

An Initiative of the Federal Ministry of
Education and Research

GRoW

WATER AS A GLOBAL RESOURCE

LAYPERSONS SUMMARY

7 Sins against Local Water Management

1. **Poor Incentives for Water Service Performance**
2. **Insufficient Cost Transparency**
3. **Neglected Demand Management**
4. **Consultants Instead of Water Service Providers**
5. **Weak Local Water Business Development**
6. **No Impact of Investment Finance on O&M**
7. **Political Influence on Executive Operations**



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SEVEN SINS AGAINST LOCAL WATER MANAGEMENT

Seven Starting Points to Secure Water Services and Stop Sunk Investments

PROLOGUE

On 9 July 2020, the UN launched a “Global Acceleration Framework” to rapidly improve progress on Sustainable Development Goal 6, “Clean Water and Sanitation”.¹ The UN stated that “the water and sanitation crisis is getting worse”, even though “many examples from around the world prove that dramatic gains are possible in just a few years...Optimised financing² is essential... Governance collaboration across boundaries and sectors will make SDG6 everyone’s business”. Despite strong efforts and increasing financial investments, achievements are reported to be insufficient³. No doubt, it is necessary to

address and research failures in local water management and name the sins that may cause the loss of lives and wealth.

Poor people and the local ecosystems in emerging markets and developing countries suffer the most from malfunctioning water and environmental services. Most of the donor agencies are obliged to ensure good water governance as a prerequisite for donor support. For this reason, international development cooperation should encourage and enable public water utilities to overcome often serious mistakes in local water management.



The photos above are from WWTPs in Africa, with operational default (left) and with operational success (right), managed under different governance conditions. Experiences like these provided the motivation to research and digest the lessons learned about effective and non-effective governance, and present them in this paper.

NOTE:

This paper is the layperson’s version of a full thesis paper in German, based on a full report describing the scientific background and empirical research. Extensive discussions with experts from the academic world – as part of the research program GRoW (<https://bmbf-grow.de/en>) – from international development agencies and the water industry have taken place. Still, it must be emphasized that the responsibility for this paper lies with the authors and the GroW-project IWaGSS (www.iwagss.com). Furthermore, note that this thesis paper does not necessarily reflect the experiences, expertise and views of all donor agencies or all researchers on macro-governance, etc. One reason is that this paper is based on interviews with water utility leaders responsible for local water management in many regions worldwide, including (but not exclusively) African as well as other developing countries and several industrialized countries. Readers who have questions or want to know more are invited to contact mail@uni-wh-ieem.de.

1 <https://www.unwater.org/sdg6-action-space/>

2 Regarding „optimised” instead of „increased”: see Rudolph, K.U: “Sustainable Financing Mechanisms for Good Water Governance and Water Service Performance” WISA (Water Institute of South Africa) Annual Conference 10 Oct 2020, slide 9.

3 www.unwater.org/publication_categories/sdg-6-synthesis-report-2018-on-water-and-sanitation/

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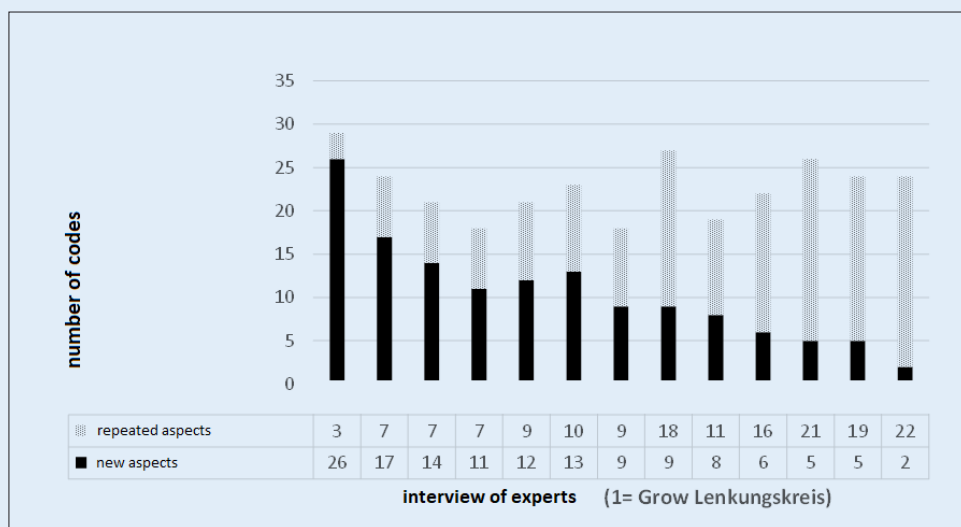
METHODOLOGY

The authors have researched, selected and verified seven topics of critical importance to water management and listed them with brief comments as to *why* the issues need to be addressed and *how* to deal with them. Unfortunately, *these issues are far too common and must be called what they are: seven serious, often fatal sins against local water management.* If addressed and properly mitigated, however, these sins can become success factors, i.e. starting points to secure water service performance and prevent sunk investments – which, in the end, local, national and multinational taxpayers, tariff payers and citizens pay for.

The list of “Seven Water Sins” (addressing the most relevant issues of influence on success or failure) is the outcome of empirical research.

This research was structured as follows:

- The starting point was a detailed **review** of case studies and publications about local water service performance.
- The **assessment** of actual project experience and other case-specific data from developing but also mature countries, including mainly domestic, but also industrial water systems.
- Target-sample oriented **interviews**⁴ with water utility professionals from various countries to verify and establish the data base.
- The collection of additional information and expert **opinions** from scientific research, donor agencies, regulators, banks including practitioners and young professionals to counter-check the findings.



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The figure above indicates the number of codes, changing during the data analyses of interviews. In general, the number of codes for new aspects decreases while increasing for repeated aspects until saturation.

A final review and modification of the pre-final thesis paper took place in consultation with highly experienced experts from international development cooperation (specialists from GIZ, the German agency for technical development cooperation) and from the international water industry (members of the European AquaFed and the German BDE, both associations of water service providers).

⁴ see Stroemer, K.P. (2020): Development of a Sustainable Business Model for Water Utilities in India or other Emerging Markets. IEEM Proceedings Vol. 40, ISBN 978-3-9818108-6-8.

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THE SEVEN SINS

1. POOR INCENTIVES FOR WATER SERVICE PERFORMANCE

WHY? Without incentives for those responsible for water management at the local level, it is unlikely that water facilities function well. Public services are seldom structured to pay different salaries for different work performance. Neglected staff and equipment for operation and maintenance (O&M) is a major bottleneck of success in service performance; often, O&M is the first expenditure that governments cut in times of financial difficulty.

▶ *Respect and incentives are needed to motivate water utility managers and their staff, who make things work on site.*

HOW? Existing cases and contracts provide details about the **introduction and handling of penalties and rewards** (monetary and others) among different staff levels. For contracts with private service operators, performance-based incentives are quite common and can serve as a good example for municipal decision-makers. Fair incentive systems might also help attract qualified personnel and keep staff motivated.

2. INSUFFICIENT COST TRANSPARENCY

WHY? Without knowledge about full costs (including O&M), no city council or utility leader can make informed decisions about alternative technologies, different managerial options or tariff strategies⁵ for water business planning. Currently, too many decisions are made in an information vacuum, without transparent financial data. Financial modelling is essential to reconcile political priorities with monetary limitations.

▶ *Just as an airplane needs geographic navigation, water utilities cannot work without financial navigation.*

HOW? **Establish financial modelling** adapted to the utilities' bookkeeping as much as possible, with common software, tables and figures. Ministries, councillors, banks, water managers and consumers have different motivations, and may want to check different targets. These can be reflected in a set of different output parameters of financial modelling variations without manipulating input parameters and financial calculation methods.

⁵ For water tariffs see also <https://iwa-network.org/publications/guidelines-for-public-participation-the-tools/>

3. NEGLECTED DEMAND MANAGEMENT

WHY? “Day Zero” is a famous label that raised awareness during the latest drought in Cape Town. However, creating awareness is of little value without reliable commitment. Low, subsidised tariffs, flat-rate tariffs⁶, poor collection rates, legal barriers that cut or limit water supply can ruin any efforts aimed at reasonable water demand management and, in the end, endanger continuous water supply and lower the quality of water services.

▶ *Without water demand management, it is likely that water ends up wasted and lost instead of efficiently used.*

HOW? **Make water demand management** one element of water efficiency, in combination with water loss reduction programs addressing physical losses (leakages) as well as administrative losses (water theft, unbilled or unpaid water consumption). Digitised water metering, leakage and pressure control is much easier now than in the past. A lot of progress has been achieved⁶, but much more is needed.

4. EMPLOYMENT OF CONSULTANTS INSTEAD OF LIABLE WATER SERVICE PROVIDERS

WHY? Consultants can be of great help if acting as independent advisors without conflict of interest regarding competitive technologies or services. Providing and guarantying technical and financial service performance is a different issue. Contractual compliance with output-based standards can only be delivered by liable providers of goods and services. In addition, these providers must be paid based on output (e.g. per m³ of water treated to standards), not per hour or for paper work. Any contribution that is based on full cost recovery without liability for the contributing party may advise, but cannot resolve technical or operational failures.

▶ *If you pay for consulting hours, you will get consulting hours. If you pay for outputs, you will get outputs.*

HOW? In most developing countries and emerging markets, it is very common to have a lot of consultants involved. Let consultants, municipal twinning, water operator partnerships and others train your local staff, prepare procurement and supervise your providers of goods and services. But **do not substitute liable technology and service providers with consultants** paid per hour without output-based liability.

⁶ Rudolph, K.U., Klein, G. (2011): Water Loss Reduction – Economic Gains: Chapter III pp. 113 in "Capacity Development for Drinking Water Loss Reduction: Challenges and Experiences" UN Water DPC, Dreesbach Verlag München, ISBN 978-3-940061-51-5

5. WEAK LOCAL WATER BUSINESS DEVELOPMENT

WHY? Water and environmental services play a critical role in the development of the local economy. Local contracting will enhance political acceptance and the willingness to charge respectively to pay for good water and sanitation services, in line with the UN Sustainable Development Goals (SDGs) – which have been adopted by many countries, including Germany. Supporting the development of local water business with qualified local contractors is an advantage for water utilities because they do not have to rely on non-native contractors travelling in from far distance.

▶ ***“Jobs per drops” with local contractors can improve political acceptance for the sake of local water management.***

HOW? **Use lean design tender docs** with work packages designed in such a way that certain lots become attractive for local entrepreneurs, in terms of risk share and obligations (request skills available in the local provider market). For ambitious projects, make sure that international technology and service providers are not chased away, but incentivized to partner with local companies in such a way that the local market can develop further.

6. INVESTMENT FINANCE DISREGARDING O&M

WHY? For good reason, donor banks are risk-protected under state guarantees and the umbrella of their governmental shareholder(s). Commercial banks bear financial risks and suffer if their borrower does not generate revenues for debt repayment as planned. As a result, commercial banks are committed to making things work, from design and construction to operation and water services. Investment finance without risk on side of the lending banks is a fertile ground for insufficient operation, maintenance and sunk investments in the water sector.

▶ ***Subsidies are like drugs: Life-saving if you need them, but drugs can kill if side-effects are neglected for too long.***

HOW? **Blended finance**, or (preferred by the authors) **hybrid finance** with a certain component of private risk finance contributed by commercial banks can make for a reasonable solution. However, the technical risks of project development and execution must not be socialized – this generates hidden risk guarantees to the disadvantage of taxpayers and water consumers. Wherever available, lenders should prefer loans that include a subsidized donor bank loan and a commercial loan component (project finance or forfaiting?). Lenders are advised to create a professional project memorandum to attract competing offers from different banks.

7 Hermann, M. F. (2015): Finanzierung von Unternehmen im Wassersektor. Eine Analyse der Finanzierungsinstrumente PPP-Forfaitierung in Deutschland und Implikationen für Projekte in Entwicklungs- und Schwellenländern. Schriftenreihe IEEM, Bd. 33. ISBN 073-300-050093-0. IN ENGLISH see: Rudolph, K.U: Forfaiting, an Output-Based Component for Sustainable Water Finance. Proceedings of the IWA World Water Congress & Exhibition 2016, Brisbane, Australia, 9. - 13. October 2016.

7. POLITICAL INFLUENCE ON EXECUTIVE OPERATIONS

The “Mother of All Sins” in Water Management

WHY? Public entities and municipal water utilities fall under political governance. This is justified for political decision-making and supervision, but not for operational execution. Far too often in certain countries, water utilities are misused for self-catering. Execution fails without executives empowered to act according to managerial, technical, and entrepreneurial needs without political interference.

▶ *Water utilities cannot perform without protection against political interference in day-to-day business.*

HOW? **Ring-fenced utilities** can be a good way to make sure that the different political and executive roles and players are clearly defined and strictly separated. Ring-fenced utilities are often incorporated as autonomous legal entities. If not, they can be a department under a municipal administration, for example, but must be committed to act as a commercial company with the council as shareholders under the utility leader as CEO. The ring-fencing can be protected with binding contracts under international law, signed by the utility owners and the financial sponsors in consent with the responsible governing ministry.

Whenever lending banks take such contracts as part of the financial agreement as a pre-condition of grants and soft loans, this serves as a strong lever to eradicate the political influence on the executive operations of local water management. To allocate political risks and force majeure on the national level (like under a so-called sovereign state guarantee, excluding technical and commercial performance risks) is justified and no sin against local water management.

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EPILOGUE

The latest UN statement that “optimised financing is essential”⁸ is one important voice among others emphasizing that it is not merely the lack of money or technologies, but governance issues that need to be addressed for local water management to succeed with the UN social development goal SDG6⁹.

The "Agenda 2030 for Sustainable Development" of the German Ministry for Economic Cooperation and Development¹⁰ includes a general prerequisite: That development aid will not be granted unless certain reforms are properly implemented in the receiving country. This pre-requisite corresponds with the list of the Seven Sins, which provides a concrete set of criteria for the water sector and includes recommendations for

prompt success with social, ecological and economic added value.

To eradicate the Seven Sins would not necessarily require additional money but could avoid sunk investments, which occur too often in the water sector of developing and other countries. What is required is a stable commitment on the side of all important parties involved. In the short term, the eradication of water sins may not serve the self-interest of certain institutions and individuals. Reforms are needed not only in the developing countries, but also in the donor countries with the development agencies and multilateral institutions to support good water governance with good local water management for the benefit of all.

8 See footnote no. 1 on page 1

9 <https://www.un.org/sustainabledevelopment/water-and-sanitation/>

10 https://www.bmf.de/en/press/aktuelleMeldungen/2020/april/200429_pm_09_Development-Ministry-unveils-BMZ-2030-reform-strategy/index.html

About GROW: This paper was written as part of the research programme “GROW – Water as a Global Resource”, related to the GROW cross-cutting topic No. 1 “Incentives in The Context of Governance”. The research programme GROW, funded by the German Ministry of Education and Research, is one of the largest contemporary research initiatives on global water resources. GROW comprises 12 international cooperation projects with 90 partner institutions from Germany and more than 40 case studies worldwide, involving approximately 300 researchers, practitioners and stakeholders over more than three years. GROW has investigated innovative approaches for better understanding, predicting and addressing the local-to-global teleconnections in water resources management. The approaches span from high-resolution global models of water use efficiency and agriculture via new operational rules for water reservoirs to water footprint tools, water quality assessments and, last but not least, new tools for water governance. For more information, please visit: <https://bmbf-grow.de/en> or contact the authors mail@uni-wh-ieem.de.

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