director sits in the driver's seat of the reform process with the political leadership as co-driver.

The challenge for development agencies is therefore to be responsive to the preferences and immediate needs of the managing-director and the political leadership (to the extent of course that these preferences and needs are benevolent) and work within the prevailing political context of these actors. Such a demand-driven and politically astute approach has worked well for SECO in Khujand (Tajikistan) and was also successfully followed by the French government and the World Bank in Phnom Penh (Cambodia) and the EBRD in Iasi (Romania). It is championed by GIZ, based on its own extensive on-the-ground experiences with change processes in developing countries (GTZ 2010, GIZ 2015), and is strongly argued for in other recent development studies (see amongst others Booth and Unsworth (2014), Fritz and Levy (2014) and Andrews (2013)).

Second, where local leadership emerges and prevails over time, development agencies can truly help. They can empower the change makers inter alia through facilitating an in-country dialogue and collective action process, capacity building, providing man- and brainpower, and results-based financing. It is important to remain conscious of the fact that the reform effort is a process and one that can neither be fully planned nor controlled by any one of the key stakeholders. As such, it is vital to remain perceptive to what is happening both within the utility as well as its (political and social) environment and be ready to adapt the assistance in content or intensity to the circumstances at hand.

Third, following such a tailored, demand-driven, politically astute approach allows development agencies to apply the two-phase reform model, i.e. to start small and focus the assistance on emergency measures, getting the basic operations right and facilitating culture change, before scaling up the support to large-scale investments and the adoption of increasingly modern business practices. This approach also allows the development agency to monitor progress, the prevalence of ownership

and leadership and the effective use of the development funds, before more resources are committed or disbursed thereby ensuring a judicious use of development aid funds.

Fourth, the Review's analytical framework, collected data, extended success factor model and the two-phase development graph provide practitioners an emerging tool to: (i) assess where a utility is located in its development or reform process, as well as the (political) context in which it operates; and (ii) conduct a structured dialogue amongst the stakeholders on reforming the utility. In recognition of this particular finding, SECO has initiated the publication of an accompanying 'emerging analysis and dialogue tool for water utility reforms' to the main Report.

One cautionary note on the usage of this analysis and dialogue tool is warranted. This tool should not be used mechanically. For example, the absence of success factors does not mean a development agency should not engage with a particular utility. It only suggests that the development agency should look together with the utility for entry points to trigger the emergence of the success factors.

In conclusion, the Review unequivocally shows that it is possible for underperforming urban water utilities in developing countries to evolve into modern service providers with high-quality service delivery and a solid financial performance. This does require *hard work* and a *deft touch* of competent and audacious local leaders (in particular from the managing-director), the competent *support* and *push* of a development agency, and the *acceptance* that the road to success is bumpy and long, requiring perseverance and a healthy portion of good fortune.

Annex

A. SECO's review questions

1. How successful are the 'success stories'? How realistic are good and sustainable results from corporate development? What are common success factors of well-performing water utilities and how do they impact (the corporate development of) the utility? Is it plausible to have constant ownership and commitment from recipient utilities? How to improve the services of a utility, if the municipality has an opaque administration and a weak public finance management, not performance oriented? How to deal with the omnipresent political risks to corporate development?
2. How have successful utilities evolved towards success? What triggered the turnaround? What is the underlying process of change? Which development phases can be distinguished? What steps does a utility need to take and in what sequence? How did the KPI evolve over time, due to what steps and (corporate development) actions? What is the interplay and leverage between corporate development, technical assistance and physical investments? How are the reforms sustained over time? What incentives should be in place to ensure success? What are key positive and negative contextual factors?
3. How have development agencies facilitated the turnarounds? What role did the development agencies perform during the reform process? What is the interplay between the external environment and development assistance support? What are approaches to urban utility reforms that proved consistently successful? What official development assistance (aid modalities, activities, budget) was provided over time and cumulatively?
4. How can SECO support the emergence of success factors and the successful turnaround of urban water utilities? What actions and positions should SECO take? What tools should it use? What should the sequence of its actions and tool-use be? How can SECO ensure the quality of the process and the results? What red flags / warning signs should SECO look out for which endanger the success? What milestones can be identified which signal that one is on track towards success? Should and can SECO effectively support the dialogue process in-country? How do these case-studies differ from SECO's current portfolio of projects?

B. Case-study selection criteria

The three in-depth case studies were selected from a long-list of candidates based on the following criteria:

- publicly-owned utilities, which have not availed of private management contracts;
- proven success, which is not too far back in time (to ensure availability of resource persons);
- different lead development partners (to capture different development approaches);
- aid modalities, which can be applied by SECO (i.e. no utilities, which have extensively benefited from embedded international development experts); and
- geographical spread, with a preference for countries similar to SECO's country of operations, and with a focus on countries not covered by the Independent Evaluation of SECO's Corporate Development of Public Utilities (Engelsman and Leushuis 2015).

C. Nyewasco, Nyeri, Kenya

Nyewasco, Nyeri, Kenya

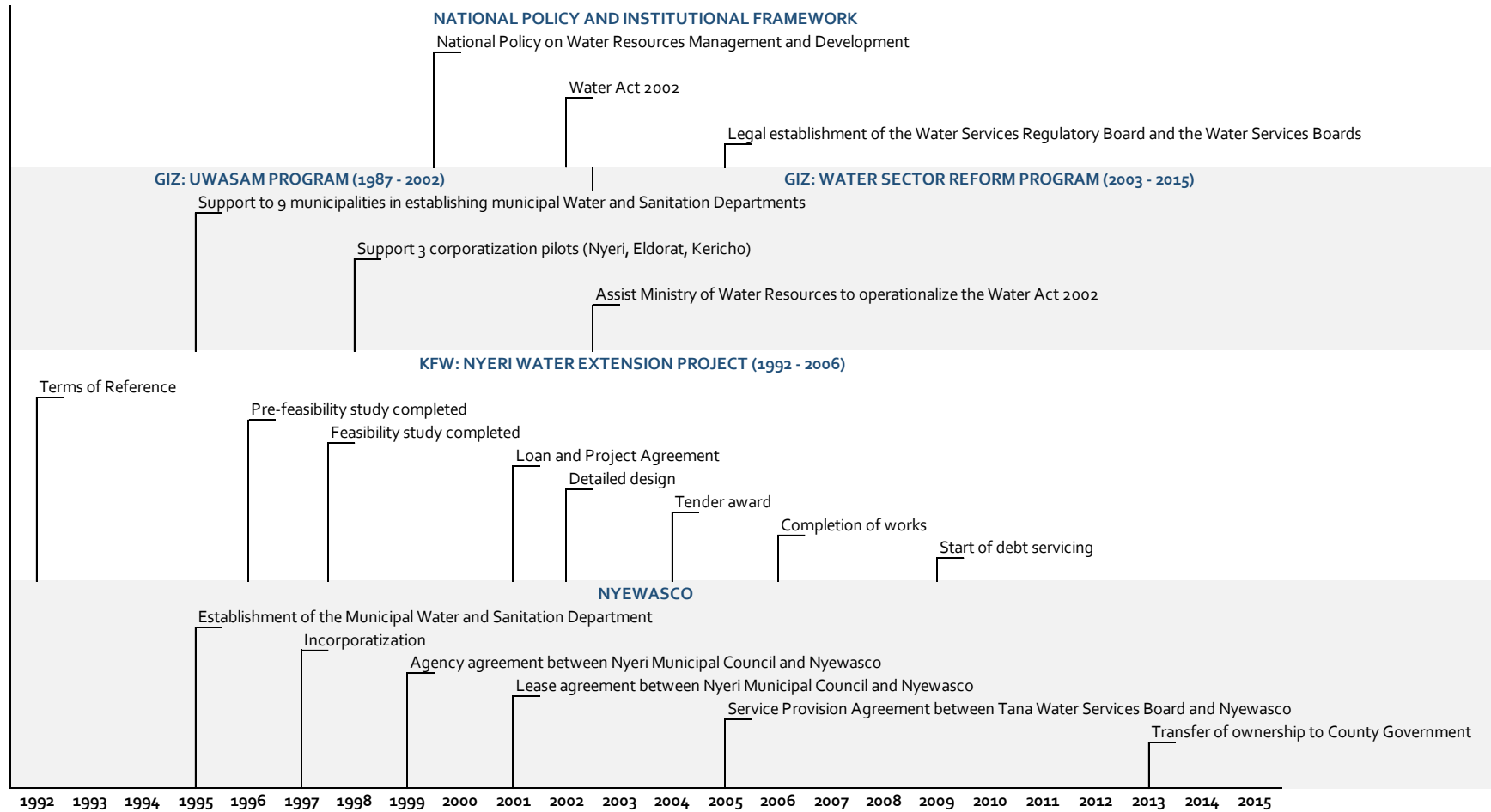
This Annex contains our findings on the successful turnaround of the Nyeri Water and Sanitation Company (Nyewasco), including:

1. **a timeline**, with key occurrences and milestones in Nyewasco's development, GIZ/KfW's assistance to Nyewasco, and the evolution of the national policy framework;
2. **the annual development in key performance indicators**, which shows the operational and financial improvements of Nyewasco over time;
3. **the political economy** in which Nyewasco operated, which forms an important backdrop to understanding the successful turnaround;
4. **the discretionary measures**, in chronological order, underlying the turnaround;
5. **the development assistance** Nyewasco has received from GIZ and KfW;
6. **the success factors** as perceived by our interviewees;
7. **the signposts**, which indicated that Nyewasco was on a path towards success;
8. **the sustainability** of Nyewasco's reforms; and
9. **the development phases** Nyewasco has gone through, distilled from the above findings.

Timeline

The table on the next page marks the key occurrences and milestones in the history of Nyewasco, GIZ/KfW's assistance, and the national policy framework. The table is easiest read starting from the bottom grey row on Nyewasco's main developments and then moving upwards

Graph 3 Timeline of key occurrences and milestones, Nyewasco



Sources: GTZ (Undated), GTZ (2006), MacDougall (1999), Nyewasco (2006, 2015), Ndung'u, et al. (2009)

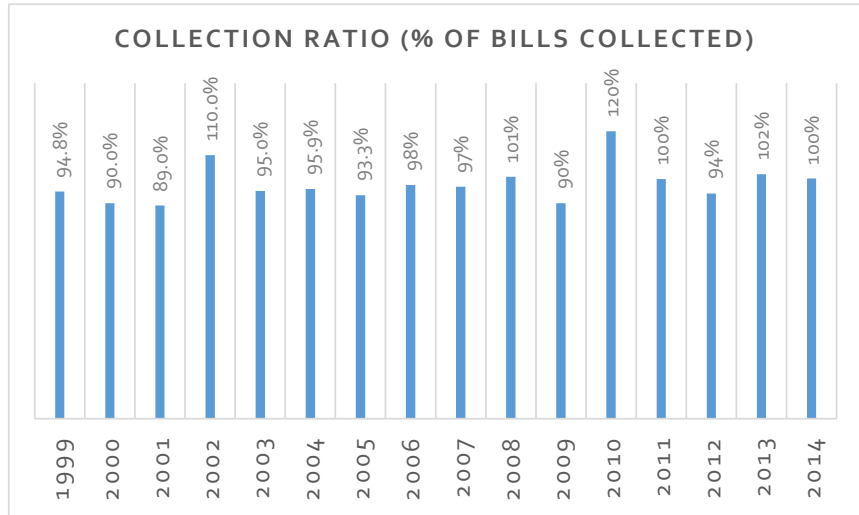
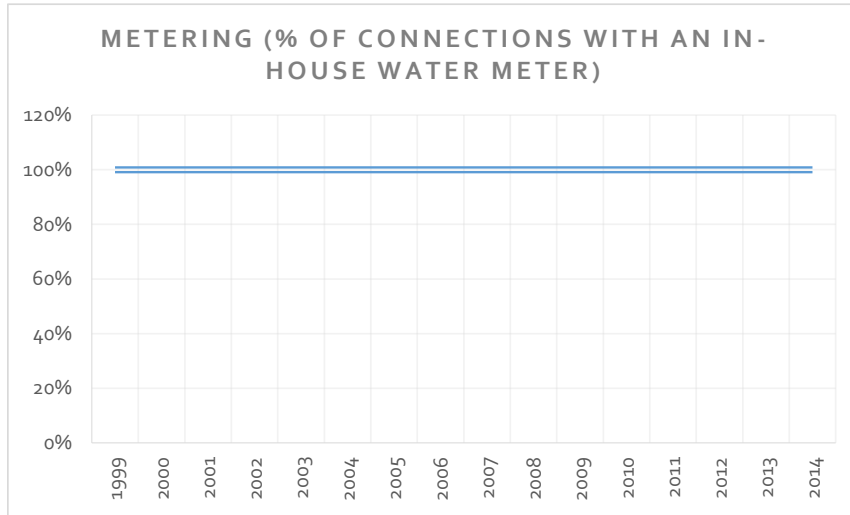
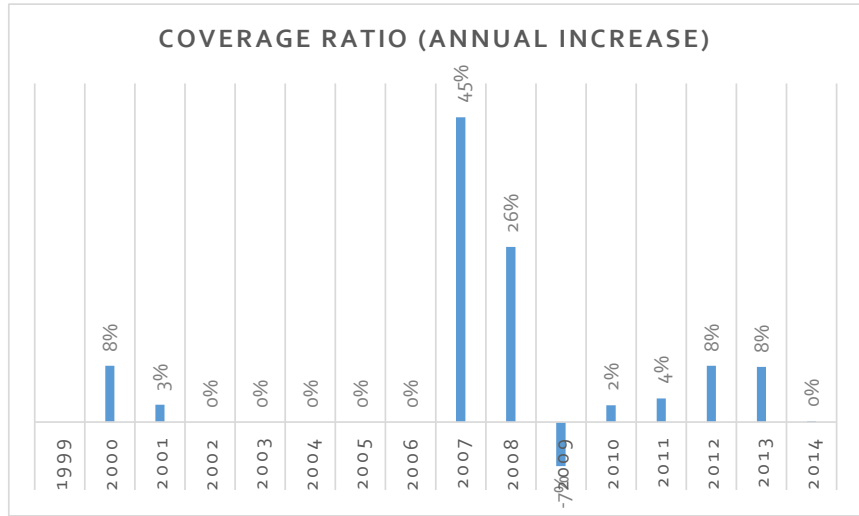
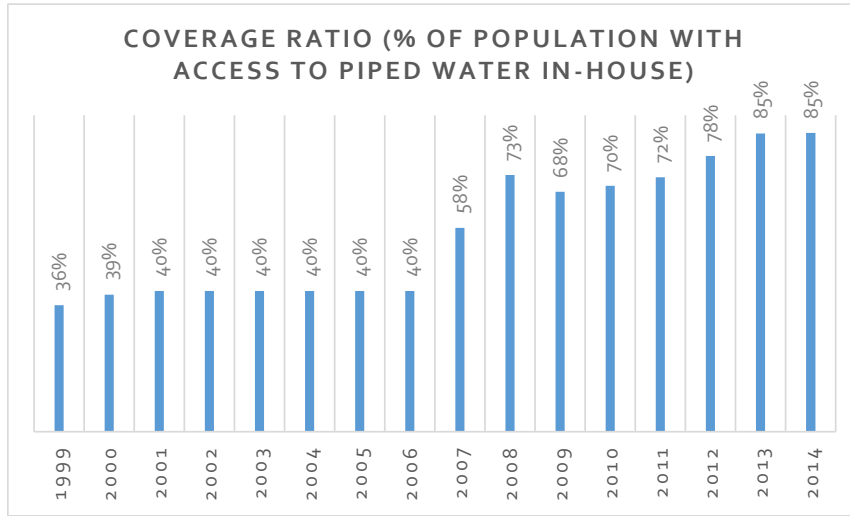
The annual development in key performance indicators

Table 4 Key performance indicator data, Nyewasco, 1999 – 2014

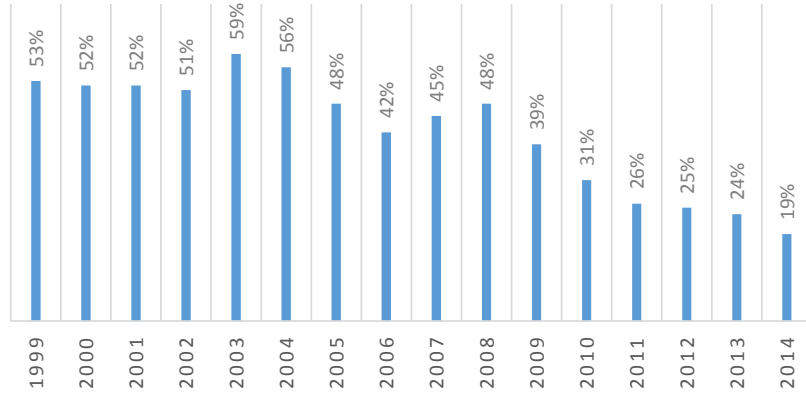
KPI\Year	1999	2000	2001	2002	2003	2004	2005	2006
Availability of service (hours per day)	15	15	18	20	20	20	20	24
Connections (numbers)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Coverage ratio (% of population with access to piped water in-house)	36%	39%	40%	40%	40%	40%	40%	40%
Metering (% of connections with an in-house water meter)	100%	100%	100%	100%	100%	100%	100%	100%
Nonrevenue Water (in % of total production)	53%	52%	52%	51%	59%	56%	48%	42%
Collection ratio (% of bills collected)	94.8%	90.0%	89.0%	110.0%	95.0%	95.9%	93.3%	98%
Staff numbers (number of staff per 1000 connections)	23	21	19	15	14	11	10	11
Operating cost coverage (total operational revenues / total operational costs)	0.91	0.95	0.97	1.11	1.18	1.18	0.91	1.17
Residential Tariff/m ³ sold	KES 20	KES 20	KES 20	KES 20	KES 20	KES 20	KES 20	KES 20
Year and size of residential tariff adjustments (%)	-	-	-	-	-	-	-	-

KPI\Year	2007	2008	2009	2010	2011	2012	2013	2014
Availability of service (hours per day)	24	24	24	24	24	24	24	24
Connections (numbers)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Coverage ratio (% of population with access to piped water in-house)	58%	73%	68%	70%	72%	78%	85%	85%
Metering (% of connections with an in-house water meter)	100%	100%	100%	100%	100%	100%	100%	100%
Nonrevenue Water (in % of total production)	45%	48%	39%	31%	26%	25%	24%	19%
Collection ratio (% of bills collected)	97%	101%	90%	120%	100%	94%	102%	100%
Staff numbers (number of staff per 1000 connections)	10	7	8	7	7	6	5	5
Operating cost coverage (total operational revenues / total operational costs)	1.04	1.20	1.54	1.52	1.49	1.41	1.40	1.26
Residential Tariff/m ³ sold	KES 20	KES 20	KES 31	KES 31	KES 31	KES 31	KES 31	KES 31
Year and size of residential tariff adjustments (%)	-	-	50%	-	-	-	-	-

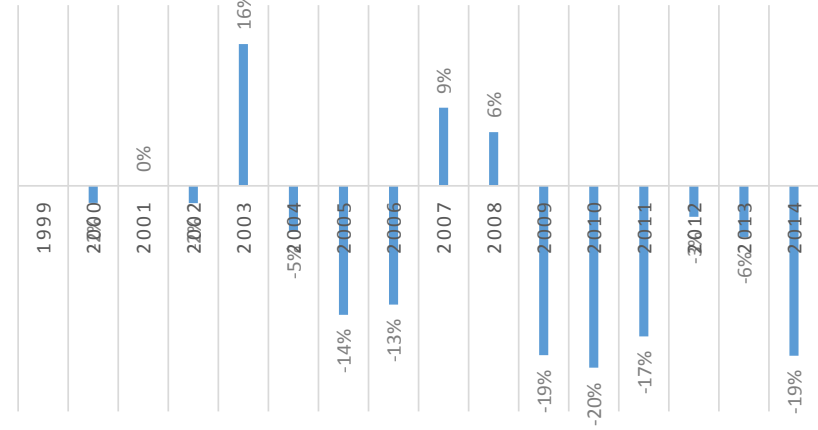
Graph 4 Development of key performance indicators, Nyewasco, 1994 – 2014



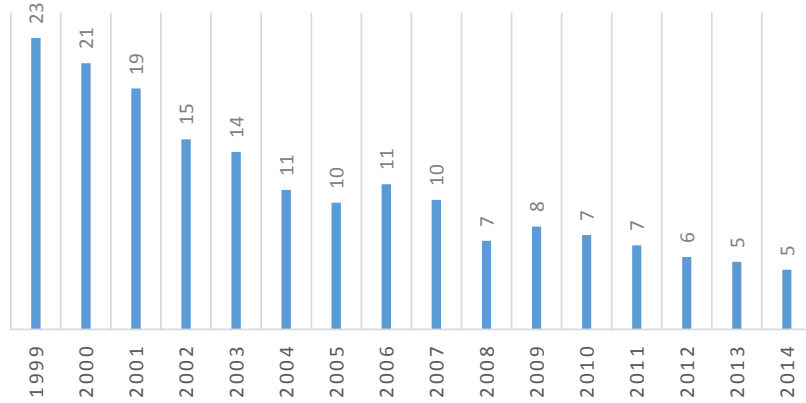
NONREVENUE WATER (IN % OF TOTAL PRODUCTION)



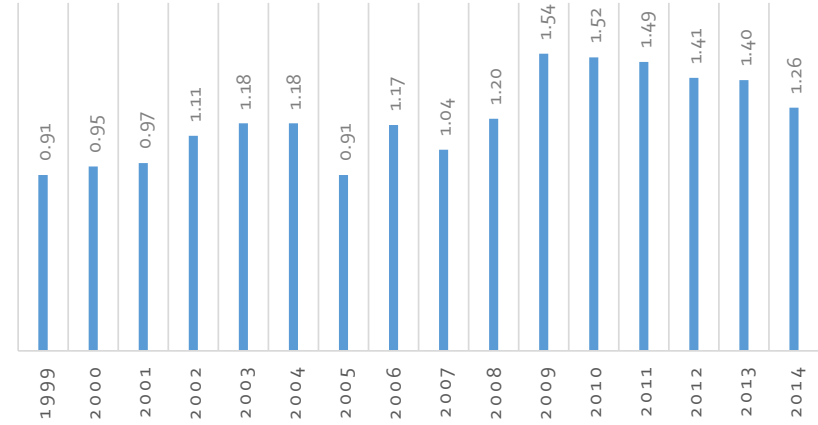
NONREVENUE WATER (ANNUAL CHANGE)



STAFF NUMBERS (NUMBER OF STAFF PER 1000 CONNECTIONS)



OPERATING COST COVERAGE



The political economy of Nyewasco

German development cooperation to the Kenyan water and sanitation sector

Between 1987 and 2003, GIZ implemented the Urban Water and Sanitation Management (UWASAM) Program: a nation-wide program 'aimed to assist in attaining self-sustainability of the water and sanitation services of local authorities' (MacDougall 1999). The program went through four distinct phases as shown in the table below.

Table 5 The evolution of GIZ's UWASAM Program in Kenya

Period	Approach	Response
1997 – 1993	<p>Capacity building</p> <ul style="list-style-type: none"> – Creation and institutional strengthening of a Water and Sewerage Operations Unit in the Ministry of Local Government. – Capacity building of local government staff, who were directly involved in the management, operation and maintenance of water and sanitation services, on technical skills, meter reading, billing, and financial management. 	<p>The capacity building of the local authorities did not have the envisaged results. To safeguard the investments, GIZ pushed for greater autonomy of the responsible municipal divisions.</p>
1994 – 1996	<p>First step towards autonomy</p> <ul style="list-style-type: none"> – Creation of Water and Sanitation Departments in nine municipalities: Nyeri, Kitali, Kericho, Nyahururu, Eldorat, Kisumu, Nakuru, Nanyaki, and Thika. The departments had their own corporate management and bank account. – Development of financial management guidelines – Technical assistance on financial management and revenue generation. – Public awareness workshops and forming of local action committees 	<p>The nine municipalities continued to underperform. The problems were 'inherent to the local government structure:</p> <ul style="list-style-type: none"> – non-application of cost-covering tariffs to obtain short-term popularity; – delays in the approval of tariffs and budgets due to long bureaucratic procedures; – diversion of water revenues to unrelated expenditures at the expense of water services; – difficulty in the recruitment and detention of professional top and middle management; – overstaffing at unskilled personnel levels'. <p>(MacDougall 1999)</p> <p>Backdrop: by 1998, the German government had invested – through KfW and GIZ – \$330 million in the Kenyan urban water and sanitation sector (MacDougall 1999).</p>
1997 – 1999	<p>Corporatization¹³</p> <ul style="list-style-type: none"> – Assist three pilot municipalities (Nyeri, Eldorat and Kericho) to establish independent, commercially operating water and sanitation companies (under the Companies Act Cap. 486 of the Laws of Kenya). 	<p>To ensure the success of [the corporatization] approach, there was a need for enabling framework conditions (legal, policy, regulatory and normative) for the sector.' (GTZ Undated)</p>

¹³ In Kenya, corporatization is referred to as 'socially responsible commercialization' to prevent an association with privatization. (Water Services Regulatory Board 2007)

Period	Approach	Response
2000 - 2003	Development of a national legal and institutional framework <ul style="list-style-type: none"> - Joint review of the water and sanitation sector by the World Bank, KfW, GIZ and AFD - Development of a country strategy on water and sanitation services - Studies on corporatization and private sector participation - Review of Water Act Cap. 372 and the Local Government Act Cap. 265. 	'A project mid-term review carried out in August 2001 recommended that the UWASAM program increase its activities at the macro-level (Ministry of Water Resources and Ministry of Local Government) but still maintain a window at the local level. This window will be open to potential good performers only in response to demand.' (MacDougall 1999)

Source: GTZ (Undated, 1998), MacDougall (1999), Water Services Regulatory Board (2007)

The UWASAM program was succeeded by the Water Sector Reform Program, which ran from 2003 – 2013. The Water Sector Reform Program assisted the Ministry of Water in operationalizing the Water Act 2002 (see below). Through the Water Sector Reform Program, the German development cooperation invested €49 million euro in Kenya's urban water and sanitation sector (€16 million in grants (GIZ) and €43 million in loan and grant investment financing (KfW)). (Ndung'u, et al. 2009)

National buy-in to the corporatization idea

The idea of corporatization of the municipal Water and Sanitation Departments was accepted by the Ministry of Water Resources, the Ministry of Local Government and the three pilot municipal councils by 1996. This acceptance came after:

- (i) a well-laid out argument and proposal by GIZ (making the idea of corporatization clear);
- (ii) a study tour for representatives of the Ministry of Water Resources, the Ministry of Local Government and municipal councils to Chipata and Luzaka in Zambia, where the utilities were corporatized years before with marked success (which brought the idea of corporatization to life);
- (iii) a GIZ-study into alternative revenue streams for municipal governments (showing alternative income sources to the water revenues for municipalities); and
- (iv) a series of GIZ-facilitated workshops between the ministry representatives, municipal councils and international experts to talk through the implications of a corporatization, as well as define the shape of the water and sanitation companies.

(MacDougall 1999)

The workshops were attached particular importance:

'The general approach being adopted in dealing with contentious issues is to provide facilitation for those issues to be fully discussed at workshops attended by elected representatives, local and central government officials, together with technical, financial and legal advisors provided by the UWASAM program. It is hoped that by means of this guided discussion will lead to acceptance.' (MacDougall 1999)

The early success of Nyeri and Eldorat informed the national Water Act 2002, which separated water resource management and water and sanitation services; separated the policy-making, regulatory and water supply functions; devolved the provision of water supply to municipal towns; and required the corporatization of municipal water and sanitation utilities. The Water Act was operationalized in the years thereafter, creating in 2005 the Water and Sanitation Regulatory Board, the regional Water

Service Boards (as asset-holders), and the local (corporatized) Water Service Providers. In other words, in 2005, the formal institutional framework was in place supporting the choices Nyeri had made in 1998.

The Water Act 2002 had been prepared by the government of President Moi. The Act was full-heartedly operationalized and implemented by the, in 2002, newly elected government of President Kibaki (despite the fact that this new government ended a nearly 40-year reign of the KANU party, which would have excused the government for pursuing its own policy and strategies for the urban water sector. President Kibaki stemmed from Nyeri, whereby we do not have information whether 'these origins' played any role in the government's embrace of the Water Act 2002.).

Local political support

The Nyeri Mayor and Town Clerk (the highest municipal civil servant) fully embraced, first, GIZ's suggestion to create a separate Water and Sanitation Department, and second, KfW's loan conditionality, to corporatize the department. 'The Mayor had seen, in the 1950's, what the provision of clean drinking water brought to a community'. He wanted to again provide Nyeri with high-quality drinking water and sanitation and was 'willing to stake his mayor position on achieving this'. Moreover, the Nyeri municipal council continuously subsidized the provision of (the inferior) water services to Nyeri town. (The latter is a disputed fact, perhaps because it runs counter to the more common situation at that time that the municipal water utilities in Kenya served as an important revenue generator – i.e. 'cash cow' – for municipalities. The threat of losing the water revenues was the source of fierce resistant of most municipal councils against the corporatization of their utility (MacDougall 1999).)

There was consensus amongst our interviews that both the Mayor and Town Clerk were instrumental in galvanizing the Municipal Council in supporting the corporatization of the Water and Sanitation Department. Part of the political agreement was that the newly corporatized entity, Nyewasco, would cover KSh. 18 million (or ca. €250.000 in 1999 exchange rates) of backward payments of statutory deductions by the Municipality (Nyeri Municipal Council 1999).

Upon corporatization, KfW asked for German management of the utility or at least a new management team recruited from the private sector. This request was however not acceptable to the Mayor, Town Clerk and Council, who stated unequivocally that 'if corporatized, Eng. Joseph Nguiguti [the current general manager of the Water and Sanitation Department] was to be the Managing-Director'.

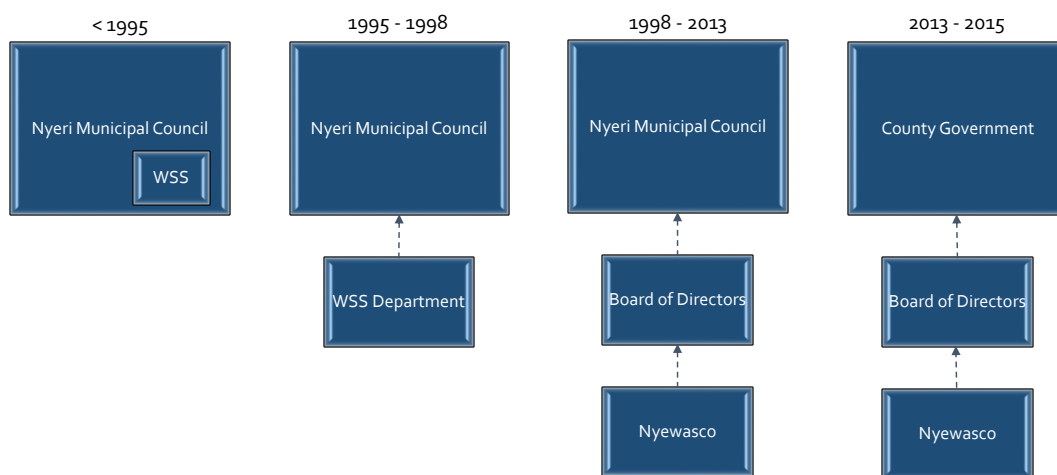
Institutional set-up

The institutional set-up of Nyeri's water and sanitation services have evolved over time:

- In 1982, Nyeri Municipal Council became responsible for the provision of drinking water and sanitation (taking over this responsibility from the Ministry of Water Resources) with the municipal engineering department taking charge of service delivery.
- In 1995, on the behest of GIZ, a dedicated Water and Sanitation Department (with its own bank account) was created.
- In 1998, to fulfill a loan conditionality of KfW, the Water and Sanitation Department was transformed into a municipal government-owned commercial entity operating under commercial law.
- In 2013, when Kenya adopted a new constitution, which dissolved the municipalities and created counties (enveloping multiple municipalities), ownership was transferred from the municipality to the county government.

The below graph depicts the evolution in the institutional set-up.

Graph 5 Institutional set-up of water supply, Nyeri, Kenya



Board of Directors and Management-Team

The table below shows the composition of the Board. The Board members are nominated by a Board selection committee (which, in turn, is drafted from the participants to the Annual Stakeholders Conference) and appointed by the Annual General Meeting (i.e. the Municipal/County Government). The Managing-Director is recruited by the Board in what should in principle be an open and merit-based recruitment process. In 1998, the Municipal Government insisted however on keeping the General-Manager of the Water and Sanitation Department in place. The general belief amongst our interviewees was that the County Government also had a hand in the appointment of Joseph Nuiiguti’s successor in 2014/2015.

Table 6 Nyewasco’s Board of Directors

	Representatives			
	Nyewasco	Local government	National government	External stakeholders
< 2010 10 members	- Managing-Director	- Mayor - Town Clerk - Town Treasurer	- Ministry of Local Government - Ministry of Water Resources - Ministry of Finance	- Consumers - Local women organizations - Business / financial sector
> 2013 11 members	- Managing-Director	County Government - Chief Officer - County Administrator	- Ministry of Finance	- Consumers - 2 from registered women organizations - Business / financial sector - Local professional bodies - 2 from resident organizations or persons with disability

Source: MacDougall (1999), Nyewasco (2015)

Accountability

The political economy literature differentiates between *upward* and *downward* accountability, as well as between accountability to a *single stakeholder* versus accountability to a *diversified group of stakeholders*. Formally, Nyewasco's Board is recruited by and accountable to a single shareholder: its owner (formerly the municipal, now the county government). As such, Nyewasco has an institutionalized upward accountability. However, the Ministry of Finance holds a golden share, which provides it 'veto power on all resolutions of general meeting and board meeting that have the capacity to affect the financial viability of the company'¹⁴. Moreover, the Nyeri people have embraced Nyewasco's success and the delivery of clean water (forming a political force protecting Nyewasco). Of course, the Nyeri people also generate – as paying customers – Nyewasco's revenues. As such, Nyewasco is also accountable to other stakeholders (Ministry of Finance and customers). This gives Nyewasco some protection from political interference from Nyewasco's single owner.

Formal incentives

The relationship between the Municipal Council and Nyewasco was ruled by an Agency Agreement between 1998-2003, a preliminary Service Provision Agreement from 2003-2005 and two subsequent 5-year Service Provision Agreements from 2005 – 2015. Only from 2005 onwards, did the Service Provision Agreements contain performance targets for Nyewasco. These targets were however not incentivized through some sort of bonus-malus system. Importantly, the Management Team of Nyewasco, consisting of the Managing-Director, the Commercial-Director and the Technical-Director receive(d) a fix salary, i.e. did or do not receive a (partially) variable, performance-based salary.

Stability

Nyewasco has been characterized by a stable composition of its Management Team. Only the first Commercial and Technical Directors had a short tenure, with their two-year contracts not having been extended (in the case of the Commercial Director on allegations of corruption).

Table 7 Nyewasco's management team, 1998 – 2015

	Year 98	00	05	10	15
Managing-Director	Eng. Joseph Nguiguti				Mr. P. Gichaaga
Technical-Director	Eng. R. Mukui	Eng. S. Getanda	Eng. Joseph Muchiri (one-year interim MD)		
Commercial-Director	Mr. M. Ruitha	Mr. S. Muchai	Mr. Samuel Karogo		

Source: Nyewasco 2006

Water tariff

Neither before nor after the corporatization of Nyewasco have the tariffs been adjusted. Only in 2009 was the first, and thus far only, tariff increase (by 50%) agreed upon. The turnaround of Nyewasco can thus be fully credited to operational and financial management efficiency improvements. The 2009 tariff increase coincides with the start of Nyewasco servicing its KfW debt obligations. Earlier tariff increases were difficult to arrange in part because water was considered a free public good in Kenya (to be provided by the government or simply taken from a pond or well).

¹⁴ The veto power of the Treasury was confirmed in the interviews and is included in a revised version of the Articles of Association dates 25 May 2014. We have not seen a signed and thereby definitive version of the Articles of Association. Moreover, neither the Memorandum of Association, nor the Articles of Association list the Treasury as shareholder, with all shares held by the Municipal Council and (in trust) the Mayor, Town Clerk and Town Treasurer. The municipal leadership holds these shares in trust to conform to the Kenyan Companies Act, which requires joint stock companies to have multiple shareholders.

Topography

Nyeri town has a couple of advantageous physical characteristics. First, it has access to gravity water, which – compared to groundwater or spring wells – saves on the electricity bill. Second, its water sources are relatively clean, with low levels of silt, making it relatively easy and cheap to clean. Third, there is, throughout the year, sufficient water. Fourth, Nyeri has limited urban sprawl, with the people residing in a relatively condensed area. Related, Nyeri is a relatively small town with 125,357 citizens in 2009¹⁵.

Discretionary measures

In the period 1995 – 1998, the Nyeri Water and Sanitation Department undertook a series of measures to improve operational and financial performance. These measures were in part financed through KfW (as so-called accompanying measures to the envisaged KfW investment loan).

- Adoption of a computerized billing system
- Improvements to water intake through a partial shift to gravity water
- Installation of new water pumps (with a larger pumping capacity)
- Efficiency improvements in the treatment of water
- Small extensions of the network
- Installation of raw and bulk water meters and creation of District Metering Areas
- Achieving universal metering
- Relocation of the residential water meter closer to the distribution mains (to reduce illegal connections)
- Procurement, training and use of leak detection equipment
- Solicited the support of the public (through an incentive scheme) to identify illegal connections
- Enforced billing procedures and payment (including from government institutions).

After GIZ's assistance on the corporatization of Nyewasco (see below), a critical measure was the design, implementation and follow through on the culture change program. This program consisted of (i) a one day workshop for all staff; (ii) the selection of 'role models' from within management and staff, who would form a 'culture change team' and receive another three-day workshop; and (iii) recurrent annual workshops with all staff on culture change.

According to our interviewees, the culture change program bore fruit because: (i) the institutional framework had changed: incentivizing management and staff to perform; (ii) staff received a substantial (30%) wage increment; and (iii) management empowered staff with responsibility, materials and uniforms. Together, these changes created 'a moral obligation amongst staff to perform'. The Managing-Director also led the fight against corruption, which remained endemic at the time of the corporatization. The Managing-Director's approach was to lead-by-example and zero tolerance (firing corrupt staff and non-extending the contract of the first Commercial-Director on allegations of corruption).

In the period up to the KfW investment loan in 2004, the utility continued implementing efficiency improvements, including electronic billing, automated pumping stations (with a strict weekly maintenance schedule), energy use audits, and the establishment of an ISO-accredited water quality

¹⁵ <https://www.opendata.go.ke/Population/2009-Census-Vol-1-Table-3-Rural-and-Urban-Populati/e7c7-w67t/1>

testing laboratory. Moreover, on instigation of the Managing-Director, the staff became unionized and negotiated two-year collective bargaining arrangements.

Development assistance to Nyewasco from GIZ and KfW

GIZ

Prior to the corporatization, GIZ assisted in the establishment of the Water and Sanitation Departments and provided technical assistance on financial management and revenue generation. GIZ and Nyeri Water and Sanitation Department held monthly meetings to discuss operational and financial performance.

GIZ's assistance on the corporatization of Nyewasco was provided in roughly a three-year period (1997 – 1999). Effectively, GIZ helped Nyeri Municipal Council and Nyewasco to set up the new institutional and organizational structure. This was completed by the end of 1999, after which Nyewasco took over (control). There was little to no hand-holding of Nyewasco by GIZ since.

The GIZ assistance was provided through international and national consultants and encompassed below measures (Water Services Regulatory Board 2007, GTZ 2006, Nyewasco 2006). The GIZ assistance was organized and managed by a three-person, GIZ-staffed program management in the Ministry of Local Government.

- Development of the Memorandum of Association and the Articles of Association
- Recruitment and induction of the Board of Directors and the Management Team
- Corporate governance training of Board and Management Team
- Development of a 5-10 years strategic plan, 1-5 years corporate plan, and an annual budget
- Organizational design (company structure)
- Design and implementation of a human resources plan (job titles, job descriptions, salary grades, terms and conditions of service)
- Asset identification, inventory and valuation
- Design and implementation of a culture change program
- Implementation of efficient meter reading processes
- Accounting software and security profiles for billing software
- Design of company logo
- Computer training
- Preparation of asset lease agreement

KfW

Prior to the corporatization and in anticipation of an upcoming investment loan, KfW supported Nyewasco with (GTZ 2006):

- conducting a feasibility study on the infrastructure extension project;
- procurement of 500 water meters, laboratory equipment, 18 computers and 5 printers;
- procurement and installation of new billing software.

KfW financed the €10.2 million Nyeri Water Supply Extension Project (GTZ 2006):

- detailed design and supervision of the Nyeri Water Extension Project
- 6 km of new raw water intake main;
- new water treatment plant at Kamakwa with 21,000 m³/day capacity
- 85 km of new water distribution mains;
- New storage reservoirs
- 22 km of sewerage network and treatment;
- rehabilitation works;
- Block mapping and establishment of Geographical Information System.

Success factors (as mentioned by our interviewees)

Mr. Joseph Nguiguti

All interviewees attributed Nyewasco's success for a considerable part to Eng. Joseph Nguiguti, the company's Managing-Director from 1995 until 2014. Mr. Nguiguti was qualified by all our interviewees as: self-evasive, highly principled, dedicated, focused, word-bound, intrinsically honest and politically savvy. For staff members, he was a 'father-figure': rule-bound and caring. He managed the utility 'by walking around'.

Prior to his move to Nyeri, Mr. Nguiguti had a long track record in trying to improve municipal water services, in particular reducing nonrevenue water. From 1970 until 1989, he worked (and moved up the ladder) at the Water Department of the Nairobi Municipal Council. He spearheaded (with USAID support) the Nairobi's Masterplan for Water Supply, studied one year in the United States nonrevenue water reduction, and by 1989 had brought down nonrevenue water in Nairobi to below 22% of the water production.

In 1989, Mr. Nguiguti was transferred (due to a change in municipal government, which replaced all top civil servants) to Kitari municipality, where he faced severe opposition to his efforts to improve the technical and financial performance of the municipality's water services. That same year, Mr. Nguiguti was asked by the Nyeri Town Clerk (also a former Nairobi civil servant) to join the engineering department of Nyeri.

Corporatization and middle-management

The corporatization of Nyewasco in 1998 and the practical departure of GIZ by the end of 1999 (see above), left the ball squarely in the hands of Nyewasco's management and staff. In the words of Joseph Nguiguti: 'we are now on our own'. All staff that we interviewed noted that this sentence captures well how they felt at the time and that it was now there moral obligation to perform. Mr. Nguiguti was thereby supported by – what proved over time – a strong middle-management (which were up to the task at hand).

Renewal of infrastructure through KfW support.

All interviewees noted that the utility made significant strides in operational and financial performance prior to 2006, but that the commissioning of the new water treatment plant and renewal of the main distribution network allowed Nyewasco to perform at current levels of operational and financial efficiency.

Signposts

What were signposts for GIZ and KfW that Nyeri would be a deserving partner? There seems to have been a few. From the interviews, we deduct that Nyeri was selected a pilot for the corporatization because (i) it had reliably shared operational and financial performance data throughout the third phase of the UWASAM Program (between 1995 – 1998, the years immediately prior to the corporatization initiative); and (ii) the municipal council explicitly agreed on the corporatization after rigorous debate (in part facilitated and expert led by GIZ). At the time of the corporatization, neither GIZ nor KfW foresaw the leadership role that Joseph Nguiguti would play, with both propagating the external recruitment of the Managing-Director.

Sustainability

All interviewees felt comfortable about the sustainability of Nyewasco's turnaround: 'the utility is now run on systems and does no longer depend on individuals'. Still, the interviewees voiced some concern with the active interest the County Government displayed in the utility and feared increasing political interference. These concerns arise from the fact that the county government takes an interest in Nyewasco and sought to take part (if not influence) Board decisions (namely the appointment of the new Managing-Director after the first Managing-Director, Joseph Nguiguti, retired in 2014) and operational decisions (e.g. the tendering of the staff medical insurance coverage).

Development phases

With the benefit of hindsight, the evaluators distill four distinct phases in Nyewasco's turnaround.

1. Phase 1 – 1995:1998 – improving basic operations (billing, collection, NRW) and the political buy-in into the corporatization of the water and sanitation services.
2. Phase 2 – 1998:2003 – corporatization, changing the organization's culture and further incremental operational improvements (including network expansion).
3. Phase 3 – 2004:2009 – renewal and expansion of the water intake, water treatment plant and main distribution network.
4. Phase 4 – 2009:2015 – first increase in water tariff and consolidation of operational and financial performance.

D. APA Vital, Iasi, Romania

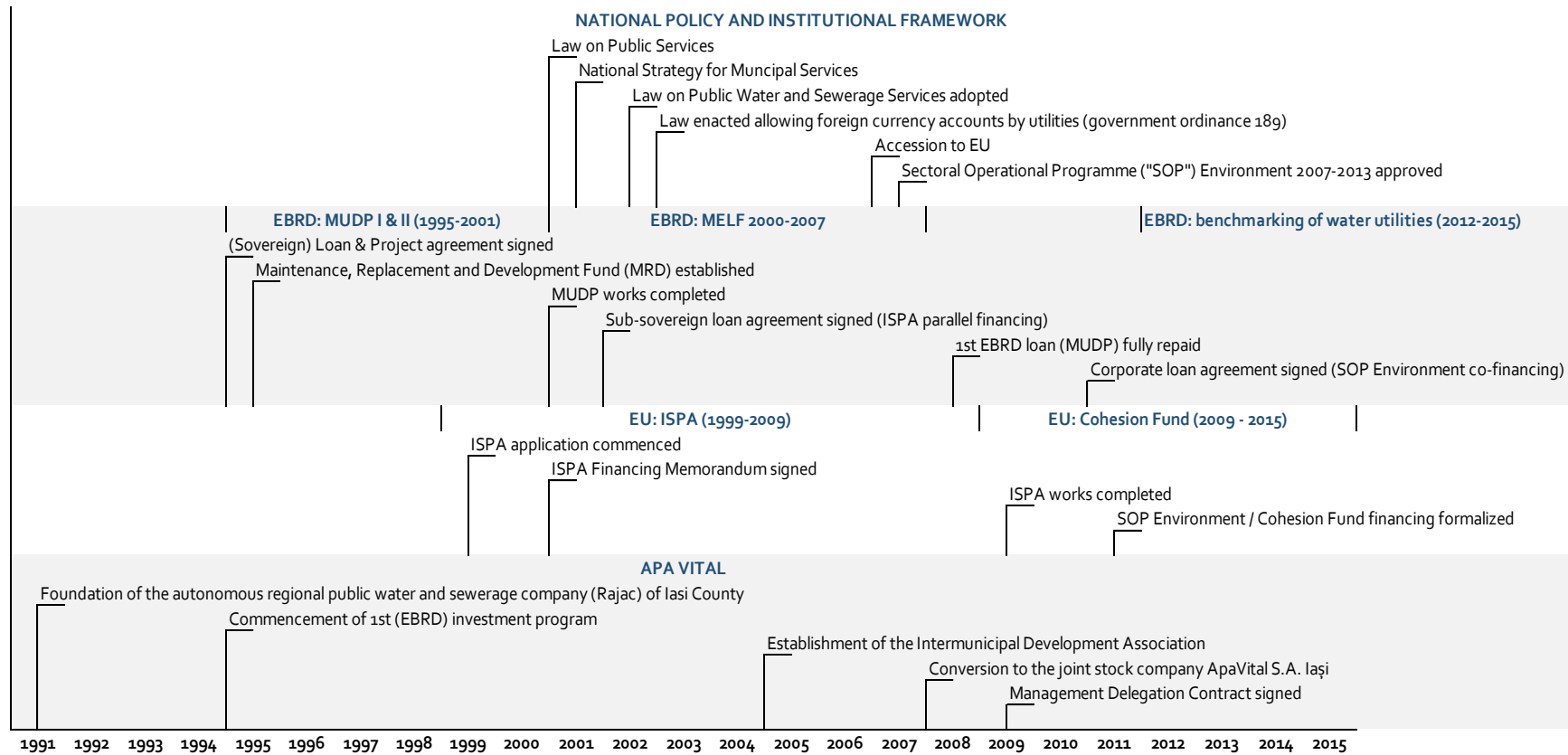
This Annex contains our findings on the successful turnaround of *APA Vital*, the water and waste water utility of Iasi County, including:

- a **timeline**, with key occurrences and milestones in Apa Vital's development, EU and EBRD assistance to Apa Vital, and the evolution of the national policy framework;
- **the annual development in key performance indicators**, which shows the operational and financial improvements of Apa Vital over time;
- **the political economy** in which Apa Vital operated, which forms an important backdrop to understanding the successful turnaround;
- **the discretionary measures**, in chronological order, underlying the turnaround;
- **the development assistance** Apa Vital has received from EBRD and EU;
- **the success factors** as perceived by our interviewees;
- **the signposts**, which indicated that Apa Vital was on a path towards success;
- **the sustainability** of Apa Vital's reforms; and
- **the development phases** Apa Vital has gone through, distilled from the above findings.

Timeline

The table on the next page marks the key occurrences and milestones in the history of APA Vital, EU/EBRD's assistance, and the national policy framework. The table is easiest read starting from the bottom grey row on APA Vital's main developments and then moving upwards.

Graph 6 Timeline of key occurrences and milestones, APA Vital



Sources: Apa Vital presentation and internal documents, interviews

The annual development in key performance indicators

Table 8 Key performance indicator data, APA Vital, 1995 – 2015 (October)

KPI\Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Availability of service (hours per day)	16	16	16	16	16	16	16	16	16	16	24
Coverage ratio (% of population with access to piped water)	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Metering (% of connections with an in-house water meter)	No data	No data	No data	No data	No data	79%	87%	94%	96%	98%	99%
Non-revenue Water (in % of total production)	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Collection ratio (% of bills collected)	73%	89%	79%	85%	84%	84%	94%	101%	106%	101%	103%
Staff numbers (number of staff per 1000 connections)	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Operating cost coverage (total operational revenues / total operational costs)	1.20	1.37	1.25	1.72	1.53	1.19	1.15	1.20	1.35	1.18	1.12
Residential Tariff/m ³ sold **	308	505	1,267	2,544	3,708	5,437	7,449	9,928	12,541	14,085	1.6
Year and size of residential tariff adjustments (%) **	102%	64%	151%	101%	46%	47%	37%	33%	26%	12%	11%

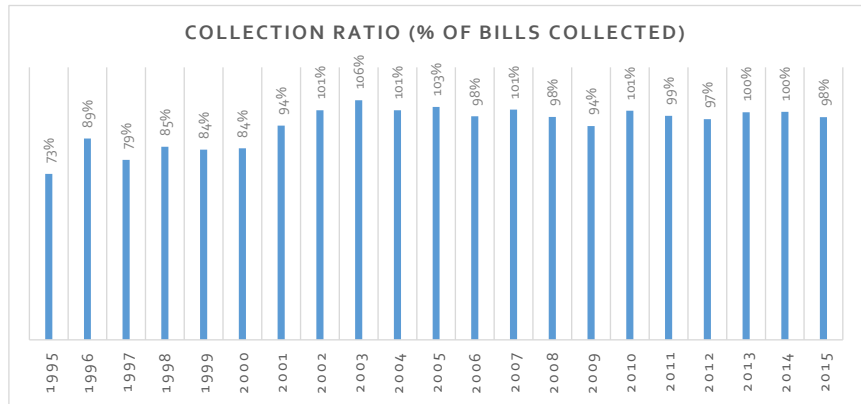
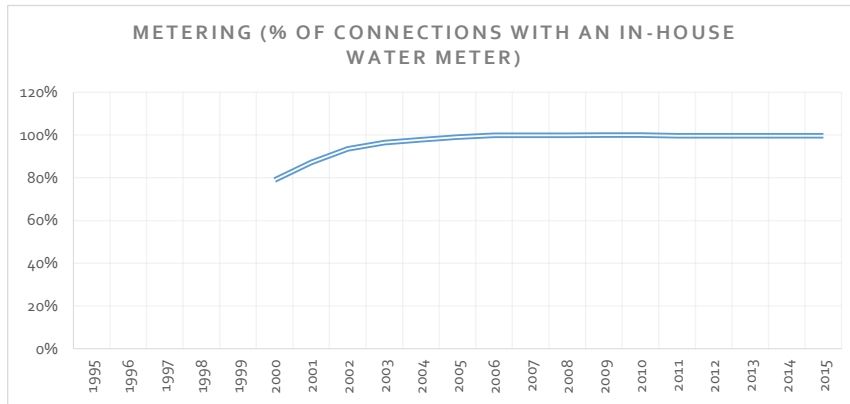
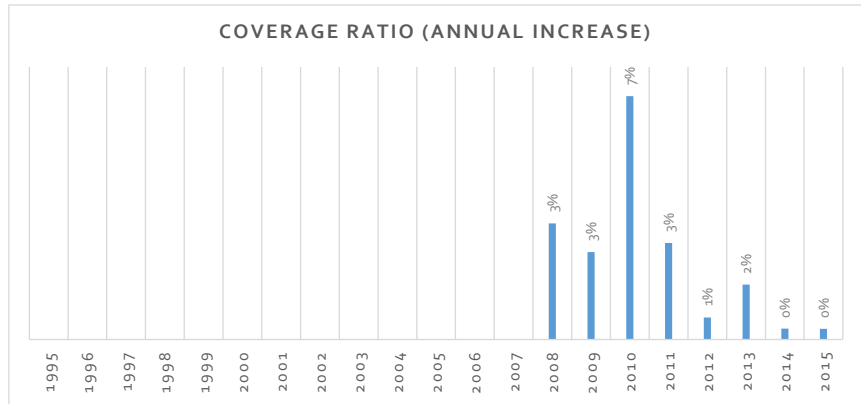
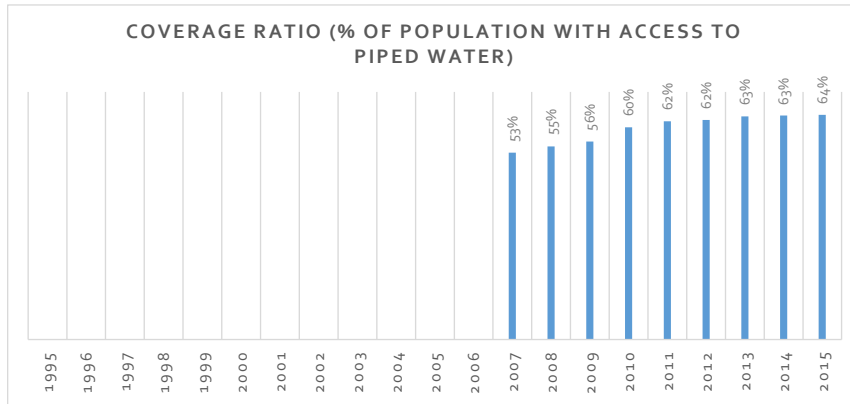
...Continued...	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Availability of service (hours per day)	24	24	24	24	24	24	24	24	24	24
Coverage ratio (% of population with access to piped water)	No data	53%	55%	56%	60%	62%	62%	63%	63%	64%
Metering (% of connections with an in-house water meter)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Non-revenue Water (in % of total production)	No data	No data	No data	No data	30%	30%	28%	28%	27%	27%
Collection ratio (% of bills collected)	98%	101%	98%	94%	101%	99%	97%	100%	100%	98%
Staff numbers (number of staff per 1000 connections)	No data	No data	No data	25	23	22	21	20	18	17
Operating cost coverage (total operational revenues / total operational costs)	1.15	1.12	1.10	1.12	1.09	1.06	1.08	1.06	1.11	1.11
Residential Tariff/m ³ sold **	1.7	1.8	1.9	2.3	2.6	2.8	3.0	3.1	3.2	3.2
Year and size of residential tariff adjustments (%) **	8%	4%	7%	23%	13%	8%	5%	4%	4%	0%

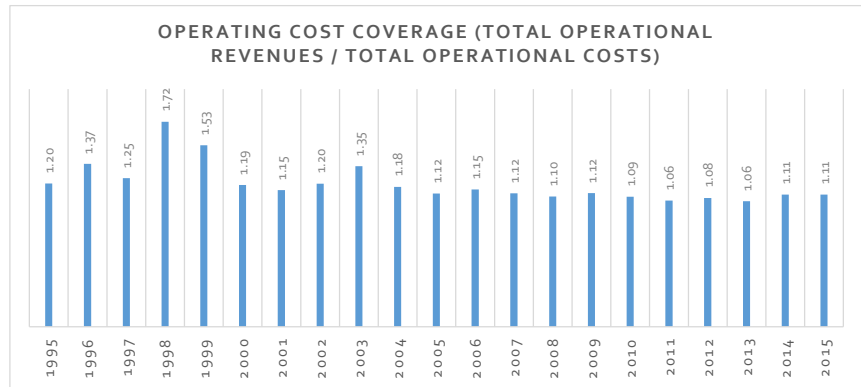
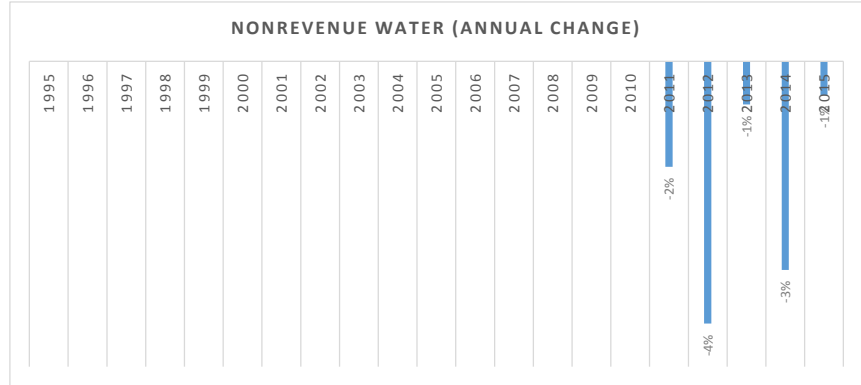
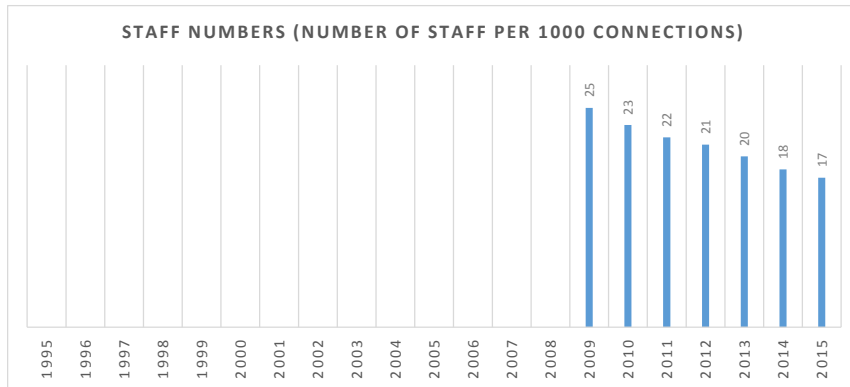
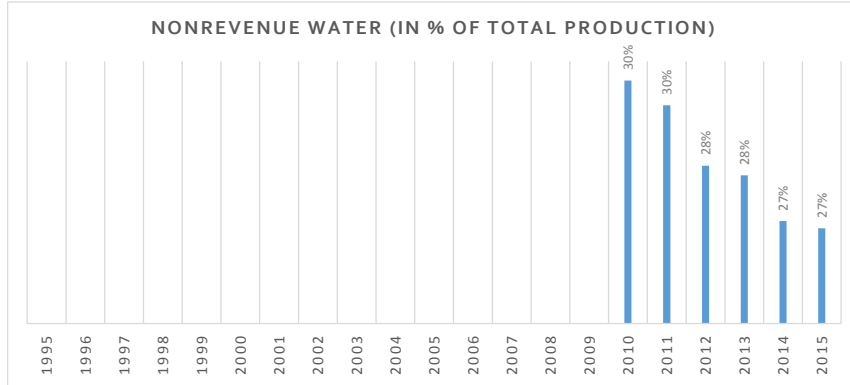
Source: Apa Vital

* As a regional water utility, APA Vital covers the whole Iasi County. The urban coverage ratio is at present 100%.

** As of 2005 a new currency was introduced with a conversion ratio of 1:10,000

Graph 7 Development of key performance indicators, APA Vital, 1995 – 2015





The political economy

Nation-wide EBRD and EU support programs

The EBRD started a nation-wide program in the urban water sector in 1994 (with the effective program start in 1995). The EU entered the sector in 1999. The EBRD and EU worked closely together: providing financing for the same program / phase. With hindsight, three separate investment phases can be distinguished in the EBRD and EU support, with a fourth phase currently under preparation.

Table 9 EBRD and EU support to Iasi County between 1995 and 2015

Period	EBRD	EU
Early emergency support		
1995 – 2001	<ul style="list-style-type: none"> - Municipal Utilities Development Program (MUDP 1) sovereign loan, on-lent by the Ministry of Finance to 5 medium sized cities: Brasov, Craiova, Iasi, Targu-Mures and Timisoara. This program was quickly expanded with a second phase (MUDP 2), covering an additional 10 cities. - Critical / emergency investments in water metering, network rehabilitation, pump replacement and improvement of treatment facilities - Introduction of a performance and revenue improvement program with time based improvement targets included as loan covenants in the Project Agreement. The Project Agreements were signed by the respective water utility, municipality or county and the EBRD - Introduction of a mandatory Maintenance, Replacement and Development reserve account (“MRD Reserve”) - “Hands-on” support by EBRD staff and consultant in (i) managing/monitoring financial loan covenants (ii) program management and implementation - Real tariff increases in a hyperinflationary environment - Rapid financial and operational improvement (especially collection efficiency) through introduction of water metering and improved management of unpaid accounts receivable 	<ul style="list-style-type: none"> - No yet active in the urban water sector
Upscaling investments		
1999 – 2006 (planned) 2009 (actual)	<ul style="list-style-type: none"> - Municipal Environmental Loan Facility (MELF) 25% parallel financing to EU ISPA funds on a sub-sovereign loan basis - “Hands-on” MELF TA support to (i) TA in monitoring (financial) loan covenants (ii) project management assistance EBRD financed components 	<ul style="list-style-type: none"> - Instrument for structural policies for pre-accession - ISPA grant financing of capital expenditure; 75% of total program - Capital expenditure targeted at improvement / expansion drinking and waste water system

Period	EBRD	EU
		<ul style="list-style-type: none"> - Project management / supervision support of EU-IPSA funded components - TA support for project preparation / ISPA application
Regionalization and expansion		
2009 – 2015	<ul style="list-style-type: none"> - Direct corporate lending to successful utilities for the expansion of infrastructure - Assistance in setting up a national benchmarking program, facilitated by the national water utility association. Ultimate purpose of the benchmarking system is to allow the IDA's (see cell to the right) to monitor the key performance indicators in the delegation contract 	<ul style="list-style-type: none"> - SOP Environment 2007-2013 from the EU Cohesion Fund financial instrument - Large investment grant. Focus of investment is compliance with water and wastewater related EU directives (targeting agglomerations > 10,000 inhabitants) - Institutional reform: establishment of joint stock companies at the county level with the municipalities and county being shareholders, creation of the Inter-communal Development Association ("IDA") of municipalities, and the set-up of a delegation contract between IDA and the regional water utilities
Expansion in rural communities		
2016 onwards	<ul style="list-style-type: none"> - EBRD role to be decided 	<ul style="list-style-type: none"> - Large Infrastructure Operational Program - Large investment grant being prepared under the Large Infrastructure Operational Program ("POIM" in Romanian; "LIOP" in English). Focus of investment is compliance with water and wastewater related EU directives (targeting agglomerations > 2,000 inhabitants)

Socio-economic situation

After the toppling of the communist regime in the early nineties and as a result of years of neglected maintenance and under-investment, the situation in the water sector had reached critical levels with intermittent water supply in major urban centers, frequent unplanned service interruptions and questionable / unreliable drinking water quality levels. Water supply outside major urban centers frequently did not exist at all, not to speak of sewerage and waste water treatment systems. In short, the water sector was at the brink of collapse. Iasi was no exception to this situation. Hence, there was an urgent need for emergency support and critical rehabilitation of crucial water systems to prevent a collapse of the system.

National political support

National political support was critical at two stages during the 20 year development of the utility. First, the initial loan provided by the EBRD in the year 1995 was on a sovereign basis and signed by the Romanian Ministry of Finance. As the loan agreement was also ratified by parliament it had the status of a law, including its loan covenants. Hence, during implementation, the utility staff could always fall back to this legal basis in order to convince critics of the need for real tariff increases and the

operation of the MRD reserve account. This proved critical in the successful implementation of this initial program¹⁶.

Second, the Ministry of Environment and Sustainable Development included a mandatory requirement in its SOP Environment Program document (approved and ratified by the EU and the Romanian government and parliament) that water utilities need to *regionalize*, serving the entire county, as opposed to one large city. The new regional water utilities, so-called Regional Operating Companies ("ROC") had to enter into a delegation contract with the also newly formed association of local governments (the Intercommunity Development Association, "IDA"). The intention of this policy was to (i) reap economies of scale by including smaller water utility operators into larger, more efficient water utilities usually serving the larger urban areas within the county; and (ii) provide access to EU grant money via the Cohesion Fund financing instrument to the smaller communities. Although RAJAC Iasi always was county-owned and thus in principle operated throughout the entire county, this specific policy allowed the utility to reap the benefits of the SOP Environment Program and increase its coverage ratio substantially.

Local political support

Both county and city recognized the need for emergency investments in the early nineties and hence were quick to agree on the tri-partite project agreement in the year 1995, signed by respectively the Iasi County Council, RAJAC Iasi and the EBRD. Nevertheless the full consequences of the loan conditions were probably not completely realized during those days. Especially the mandatory, time-based real tariff increases proved a contentious issue and actually caused the replacement of the managing director in the year 1996 with a young engineer (Gheorghe Nichita), who subsequently embraced the EBRD program and the development opportunities it provided.

With a lot of direct involvement and support of the EBRD and the newly appointed managing director, county and city governments eventually were supporting the EBRD program including its conditionalities, as they recognized the opportunity to get access to substantial financial resources (EBRD loan and national government budget support) to urgently improve the water supply system. Since the appointment of the Gheorghe Nichita as the new managing-director, actual implementation of EBRD MUPD program went smooth, including the frequent real tariff increases as required based on the loan covenants. The new managing-director was politically astute. Testimony to this is that he was appointed deputy mayor of Iasi town in the year 2003 and later on became the mayor.

Institutional set-up

1. <1991

The water services for Iasi town were provided by a communal services company carrying out a variety of communal services such as solid waste collection, street cleaning, water supply etc.

2. 1991 - 2008

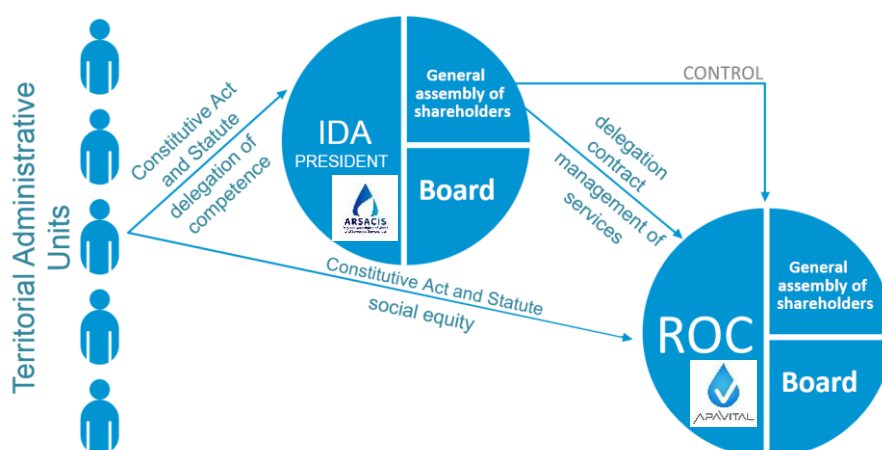
After the toppling of the Communist Regime, the "Regia Autonomă Județeană Apă Canal Iași" (the regional autonomous water and sewerage company of Iasi County or "RAJAC Iasi") was founded. This entity exclusively focused on providing water supply, sewerage collection and waste water treatment services. The Iasi County was its sole founder and owner. Hence, the utility was already a regional operator in principle, although the far majority of the services were concentrated at Iasi city.

¹⁶ The initial 1995 EBRD loan was fully repaid by Iasi utility in the year 2008.

3. >2008

In 2008, RAJAC Iasi was converted into a joint-stock company APAVITAL SA, operating under commercial law. Iasi County is the majority shareholder of APA Vital with 99.7% of the shares, with 90 other local government bodies owning the balance of shares. In the same year, under instigation of the national government and through the SOP Environment Program, the Inter-community Development Association (IDA) was founded. It currently has 102 members: 1 county council, 5 cities, 93 communes, and 3 communes outside Iasi County. Each holds one vote and veto power over decisions directly impacting their individual municipality. Each of these local government bodies has a legal responsibility to provide water supply & sewerage services within their area of jurisdiction. This legal responsibility was delegated by means of a delegation contract to the newly created Regional Operator Company in Iasi, APA Vital. The delegation contract was signed in March 2009. The figure below illustrates the current institutional set-up.

Table 10 Institutional set-up of APA Vital since 2008



Source: APA Vital internal document / presentation

Board of Directors and Management-Team

The management team of APA Vital has remained relatively constant in terms of composition over the 1995-2015 period. The operational manager for Iasi County was added to the Management Team when the delegation contract with the IDA was being arranged and the service area was expanded. The current composition of the management team is:

- General manager
- Technical Director
- Economic Director
- Operational manager Iasi metropolitan area
- Operational manager Iasi County

The Board of Directors is appointed by the shareholders through the General Shareholders Assembly in its Annual General Meeting (AGM). The Board of Directors is comprised of 10 members from APA Vital itself, County Council and representatives from the local academic community. The General Manager and Economic Director are both represented in the Board of Directors as well. Interestingly, the President of the Board of Directors is also the Technical Director of APA Vital and in his position as President is overseeing his boss at APA Vital.

Accountability

APA Vital has a typical institutionalized upward accountability with the Board appointed by its shareholders (the Iasi County and 90 local government minority shareholders) for a 4 year term. The representation of 90 local governments creates checks and balances between the interest of the larger urban areas (especially Iasi city) and the rural communities within the County. This diversified accountability is also reinforced through the IDA where each member has one vote (including the Iasi County Council, even when it directly owns 99.7% of the shares in APA Vital). Each IDA member has a veto right for any decisions directly impacting its jurisdiction. APA Vital is directly accountable to the IDA with the IDA having the authority to decide on major decisions such as tariff adjustments (regulated through the delegation contract) and investment plans. This diversified representation gives the company quite some protection from political interference from individual local governments. Furthermore, the APA Vital Board has members from the local academia, which further limits the political influence. No national level is represented in the Board, nor are consumer organizations.

Formal incentives

The time bound performance improvement targets formalized as loan covenants in the 1995 EBRD loan agreements proved pivotal in the rapid performance improvement of the utility during the early stages. This “stick and carrot” approach was made a success through a number of factors: (i) direct, hands-on support and close monitoring by EBRD staff and their consultants in assisting the utility in meeting the performance targets and addressing the initial concerns of local government especially regarding (real) tariff adjustments; (ii) a young and eager utility management team which embraced the chance to gain technical know-how from experienced international experts with large utility management experience; and (iii) readily available financial resources to quickly make the necessary emergency repairs and rehabilitations to show immediate service/operational improvements.

The time bound performance improvement targets were only set at the company level and not linked to individual performance of utility management or staff. Hence no *individual* formal incentive system was put in place, although utility staff quickly realized that the rapid financial performance improvement did allow the timely payment of their individual salaries.

The delegation contract signed between IDA and APA Vital contains annual performance targets which need to be reported upon by the utility. The delegation contract has a penalty system in place in case of non-performance, but this has not been applied yet. As from the year 2012, APA Vital management team’s remuneration has a fixed and variable (max 40% of fixed salary) element with the variable components based on an individual performance appraisal system. We could however not ascertain whether this performance appraisal system is linked to the delegation contract performance targets.

Stability in management

The APA Vital management team has been remarkably stable over the 1991 to 2015 period with some key staff being promoted to more senior positions. As from the year 2003 until today the key management team has remained the same.

- There have been three general directors:
 - 1991 – 1996 Mihai Casparovici
 - 1996 – 2003 Gheorghe Nichita (became deputy mayor Iasi city and later mayor)
 - 2003 – present Ion Toma

- Technical managers:
 - o 1991 – 1997 Petrea Vasluianu
 - o 1997 – 2003 Ion Toma (also deputy general manager / production manager)
 - o 2003 – present Dorus Mihail (former PIU manager EBRD MUDP program)

- Economic managers:
 - o 1991 - 1997 Maria Vengher
 - o 1997 – 2001 Victorel Lupu
 - o 2001 – present Mariana Chirila

Water tariff

One of the major success factors of the early EBRD MUDPI program was the implementation of real tariff increases in a high inflationary environment. Together with the introduction of metering so that actual water consumption was billed and improvement of the billing & collection system, a rapid financial improvement was achieved. A targeted and closely monitored cost reduction program (especially energy efficiency improvements) also contributed to the improved financial performance.

As can be concluded from the key performance indicator table, the water tariff was adjusted almost every year during the period 1995 – 2015. The EBRD MUDP and MELF programs had targeted annual or even 6 monthly tariff increases included as loan covenants which was closely monitored. The 2009 delegation contract has a multi-year annual tariff adjustment formula, which has proven to provide sufficient basis for the utility to get annual tariff increases, at least adjusted for inflation and allowing for a development levy which is used to improve and expand the water system.

Topography

The water distribution network in Iasi is fed by two sources. The first and oldest source, Timisesti, provides infiltration water and ground water. This water is of a good quality and requires limited treatment to comply with EU drinking water directives. In addition, it is gravity fed (no pumping /electricity costs), so water production is relatively cheap, although the raw water needs to be transported over a large distance of approximately 100 kilometer.

The second source is surface water from the Prut River, which requires advanced treatment at the Chirita drinking water treatment facilities in order to comply with EU directives. As this water also needs to be pumped, the overall production and transmission cost is high.

Overall the mix of water sources is serving Iasi town is relatively cheap. Hence the average consumer tariff charged is relatively low compared to other ROC's in Romania. As an additional effect, large scale investments targeting reduction of physical water losses are difficult to economically justify as, the marginal cost of water production is low. This is one of the reasons why NRW reduction has not been a high priority area and remains relatively high (27% in the year 2015).

Since the signing of the delegation contract in the year 2009, APA Vital's service area has been expanded into the rural areas of Iasi County. As population density in these areas is low, the cost of distributing water is relatively high. This will have a negative impact on the financial performance of APA Vital as a unitary tariff system is applied across all serviced communities with the current based on relatively cheap water supply provision in high density urban areas.

Development assistance to APA Vital from EBRD and EU

Apa Vital has received extensive support during an extended period of time commencing in the year 1995 until now. Both “soft” (technical assistance, project management) and “hard” (investments and capital expenditure) funding was provided. The vast majority of the support was provided by the EBRD and the EU, but there was also some assistance from KfW and bilateral and twinning partners.

The start of the EBRD assistance

In 1994, the EBRD surveyed the urban landscape in Romania to assess where and how to provide assistance. It subsequently managed to agree in a very short time frame on a sizable (USD 28 million) sovereign loan with the Romanian Ministry of Finance to support the water utilities serving five larger cities: Brasov, Craiova, Iasi, Targu-Mures and Timisoara²⁷. This loan was on-lent by the Ministry of Finance to the 5 water utilities and doubled with an investment grant allocated from the Romanian national budget.

What proved critical in the speed of arranging the loan was that the EBRD accepted to provide emergency funding for critical investments based on existing plans and feasibility studies prepared by the utilities themselves, while in *parallel* practical, hands-on technical assistance was provided to advise the utilities how best to procure and utilize the available funds and adjust the plans if necessary “on the go”, i.e. during implementation. This was in contrast to an approach adopted by the World Bank during the same period, as the World Bank insisted on an initial institutional development phase only after which an investment phase could *possibly* follow. This led to prolonged project preparation and loan negotiations²⁸

Early EBRD assistance

According to our interviewees, the initial assistance provided through EBRD MUDPI was pivotal in the performance improvement of RAJAC Iasi. The EBRD support was hands-on and provided by both EBRD staff as well as experienced international consultants with direct utility management experience. The technical assistance centered on assisting the utility to meet and monitor the time bound performance improvement targets included as mandatory loan covenants.

The support provided during this early phase included:

TA measures:

- Monitoring loan covenant compliance
- Financial planning & forecasting financial ratios / loan covenant compliance
- Assistance with tariff methodology and increases
- Billing & collection system improvements (introduction customer contracts, improved/reinforced collection procedures and customer debt control)
- Assistance in implementing and monitoring cost reduction program
- Calibration & water meter repair workshop
- Preparation of water pressure management/control system
- Development 3-year operational plan

²⁷ Interestingly, three of these cities (Timisoara, Brasov and Iasi) are still frequently identified as being the best performing water utilities in the country.

²⁸ On August 1, 1996 the World Bank Board approved a USD 25 million loan for the Bucharest water supply system, hence not a nationwide water sector project as was discussed during the first half of the nineties.

- Leakage control strategy
- Establishment MRD reserve
- Project management and tendering assistance of investment measures

Investment measures:

- Water distribution network rehabilitation
- Installation of consumer water metering
- Improvement of Chirita water treatment plant
- Prut river pump replacement
- Improvement Timisesti raw water supply source
- Storm water overflow stations
- Rehabilitation sewerage network

Follow up EBRD and EU assistance

During the MELF/IPSA phase (1999 – 2009), performance improvement measures focused on:

- Loan covenant compliance monitoring and financial modeling & forecasting
- Cost reduction program and monitoring
- Project management, procurement and supervision of investment program

RAJAC Iasi also continues on its own

After the MUDP I phase, RAJAC Iasi carried out the following performance improvement measures (with little external assistance):

- Introduction new ERP and billing & collection system (IT system called "Cros"), 2003
- Creation of call center, 2005
- Set up of public relations department, 2001
- Establishment of job descriptions, working procedures and a performance evaluation system
- Certified / accredited drinking water and waste water quality laboratories
- ISO certified quality management system
- Various technical/operational IT systems (SCADA)

EU assistance

EU technical assistance under ISPA and SOP Environment focused on:

- Project preparatory studies (feasibility studies, ISPA/Cohesion Fund application, master plan)
- Project management, design, procurement and construction supervision

An innovative approach: the Maintenance, Replacement and Development Reserve Account

The EBRD loan agreement contained an innovative approach by including as loan covenants (i) time bound performance improvement targets, including real water tariff increases and (ii) the establishment of a Maintenance, Replacement and Development Reserve Account ("MRD Reserve"), with a requirement to replenish this reserve account with any net profit / dividend and corporate income taxes paid by the utility company to the local authorities. This MRD reserve account could subsequently be used to fund capital expenditure and to service the EBRD debt which was on-lent via the Ministry of Finance. The impact of the MRD reserve account is that the additional cash generated as a result of the tariff increases and financial and operational improvements were flowing back to the utility, so that it could be used to further improve its services. The MRD reserve account also informed

the national water policy legislation, as it was made mandatory for all water utilities by a national law enacted in the year 2002.

EBRD's loan covenants

- Financial covenants
 - o Tariff increases in real terms from initial base tariff
 - 1 July 1995 50%
 - 1 July 1996 100%
 - 1 July 1997 150%
 - o 6 monthly tariff adjustment for inflation following prescribed formula
 - o Customer debt control: not to exceed 20% of annual revenues
 - o >90% of water meters calibrated and in working condition
 - o Cost control/reduction (real, inflation adjusted):
 - 1995 2% reduction of initial base operating costs
 - 1996 4% reduction of initial base operating costs
 - 1997 6% reduction of initial base operating costs
 - 1998 8% reduction of initial base operating costs
 - 1999 10% reduction of initial base operating costs
 - o Cash flow cover ratio of debt service and dividends >1.5
 - o Prior EBRD approval required for additional debt (other than EBRD loan)

- Non-financial covenants
 - o Implementation of water pressure monitoring system by 1 January 1996
 - o Development of 3-year Operational Plan for the period 1996-1998
 - o Preparation of Leakage Control Strategy by 1 January 1996
 - o Preparation Public information program by 1 July 1995
 - o Accountability program targeted at the utilities' customers, established by 1 July 1995 and comprised of:
 - 6-monthly progress project implementation progress reports
 - 6-monthly reports on service quality to be published in local press\
 - Effective prior notification of households effected by implementation of works under the project
 - o Establishment of MRD Reserve, with a minimum mandatory annual contribution by the City from its budget of (i) profit tax paid by the utility to the City and (ii) share of net profits (dividend) received by the City from the utility

Success factors (as mentioned by our interviewees)

General consensus of our interviewees was that the initial EBRD MUDP I and its rapid performance improvement conditions was critical and actually set the pace for all further corporate development activities. Specifically the following success factors were mentioned.

- Innovative EBRD "Carrot-and stick" approach by introducing time bound based performance targets agreed upon as loan covenants which had the status of a law as the loan agreement had passed parliament. Carrot: loan/financial resources for utility development. Stick: discontinuation of loan drawdowns if performance targets were not met.

- “Hands-on” and pro-active approach by EBRD staff themselves, telephonically and in the field. Active lobbying of the local political leadership to get critical changes implemented, especially tariff increases.
- Hands-on approach and field presence of seasoned international consultants with practical utility management experience.
- Innovative EBRD idea to set up MRD reserve account which facilitated the “ploughing back” of funds for further development.
- Young and eager management team with the full support of the General Manager, ready to absorb and apply best international practices.
- Limited political interference in tariff adjustments, management appointments and during procurement, facilitated by the fact that utility is county owned (not by Iasi city) and political management skills and transparency of utility management towards local government.
- Continuity of utility management.
- Company culture turnaround by improved working conditions and training facilities, clear-cut job descriptions and working procedures and a merit based performance appraisal system in place.
- Iasi as a university town has a pool of well-educated people from which the utility can draw staff.
- Policy / legislation in place to support regionalization process, unlike other communal services sectors.
- Strong apolitical water association with big influence on national water policy development.

Signposts

Some early signpost can be distilled from the interviews:

- Eagerness to attract investment funds by both national level (Ministry of Finance) and local level (Iasi county and RAJAC Iasi) triggered by the critical water supply service delivery standards. There clearly was an emergency situation.
- First real tariff increase applied in accordance with loan covenants, which required a lot of effort and convincing, but did mark the acceptance by Iasi county and city of the conditionalities of the EBRD loan. Subsequent tariff adjustments were much easier.
- Full repayment of the initial MUDP 1 loan by 2008: this provided evidence that the utility could “stand on its own financial feet” and that the MRD reserve account concept was working in practice

Sustainability

All interviewees were comfortable with and confirmed the sustainability of the utilities’ operation. Financial sustainability is probably best illustrated by the evolution of external EBRD debt guarantee/security requirements:

- The 1995 MUDPI loan was provided with a sovereign guarantee;
- The 2001 MELF loan could be provided based on a sub-sovereign guarantee from Iasi county council only;
- The 2009 EBRD loan linked to the SOP environment program did not require a guarantee and was solely based on APA Vital’s financial performance and balance sheet strength.

Development phases

The following two development phases in APA Vital's turnaround can be distinguished, each with some sub-phases marking major capital expenditure / development rounds.

1. Phase 1 – 1995:2009 – *Early emergency support and urban upscaling*
 - 1a - Early emergency support (1995 – 2001)
 - 1b - Upscaling and service delivery improvement in Iasi city (1999 – 2009)

2. Phase 2 – 2009:present – *Regionalization*
 - 2a – Regionalization and expansion in county towns (2009 – 2015)
 - 2b – Rural expansion into Iasi County (2016 – onwards)

E. PPWSA, Phnom Penh, Cambodia

Phnom Penh Water Supply Authority, Cambodia

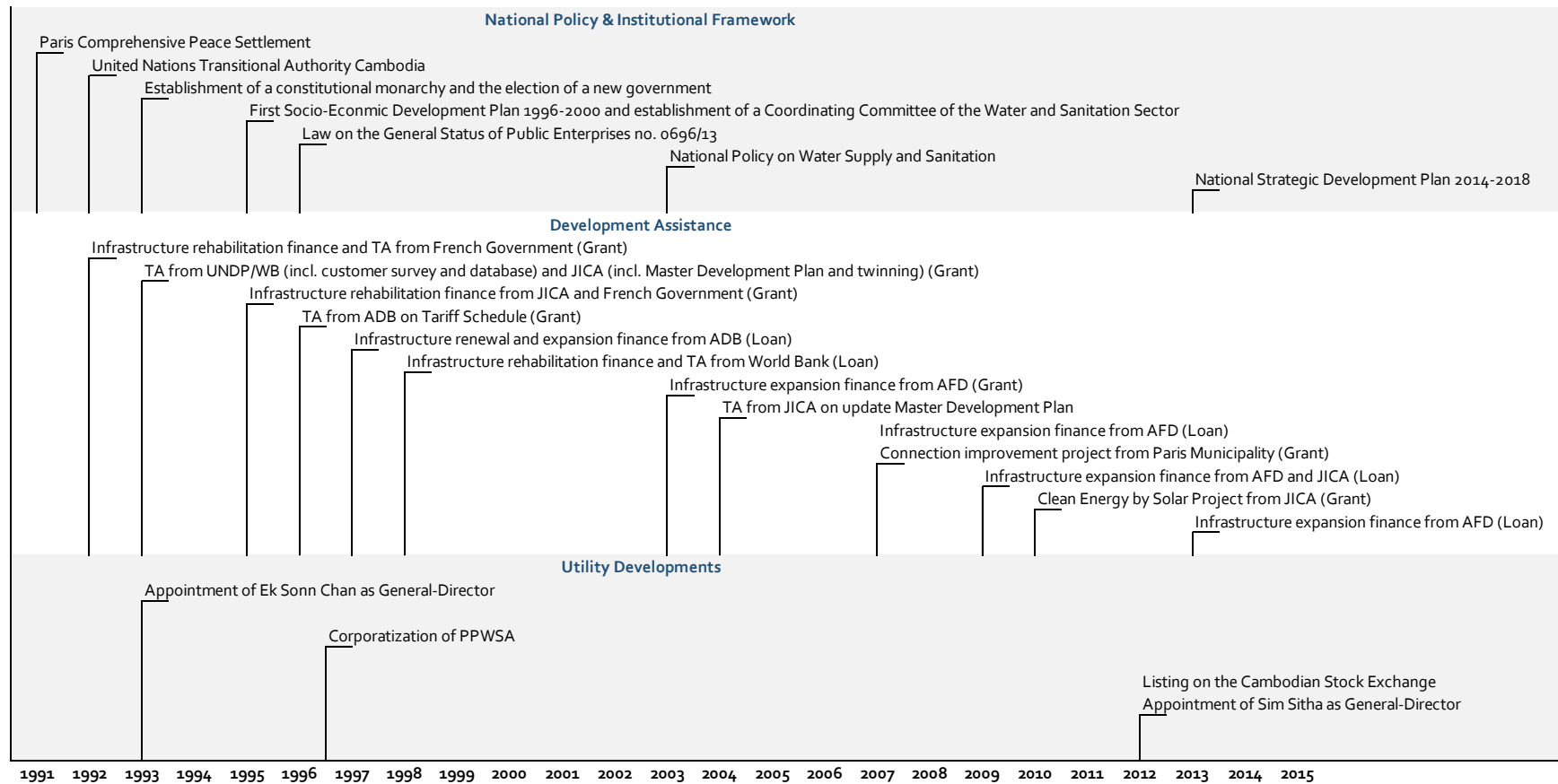
This Annex contains our findings on the successful turnaround of the Phnom Penh Water Supply Authority (PPWSA), including:

10. **a timeline** with key occurrences and milestones in PPWSA's development, official development assistance to PPWSA, and the evolution of the national policy framework;
11. **the annual development in key performance indicators**, which shows the operational and financial improvements of PPWSA over time;
12. **the political economy** in which PPWSA operated, which forms an important backdrop to understanding the successful turnaround;
13. **the discretionary measures**, in chronological order, underlying the turnaround;
14. **the development assistance** PPWSA has received from the French government, AFD, JICA, ADB and the World Bank;
15. **the success factors** as perceived by our interviewees;
16. **the signposts**, which indicated that PPWSA was on a path towards success;
17. **the sustainability** of PPWSA's reforms; and
18. **the development phases** PPWSA has gone through, distilled from the above findings.

Timeline

The table on the next page marks the key occurrences and milestones in the history of PPWSA, its development assistance, and the national policy framework.

Graph 8 Timeline of key occurrences and milestones, PPWSA



Sources: PPWSA Data, Chan, Vermersch en Vaughan (2012), Das, et al. (2010), ADB (1996, 2005, 2014), World Bank (1998, 2004)

The annual development in key performance indicators

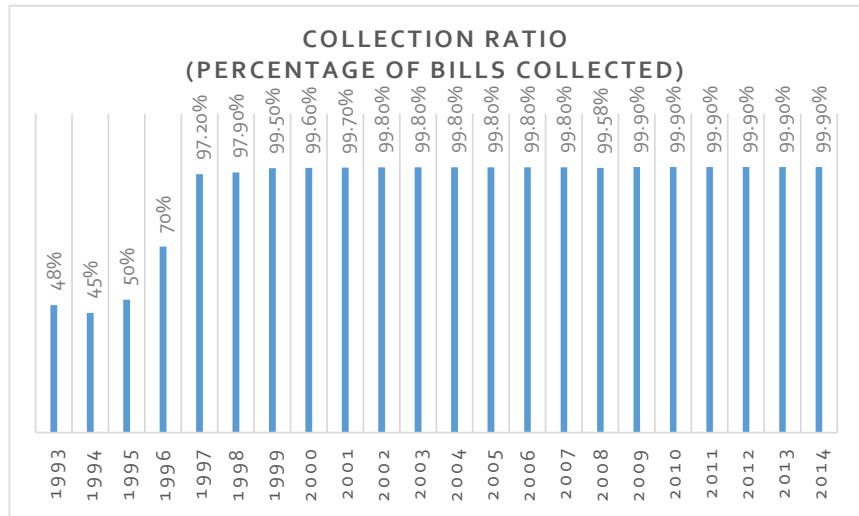
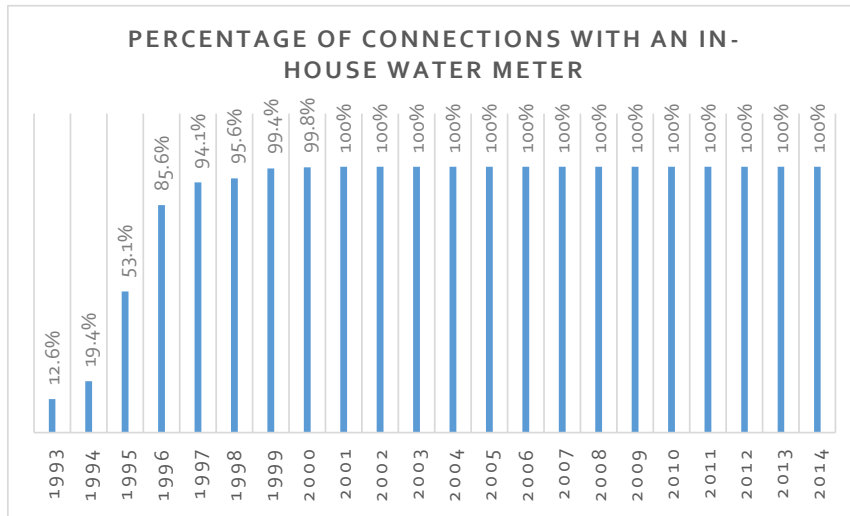
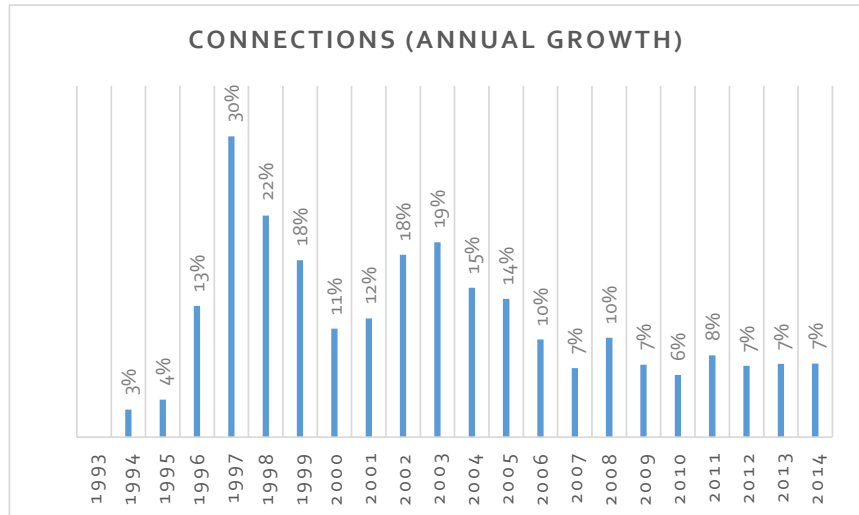
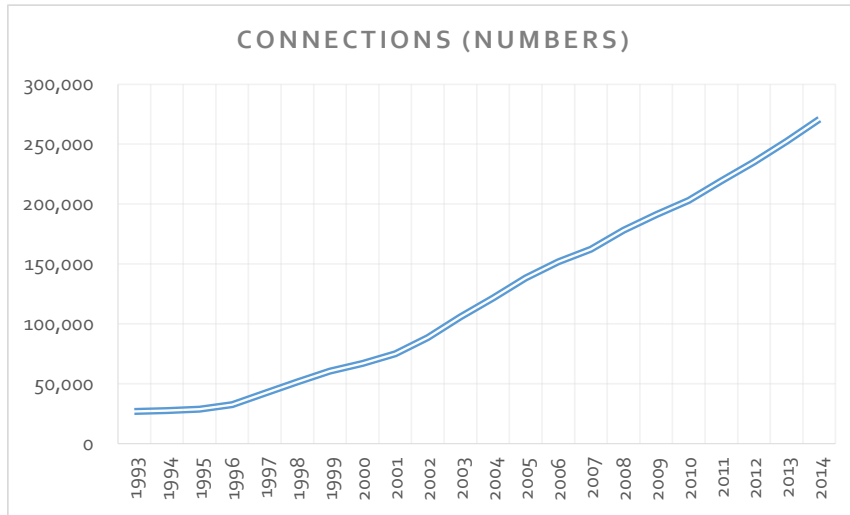
Table 11 Key performance indicator data, PPWSA, 1993 - 2014

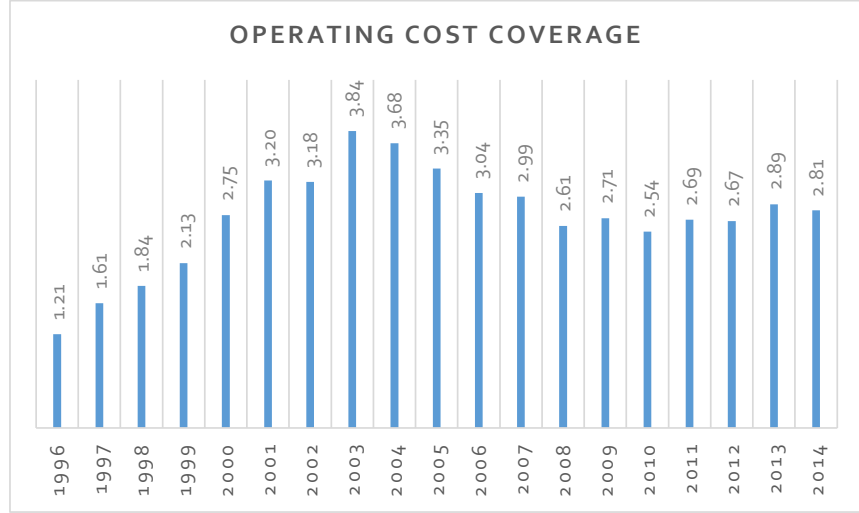
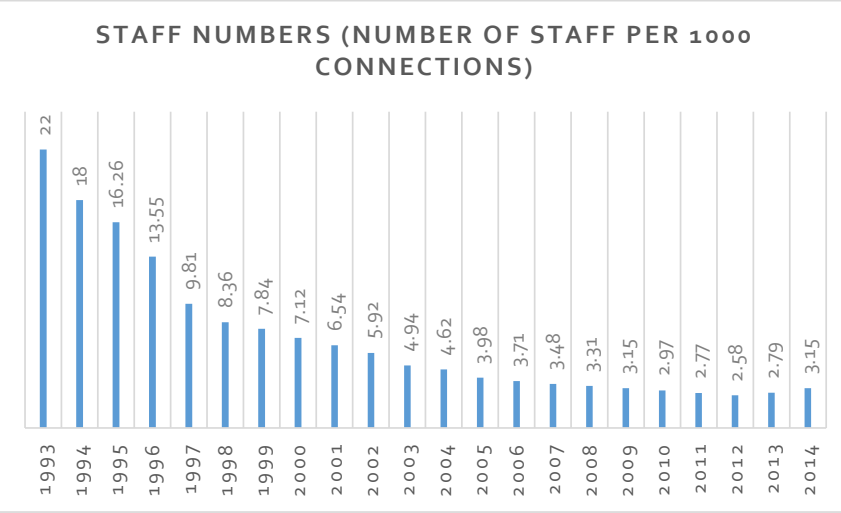
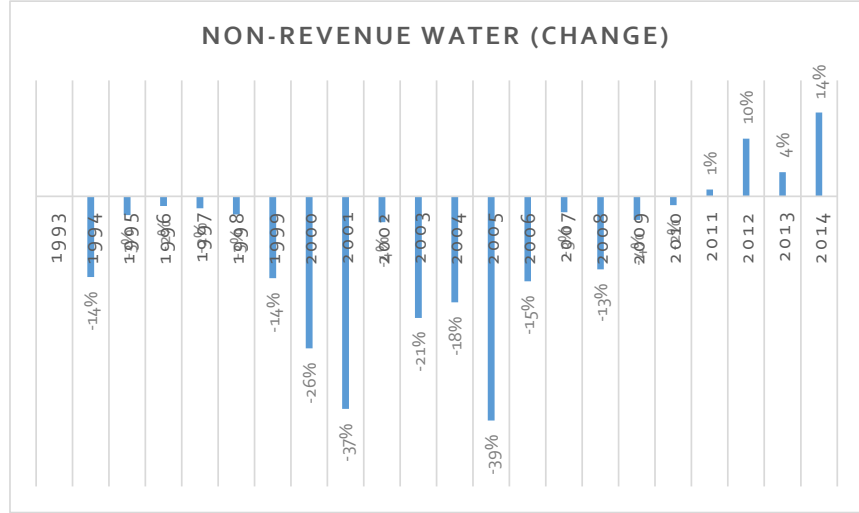
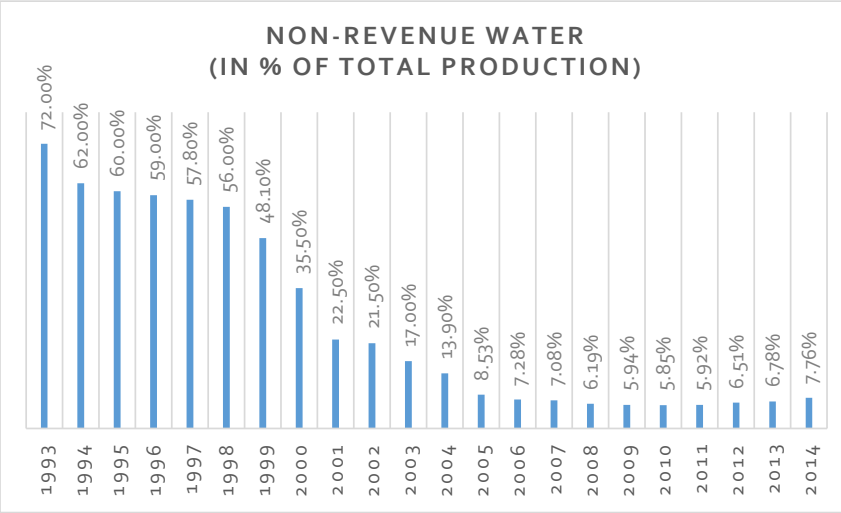
KPI\Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Availability of service (hours per day)	10	10	24	24	24	24	24	24	24	24	24
Connections (numbers)	26,881	27,623	28,654	32,404	42,113	51,407	60,479	67,016	74,945	88,571	105,777
Coverage ratio (% of population with access to piped water in-house)	20%	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Metering (% of connections with an in-house water meter)	12.6%	19.4%	53.1%	85.6%	94.1%	95.6%	99.4%	99.8%	100%	100%	100%
Non-revenue Water (in % of total production)	72.00%	62.00%	60.00%	59.00%	57.80%	56.00%	48.10%	35.50%	22.50%	21.50%	17.00%
Collection ratio (% of bills collected)	48%	45%	50%	70%	97.20%	97.90%	99.50%	99.60%	99.70%	99.80%	99.80%
Staff numbers (number of staff per 1000 connections)	22	18	16.26	13.55	9.81	8.36	7.84	7.12	6.54	5.92	4.94
Operating cost coverage (total operational revenues / total operational c	No data	No data	No data	1.21	1.61	1.84	2.13	2.75	3.20	3.18	3.84
...Continued...	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013*	2014
Availability of service (hours per day)	24	24	24	24	24	24	24	24	24	24	24
Connections (numbers)	121,522	138,266	151,724	162,151	178,200	191,092	202,929	219,498	235,128	252,315	270,812
Coverage ratio (% of population with access to piped water in-house)	No data	No data	No data	No data	90%	90%	90%	90%	90%	85%	85%
Metering (% of connections with an in-house water meter)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Non-revenue Water (in % of total production)	13.90%	8.53%	7.28%	7.08%	6.19%	5.94%	5.85%	5.92%	6.51%	6.78%	7.76%
Collection ratio (% of bills collected)	99.80%	99.80%	99.80%	99.80%	99.58%	99.90%	99.90%	99.90%	99.90%	99.90%	99.90%
Staff numbers (number of staff per 1000 connections)	4.62	3.98	3.71	3.48	3.31	3.15	2.97	2.77	2.58	2.79	3.15
Operating cost coverage (total operational revenues / total operational c	3.68	3.35	3.04	2.99	2.61	2.71	2.54	2.69	2.67	2.89	2.81

Source: PPWSA

* Extension of municipal border - Geographical area of Phnom Penh city doubled

Graph 9 Development of key performance indicators, PPSA, 1993 – 2014





The political economy of PPWSA

The start of the turnaround

The start of PPWSA's turnaround can be well marked, namely the appointment in 1993 of Mr. Ek Sonn Chan as General-Director of the utility. We have not been able to ascertain what sparked this appointment. According to Ek Sonn Chan, he 'was requested by the Mayor of Phnom Penh to move to some of the very difficult public service institutions to improve, especially, the infrastructure', whereby he could 'choose a place' (Princeton University 2009). Ek Sonn Chan then chose to lead PPWSA. A case study on PPWSA by the Institute for Water Policy of the National University of Singapore states that Ek Sonn Chan was selected for his experience with international donors, his fluency in English and French, and his strong drive for social justice (Ching 2009).

Early resistance: patronage, corruption and freeriding

Ek Sonn Chan noted that, upon taking office, 'the majority of people, staff, the employees, just worked for their own profit ... it was something like a family affair ... where the leader of the institute had his followers, a group working for the profit of the group, not the profit of the company' (Princeton University 2009). One example was the illegal sale of water connections for up to \$1,000 with 'most of the illegal connections [being] installed by utility employees themselves' (ADB 2006) or through 'third-party middle-men connected to the top management of PPWSA' (Chan, Bringing Safe Drinking Water to Phnom Penh City 2009).

Ek Sonn Chan faced a prolonged, antagonistic media campaign against the changes he sought to bring about, specifically the installation of water meters, the billing of actual consumption, enforcing payment obligations and disconnecting debtors and illegal connectors. This media campaign was sustained by popular and elite (especially from the armed forces) resistance to the reforms. This resistance originated from (i) the belief that water is in abundance and should be free; (ii) the practice until 1988 that water was indeed provided for free; (iii) the practice that government agencies still received free water in 1993; and (iv) the knowledge that PPWSA 'could not do anything' if one did not pay the water bill. (Princeton University 2009, ADB 2006)

The internal and external resistance to Ek Sonn Chan's reforms 'lasted for 1½ to 2 years ... [when the] balance was tipped ... with old managers becoming weaker, as they had no income, and new managers were stronger' (Princeton University 2009).

Sources of support for the reforms

According to Ek Sonn Chan, he had three sources of support. First, he received political support from the Mayor of Phnom Penh and the Prime-Minister Hun Sen. At one time, the Prime-Minister made a public statement asking everyone, including the government employees and the armed forces, to pay their water bills (Das, et al. 2010).

Second, he received support from external development players, who provided critical knowledge and capacity, and who made, in 1996, financial autonomy and cost-recovery conditional for loan support. And thirdly, Ek Sonn Chan received support from the new management cadre, appointed by Ek Sonn Chan, who 'gave him the courage to continue'. (Princeton University 2009).

Political support was no given and had to be fought for

In 1996, PPWSA's proposal to the Council of Ministers to raise the water tariffs was, in first instance, not accepted. Subsequently, Ek Sonn Chan convinced the Prime-Minister of the need for a tariff increase by (i) showing the finger prints of tens of thousands poor who desired clean water rather than

expensive, poor quality water from illegal vendors; (ii) explaining that PPWSA water would remain relatively cheap compared to water from private vendors; and (iii) reiterating that tariff increases were conditional for the envisaged ADB infrastructure loan. (Ching 2009)

The origins of the political support

We have not been able to ascertain the exact origins of, or reasons for, the political support extended to Ek Sonn Chan by especially the Prime-Minister and the Mayor of Phnom Penh. We have learned that (i) Ek Sonn Chan was befriended to both the Prime-Minister and the Phnom Penh Mayor and, as such, had direct access to both; and (ii) in the early nineties, there were no rigid bureaucratic structures in place – with Cambodia emerging from decades of civil strife – which bound Ek Sonn Chan's actions. It could thus be that Ek Sonn Chan carved out his area of influence and arranged for political support rather than that this political support was extended to him a priori. Ek Sonn Chan's success in servicing Phnom Penh with clean water would subsequently have made it politically prudent to continue to support Ek Sonn Chan and the PPWSA. This 'theory' could explain why Ek Sonn Chan was able to act autonomously and pursue deep reforms years before PPWSA was granted formal autonomy (through incorporation).

The corporatization

According to Ek Sonn Chan, it was the 'idea from the beginning' to make PPWSA financial autonomous with Ek Sonn Chan having 'promised the Mayor autonomy in five years'. The formal corporatization of PPWSA in December 1996 was strongly supported by the World Bank, ADB, the Ministry of Finance and the Prime-Minister. (Princeton University 2009)

In December 1996, the Government 'established PPWSA as a public enterprise and obliged it to operate according to commercial practices and prepare annual business plans' (World Bank 1998). Under the Law on the General Status of Public Enterprises No. 0696/13 (Das, et al. 2010):

- PPWSA must organize, manage and operate all its activities independently, in accordance with commercial business requirements;
- PPWSA could have an independent salary and incentive package for its staff, subject to the approval of the Board of Directors;
- The General-Director had the authority to hire and dismiss staff;
- The General-Director must submit to the Board of Directors an annual operations, investment and financing plan.

Moreover, the government adopted a decree number 52 to (World Bank 1998):

- end the pooling of PPWSA's revenues and expenditures with the municipality;
- make Government financial support to the utility more transparent, as PPWSA would now be a specific item in the national budget;
- empower the utility to cut off all public and private customers for nonpayment; and
- enable PPWSA to charge government/administrative consumers prevailing tariffs.

Institutional set-up

Prior to 1996, PPWSA was a public agency under the jurisdiction of the Municipality of Phnom Penh (ADB 1996, World Bank 1998). In December 1996, PPWSA became a public enterprise, operating under commercial law, under the tutelage of the Ministry of Interior, the Ministry of Industry, Mines and Energy, and the Ministry of Economy and Finance. These three tutelage ministries appoint the Board of Directors and approve the annual investment plan. The Board of Directors has 7 members: the PPWSA General-Director plus representatives from (i) the Council of Ministers, (ii) Ministry of Finance;

(iii) Ministry of Interior, (iv) the Ministry of Industry, Mines and Energy (chair), (v) the Phnom Penh Municipality; and (vi) PPWSA staff. (World Bank 1998, Chan 2009, Das, et al. 2010)

Incentives through loan conditionalities

ADB (1996) retrieved 'specific assurances' from the government and PPWSA prior to loan approval, including the commitment to:

- establish PPWSA as a separate legal entity;
- implement the new water tariff schedule;
- enforce payment of water charges by public entities;
- full metering by ultimo 1997;
- establish and implement procedures for disconnection and dispute resolution;
- formulate and implement a detailed program on leakage detection and removal of unauthorized connections;
- reduce connection fees by 50%;
- operations and maintenance cost recovery by the end of 1997 and full operational cost recovery by the end of 2000;
- charging a waste water surcharge (of not more than 10% of the water bill).

Moreover, the ADB (1996) included in the loan covenants the following targets for ultimo 2000:

- collection ratio of 85%
- UFW of 45%
- cost recovery of operations, maintenance and depreciation
- staffing level of 12 per 1000 connection
- average self-financing ratio of not less than 20%
- debt-service ratio of not less than 2:1; and
- rate of return on assets not less than 2 percent.

Ek Sonn Chan was reluctant to commit to the above loan conditionalities as he considered them too much for one go. He came to embrace them as he witnessed the value, in the domestic political discourse, of being able to point to an external agency, which 'requires' well-defined reforms (and performance targets) to commit financing.

The cost of water

Phnom Penh, lying in the confluence of two major rivers (Mekong and Tonlé Sap) has 'abundant water resources' (ADB 1996). Still, in the mid-nineties, 'water was very expensive due to the incredibly high electricity tariff' (ADB 2006).

The water supply sector and the national policy framework

The First Socio-Economic Development Plan 1996-2000 stated that PPWSA will become a self-sustaining commercial entity based on full cost recovery, which is to meet WHO standards for water quality. The Plan also committed US\$160 million to the water and sanitation sector, of which US\$95 million to Phnom Penh and US\$83.2 million to the Phnom Penh water supply. (World Bank 1998)

In 2003, the government adopted the National Policy on Water Supply and Sanitation, which reemphasized the importance of sustained access to safe water. The Policy highlighted the need to '(i) expand the water supply and sanitation services through the adoption of appropriate technologies; (ii)

pursue full cost-recovery, decentralization, and financial autonomy of water supply utilities; (iii) enhance regulatory capacity; and (iv) encourage private sector participation' (ADB 2005).

ADB's 2014 sector assessment concluded that 'demand [for improved water supply services] far outstrips the government's ability to deliver' (ADB 2014). In 2012, 94% of the urban population had access to improved water supply. However, only two-third of this constituted access to piped water supply; a ratio, which fell below 50% outside of Phnom Penh.

ADB (2014) concluded that inadequate water supply was due to:

- weak regulatory environment;
- limited government capacity to provide services;
- lack of adequate funding for capital investments, operations and maintenance;
- weak interagency coordination and overlap of responsibilities;
- a shortage of qualified, experienced staff;
- lack of incentives to retain staff; and
- poor cost recovery.

The National Strategic Development Plan 2014-2018 aims to:

- develop a legal framework for urban water supply;
- promote decentralization and deconcentration;
- transfer full autonomy for service delivery to all public works;
- increase sector financing; and
- improve water source protection.

Discretionary measures

From Ek Sonn Chan's own accounts (Chan 2009, 2012, Princeton University 2009, ADB 2009), we distilled the following discretionary reform measures. According to Ek Sonn Chan, 'most of these actions were initiated simultaneously' (Chan, Vermersch en Vaughan 2012).

Restructuring, empowering and incentivizing management and staff

Ek Sonn Chan brought to the front a 'younger generation, newly educated from Russia, Germany and East Germany, who came with innovative ideas' (Princeton University 2009). 'Inefficient, older workers kept their jobs, but moved to dormant roles' (Chan 2009). He promoted hard work, invested in training, and empowered the achievers by giving them more authority and more responsibility. Ek Sonn Chan personally subjected all managers to annual written examinations (Ching 2009), and promoted staff and managers on merit and fostered teamwork (ADB 2009). 'Within a few years, [Ek Sonn Chan] had created an efficient and disciplined workforce within PPWSA' (Chan 2009). ADB (2005) concluded in a post-completion report that 'headed by a strong and inspired leadership, PPWSA is staffed with well-trained, managed and motivated workforce'.

Over time, salaries were steadily increased and bonuses/penalties were introduced on good/bad performance. Salary levels increased between 15% and 25% annually between 1997 and 2008. Moreover, 3-months bonus salaries, upon achieving a net profit of 15% of operational expenditures, were continuously paid to staff between 1997 and 2008. (Princeton University 2009)

Curb corrupt practices

In essence, PPWSA (ADB 2006):

- forced utility management and staff to obtain a water meter and pay for water consumption;
- forced and set as an example a couple of high-profile figures (including the former PPWSA General-Director, as well as several army generals) to obtain a water meter, pay a fine for an illegal connection and start paying for consumption;
- introduced an incentive system, starting with the bill collectors, to promote hard work and (through higher disposable incomes) the opportunity to make an honest living (and not having to resort to corruption);
- introduced a Discipline Commission, with representation of management, the workers' union, women and staff), with the power to penalize and dismiss middle-managers and staff.

Improve operational efficiency

At the outset, to break the vicious circle of poor service quality, low revenue generation and no investments, PPWSA concentrated on three priority areas: increase network pressurization (to raise service quality), reduce NRW (to increase operational efficiency) and raise revenue collection (to allow for higher wages and new investments) (Chan, Vermersch en Vaughan 2012). This included the following measures (Chan 2009, ADB 2006, 2009):

1. establish an up-to-date customer database (by 1994), computerize the billing system (by 1996), computerize all financial transactions and reporting (by 2000), and comprehensive Management Information System (by 2003).
2. full metering (with class C meters), removing illegal connections and offering incentives to informants on illegal connections;
3. creating leakage detection teams (subject to performance regimes), as well as repair teams, and conduct bi-weekly NRW meetings;
4. educating and incentivizing bill collectors (among others through a 3-months bonus payment upon reaching predefined collection rate targets),
5. replace entire distribution network¹⁹ and renewal and expansion of Water Treatment Plants (with development assistance support)
6. implementation of Supervisory Control and Data Acquisition (SCADA), District Metered Areas (DMAs), and variable speed drivers to control pumps and optimize energy consumption.

A new water tariff schedule

With support from the ADB, PPWSA adopted a new tariff schedule in 1997. The water tariffs were raised in 1997 and 2001. The third envisaged rate increase was not implemented due to the healthy financial situation of PPWSA. (Chan 2009)

¹⁹ PPWSA laid the piped with own staff, which 'helped to control repairs and save money' (ADB 2006)

Development assistance

Between 1993 and 2012, PPWSA received US\$223 million in official development assistance: US\$98 million in grants and US\$125 in concessional loan financing. Besides technical assistance, this allowed for the complete renewal of the distribution network, as well as the rehabilitation and expansion of the water treatment capacity. (Chan, Vermersch en Vaughan 2012) Below table provides an overview of the development assistance to PPWSA.

Table 12 Overview of official development assistance to PPWSA

Start Year	Agency	Project (Content)		Amount (US\$, in million)	Modality
		Capital Investments	Technical assistance / Capacity Building		
1992	French MOF	Infrastructure finance and technical assistance		?	Grant
		<ul style="list-style-type: none"> - Improvement of water supply facilities and distribution network 	<ul style="list-style-type: none"> - Institutional strengthening and technical assistance from Safege Consulting Engineers - Full assessment of infrastructure facilities and network 		
1993	UNDP/WB	Technical assistance		2.80	Grant
			<ul style="list-style-type: none"> - Customer survey - Update and computerization of customer database - Staff training - Study tours to Malaysia, Laos, Vietnam and Thailand 		
1993	JICA	Technical assistance		?	Grant
			<ul style="list-style-type: none"> - Preparation of a Master Development Plan 2010 - Water Operator Partnerships with the Japanese utilities Kitakyusyu and Yokohama on operations and maintenance 		
1995	JICA	Urgent rehabilitation works		46.33	Grant
		<ul style="list-style-type: none"> - Repair & expansion of Phum Prek Water Treatment Plant - Replacement of supply networks of 52km 			
	French MOF	Urgent rehabilitation works		14.77	Grant
		<ul style="list-style-type: none"> - Phum Prek Reservoir Restoration & Filter Backwash equipment replacement - Expansion of Chamcarmon Treatment Plant 	<ul style="list-style-type: none"> - Water loss control program 		
1997	ADB	Phnom Penh Water Supply and Drainage Project		12.75	Loan
		<ul style="list-style-type: none"> - Installation of water supply transition mains to supply bulk water from the water treatment plants to the distribution network - Rehabilitation of the water distribution system in Toul Koak and Boeng Salang areas 	<ul style="list-style-type: none"> - Design of a new tariff schedule 		

Start Year	Agency	Project (Content)		Amount (US\$, in million)	Modality
		Capital Investments	Technical assistance / Capacity Building		
		- Equipment for operations and maintenance			
1998	World Bank	Urban Water Supply Project		23.97	Loan
		- Rehabilitation of Chruoy Changwar Water Treatment Plant - Pipes, ancillary and leak detection equipment - Pilot program for financing domestic connections	- Fielding of 4 long-term experts in: - NRW - Financial management, billing, collection, cost control and accounting - Information technology - Water quality - Twinning arrangements with Australian Water Operator - 1 management expert (2½ months intermittent inputs) - 1 technical expert (2½ months intermittent inputs) - Extended study tour to Australia - Draft sector policy paper (including institutional framework)		
2003	AFD	The Extension of Phnom Penh Suburb Water Supply System		6	Grant
2004	JICA	Update of Master Development Plan until 2020		?	Grant
2006	AIMF France	Supply and delivery of HDPE fitting and Valves for Sen Sok Community		0.3	Grant
2007	AFD	The Extension of Chrouy Changwar Water Treatment Plant		16.15	Loan
	Paris City	Clean Water for all Project (Household connection)		0.2	Grant
2009	JICA	Niroth Water Supply Project (Phase 1, Part B)		32.23	Loan
	AFD	Niroth Water Supply Project (Phase 1) Raw Intake Station and Raw Water Transmission Mains		24	Loan
	AIMF France	Supply and Delivery of HDPE and DI Pipes & Fittings for Phum Trapeang Achanh & Phum Ondoung		2.15	Grant
	AFD	Feasibility Study of the South Branch of Phnom Penh Transmission Main		0.1	Grant
2010	JICA	Project for Introduction of Clean Energy by Solar Electricity Generation System		8	Grant
2012	AFD	Extension of Water Supply System to the Greater Phnom Penh		0.3	Grant
2013	AFD	Niroth Water Supply Project (Phase 2)		37.5	Loan

Source: PPWSA Data, Princeton University (2009), ADB (1996), World Bank (1998)

Success factors (as mentioned by our interviewees)

All interviewees pointed to the pivotal role of Ek Sonn Chan – a ‘humble, committed man’ and ‘natural manager’ – in PPWSA’s turnaround. Ek Sonn Chan was able to change the attitude of utility’s management and staff, as well as of the external stakeholders. He did so through the force of argument (supplying clean drinking water comes with a cost; everybody requires access to clean water) and by setting examples (everybody, including utility management and staff, army generals and the prime-

minister have to pay for water). He led by example, facing-up to resistance in person, directly engaging protestors in a dialogue (whether poor city dwellers or army generals), extending empathy, whilst staying true to his beliefs and arguments. Finally, Ek Sonn Chan invoked commitment, integrity, and professionalism and leadership amongst management and staff, and ensured a 'continuity in administration' (Chan, Vermersch en Vaughan 2012).

Ek Sonn Chan showed himself eager to learn and encouraging his staff to do so as well. This created a fertile bed for the second important success factor: the development assistance. According to Ek Sonn Chan, 'the external world gave us a lot of know-how to operate the system efficiently' (Chan, Vermersch en Vaughan 2012). Through the loan covenants of ADB and the World Bank, PPWSA could also galvanize domestic resistance to the reforms (Chan 2009).

The third success factor highlighted by the interviewees was PPWSA's achievement to raise revenues by reducing energy costs, improving the collection rate, and raising the average tariff (World Bank 2004). These revenues allowed PPWSA to raise salaries, introduce performance-based remuneration schemes, and invest in the distribution network, expanding the service coverage.

The fourth success factors is the continuous political support PPWSA received, most notably from the Prime-Minister and the Mayor of Phnom Penh. This political support included the incorporation of PPWSA and the increases (in 1997 and 2001) of the water tariffs (Chan 2009).

Signposts

We have not identified signs, which predicted – at the outset – success. Only after a few years did the gradual and steady improvements in operational and financial performance, as well as the competence of management and staff show, as evidenced by the ADB and World Bank. 'Through assistance from the UNDP and the World Bank in the past few years, PPWSA has developed a fairly strong team of technically qualified staff and has made remarkable progress in production and management efficiency' (ADB 1996). 'PPWSA has improved coverage and efficiency, is the country's best-run utility, and has enough capacity to implement and sustain the proposed investments' (World Bank 1998). More concretely, the World Bank (1998) notes that, by 1994, PPWSA had 21 engineers (instead of the original 5) and 28 trained technicians, completed the computerization of the billing and collections and had a leak detection program in place.

Sustainability

Our interviewees felt comfortable with the sustainability of PPWSA's operational and financial performance. Ek Sonn Chan has been replaced in 2012 by Sim Sitha, who previously ran the private water utility in Sihanoukville. Sim Sitha is supported by a seasoned management team consisting of long-term PPWSA staff. Importantly, PPWSA has been brought to the Cambodian Stock Exchange, diversifying PPWSA's accountability to include the new shareholders.

Development phases

Ek Sonn Chan (2012) distinguishes two phases in PPWSA's turnaround:

1. 1993 – 1997: the rehabilitation phase – marked by the rehabilitation of infrastructure, restructuring of the organization and investment in human capital.
2. 1997 onwards: the expansion phase – marked by the corporatization of the utility and the extension of services (including to the urban poor).

F. Summary description of other success stories

This annex provides a brief description of other success stories in water utility reform, namely of Haiphong (Vietnam), Manila (Philippines), NWSC (Uganda), and Tartu (Estonia). For a case study description of ONEA (Burkina Faso), we refer to Marin (2010). Each case-study description highlights the triggers of reform, the actual reform measures, the externally provided support, and – to the extent available – how the reforms evolved and were sustained over time.

Hai Phong Water Supply Company (Vietnam)

The transformation of Hai Phong Water Supply Company took place between 1990 and 2004 and the Utility maintained its success thereafter. Success is ascribed to six changes. First, the Utility set itself the explicit mission to provide good quality and adequate water to all users and efficiently manage its resources. Second, in 1993 a performance agreement was introduced between the Hai Phong Provincial People's Committee and the Utility, which made the Utility responsible for revenue generation, water production and delivery, water quality and operations and maintenance.²⁰ The Utility submitted from then on quarterly and annual progress reports to the People's Committee.

Third, the Utility decentralized its operations, maintenance, small-scale rehabilitation, and all aspects of customer relations (including billing and collection) to the lowest administrative unit (the *phuong* or ward). Key indicators (amongst others bill collection, revenue volumes, NRW, and processing time of new connections) were monthly reviewed with headquarters. Fourth, it installed master meters to monitor and regulate water intake and consumer meters for all customers. Five, the Utility introduced a performance enhancing incentive system for staff, providing staff financial rewards for meetings pre-set service standards and targets. And sixth, the Utility introduced the changes at one ward at a time, making the changes manageable and allowing the Utility to learn from its own experiences and improve implementation as it moved from one ward to the next.

The transformation was initiated by the Director of the municipal Department of Construction at the time that the Vietnamese national government was opening the economy and introducing market-economy practices (under the so-called Reconstruction Policy). The national government (strongly) suggested the introduction of water consumption tariffs and simultaneously cut its subsidies to the water utilities. Moreover, the Hai Phong city government marketed itself as a reform-minded, business oriented city, wooing foreign investors.

The transformation gained truly momentum in 1993 when the Chairman of the Provincial People's Committee and the Vice-Minister of the provincial Ministry of Construction backed the reform agenda and promoted the competent and ambitious chief engineer (and deputy managing-director) to managing-director in response to heavy civilian protests against the lack of water, which left a bill-collector dead.²¹ The new director championed the reforms and increases in the water tariffs (and used his People Council membership to this effect).

²⁰ The Provincial People's Committee remained responsible for decisions on large-scale investments and rehabilitation work, approval of tariff increases and setting of water quality standards.

²¹ We understand that the initial director was not interested in improving the utility's management and operations.

The Hai Phong Water Supply Company was supported throughout the transition period by the Finnish Ministry of Foreign Affairs, the World Bank and the ADB. The Finns provided classical, grant-financed technical and corporate development assistance, amounting to €23 million in the period 1990 - 2004.²² Unique to this Finnish assistance was that the initial bilateral agreement included a 20-year vision of cooperation as well as an indication of the associated Finnish financial assistance. The World Bank and ADB provided investments loans from 1993 onwards.

Over the last 22 years, Hai Phong Water Supply Company has only twice changed managing-directors. The new managing-directors were selected from and by the Board of Directors with relatively little interference from the municipality. The Board as well has experienced little turnover and has consisted of people close to or having worked for Hai Phong Water Supply Company.

Sources: Interviews, Coffee (1999), WSP (2009), Reinikka and Adams (2015), Baietti, Kingdom and van Ginneken (2006), van Ginneken and Kingdom (2008)

National Water and Sewerage Corporation (Uganda)

The National Water and Sewerage Corporation (NWSC) is a public statutory body with a government-appointed managing-director and board of directors. The national government formulates overall water sector policy, regulates water tariffs, sets service standards and subsidizes investments. Between 1986 and 1997, the utility received ca. US\$ 140 million infrastructure financing from (mostly) the World Bank, ADF and ADA. With little effect. In 1998, on the verge of insolvency and under pressure from the World Bank, the government appointed a new managing director: an ambitious, competent Ugandan professional, steeped in western business ethics in Germany.

The new Managing-Director immediately implemented a series of short-term performance improvements projects (mostly focussing on improved customer service, billing and collection) to generate a positive cash-flow and meet pre-set performance targets (mutually agreed upon with the Ministry of Water, Lands and Environment). In 2000, the reigning performance framework was formalized through a contract between the Ministry and the Utility.

In the late nineties, the Ministry set about preparing to concession the Utility. This led in 2000 to an initial fixed-term, two-year management contract with a German company for the revenue collection in Kampala, followed by another fixed-term, two-year management contract with a French firm, which covered full operations, maintenance and management responsibility for the Kampala area.

During this period of external private sector involvement, the NWSC management team sought to emulate the workings of the management contracts in their own operations. This led in 2001 to 'Area Performance Management Contracts' with the utility's local service areas. This internal performance contract initiated a gradual decentralization of responsibilities to the local service areas, which ultimately became fully responsible for local office management and work procedures, NRW reduction, maintenance, customer relations and billing and collection.

In 2003, the utility management introduced 'Internally Delegated Management Contracts', which introduced performance-based payment for local area managers. Local managers could receive a

²² This TA included human and institutional capacity building; strategy, business and Master plan formulations; introduction of new budget and accounting practices and Management Information System; preparation of operations and maintenance manuals; preparation of feasibility studies and detailed designs for investment projects, etc.

bonus of as much as 50% of their base pay upon reaching pre-set targets. Equally, they had to forfeit up to 25% of their base pay if targets were not met. After three consecutive months of underperformance, a local area manager could be withdrawn from the local management team.

These internal performance agreements were continuously improved over time. Moreover, the NWSC gradually terminated all public employment contracts (for management and staff) and substituted these with two-year fixed term, extendible contracts. (Public benefits were paid-off, overall benefits lowered, and salaries increased to be competitive with the private sector).

This full embrace of performance management principles was possible – we were told – because it fits well with the Ugandan industrious culture and thus acceptable to all management and staff layers in the organization. Interestingly, the termination of the public employment contracts was accepted by the Workers' Union, which – on the Utility's initiative – has been part of the NWSC management team since 2003.

Throughout these initial reform years, the NWSC was able to improve its performance and meet the performance targets. This, combined with the political aptness of the managing director, his able advocacy of the Utility's reforms and results, and the misfortunes of the private sector involvement in the utilities of Dar-es-Salaam and Nairobi, led the Ministry to abandon the envisaged concession model and allow the Utility to pursue the reforms autonomously.

Throughout the reforms, the Utility also received support from GIZ (capacity development) and KfW (infrastructure financing). GIZ's capacity development support was demand-led and, over the years, covered a myriad of topics, including: sector reform master planning, performance contract design, PPP training, and technical, financial and management training. In the meantime, other donors have returned or come in: ADF, AfDB, EIB and the World Bank.

The Ministry of Water, Lands and Environment replaced the managing-director, who had driven the reform process, in 2012 by an NWSC internal candidate and long-time member of NWSC management team. The NWSC has been able to maintain results under the new leadership.

Source: Interviews, Baietti, Kingdom and van Ginneken (2006), WSP (2009)

Manila Water Company

In 1995, the Philippine parliament passed the National Water Crisis Act (proposed by the then President Ramos). The Act set to improve water and wastewater service delivery, increase operational efficiency of the Metropolitan Waterworks and Sewerage System (MWSS), and expand service coverage. Moreover, the Act (i) sought to mobilize the financial resources and operational know-how of the private sector in achieving these goals; (ii) gave the government the power to negotiate concession contracts with the private sector; and (iii) criminalized water theft. The Act was triggered by continuous underperformance of the MWSS and its one billion US dollars in debt from ADB, JICA and the World Bank.

The operational area of MWSS, covering the whole of Metro Manila, was split – following the examples of Paris and Jakarta – into two concessions: an eastern and western part. The Eastern concession was won by the Manila Water Company (Manila Water), a consortium of the Philippine Ayala Corporation (lead partner), Bechtel Enterprises, United Utilities and Mitsubishi. The concession period was 25 years (now extended by another 15 years).

The concession de facto corporatized the public utility with Manila Water carrying full responsibility for service delivery, as well as maintenance and expansion of the infrastructure. Manila Water was thereby allowed to set water tariffs at full cost recovery levels through a pre-defined formula under the supervision of a regulator. Manila Water has the incentive to perform as (i) it pays and wants to recover the annual concession fee²³; (ii) it is subject to an elaborate pre-defined performance regime²⁴, including bonuses and penalties; and (iii) the concession allows Manila Water to earn itself a return on its capital investments on good performance.

According to Manila Water, success lay in the viability of the business case, the performance-based nature of the concession agreement and dispute resolution through a contractually-agreed arbitration mechanism²⁵ (which has taken out the regulatory or political risk for the concessionaire). Moreover, Manila Water (i) cascaded down into the organization the performance regime through a Total Management System, introducing performance-based pay (including long-term stock ownership) and promotions for all management and staff levels; (ii) decentralized operations into 8 business areas, 36 supply zones, 258 demand monitoring zones and 1700 district metering areas; and (iii) devolved responsibility for water supply, NRW, customer service, census and survey to territory teams.

Local territory teams are judged on their performance based on 5 KPI: billed volume, billed amount in Pesos, NRW, collection efficiency and sales and accounts receivable days. Through new recruits, extensive training programs, continuous internal communication of its mission, goals and values, Manila Water also brought the corporate culture of the organization, which initially included 2.200 former MWSS staff, in line with that of its lead owner (the Ayala Corporation).

Table 1 in section 2.1 shows the performance improvement of Manila Water through some KPI. Additionally, Manila Water has extended service coverage from 2 million to 6 million customers, invested US\$ 1 billion in the rehabilitation and expansion of infrastructure in Metro Manila, and expanded its operations (through new concessions) in the Philippines (to Laguna Province, Borocay Island, Clark Freeport Economic Zone and Cebu province (bulk water supply)) and Vietnam (two bulk water companies in Ho Chi Minh).

Source: Rivera (2014)

²³ The annual concession fee is set to cover the debt service obligations of MWSS (90%) and operational costs of MWSS (10%). Manila Water has thus effectively taken over a share of MWSS debt obligations to the International Financial Institutions.

²⁴ This regime includes all of the traditional KPI for water utilities, including # connections, water quality, wastewater effluent standards, customer service indicators, revenue collection, labour and energy costs, operational expenditures, NRW, etc.

²⁵ The arbitration mechanism was applied in 1998 for a ruling on an Extraordinary Price Adjustment, for Manila Water to be able to recover large increases in operational costs (due to a severe drought and 100% devaluation of the Philippine Peso), recover discrepancies in salary costs between the actual situation and bid documentation; and allow for a market-based appropriate discount rate.

Tartu Water Works (Estonia)

Tartu Water Works' transformation started in the early nineties with classical support from SECO (for the rehabilitation of the wastewater treatment plant) and the EBRD (for the rehabilitation of the water supply system). This support entailed engineering services, controlling, technical and project management support and training, as well as the financing and procurement of the investment components. At the time, Tartu Water Works constituted a municipal department and the external SECO / EBRD support was routed to Tartu Water Works through the Ministry of Finance. As part of the bilateral agreement with SECO, Tartu municipality had to finish the canalization of the whole municipality five years after contract close (1997), which was indeed achieved (in 2002).

In the mid-nineties, the Estonian government required by law that – by 1998 – all municipal water utilities had to be either part of the municipal administration or a joint stock company under private law. (The Estonian government effectively took out the option of statutory body under public law.) This policy change provided a young and ambitious management team at Tartu Water Works the opportunity to corporatize their business. After a prolonged political discussion, the Tartu Municipal Council decided as such and Tartu Water Works was incorporated in 1998. The company had to be build up from scratch, including formulating a business and master plan, setting up management information and financial accounting systems, updating the customer database, etc. Over time, it significantly reduced staff (from 200 in 1997 to 85 in 2015).

At the time of the incorporatization, SECO's support had ended and SECO has not been involved in setting up the new business. In the period 1994 – 1999, the EBRD support included a twinning program for all Estonian water companies. Oslo Waterworks provided Tartu Water Works in corporate development and technical assistance support.

Since 1998, Tartu Water Works has been managed by the same team of managing-director and financial director. This team has progressively transformed the Utility into a modern, largely self-financing, profitable service provider. Throughout, the Managing-Director has sought best practices in neighbouring countries, regularly contacted old SECO consultants for (free) advice, and obtained support from the EBRD and EU.

Since 2000, there has been a formal service contract between the Tartu municipality (the owners) and Tartu Water Works (which expires and has to be renewed in 2015). Since 2003, the salary of the Managing-Director has a fixed and performance-based component. At face value, the transformation was led by a responsible and professional management, intrinsically motivated to deliver high-quality services and achieve good financial performances, politically well-attuned, and able to work effectively with external players (such as SECO and EBRD), within a well-functioning political environment.

The development of Tartu Water Works has clearly closely followed the development of the Estonian economy. Tellingly, Estonian's GDP per capita (in current US dollars) has grown from US\$ 1610 (1993), to US\$ 8834 (2004, EU accession), to US\$ 19671 (2014). (IMF 2015)

Key performance indicators: coverage ratio (in % of population): 99,8%; availability (in hrs): 24 hours; metered connections (in % of connections): 100%; UfW (in % of total supply): 10% - 13% (1996: 40%); cost-coverage ratio (operational expenditures / operational revenue): 0.45; revenue collection efficiency (collect/billed): 99,9 %; staff members (per 1000 connections): 8.

Sources: Interviews

G. Problem-oriented political economy analysis

The Independent Evaluation of SECO's Corporate Development of Public Utilities pointed towards ownership²⁶ as an important distinguishing factor between successful and unsuccessful, promising and less promising utility reforms (Engelsman and Leushuis 2015). This Review has expanded on this finding in two important ways. First, it acknowledged the multiplicity of actors involved in successful urban water utility reforms and the required collective (rather than individual) ownership of the reform agenda. Second, it has sought to uncover the origins of such ownership.

We have seen that an individual's and group's embrace of modern business practices in running a water utility depends on their intrinsic motivation and resolve. Such motivation and resolve stems in part from own experiences and self-perception, but is also influenced by (power) relations with other stakeholders, generally agreed upon rules and norms of behaviour and formal institutional arrangements: factors which incentivize or constrain individual and group behaviour. This full set of factors is referred to as the political economy of development.

The importance of political economy for successful development has been explicitly recognized from at least the early nineties (summarized under such slogans as 'institutions matter' or 'politics matter'). Since, a substantial body of literature has emerged on how to include political economy considerations in the design and implementation of development assistance. This literature provided this Review with concrete examples of supportive and constraining factors to successful urban water utility reform (see the Annex H for an overview), as well as an important theoretical foundation.

In this Annex, we provide a brief overview of problem-oriented political economy analysis: what it entails, its core analytical framework, the research methods involved, and key reference documents.

Problem-oriented political economy analysis

Problem-oriented political economy analysis seeks to answer such questions as: 'why do technically sound WASH sector strategies, even those that have been successful in other contexts or constitute best practices, fail to improve access to water supply and sanitation?' (ODI 2012). It thereby specifically investigates 'how power is exercised, how decisions are made, and how incentives and disincentives are brought to bear on specific organizations and individuals' (Harris and Booth 2013).

Problem-oriented political economy analysis seeks to understand what motivates or constrains behaviour of key actors in attempted reform processes. In other words, it seeks to 'unpack the various factors that influence the otherwise vague concept of political will' (Harris, Kooy and Jones 2011). In the urban water supply sector, 'political economy issues are typically evident in the interference from local government and mayors in the utility operations, the role of water in political campaigns and patronage, which diminishes the accountability of managers to customers' (Manghee and Poole 2012).

Importantly, problem-oriented political economy analysis 'takes the existing situation as its starting point and then focusses on identifying feasible solutions to improving sector performance within

²⁶ In the Independent Evaluation, we defined ownership as the adoption of an explicit reform agenda, as well as exercising one's authority and utilizing one's means to implement this agenda. This definition was inspired by OECD/DAC's definition of national ownership (<http://stats.oecd.org/glossary/detail.asp?ID=7238>, accessed on 17.9.2014) and the coining of the term ownership in the Paris Declaration on Aid Effectiveness (Paris Declaration on Aid Effectiveness and the Accra Agenda for Action, 2005 / 2008, OECD).

existing incentives structures and relations of power to achieve good enough governance’ (ODI 2012). It is a tool ‘to identify appropriate responses in a given context, designing and implementing approaches that best fit existing institutional structures and incentives, rather than imposing an external model of best practice ... [it promotes] context-specific responses that work within (rather than against) existing power relations and incentive structures’ (Kooy and Harris 2012).

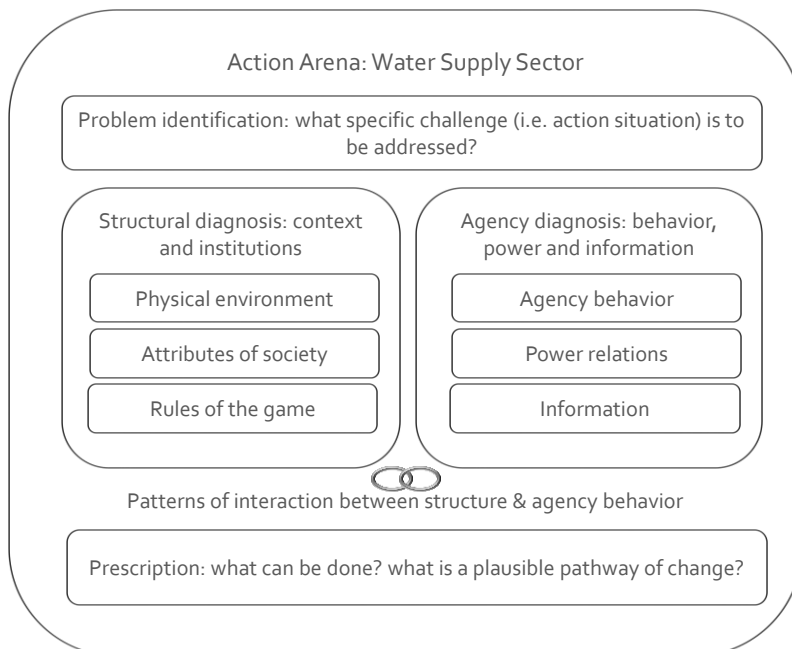
As such, political economy analysis differs markedly from governance assessments, which are ‘normative in approach, appraising performance against certain idealized criteria or characteristics for the good governance of [example given] water supply and sanitation services’ (Harris, Kooy and Jones 2011). Political economy analysis recognizes that ‘each country attempts reforms in the context of its cultural, historical and social legacies’ (Manghee and Poole 2012).

The explicit problem orientation ‘helps in narrowing the scope of the analysis ... and respond to the needs of the development partners ... making it more relevant for operational purposes [and not] simply highlighting the salient features of the political context’ (Harris 2013). It leads to specific findings and actionable recommendations (Fritz and Levy 2014).

Analytical framework

There exists a variety of presentations of the political economy’s analytical framework. However, all are built around three core elements, which decisively influence human behaviour / actions. These three core elements are (i) the physical environment in which we live; (ii) the informal and formal institutions, rules and norms that we devise to regulate human interaction and make it more predictable; and (iii) the perceptions and motivations of individual and groups of stakeholders. (Harris 2013, North 2005)

Graph 10 Analytical Framework Problem-Oriented Political Economy Analysis



Source: Authors’ combination of the frameworks of Gibson, et al. (2005) and Harris (2013)

The table below fills the three core elements of the analytical framework.

Table 13 Examples of political economy factors

Physical / material environment	<ul style="list-style-type: none"> - Geo- and topography: e.g. abundance and physical location of water resources - Climate: e.g. seasonality of available water resources - Population: growth, density, ethnic diversity and urbanisation rate - Geopolitics: e.g. sharing of scarce resources with cities in neighbour countries, territorial integrity, and history of state formation. - Economy: productive base, income levels, growth rate, and level of (in)equity
Attributes of society	<ul style="list-style-type: none"> - Cultural norms and symbols (embedded in history): e.g. the value of water, customary water rights, citizen voice, etc. - Historical legacies: e.g. the credibility and predictability of political commitments and citizen expectations; or the inherited water production and distribution infrastructure
Rules of the game	<ul style="list-style-type: none"> - Socio-political logics: e.g. dominant ideologies, the role of (traditional) leaders, the level and art of accountability (upward or downward), the extent of rule/policy bound behaviour, predictability of behaviour, the civil service culture (extent of risk-aversion), level of short-termism in politics, etc. - Socio-political organization: e.g. governance structure – flat versus hierarchical, representative versus authoritative, centralized versus decentralized, negotiation versus contestation, etc. - Formal institutional set-up: political and administrative bodies, constitution, laws, policies, strategies, development plans, budgetary processes, etc.
Agency behaviour	<ul style="list-style-type: none"> - Individual agent's motivations: e.g. personal, financial, ideational, political saliency, etc. - Individual agent's capacity: knowledge, resources, self-perception, veto-power, information processing power (heuristics/biases), etc. - Individual agent's expectations: benefits, costs, influence, risks, winner versus loser, etc.
Power relations	<ul style="list-style-type: none"> - (Power) relations: e.g. clientelism, patronage, rent seeking versus meritocracy, principal-agent, legitimacy, reliability, credibility, predictability, ownership of assets, control over resources, distribution of control over assets, dominant allegiances, etc. - Resource access: e.g. public goods, common pool resources, limited access orders.
Information	<ul style="list-style-type: none"> - Information access (imperfect, asymmetric, moral hazard, free riding) and information processing capability (heuristics/ biases)

Sources: ODI (2012), Kooy and Harris (2012), Harris (2013), Harris, Kooy and Jones (2011), Fritz and Levy (2014), Manghee and Poole (2012), Gibson, et al. (2005), DANIDA (2011)

Research approach and methods

Problem-oriented political economy analysis entails qualitative research in which information from multiple sources is combined to create analytical narratives. For one, it collects factual data on the current governance, institutional, and policy arrangements, traces the historical developments of these arrangements or identifies key historical legacies, conducts a stakeholder analysis, identifies economic and political rents, and gathers comparative indicators on (budgetary) transparency, democracy and corruption. Additionally and importantly, it seeks to gain multiple perspectives on this 'factual' information through interviewing key informants, which also shed light on the informal rules and cultural norms at play within a sector and country. As such, the main research methods involved are: documentary analysis, surveys and key informant interviews. (Harris and Booth 2013, Fritz and Levy 2014)

Selected further reading

There is a significant body of literature on the political economy of development. This literature presents the conceptual framework and theoretical underpinnings clearly (and in some cases amazingly succinctly – see for example Harris (2013)). Moreover, the literature also points to (common) political economy constraints to development – see especially below sector studies. Interestingly, none of the below referenced documents presents a full-blown political economy analysis, nor takes a dynamic perspective (showing how the political economy has evolved over time and thus promoting or inhibiting developmental change). It is on this last point, that the current review also adds value to the current body of literature on problem-oriented political economy analysis (whereby this review entails a humble start to a more dynamic approach to political economy analysis: more rigorous research is certainly necessary).

Overview of political economy literature

- Mcloughin, Claire. 2014. *Political Economy Analysis: Topic Guide*. Birmingham: GSDRC, University of Birmingham.

Conceptual framework and theoretic underpinnings

- Gibson, Clark C., Krister Andersson, Elinor Ostrom, and Sujai Shivakumar. 2005. *The Samaritan's Dilemma. The Political Economy of Development Aid*. Oxford University Press.
- Harris, Daniel. 2013. *Applied Political Economy Analysis - A problem-driven framework*. Politics and Governance Program - Methods and Resources, London: ODI.
- Harris, Daniel, and David Booth. 2013. *Applied Political Economy Analysis - Five practical issues*. Politics and Governance Program - Methods and Resources, London: Overseas Development Institute.
- Fritz, Verena, and Brian Levy. 2014. "Problem-Driven Political Economy in Action: Overview and Synthesis of Case Studies." In *Problem-Driven Political Economy Analysis. The World Bank's Experience*, edited by Verena Fritz, Brian Levy and Rachel Ort. World Bank.
- Wild, Leni, Victoria Chambers, Maia King, and Daniel Harris. 2012. *Common constraints and Inentive Problems in Service Delivery*. London: Overseas Development Institute.
- DFID. 2009. *Political Economy Analysis: How to note*. London: UK Department of International Development.
- DANIDA. 2011. *Applying Political Stakeholder Analysis - How can it work?* DANIDA.

Political economy analysis in the water supply and sanitation sector

- Harris, Daniel, Michelle Kooy, and Lindsey Jones. 2011. *Analysing the governance and political economy of water and sanitation service delivery*. Working Paper, London: Overseas Development Institute.
- Manghee, Seema, and Alice Poole. 2012. *Approaches to conducting political economy analysis in the urban water sector*. Water Papers, Washington D.C.: World Bank.
- ODI. 2012. "Political Economy Analysis for Operations in Water and Sanitation: a guidance note." London: ODI.
- Kooy, Michelle, and Daniel Harris. 2012. *Political Economy Analysis for Water, Sanitation and Hygiene (WASH) Service Delivery*. Project briefing, London: Overseas Development Institute.
- Mcloughin, Claire, and Daniel Harris. 2013. *The Politics of Progress on Water and Sanitation in Colombo, Sri Lanka*. London: Overseas Development Institute.

H. Examples of political economy considerations

Annex G outlines, in generic terms, key political economy factors which can promote or impede successful and sustainable development. Table 14 below presents concrete, real-world examples distilled from the political economy literature. We expect that these examples – given SECO's own experiences – are highly recognizable.

The subsequent Table 15 cites the common constraints and incentive problems in public service delivery, as well as their symptoms, explanatory variables and policy options (as identified by a meta-analysis of the Overseas Development Institute in 2012). These constraints and incentive problems are summarized in more 'economic theory' terminology, but (we expect) equally recognizable.

Table 14. Real-world examples of political economy incentives and constraints

Agency (accountability / power relations)	Ghana Water Company	'Political interference in the appointment of Board members results in greater levels of accountability to the political system than to the end users and customers. When the interest of the public and the politicians diverge, decisions are often made in the interest of the politicians' (Manghee and Poole 2012).
Agency (Rent seeking)	Karachi	'Official, unofficial and private tankers [vendors], who siphon off scarce water resources [from the water distribution network] to sell at double the price, form a severe opposition group to reforms' (Manghee and Poole 2012).
Agency (Rent seeking and populist political discourse)	Multiple countries – energy sector	'The low power tariffs in the Dominican Republic and in Zambia or the energy subsidies in Morocco benefit many groups in society. This wide-reaching benefit in turn means that reforms face broad-based popular opposition. At the same time, the prevailing arrangements also benefit elites and entrenched insiders: wealthier citizens consume most of the subsidized and under-priced energy in the Dominican Republic and Morocco, and insiders within state-owned power companies in the Dominican Republic and in Zambia benefit from the status quo and the preferential access it offers to job and contracting opportunities (Fritz and Levy 2014).
Rules of the game (Governance structure and political culture)	Vietnam Sanitation Sector	The strongly hierarchical, centralized and upward-directed governance structure requires that sanitation initiatives be embedded in the prevailing performance evaluation of the Vietnamese cadres for these initiatives to be successful. (Kooy and Harris 2012)
Rules of the game (historical legacies and water as a public good)	Panama City	Historically, water was provided for free: first by the Panama Canal Company, owned by the USA, and thereafter by the Water Commission, part of the Ministry of Health which stressed the public health virtues of clean water provision. Cost recovery strategies (including possible privatisation) became a central theme in the nineties and ultimately a dividing issue in the presidential elections of 1999. The elections were won by Ms. Moscoso, the candidate who had

		explicitly spoken out against the introduction of cost covering water tariffs and the privatization of water supply. For the decade after, no politician dared to burn his/her fingers on the topic. (Manghee and Poole 2012)
Rules of the game (Community participation)	Sierra Leone	With water being a common pool resource from which it is impossible to exclude anyone on use and given the nature of society, one has to build on community-level initiatives, relying on locally recognized sanction and conflict resolution schemes, to cultivate a culture of payment. (Kooy and Harris 2012)
Rules of the game (Value of water, citizen expectations)	Sri Lanka	Sri Lanka has a long history as an established welfare state and high education levels. Moreover, water is seen as vital for food security and the use of toilets is a strong cultural norm. As a consequence, citizen expectations of the governments delivering good quality basic services such as water and sanitation are high. (Mcloughin and Harris 2013)

Table 15 Summary table of common governance constraints and opportunities

Governance constraint	Definition	Explanatory variables	Symptoms for service delivery	Potential policy options
Political market imperfections	Perverse political logics often based on patronage or clientelistic relationships, contributing to short-term, populist policies and biases to visible outputs	<ul style="list-style-type: none"> - Credibility of political commitments - Imperfect voter information - Social fragmentation or polarisation 	<ul style="list-style-type: none"> - Diversion of resources - Poor supervision or monitoring of human 	<ul style="list-style-type: none"> - Link accomplishments (or failures) of Individual politicians to information on services - Support social accountability initiatives - Test whether local conditions mean decentralisation will improve or further weaken These factors
Policy incoherence	Contradictions within policy design, structure and roles, meaning some part or the entirety of policy design is unimplementable or unimplemented	<ul style="list-style-type: none"> - Horizontal incoherence - Vertical incoherence 	<ul style="list-style-type: none"> - Undefined roles and responsibilities for service delivery - Greater opportunities for patronage/resource diversion 	<ul style="list-style-type: none"> - Support definition of mandates, roles and responsibilities - Invest in building greater capacity for delivery
Levels of performance oversight or monitoring	Insufficient performance regulation and weak accountability (either top down or bottom up)	<ul style="list-style-type: none"> - Formal and informal monitoring insufficient - Exit of users 	<ul style="list-style-type: none"> - Weak regulation of providers - Users exit rather than voicing complaints 	<ul style="list-style-type: none"> - Combine top-down performance with bottom-up monitoring - Build on local institutions and customs where appropriate

Governance constraint	Definition	Explanatory variables	Symptoms for service delivery	Potential policy options
	contributing to users exiting from provision			
Challenges for collective action	Weak capacity of actors to coordinate their activities and work together productively	<ul style="list-style-type: none"> - Form and extent of interest groups, including political parties, civil society, unions, communities 	<ul style="list-style-type: none"> - Free riding for services - Poorly maintained provision, with reduced local revenue raising 	<ul style="list-style-type: none"> - Support intermediaries that can broker collective action responses - Ensure national policies do not undermine scope for local problem solving
Moral hazard	Availability of aid or other resources that insulate the state (or others) from the consequences of their actions or inaction	<ul style="list-style-type: none"> - Availability of aid resources - Revenue from natural resources 	<ul style="list-style-type: none"> - Underinvestment in key areas and low visibility of local actors 	<ul style="list-style-type: none"> - Examine choices on funding modalities

Source: Wild, et al. 2012

I. List of interviewees

Interviewee	Organization
APA Vital, Iasi, Romania	
Lupu Victorel	Iasi County Council Vice-President
Liliana Arvinte	Iasi County Council Economical Manager
Mihai Chirica	Iasi Interim Mayor
Daniel Matasaru	Iasi Vice Mayor
Victor Chitila	President of ARSACIS (IDA)
Benesch Paul	Executive Manager ARSACIS (IDA)
Ion Toma	General Manager
Mihai Dorus	Technical Manager
Andi Dumitras	Head of Development Department
Romica Casian	Head of Billing Department
Valeriu Popa	Head of IT Department
Adi Oprea	Head of Dispatch Office
Razvan Manolache	Head of Call Center
Vicu Grasu	Head of Human Resources
Ion Toma	General Manager
Dana Craciunescu	Former EBRD Senior Banker
Johan Schaapman	Former Royal Haskoning
Miruna Gala	EBRD Principal Banker
Oana Arat	Ministry of European Funds (MEF)
Sorin Caian	BDO (Senior Water Sector Expert)
Augustin Boer	BDO (Senior Water Sector Expert)
Silviu Lacatusu	Romanian Water Association
Doina Frant	EIB / JASPERS – former Ministry of Environment
Nyewasco, Nyeri, Kenya	
Eng. Joseph Nguiguti	Former Managing- Director
Peter Gichaaga	Managing-Director
Eng. Joseph Muchiri	Technical Director

Samual Karogo	Commercial Director
Joyce Munira	Head of Human Resources
Robert Gidautau Wanjou	Board Member
Jucy Kibui	Customer Relations
Lawrence Kahiga	Superintendent
Mr. Muchai	Former Commercial-Director
Eng. Kibaki	Former Technical Manager Tana Water Services Board
Neil MacDougall	Former GIZ (UWASAM Program Manager)
Eng. Milgo Malaquen	Managing-Director Athi Water Services Board Former GIZ (UWASAM Deputy Program Manager)
Ronald Werchota	GIZ (Senior Water Specialist)
Eng. Simon Thuo	Former Ministry of Water (Head Secretariat Water Sector Reforms)
Sheillah Karimi	KfW (Project Officer)
Prof. George Krhoda	Former Ministry of Water (Permanent Secretary) Professor University of Nairobi
Phnom Penh Water Supply Company, Cambodia	
Visoth Chea (by mail)	Deputy Managing-Director
Veasna Bun	World Bank (Senior Infrastructure Specialist)
Graham Jackson	Former ADB (Lead Urban Development Specialist)
Michael White	ADB (Senior Urban Development Specialist)
Celiné Robert	AfD (Task Team Leader Water and Sanitation Division)
Hai Phong Water Supply Company, Vietnam	
Do Hung Thang (by mail)	Divisional Director (NRW and Metering)
Hannu Vikman	Independent Consultant
National Water and Sewerage Corporation, Uganda	
Fridtjof Behnsen	GIZ (Senior Water Sector Expert)
Tartu Water Works, Estonia	
Toomas Kapp	Managing-Director
Alexander Lüchinger	Independent Consultant

ONEA, Burkina Faso	
Roland Werchota	GIZ (Senior Water Sector Specialist)
Latin-American experiences	
Jorge Ducci	Inter-American Development Bank (Senior Water Sector Expert)
Kathryn Furlong	Professor of Geography (Urban governance and water services) Montreal University

J. Questionnaire for the in-depth case studies interviews

<p><i>Open inquiry into the perceptions and experience of the interviewee</i></p>	<ul style="list-style-type: none"> - When did you become involved in the utility's reform process? - What was the situation you found the utility and reform process in at that time? - How did the utility evolve from that point forward? Key decisions, actions, and events ...
<p><i>Targeted inquiry into how the utility evolved towards its success – understanding the dynamics of change</i></p>	<ul style="list-style-type: none"> - What triggered the reform process? What congruence of circumstances and / or developments? <ul style="list-style-type: none"> o Who were the key stakeholders? <ul style="list-style-type: none"> o What were, for each, the attitudes, positions, motivations, roles, mandates, and actions? o What were the dominant (competing) narratives at the time? How to explain these narratives? What were there origins? <i>See table below</i> o From whom / how did the protagonists obtain political legitimacy? o What initial decisions, steps or activities were undertaken, by whom, for what immediate reason? o What did the cooperation and decision-making process look? Who were party to these processes? <ul style="list-style-type: none"> o How were the interests, views and positions of critical stakeholders aligned and a reform agenda agreed upon? o Which decision-rules / political and cultural norms were applied to reach agreement? o What were the (power) relationships between the different stakeholders? - What is the chronology of discretionary measures taken? Why... <ul style="list-style-type: none"> o How were these discretionary measures resourced and by whom? - How did the KPI evolve over time? <ul style="list-style-type: none"> o Are you aware of particular jumps in performance? Reason ... o What were the key or critical milestones in the reform process? How come? o Which discretionary measures were particularly important? - What bumps in the road occurred? External, internal ... <ul style="list-style-type: none"> o What caused the bumps: capacity, political-economic reasons ...? o Who were the key stakeholders? <i>See above</i> o What response decisions, steps or activities were undertaken, by whom, in what interest? o What did the cooperation and decision-making process look? <i>See above</i> o How were the response activities resourced and by whom? - Has the reform process durably changed stakeholders' expectations, motivations, norms and interactions? <ul style="list-style-type: none"> o What prevents the stakeholders' changed attitude to spill over to other towns, utilities and sectors? - What role did development agencies play in the reform process? <ul style="list-style-type: none"> o What activities did development agencies deploy, with which kind of (management) resources and aid modalities? With what drive / incentive? Based on what narrative? o If relevant: did the development agency need to overcome / ignore any internal institutional constraints? Which ones? How were they overcome?

<p><i>Zooming out</i> <i>Distilling general lessons</i></p>	<ul style="list-style-type: none"> - What were the key success factors or crucial developments which led to success? <ul style="list-style-type: none"> o Are there any critical linkages between crucial developments and/or success factors? - What general lessons do you draw out of this reform process? <ul style="list-style-type: none"> o What can be emulated by other utilities? - Which development phases can be distinguished in the reform process? <ul style="list-style-type: none"> o What steps does a utility's management and owners need to take and in what sequence? - What can a development agency (not) do to actively facilitate success? <ul style="list-style-type: none"> o What type of attitude, assistance, aid modalities, sequence, tools? o How can a development agency ensure the quality of the reform process and results? o What role can development agencies play in the in-country dialogue and decision-making process? o What are milestones / red flags showing the development agency / reform process is on / off track?
<p><i>Expanding the horizon</i> <i>Addressing the political context and risks</i></p>	<ul style="list-style-type: none"> - Is it plausible to have constant ownership and commitment from recipient utilities? How can it be best facilitated? How realistic is such facilitation for a development agency? - How to improve the services of a utility, if the municipality has an opaque administration and a weak public finance management, not performance oriented? - How to deal with the omnipresent political risks to corporate development? How was this dealt with here?

Source: Authors, SECO review questions, Moncrieffe and Luttrell (2005), Harris (2013)

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