ARAB WATER WEEK 2013
Training Course for Senior Managers
On
Performance Indicators and Benchmarking for Water Utilities in the MENA / Arab Region

January 30 – 31, 2013 Amman Jordan

Organized by
Arab Countries Water Utilities Association (ACWUA)
GIZ - Deutsche GesellschaftfürInternationaleZusammenarbeit

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Imprint

Performance Indicators and Benchmarking for Water Utilities
In the MENA / Arab Region
ACWUA Training Course for Senior Managers
Amman, Jordan January30 - 31, 2013

Organised by:
Arab Countries Water Utilities Association (ACWUA)
GIZ - Deutsche GesellschaftfürInternationaleZusammenarbeit, Germany

Report compiled by:
Majd Sulieman
Supported by Mostafa Biad,George Rizkallah and Mustafa Nasereddin

Trainers
Mostafa Biad and George Rizkallah

Resource Person:
Filip Bertzbach – Aquabench / Germany

GIZ-Programme Managers:
Thomas Petermann, Andrea Notz

ACWUA-Programme Managers:
Mustafa Nasereddin, Ahmad Abu Saleem

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Thomas Petermann, Training Team
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Executive Summary

As part of ACWUA and GIZ continuous efforts in enhancing the capacities in the water sector in the MENA/Arab Region comes this training as the 5th training course in "Performance Indicators and Benchmarking for Water Utilities".

The training course took place as part of the second Arab Water Week organized by the Arab Countries Water Utilities Association (ACWUA) and GIZ for two condensed days. Participants were from Jordan, Palestine, Algeria, Egypt, Yemen, Oman, Lebanon, Tunis, Morocco, UAE and Iraq representing the public sector, private sector and non-governmental institutes

The training was conducted by two trainers Eng. Mostafa Biad from Morocco and George Rizkallah from Egypt; both trainers have extensive experience in such training after participating in a TOT workshop on this subject in Germany and actually conducting the previous trainings in Key Performance Indicators and Benchmarking for Water Utilities. Moreover, Mr. Filip Bertzbach from Aquabench – Germany was the resource person and provided the International views on Benchmarking and presented Germany's experience to the participants.

The training was launched by Eng. Khaldon Khashman and Mr. Thomas Petermann, where Eng. Khaldon welcomed the participants, thanking them for their presence and attending the training, moreover. Eng. Khaldon congratulated the new elected members of ACWUA board.

Eng. Khaldon also thanked GIZ for their continuous support to ACWUA and specifically in this important conference and announced the three years extension upon the outcomes of the currently ongoing evaluation mission.

Afterwards, Mr. Thomas emphasized on the importance of this training course which aligns with ACWUA mission and explained the importance of having proper performance Indicators and Benchmarking for water and wastewater utilities in the Arab region.

Training Objectives:

General objective:

How to use **indicators and benchmarking** systems as tools for utility performance **assessment and improvement**?

Specific objectives:

- Obtain an overview and introduction to **common/practical practices regarding Performance Indicators systems and Benchmarking**
- **Exposure to international and regional applications** leading to an in-depth exchange of experience and lively discussion :
  - To contribute to the development of **useful indicators at national or organizational level**,
  - To promote **PIB** for use **within the MENA/Arab Region** in the context of the mandate of ACWUA (Benchmarking working group).

Training Methods used:

- Interactive training methods using Power Point Presentation (PPP)
- Active participatory learning Actions, i.e. Questions and reflections
- Feed Back of Group Discussions
- Case studies
- Using the Principles of Participatory Adult Learning Approach (PALA)

Day 1: Wednesday, January 30th, 2013

Opening Session:

The 5th training course on "Performance Indicators and Benchmarking for Water Utilities in the MENA/Arab Region" was launched by **Eng. Khaldon Khashman** who congratulated the newly elected members of ACWUA board and announced the new three year extension from GIZ. Eng. Khaldon welcomed the participants and urged them to benefit from this training and reflect it back in their countries.

Mr. Thomas Petermann from GIZ joined **Eng. Khaldon** in welcoming the participants an emphasized on the importance of Performance Indicators and Benchmarking in the water sector in general and in the Arab region in specific. He also emphasized on the importance to activate the benchmarking working group of ACWUA and informed that GIZ is supporting this WG and such activities.

Session 1: Introduction

Mostafa Biad started the first session of the training by introducing the team of trainers and then presenting the objectives of the training as follows:

General objective :
How to use **indicators and benchmarking** systems as tools for utility **performance assessment/improvement**.

Specific objectives :

- Obtain an overview and introduction to **common/practical practices regarding Performance Indicators systems and Benchmarking**
- **Exposure to international and regional applications** leading to an in-depth exchange of experience and lively discussion :
  - To contribute to the development of **useful indicators at national or organizational level**,
  - To promote **PIB** for use **within the MENA/Arab Region** in the context of the mandate of ACWUA (Benchmarking working group).

George Rizkallah went through the rules and regulations which will govern this training. The training method also was explained as an interactive one which will depend on feedback from the participants and sharing experiences. George Rizkallah highlighted the main benefits of the "**Participatory Adult Learning Approach" PALA**, which basically depends on sharing experience where everyone is a resource and everyone has to respect the other's opinion. The training depended on working groups too; the trainer explained how the exercises are going to be implemented where each group has to assign a team leader, a time keeper and presenter.

The participants were asked to introduce themselves and work in groups to discuss their expectations (one main and one secondary expectation) from this training course and the results were as follows:

Main Expectations:

1. Management and Performance Improvement:
    a. Improve the quality of service in water and WW utilities through designing Performance Indicators and Benchmarking
    b. How to design Performance Indicators to help in decision making, how to extract benchmarking techniques that are applicable to our countries
    c. How to improve the management by using Performance Indicators

2. Preparation and Application
    a. Learning the methodology of Benchmarking and designing Performance Indicators
    b. How to make the right decision from the best practices in Benchmarking
    c. To understand the essence of Benchmarking and how to formulate them to water utilities

3. How to implement Benchmarking for the region
    a. How to Adapt Benchmarking to accommodate our countries
    b. How to adapt international standards that apply to our region
    c. How to apply the Performance Indicators in measuring and evaluating the water utilities in our country

Secondary Expectations:

1. Exchange experiences and Networking:
2. Sharing information and Knowledge
3. Understanding Performance Indicators definition and application

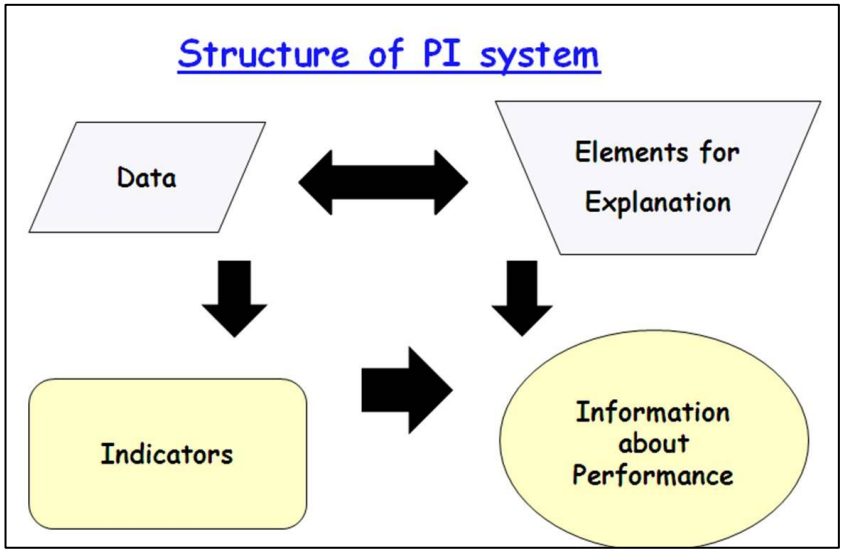
Session 2: Key Performance Indicators

Lead: Mostafa Biad

The session started with introducing the importance of Performance Indicators and performance evaluation and the challenges that the Arab region faces in the water sector (water and waste water utilities). The participants were asked to share their understanding of the importance of Performance Indicators, main points were:

1. To insure staying on the track and good performance, re-structuring if the progress went out of track
2. Helps in managing the entity stay successful
3. Ensure quality of services
4. Motivate employees working on the project
5. The indicators can be used as regulators
6. Evaluate entity performance by an external body to assess how the entity functions

Mostafa explained that structure of any PI system, as shown below and they are data, Indicators, performance criteria and Elements for Explanation and Information about performance. Mostafa went through each of the main elements and given example from the water sector to explain them.

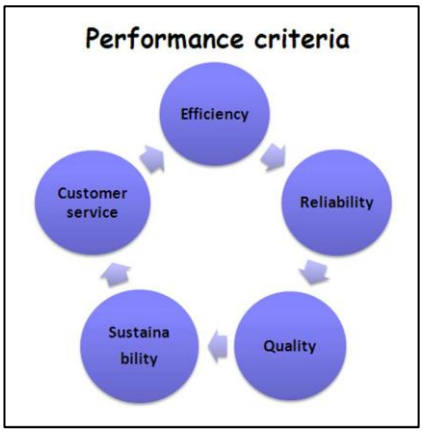


In order to introduce performance criteria and explain what we mean by "performance" in water sector, participants were asked to share their understanding of the needs of different stakeholders in the water sector in groups; the main outcomes were as follows:

- **Donors** measure achieving the goal, donors focus on the indicators such as cost recovery, capacity building of HR
- **Politicians**: look for a good service and good quality
- **NGO (civil society)**: minimum tariffs, billing , continuity of service
- **Regulator**: licensing for service providers that is governed by Performance Indicators, if not achieved the license is taken

In summary, the main points that were mentioned as performance criteria by the participants were:

1. Cost recovery
2. Quality of service
3. Customer service
4. Reliability of infrastructure
5. Efficiency and effectiveness



That corresponds to the internationally agreed upon performance criteria which are Efficiency, Reliability, Quality, Sustainability and Customer service as explained by Mostafa Biad;

Questions and Discussion:

1. What's the relationship between Performance Indicators and the strategy of the entity?

   Entities put their strategies and work plans, performance indicators are designed to support the goals sets in those strategies and work plans

2. Should entities that work similarly have the same Performance Indicators to measure the performance
   This will be discussed in the coming sessions

3. How can we define the weight of the Performance Indicators?

   The weight of the performance indicator may vary from one entity to another depending on their strategy and mission. Moreover Performance indicators may also be designed either for the entity as a whole or for each process. More performance indicators, means more detailed information / data needed and more resources to collect and process these data to obtain accurate results.

4. For utilities, it's very important to have financial resources, how can we coincide between the financial and technical resources
   It depends on each entity's strategy; each entity should define the level of the Performance Indicators that govern its performance depending on the results of the feasibility study.

Case Studies:

After the discussion, the trainers called for case study presentation, and two case studies were presented by the Tunisian team and the Palestinian team.

Tunisian Case

Mr. Fethi Cheib, the Director of the National Company at SONEDE: Water Exploitation and Distribution presented the case study from Tunisia. Mr. Cheib started with introducing the company (SONEDE), its mandate and main activities. Mr. Cheib also explained the Key Performance Indicators implemented by the company, the importance of those Performance Indicators and how were they measured by the company.

As for the Benchmarking, Mr. Cheib explained that the company applies; internal Benchmarking and gave examples on NRW and how comparison and monitoring are done in Tunisian water systems managed by SONEDE. Finally, upcoming activities were also presented and future vision was shared.

Palestinian Case

Eng. Emad Al Masri presented the case form the Palestinian Water Authority. Mr. Al Masri started with introducing the Palestinian Water Authority and how the Palestinian water law mandates the authority as a regulatory entity. Mr. Al Masri also presented the objectives of the Performance Monitoring system in the Palestinian Water Authority and explained some of the Performance Indicators and the importance of data reliability in measuring those Performance Indicators.

Later, Mr. Al Masry gave many examples on the Indicators analysis done by the authority that help in decision making and monitoring performance. Finally, recommendations were shared and next steps were also presented.

Discussion:

Questions:

1. For the Palestinian case: what is the Collection efficiency against the collection of billing.
   The Performance Indicators measures the amount of collection against the billing.
2. Tunisian case: have you benchmarked the energy consumption
   It is difficult to compare the energy consumption to international standards
   Before comparing to international standards, we need to study the current situation and design the methodology that is applicable to the equipment, resources and utility needs of the utilities.

   When measuring the indicator locally, it looks good. Comparing it with international numbers, it would not look good, that's why Benchmarking is important to show the status of each utility in comparison to others in the same sector.

Working Groups:

The participants were asked to work in groups according to their countries and to answer the following questions:

1. **What are success factors in using Performance Indicators systems (in your case)?**

Main factors of success discussed:

1. Performance Criteria-Egypt
2. Management Commitment-Iraq and UAE
3. Strategy approach and management commitment-Yemen and Oman
4. Data support and management commitment-Lebanon and Palestine
5. Data support (automation and computerization)-Jordan
6. Management commitment-Maghreb countries (Algeria, Morocco and Tunisia)

2. **How much of the following aspects that are achieved?**

Rating (1-3, where 3 is the highest)

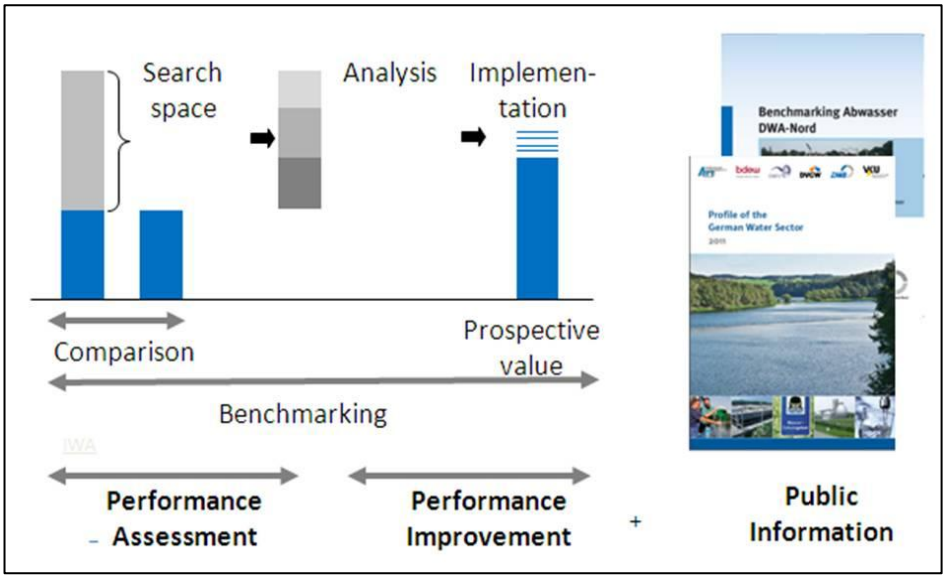
Factors	Management Commitment	IWA Performance Indicators	Support for data Plausibility check, training, etc	Performance Criteria	What can you add
Egypt				3	Capacity building
Iraq and UAE	3				
Yemen and Oman	3				Strategy approach
Lebanon and Palestine	3		2		Legal reference/regulatory entity
Jordan			3		
Maghreb countries (Algeria, Morocco and Tunisia)	3				Performance Indicators engaging

Session 3: Common Understanding of Benchmarking

Lead: Georges Rizkallah

George Rizkallah started the third session with explaining the definitions of Benchmarking, introduced the Benchmarking concept and steps for Benchmarking in accordance to the International Water Association (IWA). Georges then asked the participants to work in groups to answer the following questions, **why we do Benchmarking?** (Summary of answers is below).

George also explained the three main reasons for Benchmarking; **Performance Assessment, Performance Improvement** and **Public Information Communication** and gave different examples to explain those reasons and the link between Benchmarking and how can it be used in the water utilities.



Summary of the participant group discussions answering the question "Why we do Benchmarking?"

1. **Performance assessment**
   - Identify Gaps and how to improve
   - Guide the regulators/regulations
   - Sustainability
   - Comparison between utilities/service providers

2. **Performance improvement**
   - Increase efficiency of HR and Infrastructure
   - Ensure efficiency of supply
   - Improve performance
   - Customer service
   - Improve quality
   - Continuous training

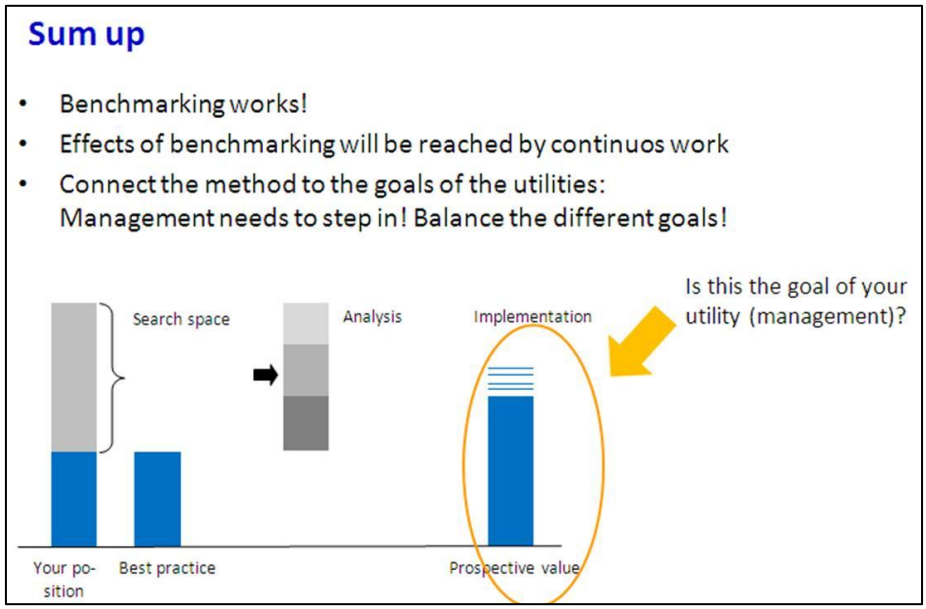
3. **Public information communication**
    - Transparency and integrity
    - Accountability and good governance
    - Communications (internal and external)
    - Public awareness
    - Motivation and incentives
    - Social impact
    - Protect interest of customers

International Experiences in Benchmarking

Lead: Filip Bertzbach

After the working groups, George gave the floor to Mr. Filip Bertzbach from Aquabench, Germany to present the International experience in Benchmarking. Mr. Filip introduced Aquabench as one of its kind public entity that was founded by leading German companies that work in the water sector. Additionally, Mr. Filip shared some of Aquabench projects in Benchmarking (1200 clients).

Benchmarking definition was also explained by Mr. Filip and examples of International players in Benchmarking were presented. Finally, Mr. Filip shared how Aquabench uses Benchmarking in improving the performance of water utilities in Germany and other European countries and how Aquabench analyses data, presents the findings and works closely with the client to improve their performance.



Questions:

1. What's the cost of Benchmarking?

5-15 times the cost of Benchmarking is saved if the entity does Benchmarking and the amount of work is between 5 and 20 days

2. Where does aquabench operate?

Europe, mainly German speaking country: Germany, Austria and Switzerland

3. How do you define the Benchmarking?

It's a complicated process; it needs a lot of processes and data to define the Benchmarking

4. What's the motivation to do Benchmarking?

The motivation is basically the reasons mentioned above.

5. What's the motive behind aquabench?

Self-regulation, aquabench is a public entity created by public utilities; they have to prove that they are delivering, effective and quality of service.

Working Group:

The participants were asked to work in groups to answer the following question:

1. **What are the Next steps (to start benchmarking) in the region/your country?**

2. **What are the next steps in the specific Area?**

Preparation:

Project Planning

Orientation training and Project Control

1. All the participating countries already have plans and strategies
2. In order to be able to plan, we should have proper data, do needs assessment and then plan
3. Unifying of Performance Indicators definitions
4. Internal preparation by entity
5. Understanding the details about Performance Indicators from the IWA perspective
6. Enforcement of Performance Indicators and channeling between different entities
7. Proper Data support
8. Automation and proper database
9. Awareness campaign to convince people about the importance of Benchmarking
10. Institutional planning in different entities
11. Pilot utilities
12. Baseline assessment of the entity

Performance Assessment:

Data Acquisition and validation

Data analysis and assessment reporting

1. Focus on the main Performance Indicators depending on the weight of the Performance Indicators
2. Choose the Performance Indicators in the areas of potential improvement
3. Automation and computerization of data
4. Explicit factors
5. Few Performance Indicators in some areas and each country can go into details when designing their Performance Indicators

Conflict discussion:

1. Each country is different than the other so each entity also has different capacity, therefore, Performance Indicators can't be unified.
2. In order to be able to Benchmarking, ACWUA should unify the Performance Indicators and each country can implement it differently

Performance Improvement

Improvement Actions

Review of Improvement Actions

1. How to define the gap ?-it could be a question also
2. Individual actions for improvement
3. Define the entity goals

Day 2: Thursday, January 31st, 2013

Mostafa started with a comprehensive Re-cap about the first day's material, results of working groups and the questions asked.

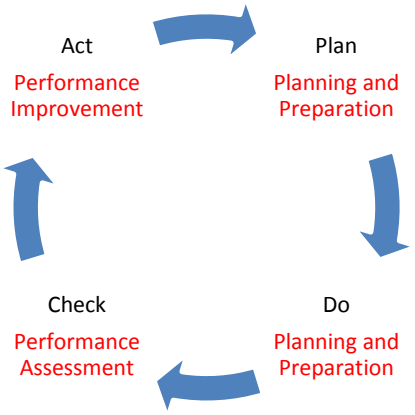
Two questions were asked by the participants

1. Are Score Cards and Six σ-TQM part of Benchmarking?

Mostafa started with explaining the TQM cycle and compared it with the Benchmarking steps discussed yesterday.

TQM	Benchmarking
Plan	Planning and Preparation
Do	
Check	Performance Assessment, evaluation
Act	Performance Improvement

And both are continuous processes:



Fillip also explained that there are some similarities but it's not always the same. Some utilities build connections between them, there are some relations but not necessarily homogeneous it depends on the utility and how it works. It makes sense to have those connections but it will entail a lot of effort.

2. WHO-UNICEF (Indicators), WHO and UNICEF initiative that collect information, can this be used in Benchmarking? (it is basically connected to MDGs)

Fillip also confirmed that it is a very good idea to link the Performance Indicators with the millennium goals (MDGs).

One of the participants shared the Lebanese experience in using Performance Indicators to assess the performance of the private sector or the services providers, where the ministry agreed on certain Performance Indicators with the private sector and then used it to assess its performance; consequently, the ministry started defining more specific Performance Indicators per entity.

Session 4: Benchmarking in Practice
Lead: Mostafa Biad

Mostafa started the first session of the second day where the participants will learn how to use Benchmarking in improving the performance. After discussing the definition of Benchmarking, how to set Performance Indicators and the importance of Benchmarking in the first day, it's time for the participants to understand the implementation part. Mostafa went through the definition of Benchmarking, objectives of Benchmarking as a reminder for the participants. Afterwards, Mostafa explained the Benchmarking steps as per IWA and the German application, what are the success factors of Benchmarking and gave examples on how to do that.

Source: IWA, 2011

Success factors for Benchmarking

General

- Strategic approach
- Clear commitment of the leadership to benchmarking results
- From general to specific (corporate vs. process benchmarking)

Performance assessment

- Clear Structure and definitions of benchmarking systems (especially IWA-Performance Indicator)
- Training, support, plausibility checks
- Performance assessment tools, (online Software, individual report)

Performance improvement

- Workshops and networking
- Continuous benchmarking

The difference between Corporate Benchmarking and Process Benchmarking was also explained and detailed examples were given. Mostafa emphasized on the importance of data integrity and data analysis and how to use this data to improve the performance. Finally, Mostafa discussed the lessons learnt and gave some recommendations

Questions:

1. In which steps are Performance Indicators identified?

During the Preparation and planning phase where the strategy of the entity is clear and action plans are in place then setting up the Performance Indicators.

2. Should Benchmarking be voluntary?

Benchmarking is voluntary so the entities are committed to do that because of their own motives. Benchmarking in Germany is voluntary but it doesn't have to be voluntary for other countries.

Code of conduct is defined and signed between the participating entities where information is kept confidential

3. In general, competition is found between water utilities, and utilities are reluctant to share their information

Fillip shared Aquabench experience where he explained that in the public sector there should not be competition, information can be shared openly in workshops, trainings, etc. However, in the private sector where competition exists, a Code of Conduct should be agreed on. Aquabench doesn't have workshops and doesn't share data in public; it can be presented individually for private sector, utilities, etc. In order to ensure confidentiality, there must be regulations and laws that govern the Benchmarking process (i.e. Code of Conduct)

Working Groups:

What's the running cost or operational cost for production of m^3 of water?

It was clear that the groups had different running costs depending on their entities and countries, that's why entities should be careful when choosing their Performance Indicators and take into consideration all factors.

A discussion took place about the definition of the units used in Mostafa's example. The bottom line is that when the entity measures Performance Indicators on the corporate level, the entity should choose different units of measurement than that used when measuring a more detailed/process benchmarking.

A comment from one participants was about the changes in the improvement plan given in the example and how will it affect the quality, Fillip confirmed that when the entity designs its improvement plan, it's up to the entity to decide how to design its improvement plan, sometimes it's quality, sometimes its money so it's different from one entity to the other. Moreover, sharing experiences with other utilities and learning from their experiences can also help in improving the performance.

Questions and discussion:

1. If a group of entities participating in the Benchmarking and the performance was not good, can Benchmarking provide the values defined in the feasibility studies?

Benchmarking is about start learning, it's about becoming better and there is always in the world someone who is doing better so the entity should look for a better Benchmarking. It makes sense to put theoretical Benchmarking to achieve.

2. What's the relationship between the Benchmarking for utilities and Benchmarking in the electricity sector for instance specifically with regards to costs, pricing, HR, maintenance?

Usually Benchmarking is done for entities in the same sector (water, electricity, etc..) even if there are direct impact on the entity, for instance, the cost of electricity is different depending on the peak value, this affects the performance of the water utilities, however, we can't Benchmark the performance of the utilities in the water sector with the electricity sector entities together.

3. What if the Benchmarking defined in the planning phase is low compared to the actual performance?

This shows improper planning or inadequate data resources, that's why the entity should do gap analysis to check the gap between the actual performance and the already defined Benchmarking. The entity can change the Benchmarking accordingly.

How to set and apply a benchmarking system?
Lead: Fillip Bertzbach

Filip continued to share the international experience in Benchmarking in his next presentation. Filip explained how to set and apply Benchmarking in the water utilities. Filip emphasized on the importance of learning from international experiences and not to re-invent the wheel. In his presentation, Filip explained the Benchmarking process and how to start referring back to the international experiences. Filip also explained the success factors of Benchmarking by giving examples and sharing the German experience in that.

Discussion:
The trainers asked the participants about who will take the first step in their countries to apply Benchmarking?

Algeria: many initiatives already took place

1. الديوان الوطني للتطهيرONA
2. الجزائرية للمياهADE
3. Twinning with other countries (Belgium)-ADE & WW→water quality Performance Indicators

Egypt: some activities related to PIs collection and performance assessment are applied

1. Giza WTP
2. MoWI, quality of service

Morocco: PIs assessment and collaboration are already run, mainly in the following

1. Water quality
2. ONEE, Water Quality National laboratories (WQ)→ Performance Indicators and comparison, exchange of experience

Participants from Egypt, Iraq, Yemen and Palestine shared their experience in Benchmarking and where they stand now.

Participants from Tunisia proposed a framework of Performance Indicators that governs the water sector in the Arab region.

One of the participants suggested that the member countries in ACWUA should start working together to share experiences in Benchmarking through ACWUA and choosing one of the international standards that is used in the European countries.

Session 3: The Way Forward

Lead: Mustafa Nasereddin

Mustafa Nasereddin, Director of Programs and Technical Services in ACWUA led the final session of the training. He started by presenting ACWUA's achievements in the past three years with Benchmarking and Technical working groups.

Mustafa explained ACWUA's progress in Benchmarking and how ACWUA cooperated with IBNET to support the water utilities in Benchmarking through conducting performance assessment study as a first step. ACWUA collected data using an excel sheet designed by IBNET for 32 utilities despite the challenges faced when collecting the data. Due to the delay in receiving the data from the ACWUA members, which resulted in lack of data resources and the data (if any) was received after the contract with IBNET has ended; this caused loss of money and reputation. Eng. Khaldon Khashman stepped in at this point and emphasized on the importance of providing ACWUA with the accurate data on time and commitment of everyone in future projects.

ACWUA will launch a regional initiative for MDGs Monitoring. It is a new project requested by the Arab Ministerial Water Council and will be implemented in cooperation with UN-ESCWA. The project titled: Establishing a Regional Mechanism for Improved Monitoring and Reporting on Access to Water Supply and Sanitation Services in the Arab Region" (MDG+ Initiative). This project requires cooperation from all ACWUA members and other related entities to collect water supply and sanitation indicators in urban and rural areas and update the Arab status towards MDGs. ACWUA has MDG+ unit and all data will be hosted in this unit.

Finally, Mustafa shared with the participants the next steps for Benchmarking in ACWUA and they are;

1. Activating the Benchmarking Technical Working Group, which can be the starting point for national and regional benchmarking activities
2. Translation of the Benchmarking manual by IWA to be accessible to the Arab countries to share knowledge about international best practices in performance assessment and performance improvement

Mr. Thomas Peterman explained the criteria for participants to be members of the Benchmarking TWG as follows:

1. The volunteer is an expert in Benchmarking not only understands the concept
2. Currently working in the water sector either public, regulator entities and utilities
3. Experience in Performance Indicators and management/development
4. Works in an entity that is a member of ACWUA
5. Experience/knowledge in performance management
6. Commitment and availability of time to be part of this TWG
7. Approval from the supervisor/employer to be part of this TWG
8. Gender equality

The participants were a bit confused about the criteria explained, however, it was then clarified that it's not necessary to apply all the criteria.

Finally, the participants suggested that interested entities send ACWUA suggested CVs and ACWUA will choose and this was agreed on.

Closing session:

Mostafa went through the expectations the participants shared in the first day of the training and asked the participants to share one point that they have learnt and will apply it in their country.

1. Spread awareness
2. Management support
3. Understanding where the entity currently stands/current position
4. Learning process
5. Better understanding of Benchmarking and how to apply it in our country with different utilities
6. Unifying the Benchmarking concept
7. Activate the Benchmarking concept in the utilities in our country for better performance
8. Benchmarking is a continuous process!

Suggestions:

1. ACWUA to call for specialized training in Benchmarking and ask members to provide case studies about Benchmarking
2. To build a network between the participants in all the trainings conducted to share experiences

Annexes

1. **Detailed Program / Agenda**
2. **List of participants**
3. **Photos (general and day by day evaluation)**
4. **Presentations**

Annex 1 :

Detailed Program / Agenda

ACWUA-GIZ Regional Training for senior managers

Key Performance Indicators and Benchmarking for Water Utilities in the MENA / Arab Region

30 - 31 January 2013, Amman – Jordan

Day 1: 30 January 2013	
Session 1:	**Official Opening and Introduction Session**
8.30 h	Registration
9.00 h	Official Welcome by ACWUA and GIZ , The ACWUA capacity building programme in the MENA region
	Introduction Session: Agenda and organisational issues. General assignments
9.20 h	Expectations from the group
Session 2:	**Performance Indicator systems**
09.45 h	1. **Overview** (Eng. Mostafa Biad): Performance measurement in utilities using performance indicator systems
10.15 h	2. **Examples** from the utilities: Performance Indicators system for utility management. case studies from the region (MENA)
11.00 h	3. **Discussions**: How to use PI's to improve management utilities, strengths, weaknesses, best practices
12.30 – 14 h	**Lunch**
Session 3:	**Benchmarking, Introduction**
14.00 h	1. **Overview** (George Rizkallah): Common understanding of benchmarking
14.20 h	2. **International experiences in benchmarking**: (Mostafa Biad & Filip Bertzbach, Aquabench, Germany)
15.00 h	3. **Working group**: What to learn from experiences at utility, national and regional levels
16.15 h	4. **Plenary discussion**
17.30 h	**Closing day 1**
Day 2: 31 January 2013	
Session 4:	**Benchmarking in Practice**
8.45 h	Feedback by the group day 1
09.00 h	1. **Benchmarking in Practice** (Mostafa Biad):
10.00 h	2. **How to set and apply a benchmarking system?** (Filip Bertzbach, Mustafa Nasereddin)
10.30 h	3. **Q/A**
11.15 h	4. **Applications in the MENA region at national/utility level. Group and Plenary discussions**
12.45-14. h	Lunch
Session 5:	**Benchmarking in the region, The Way Forward**
14.00 h	1. **Where we stand in the region?** (Benchmarking Working group of ACWUA) Mustafa Nasereddin
14.30 h	2. **Working groups: Prerequisites and requirements for setting benchmarking systems in the region** (how to get started?)
15.30 h	3. **Plenary presentations**
16.30 h	4. **The way forward**: next steps and action plan, (Benchmarking Working group of ACWUA)
17.00 h	**Conclusion and Outlook** Closing by ACWUA and GIZ

Annex 2:

Participant List

Training Course for Senior Managers
On Performance Indicators and Benchmarking for Water Utilities
in the MENA / Arab Region
January 30 -31, 2013

N	G	Name	Country	Organization	Poistion	e-mail
1	f	Seham Mohammad	Egypt	Holding Company for Water and Wastewater	Manager	Seham.Mohamed@hcww.com.eg
2	m	Ahmad Gaber	Egypt	Alexandria Water Company	Chairman	ahmedgaber@alexwater.com.eg
3	m	Mohammad Abdelrahman	Egypt	Cairo Water Company	Chairman	mohamed_reda_01@yahoo.com
4	m	Ahmad Fouad	Egypt	Jiza Company for Water and Wastewater	Chairman	cau@cgww.com
5	m	Izzat Ibrahim Sayyad	Egypt	Manofya Company for Water and Wastewater	Chairman	eng_ezzat_elsayad@hotmail.com
6	m	Omar Mohammad Salah	Egypt	Gharbiya Company for Water and Wastewater	Chairman	oms_1183@yahoo.com
7	m	Badr Abdrabbo	Egypt	Kafr Shaikh Company for Water and Wastewater	Manager	Seham.Mohamed@hcww.com.eg
8	m	Sameh Ahmed	Egypt	Holding Company for Water and Wastewater	Consultant	sahmed@hcww.com.eg
9	f	Nadia Abdou	Egypt	General Assembly of ACWUA	Head of General Assembly	n.abdou2011@ymail.com
10	m	Mohammad Hassan	Egypt	Egyption Water and Wastewater Regulatory Agency	Chairman	mohammad.hasan@ewra.gov.eg
11	m	Mohammad Beltagy	Egypt	Ministry of Water Resources and Irrigation	Head of Irrigation Sector	irr_sec@yahoo.com
12	m	Abulraqeeb Mukbel	Yemen	Zabit Utility	Manager	amukbel@yahoo.com
13	m	Abdelrakeed Al Shurmani	Yemen	Local Water & Sanitation Corporation - IBB	General Manager	alshurmani@gmail.com
14	m	Abdelsalam Razzaz	Yemen	Ministry of Water and Environment	Minister	swslc@y-net.ye
15	m	Adel Hadadd	Yemen	General Authority for Rural Water Supply abd sanaitation Projects	Chairman	adel.alhadad@hotmail.com
16	m	Amin Moghales	Yemen	Local Water & Sanitation Corporation - Hajjah	Chairman	am.saif2010@gmail.com
17	m	Nagib Ahmed	Yemen	Local Water & Sanitation Corporation - Adan	Chairman	nagib_20052025@yahoo.com
18	m	Abdelsalam Hakimi	Yemen	Local Water & Sanitation Corporation - Taaiz	Chairman	asalam@y-net.ye
19	m	Abbas Abdelrahman	Yemen	Local Water & Sanitation Corporation - Dammar	Chairman	swslc@y-net.ye
20	m	Abdelqader hanash	Yemen	National Water and Sanitation Authority	Chairman	engtaha3@gmail.com
21	m	Taha Al Washali	Yemen	Ministry of Water and Environment	General Manager of Projects Department	engtaha3@gmail.com
22	m	Taher Al Sagwani	Oman	Oman Water Soceity	Member of Board of Directors	taherallawati@googlemail.com
23	m	Sulieman Al Qasmi	Oman	Haya Water	General Manager	suleimanqasmi@haya.com.om
24	f	Rana Al Ahmadi	Lebanon	Ministry of Electricty and Water	Senior Engineer	ranaya@inco.com.lb
25	f	Mona El Hajj Sleuiman	Lebanon	Ministry of Electricty and Water	Senior Engineer	monasleiman2002@hotmail.com
26	m	Bassam Jaber	Lebanon	Lebanon Water and Wastewater Sector Support	Senior Advisor	bassam_jaber@dai.com

27	m	Imad Al Zeer	Palestine	Hebron Municipality	General Manager of Water Department	alzeerj@yahoo.com
28	m	Akram Nassar	Palestine	WSSA in bethlehem	General Manager	anassar@wssa-beth.org
29	m	Muneer jaradat	Palestine	JSC in jineen	General Manager	jsc_west@yahoo.com
30	m	Almutaz Abadi	Palestine	Palestinain Water Authority	Consultant	mutaz.abadi@gmail.com
31	m	Ahmad Hindi	Palestine	National Water Council	Unit Head	ahmadhindi19@yahoo.com
32	m	Imad Al Masri	Palestine	Nabuls Municapility	Unit Head	efmasri@nabuls.org
33	m	Hadi Belhaj	Tunis	National Company of Water Exploitation and Distribution	Chairman	sonede@sonede.com.tn
34	m	Chedli Maimoun	Tunis	National Company of Water Exploitation and Distribution	Director	c.mimoun@sonede.com.tn
35	m	Fethi Cheib	Tunis	National Company of Water Exploitation and Distribution	Director	f.cheib@sonede.com.tn
36	m	Abdelkarim Mechia	Algeria	A.D.E	Chairman	nabilakadri2012@gmail.com
37	m	Salah Eddin Charit	Algeria	A.D.E	Director de Zone	zone2cheif@gmail.com
38	m	Abdelslem Zabat	Algeria	A.D.E	Head Unit	adesaida@yahoo.fr
39	m	Farid ladjel	Algeria	National Office for Sewage	Manager of the Tizi	faridladjel@yahoo.fr
40	m	Mohammed Ait Bella	Morocco	ONEE	Director of CHTOUKA AIT BAHA District	maitbella@hotmail.com
41	m	Rhidouani Abdeljalile	Morocco	ONEE	Head of Water quality service	arhidouani@onee.ma
42	m	Said Lbadaoui	Morocco	ONEE	Director of El Haouz District	slbadaoui@onee.ma
43	m	Benchekh Zakarya	Morocco	ONEE	Engineer at ONEE Regional Department of Tangier	zbenchekh@onee.ma
44	m	Wahabi Rachid	Morocco	Ministry of Health	Director	wahabirachid3@gmail.com
45	f	Samaher Al Akhras	Jordan	Water Authority of Jordan	Project Manager	s.al-akhrass@mwi.gov.jo
46	m	Mohammad Waqfi	Jordan	Ministry of Water and Irrigation	Technical Monitoring and Auditing Manager	m_alwaqfi@hotmail.ca
47	m	Nesreen Nabulsi	Jordan	Jordan Water Company	Human Resources Admin	ninabulsi@miyahuna.com.jo
48	m	Naser Al- Nabulsi	Jordan	Jordan Water Company	Human Resources Director	nnabulsi@miyahuna.com.jo
49	m	Mohammad Zakaria Al- Talafha	Jordan	Jordan Water Company	Business Planning Unit Head	ztalafha@miyahuna.com.jo
50	m	Naem Saleh	Jordan	Aqaba Water	Acting CEO	n_saleh@awc.com.jo
51	m	Loui Joudeh	UAE	Regulation and Supervision Bereau	Technical Data Analyst	ljoudeh@rsb.gov.ae
52	m	Mohammad Ibrahim	Iraq	Ministry of Water Resources	Head of Groundwater Department	moha19562003@yahoo.com
53	f	Dhifaf Al Khafaji	Iraq	Ministry of Water Resources	Senior Engineer	dhmahdi@yahoo.com
54	m	Fouad Shalabi	Iraq	Ministry of Water Resources	General Manager for Survey	
55	m	Faisal Alrowaili	KSA	Bin Sammar Company	General Manager	modhenawy@yahoo.com
56	m	Khaldon Khashman	Jordan	ACWUA	Secertary General	khaldon_khashman@acwua.org
57	m	Mustafa Nasereddin	Jordan	ACWUA	Programs and Technical Services Director	mustafa_nasereddin@acwua.org
58	m	Ahmad Abu Saleem	Jordan	ACWUA	Projects and Programs Coordinator	ahmad_abusaleem@acwua.org
59	f	Majd Sulieman	Jordan	ACWUA Rapporteur	ACWUA Rapporteur	suleiman.majd@gmail.com
60	m	Mostafa Biad	Morocco	ONEE	ACWUA Trainer	mostafabiad@gmail.com
61	m	George Rizkallah	Egypt	ACWUA Trainer	ACWUA Trainer	rizkallah.george@gmail.com
62	m	Thomas Petermann	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Senior Program Manager: MENTA WANT	thomas.petermann@giz.de
63	f	Andrea Notz	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Project Manager MENA WANT Programme	andrea.notz@giz.de
64	m	Filip bertzbach	Germany	Aquabench	Trainer	f.bertzbach@aquabench.de

Annexes

1. **Detailed Program / Agenda**
2. **List of participants**
3. **Photos (general and day by day evaluation)**
4. **Presentations**

Annex 1 :

Detailed Program / Agenda

ACWUA-GIZ Regional Training for senior managers

Key Performance Indicators and Benchmarking for Water Utilities in the MENA / Arab Region30 - 31 Januray 2013 – Amman – Jordan

Day 1: 30 January 2013	
Session 1:	**Official Opening and Introduction Session**
8.30 h 9.00 h 9.20 h	Registration Official Welcome by ACWUA and GIZ , The ACWUA capacity building programme in the MENA region Introduction Session: Agenda and organisational issues. General assignments Expectations from the group
Session 2:	**Performance Indicator systems**
09.45 h 10.15 h 11.00 h	**1. Overview** (Eng. MostafaBiad): Performance measurement in utilities using performance indicator systems **2. Examples** from the utilities: Performance Indicators system for utility management. case studies from the region (MENA) **3. Discussions**: How to use PI's to improve management utilities, strengths, weaknesses, best practices
12.30 – 14 h	**Lunch**
Session 3:	**Benchmarking, Introduction**
14.00 h 14.20 h 15.00 h 16.15 h 17.30 h	**1. Overview** (George Rizkallah): Common understanding of benchmarking **2. International experiences in benchmarking**: (MostafaBiad&FilipBertzbach, Aquabench, Germany) **3. Working group**: What to learn from experiences at utility, national and regional levels **4. Plenary discussion** **Closing day 1**
Day 2: 31 January 2013	
Session 4:	**Benchmarking in Practice**
8.45 h	Feedback by the group day 1
09.00 h 10.00 h 10.30 h 11.15 h	**1. Benchmarking in Practice** (MostafaBiad): **2. How to set and apply a benchmarking system?** (FilipBertzbach, Mustafa Nasereddin) **3. Q/A** **4. Applications in the MENA region at national/utility level. Group and Plenary discussions**
12.45-14.00 h	Lunch
Session 5:	**Benchmarking in the region, The Way Forward**
14.00 h 14.30 h 15.30 h 16.30 h	**1. Where we stand in the region?** (Benchmarking Working group of ACWUA) Mustafa Nasereddin **2. Working groups: Prerequisites and requirements for setting benchmarking systems in the region** (how to get started?) **3. Plenary presentations** **4. The way forward**: next steps and action plan, (Benchmarking Working group of ACWUA)
17.00 h	**Conclusion and Outlook** Closing by ACWUA and GIZ

Annex 2:

Participant List

Training Course for Senior Managers
On Performance Indicators and Benchmarking for Water Utilities
in the MENA / Arab Region
January 30 -31, 2013

N	G	Name	Country	Organization	Poistion	e-mail
1	f	Seham Mohammad	Egypt	Holding Company for Water and Wastewater	Manager	Seham.Mohamed@hcww.com.eg
2	m	Ahmad Gaber	Egypt	Alexandria Water Company	Chairman	ahmedgaber@alexwater.com.eg
3	m	Mohammad Abdelrahman	Egypt	Cairo Water Company	Chairman	mohamed_reda_01@yahoo.com
4	m	Ahmad Fouad	Egypt	Jiza Company for Water and Wastewater	Chairman	cau@cgww.com
5	m	Izzat Ibrahim Sayyad	Egypt	Manofya Company for Water and Wastewater	Chairman	eng_ezzat_elsayad@hotmail.com
6	m	Omar Mohammad Salah	Egypt	Gharbiya Company for Water and Wastewater	Chairman	oms_1183@yahoo.com
7	m	Badr Abdrabbo	Egypt	Kafr Shaikh Company for Water and Wastewater	Manager	Seham.Mohamed@hcww.com.eg
8	m	Sameh Ahmed	Egypt	Holding Company for Water and Wastewater	Consultant	sahmed@hcww.com.eg
9	f	Nadia Abdou	Egypt	General Assembly of ACWUA	Head of General Assembly	n.abdou2011@ymail.com
10	m	Mohammad Hassan	Egypt	Egyption Water and Wastewater Regulatory Agency	Chairman	mohammad.hasan@ewra.gov.eg
11	m	Mohammad Beltagy	Egypt	Ministry of Water Resources and Irrigation	Head of Irrigation Sector	irr_sec@yahoo.com
12	m	Abulraqeeb Mukbel	Yemen	Zabit Utility	Manager	amukbel@yahoo.com
13	m	Abdelrakeed Al Shurmani	Yemen	Local Water & Sanitation Corporation - IBB	General Manager	alshurmani@gmail.com
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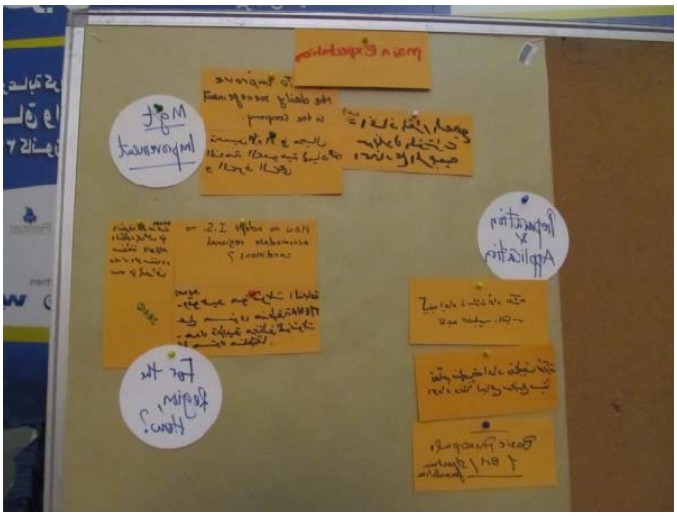
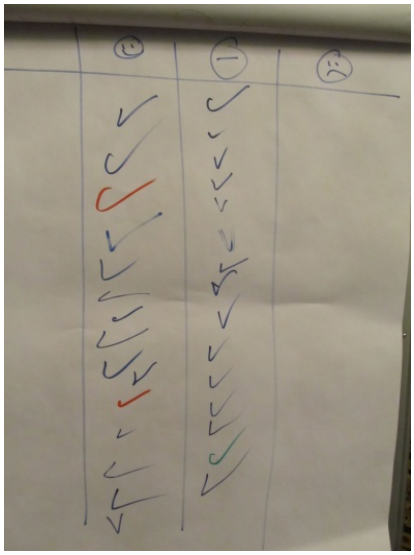
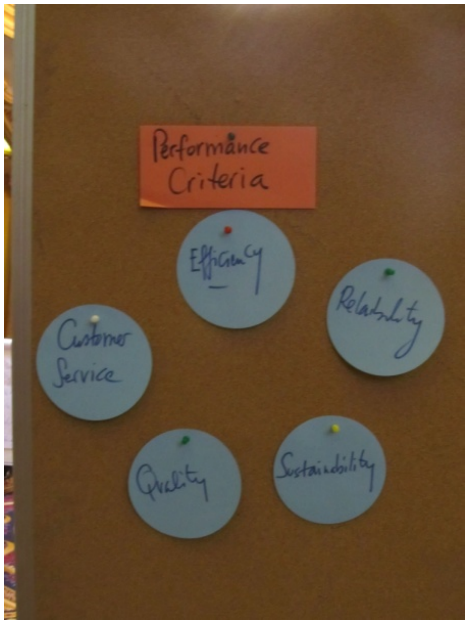
17	m	Nagib Ahmed	Yemen	Local Water & Sanitation Corporation - Adan	Chairman	nagib_20052025@yahoo.com
18	m	Abdelsalam Hakimi	Yemen	Local Water & Sanitation Corporation - Taaiz	Chairman	asalam@y-net.ye
19	m	Abbas Abdelrahman	Yemen	Local Water & Sanitation Corporation - Dammar	Chairman	swslc@y-net.ye
20	m	Abdelqader hanash	Yemen	National Water and Sanitation Authority	Chairman	engtaha3@gmail.com
21	m	Taha Al Washali	Yemen	Ministry of Water and Environment	General Manager of Projects Department	engtaha3@gmail.com
22	m	Taher Al Sagwani	Oman	Oman Water Soceity	Member of Board of Directors	taherallawati@googlemail.com
23	m	Sulieman Al Qasmi	Oman	Haya Water	General Manager	suleimanqasmi@haya.com.om
24	f	Rana Al Ahmadi	Lebanon	Ministry of Electricty and Water	Senior Engineer	ranaya@inco.com.lb
25	f	Mona El Hajj Sleuiman	Lebanon	Ministry of Electricty and Water	Senior Engineer	monasleiman2002@hotmail.com
26	m	Bassam Jaber	Lebanon	Lebanon Water and Wastewater Sector Support	Senior Advisor	bassam_jaber@dai.com

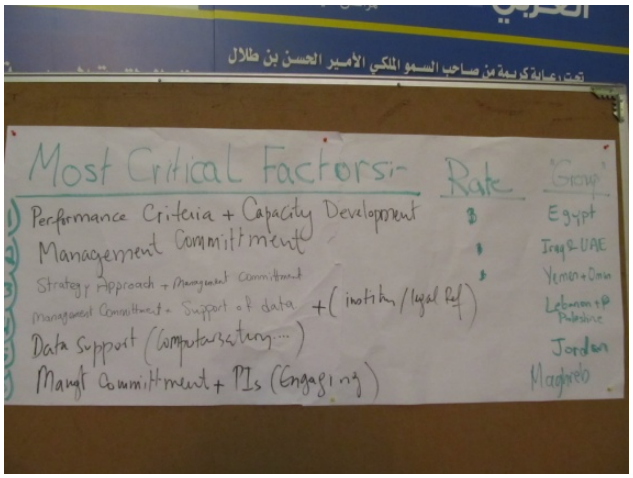
27	m	Imad Al Zeer	Palestine	Hebron Municipality	General Manager of Water Department	alzeerj@yahoo.com
28	m	Akram Nassar	Palestine	WSSA in bethlehem	General Manager	anassar@wssa-beth.org
29	m	Muneer jaradat	Palestine	JSC in jineen	General Manager	jsc_west@yahoo.com
30	m	Almutaz Abadi	Palestine	Palestinain Water Authority	Consultant	mutaz.abadi@gmail.com
31	m	Ahmad Hindi	Palestine	National Water Council	Unit Head	ahmadhindi19@yahoo.com
32	m	Imad Al Masri	Palestine	Nabuls Municapility	Unit Head	efmasri@nabuls.org
33	m	Hadi Belhaj	Tunis	National Company of Water Exploitation and Distribution	Chairman	sonede@sonede.com.tn
34	m	Chedli Maimoun	Tunis	National Company of Water Exploitation and Distribution	Director	c.mimoun@sonede.com.tn
35	m	Fethi Cheib	Tunis	National Company of Water Exploitation and Distribution	Director	f.cheib@sonede.com.tn
36	m	Abdelkarim Mechia	Algeria	A.D.E	Chairman	nabilakadri2012@gmail.com
37	m	Salah Eddin Charit	Algeria	A.D.E	Director de Zone	zone2cheif@gmail.com
38	m	Abdelslem Zabat	Algeria	A.D.E	Head Unit	adesaida@yahoo.fr
39	m	Farid ladjel	Algeria	National Office for Sewage	Manager of the Tizi	faridladjel@yahoo.fr
40	m	Mohammed Ait Bella	Morocco	ONEE	Director of CHTOUKA AIT BAHA District	maitbella@hotmail.com
41	m	Rhidouani Abdeljalile	Morocco	ONEE	Head of Water quality service	arhidouani@onee.ma
42	m	Said Lbadaoui	Morocco	ONEE	Director of El Haouz District	slbadaoui@onee.ma
43	m	Benchekh Zakarya	Morocco	ONEE	Engineer at ONEE Regional Department of Tangier	zbenchekh@onee.ma
44	m	Wahabi Rachid	Morocco	Ministry of Health	Director	wahabirachid3@gmail.com
45	f	Samaher Al Akhras	Jordan	Water Authority of Jordan	Project Manager	s.al-akhrass@mwi.gov.jo
46	m	Mohammad Waqfi	Jordan	Ministry of Water and Irrigation	Technical Monitoring and Auditing Manager	m_alwaqfi@hotmail.ca
47	m	Nesreen Nabulsi	Jordan	Jordan Water Company	Human Resources Admin	ninabulsi@miyahuna.com.jo
48	m	Naser Al- Nabulsi	Jordan	Jordan Water Company	Human Resources Director	nnabulsi@miyahuna.com.jo
49	m	Mohammad Zakaria Al- Talafha	Jordan	Jordan Water Company	Business Planning Unit Head	ztalafha@miyahuna.com.jo
50	m	Naem Saleh	Jordan	Aqaba Water	Acting CEO	n_saleh@awc.com.jo
51	m	Loui Joudeh	UAE	Regulation and Supervision Bereau	Technical Data Analyst	ljoudeh@rsb.gov.ae
52	m	Mohammad Ibrahim	Iraq	Ministry of Water Resources	Head of Groundwater Department	moha19562003@yahoo.com
53	f	Dhifaf Al Khafaji	Iraq	Ministry of Water Resources	Senior Engineer	dhmahdi@yahoo.com
54	m	Fouad Shalabi	Iraq	Ministry of Water Resources	General Manager for Survey	
55	m	Faisal Alrowaili	KSA	Bin Sammar Company	General Manager	modhenawy@yahoo.com
56	m	Khaldon Khashman	Jordan	ACWUA	Secertary General	khaldon_khashman@acwua.org
57	m	Mustafa Nasereddin	Jordan	ACWUA	Programs and Technical Services Director	mustafa_nasereddin@acwua.org
58	m	Ahmad Abu Saleem	Jordan	ACWUA	Projects and Programs Coordinator	ahmad_abusaleem@acwua.org
59	f	Majd Sulieman	Jordan	ACWUA Rapporteur	ACWUA Rapporteur	suleiman.majd@gmail.com
60	m	Mostafa Biad	Morocco	ONEE	ACWUA Trainer	mostafabiad@gmail.com
61	m	George Rizkallah	Egypt	ACWUA Trainer	ACWUA Trainer	rizkallah.george@gmail.com
62	m	Thomas Petermann	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Senior Program Manager: MENTA WANT	thomas.petermann@giz.de
63	f	Andrea Notz	Germany	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Project Manager MENA WANT Programme	andrea.notz@giz.de
64	m	Filip bertzbach	Germany	Aquabench	Trainer	f.bertzbach@aquabench.de

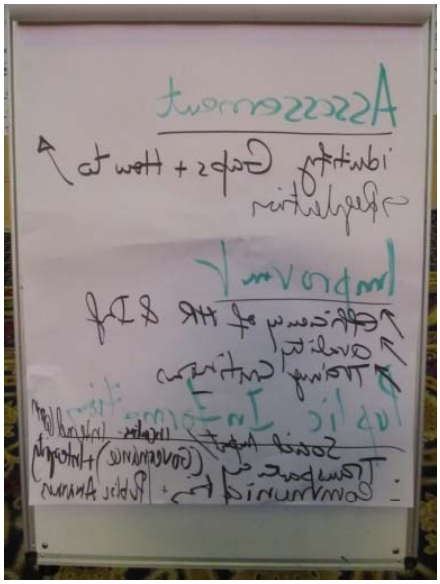
Annex 3: Photos - General Photos (day by day) and Evaluation photos (Day one)





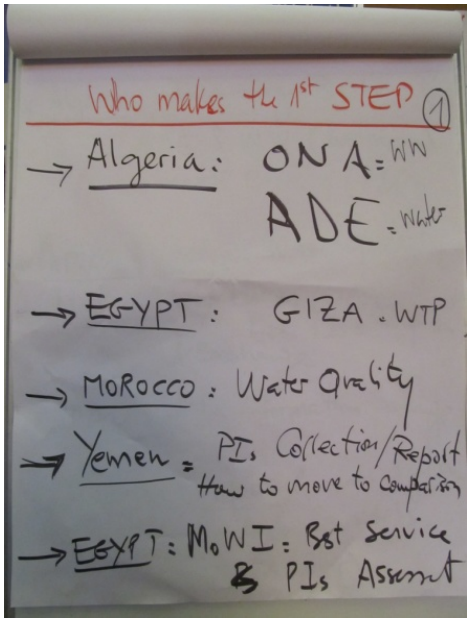

Performance Criteria
Efficiency
Reliability
Customer Service
Quality
Sustainability

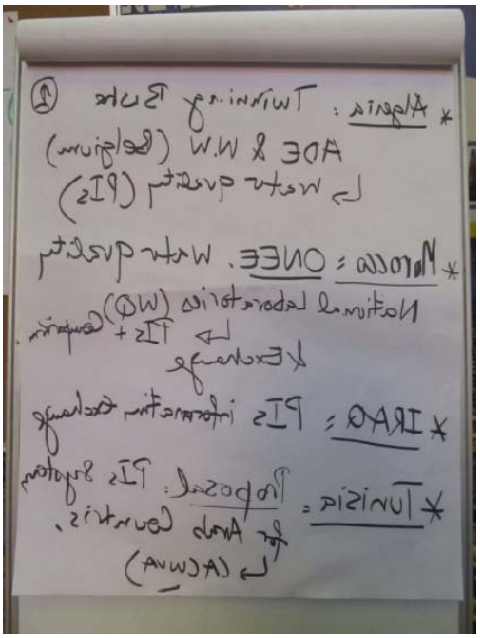

Most Critical Factors:-
Rate
Group
Performance Criteria + Capacity Development
Management Committment
Strategy Approach + Management Committment
Management Committment + Support of data + (institu / legal ref)
Data Support (Computerisating....)
Managt Committment + PIs (Engaging)
Egypt
Iraq & UAE
Yemen + Oman
Lebanon + P Palestine
Jordan
Maghreb

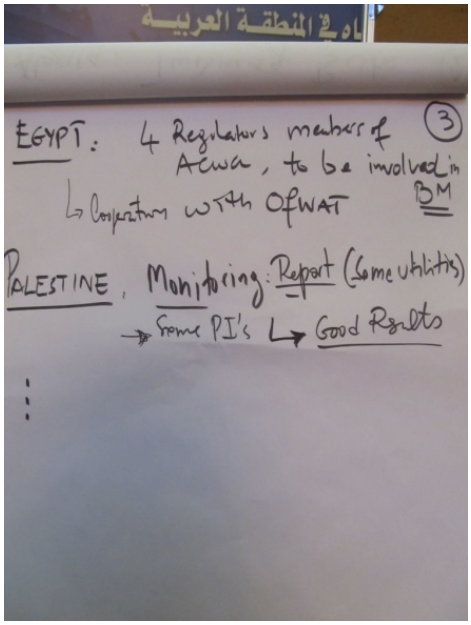


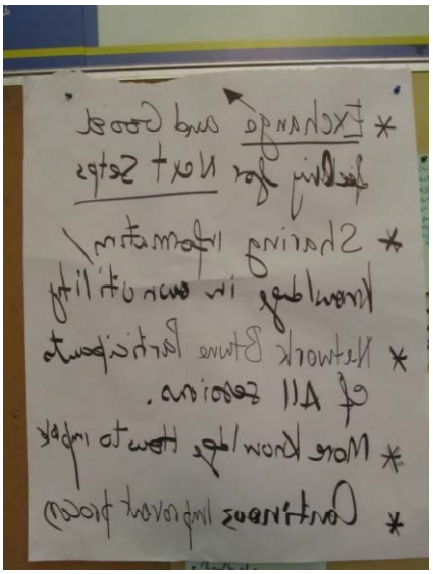
Training Awareness
Pilot Utility
Short Sample
Few PIs in Some areas.
Explanatory Factors
Define Own Goals

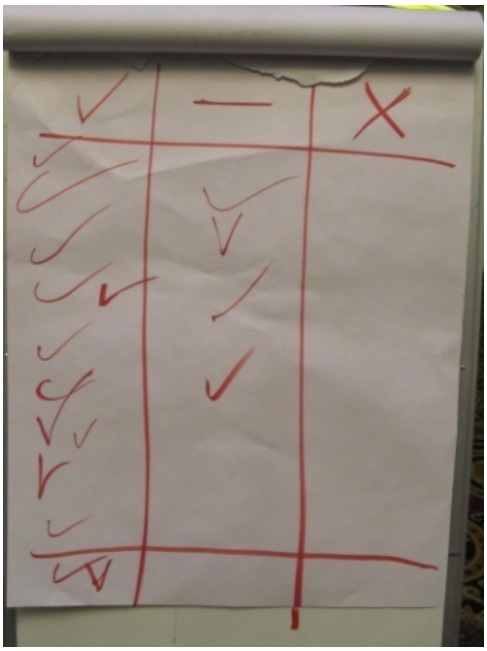
Day two.

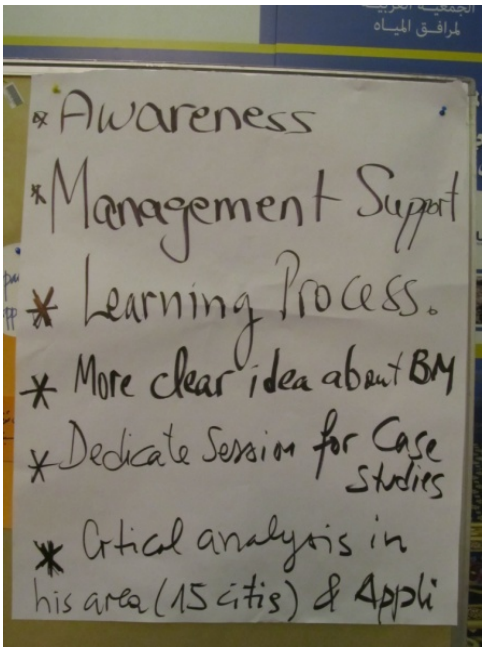

Who makes the 1st STEP (1)
→ Algeria: ONA = WW
ADE = water
→ EGYPT: GIZA . WTP
→ MOROCCO: Water Quality
→ Yemen = PIs Collection/Report
How to move to Comparison
→ EGYPT: MoWI: Best Service
& PIs Assessment

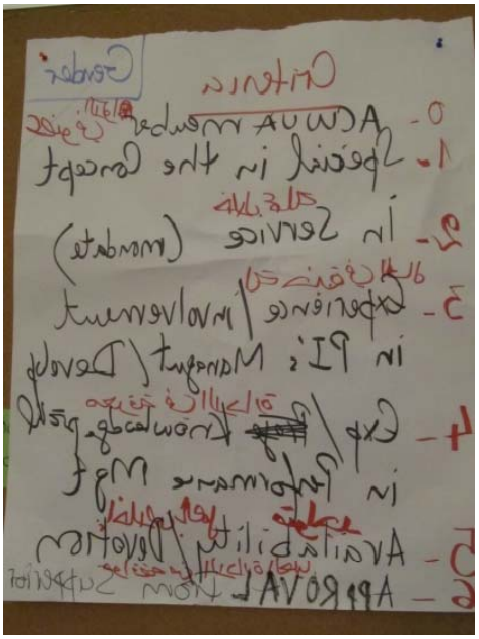



EGYPT: 4 Regulators members of Acwa, to be involved in BM (3)
↳ Comparison with OFWAT
PALESTINE, Monitoring: Report (Some utilities)
→ Some PI's ↳ Good Results
⋮






* Awareness
* Management Support
* Learning Process.
* More clear idea about BM
* Dedicate Session for Case Studies
* Critical analysis in his area (15 citis) & Appli



Annex 4: Presentations

giz

ACWUA

Welcome to the

Training Course for Senior Managers

Performance Indicators and Benchmarking for Water Utilities in the MENA / Arab Region

Amman, Jordan

January 30 – 31, 2013

Objectives of the Training

General objective :

How to use **indicators and benchmarking** systems as tools for utility **performance assessment/improvement**.

Specific objectives :

- Obtain an overview and introduction to **common/practical practices regarding PI's systems and Benchmarking**
- **Exposure to international and regional applications** will lead to an in-depth exchange of experience and lively discussion :
  - To contribute to the development of **useful indicators at national or organizational level**,
  - To promote **PIB** for use **within the MENA/Arab Region** in the context of the mandate of ACWUA (Benchmarking working group).

Course Agenda

Day 1	**Session 1: Official Opening and Introduction Session**
	Session 2: Performance Indicator systems
	1. Overview: Performance measurement in utilities using performance indicator systems 2. Case studies from the region: Performance Indicators system for utility management. 3. Group Work 1: State of the practice of PIs systems in our Utilities
	Session 3: Benchmarking, Introduction
	1. Overview: Benchmarking Introduction, Why Benchmarking 2. International experiences in benchmarking 3. Group Work 2: What to learn from experiences, projection to our region
Day 2	**Session 4: Benchmarking in Practice**
	1. Benchmarking in Practice : Success factors 2. How to set and apply a benchmarking system 3. Group Work 3: How to get started With Benchmarking at Utility/National /Region level.
	Session 5: Benchmarking in the region, The Way Forward
	1. Where we stand in the region? (Benchmarking Working group of ACWUA) 2. The way forward: next steps and action plan, (Benchmarking Working group of ACWUA)
	Session 6: Closing session

Training Team :

- Eng. Mostafa Biad– Morocco
- Mr. George Rizkallah – Palestine / USA
- Mr. Filip Bertzbach - Germany

Organisation:

- Eng. Mustafa Nasereddin (ACWUA)
- Eng. Ahmad Abusaleem (ACWUA),
- Dr. Thomas Petermann (GIZ),

Our slogan: Work hard – be smart

Welcome to the ARAB WATER WEEK

Training Course for Top Managers

Key Performance Indicators and Benchmarking for Water Utilities in the MENA / Arab Region

Amman, Jordan

January 30 - 31, 2013

Training Methods….

- Interactive training methods using Power Point Presentation (PPP)
- Active participatory learning Actions, i.e. Questions and reflections
- Feed Back of Group Discussions
- Case studies

Rules and Regulations

- Participation….
  - Please raise your hand if you have any participation / Comments
  - Please respect other opinions – We are here to learn from each other and share experiences.
- Starting Time
  - Starting daily at 9:00 am sharp
  - Please try to be in the training room by 8:45 am
- Breaks….
  - 10:15 am is 1st Coffee Break
  - 12:30 – 14:00 pm – Lunch Break
  - 15:30 pm is 2nd Coffee Break

Rules and Regulations, continue

- Cell phones....
  - At all times during working sessions is closed,
  - Please try to use your Cell phones **ONLY** during the breaks.

- Smoking....
  - This is a **NON SMOKING** Training Room
  - If you smoke, please look for the smoking room or go outside the Hotel

Principles of PALA

(Participatory Adult Learning Approach)

- Nobody knows everything
- Everybody knows something
- Every resource person is a participant and
- Every participant is a resource person
- All ideas/contributions are equally important
- Mutual respect amongst all
- Agreeing to disagree is more than welcome

Interactive training and visualisation, because....

- What we hear we forget
- What we hear and see, we remember
- What we hear, see and say, we understand
- What we do, we know

Participants Introduction and Expectations

Expectation from the training

By tables - 5 minutes using 2 coloured cards, one for Main and one for Secondary

By tables, please stand up and introduce yourself and the table's Expectations

Thank you for your attention

Training Team

Performance indicators

PIs System for utility management

Mostafa BIAD, Eng-MBA
mbiad@onee.ma

Methodological questions

- Why PIs system?
- How to define Performance Indicators?
- What do we mean by « Performance » ?
- How to compare PI's ?
- How to structure a PI-system?

Presentation outline

- Introduction to performance Indicators
- Elements of PI system
- PI's in water sector, IWA PI's
- Corporate vs Process PIs
- PI system in practice
  - Performance criteria
  - How to compare PI's : CI
  - PI system structure
  - Confidence grading

Need for information :

Challenges of the water and sanitation utilities

- Increasing demand on water and waste water companies to run their business more **effectively and efficiently**.
- **Water governance Framework** : accountability, transparency, openness, ..

PI Systems Purposes :

- Rate the overall effectiveness and efficiency of utility in quantifiable terms
- Highlights whether the organization is on track to achieve its desired goals

Why PIs : PI Systems Purposes

Utility management

- Strategic/structured planning and Pro-active approach
- Follow the long term performance of their systems,..
- Control the fulfillment of the pre-set targets (Monitoring tool)

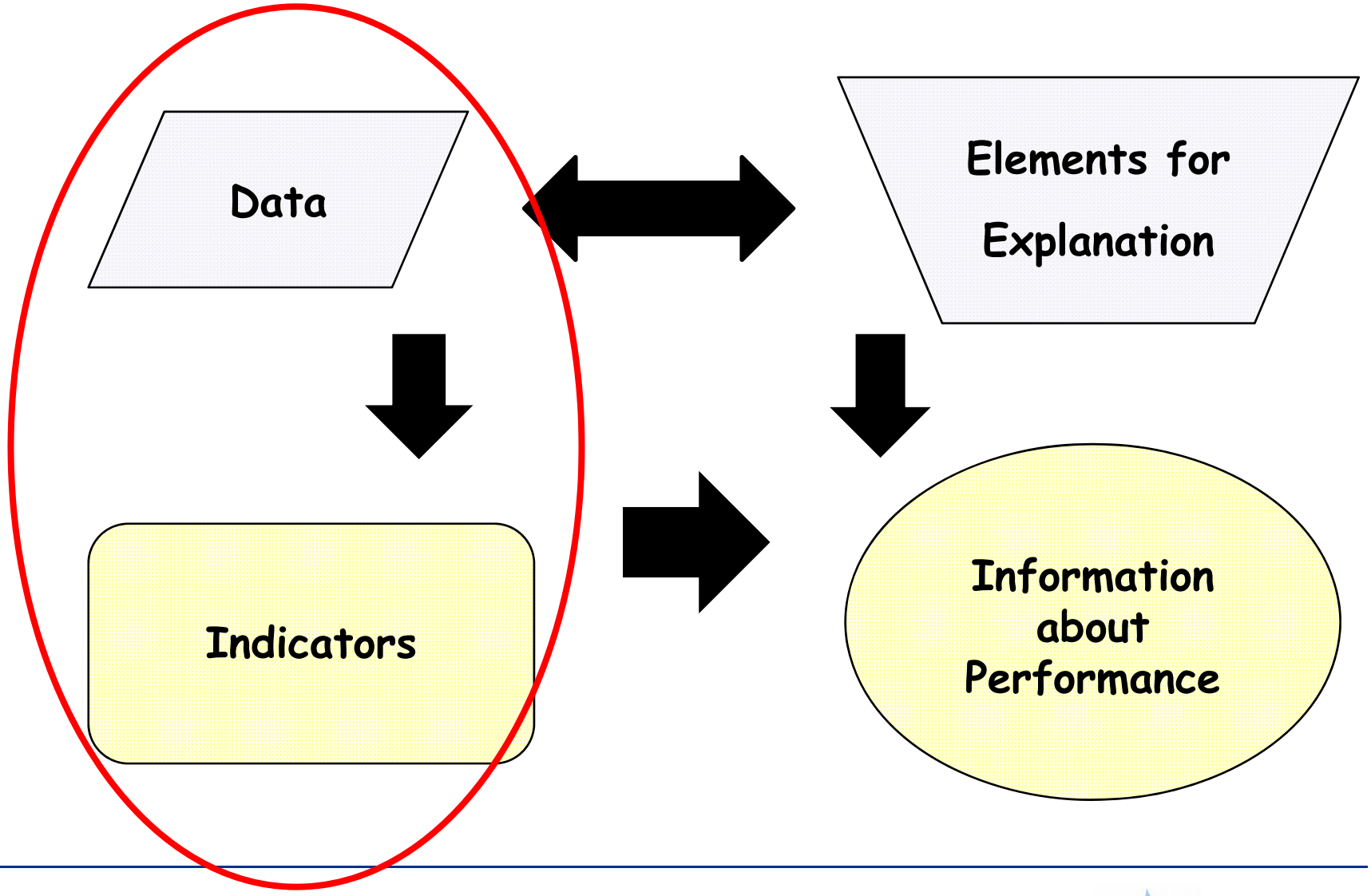
Benchmarking

- Comparison of the performance with other utilities
- Identify areas of good performance as well as areas where improvement is required ("learning from others" process)

External bodies (Regulation, Policy-making, NGO's)

- Monitoring and Formulation of policies
- Regulation/Information safeguard customer interests

Structure of PI system



Definitions : Elements of a PI System

- Many terms are used when handling figures : Data, variables, CI (context information), and PI's :
  - **Data elements** : Information in raw or unorganized form collected from the field or easily obtained (statistics, measurements)
  - **Variables** : an identified piece of data (Data elements in processing rules in order to define PI)
  - **PI** : is a combination of different variables to assess the efficiency and effectiveness of utility (compared to targets or within time frame)

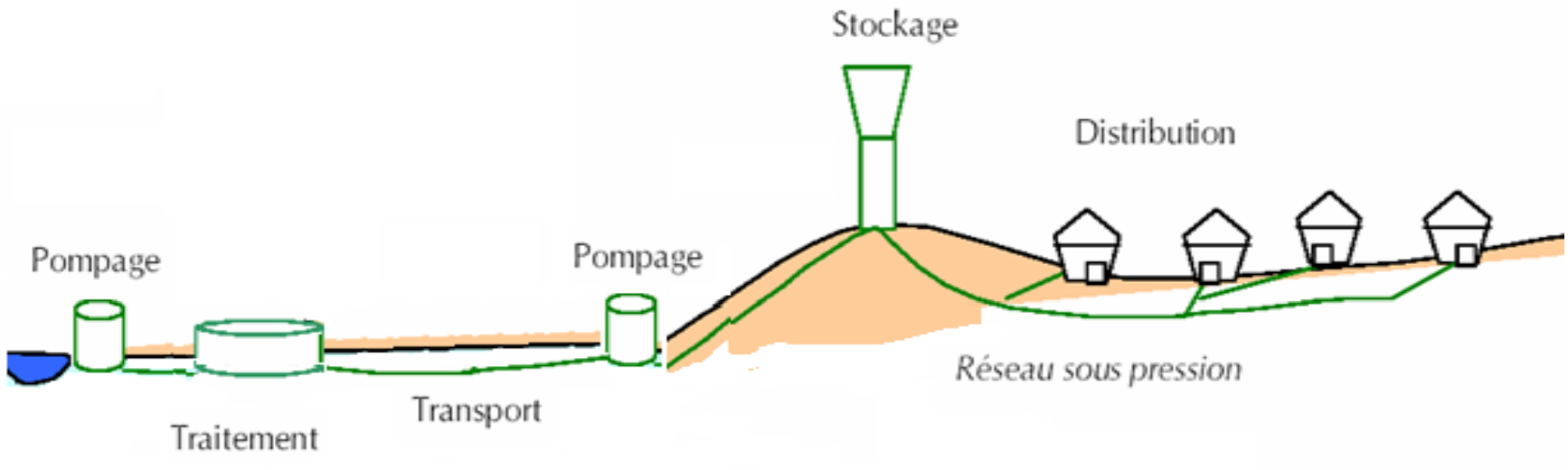
PIs Characteristics : SMART

- PI's need to be SMART, that is:
  - S = Specific;
  - M = Measurable;
  - A = Achievable;
  - R = Results oriented
    (i.e written as something to be achieved);
  - T = Time bound.

Elements of a PI System : Explanatory factors

- **Explanatory factors:**
  - **CI : Data elements that provide information on the inherent characteristics of utility and account for difference between systems**
  - **Any element used to explain PI values, the analysis stage**
  - **May be:**
    - **Driving factor (that depends on short or medium term management policies) or**
    - **Depend on context (i.e. on long term management policies) or**
    - **Depend on external factor (as climate, economy, topography that cannot be influenced by the entity)**
  - **Can be expressed:**
    - **Qualitatively** (aggregated information, e.g. poor rural area, demographics) or
    - **Quantitatively** (e.g. ground type, rainfall).

PIs in water sector : Describing the system



- Technical Indicators (Operation, function, etc.)
- financial performance indicator
- Productivity indicators
- Quality indicators

IWA Performance Indicators

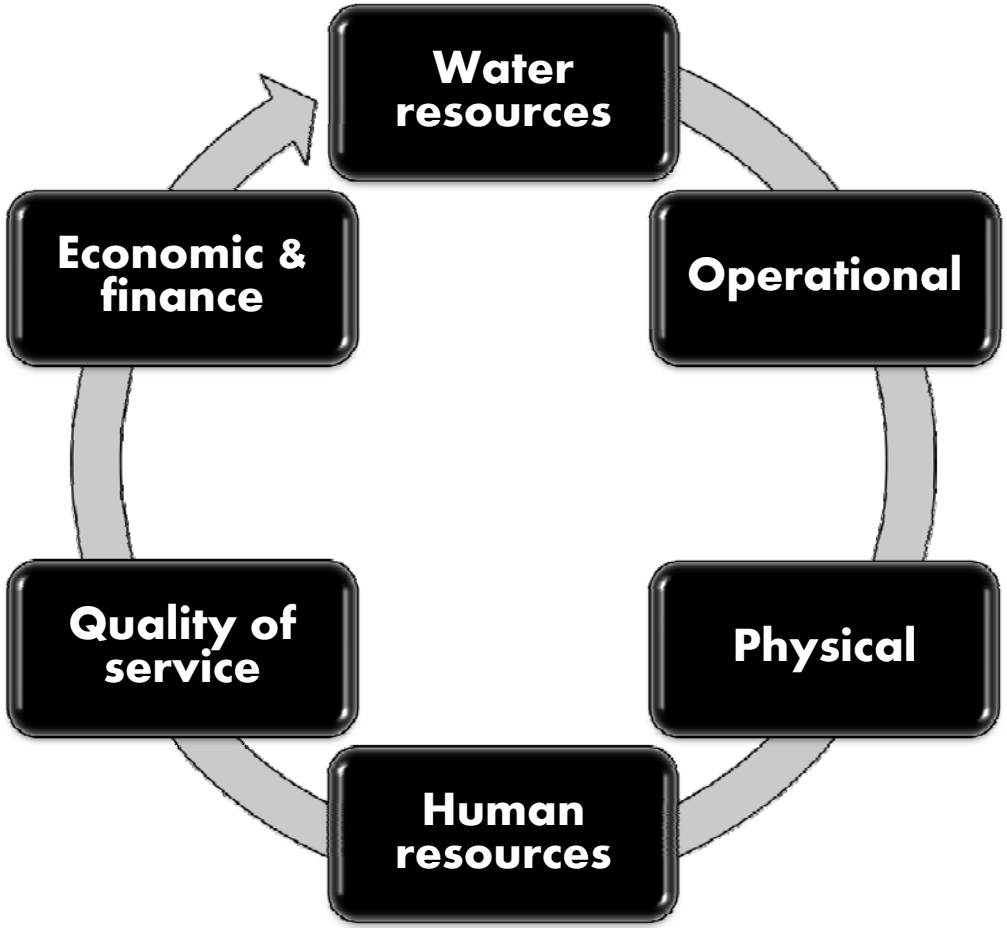
2000 – Performance indicators for water supply services

2002 – Process benchmarking in the water industry

2003 – Performance indicators for wastewater services

2006 – 2nd edition Water supply PIs

Domains of PIs (IWA Version)



Domains of PIs (IWA Version) : Operational

Examples

- NRW
  - Losses per mains length (m^3/km/time) : **LLI**
  - Same with apparent, real losses , ETC..
- Electricity consumption
  - Kwh/m^3 and \$/m^3
  - ..
- Facilities failures
  - Average number of days par year out of order
  - Average breaks per km/year (day/year)
- Water quality Monitoring
  - % tests performed / total tests required

Domains of PIs (IWA Version) : Examples

- **Physical**
  - Facilities (TP, PS, etc..) utilization
    - Maximum of the daily capacity used (%)
    - Number of hours per day/24 (%)
  - Storage capacity
    - Capacity of reservoir per unit of daily system inputs (days, hours)
  - Automation (remote control degree)
    - % of control units automated (remote controlled)
  - ...

Domains of PIs (IWA Version) : Examples

- **Personnel**
  - Productivity
    - Employees per 1000 Connections
    - Employees per Water produced
    - ..
  - Training
    - Hours training/staff/year
    - ..
  - Category of personnel
    - Personnel per main functions (%)
    - Personnel qualification, level of education (%)
    - ..

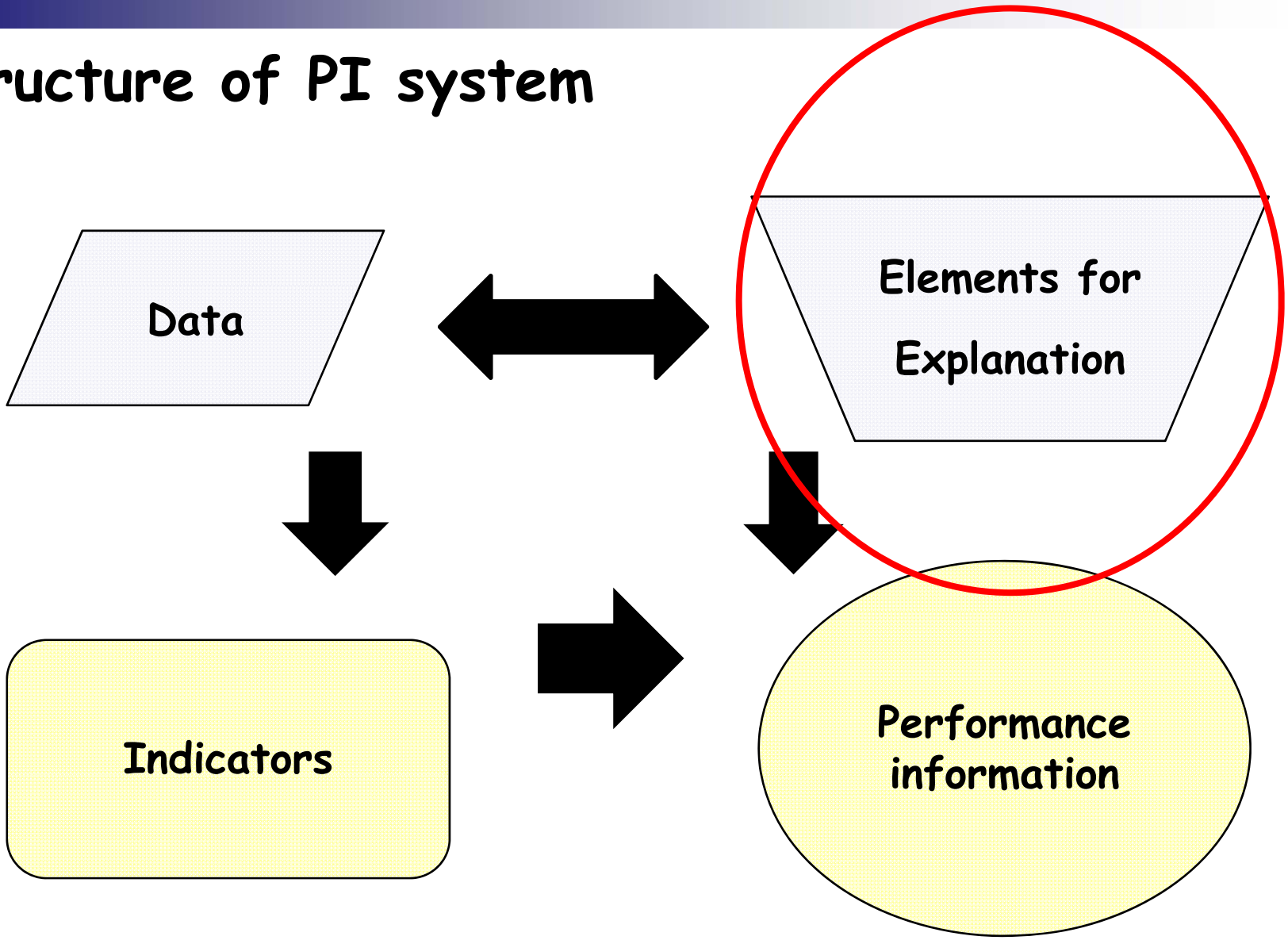
Domains of PIs (IWA Version) : Examples

- **Quality of service**
  - Service coverage
    - Population coverage (%)
    - Connection ratio (vs service ratio) : %
    - ..
  - Continuity of the service
    - % of hours of service (pressurized system)
  - Water quality
    - % of total tests complying with stabdards
    - ..

Domains of PIs (IWA Version) : Examples

- **Economic and Financial**
  - Unit revenue : $/m^3
  - Cost : Total cost ($/m^3)
    - Split in Capital cost and running cost (electricity, salaries, Chemicals, etc..% in)
  - Composition of running cost per function (%)
    - (HR, Finance, technical, commercial, etc..)
  - Efficiency :
    - Total cost coverage ratio (%)
    - same with operating cost
    - ..

Structure of PI system



Example : NRW, LLI (m^3/km/d)

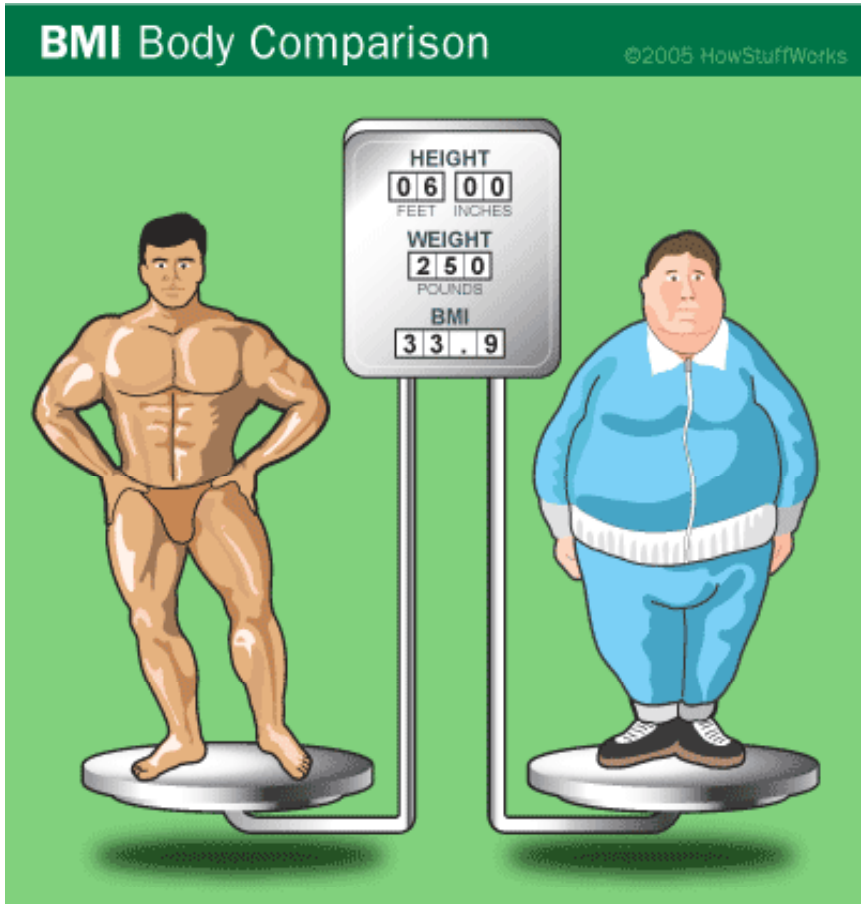
VEOLIA WATER : CI is CLI (m^3/km/d)

Type	Rural	Intermediary	Urban
Criteria	**CLI ≤ 10**	**10 < CLI ≤ 30**	**30 < CLI**
Good	LLI < 1	LLI < 3	**LLI < 7**
Acceptable	1 ≤ LLI < 3	**3 ≤ LLI < 7**	7 ≤ LLI < 12
Bad	**3 < LLI**	7 < LLI	12 < LLI

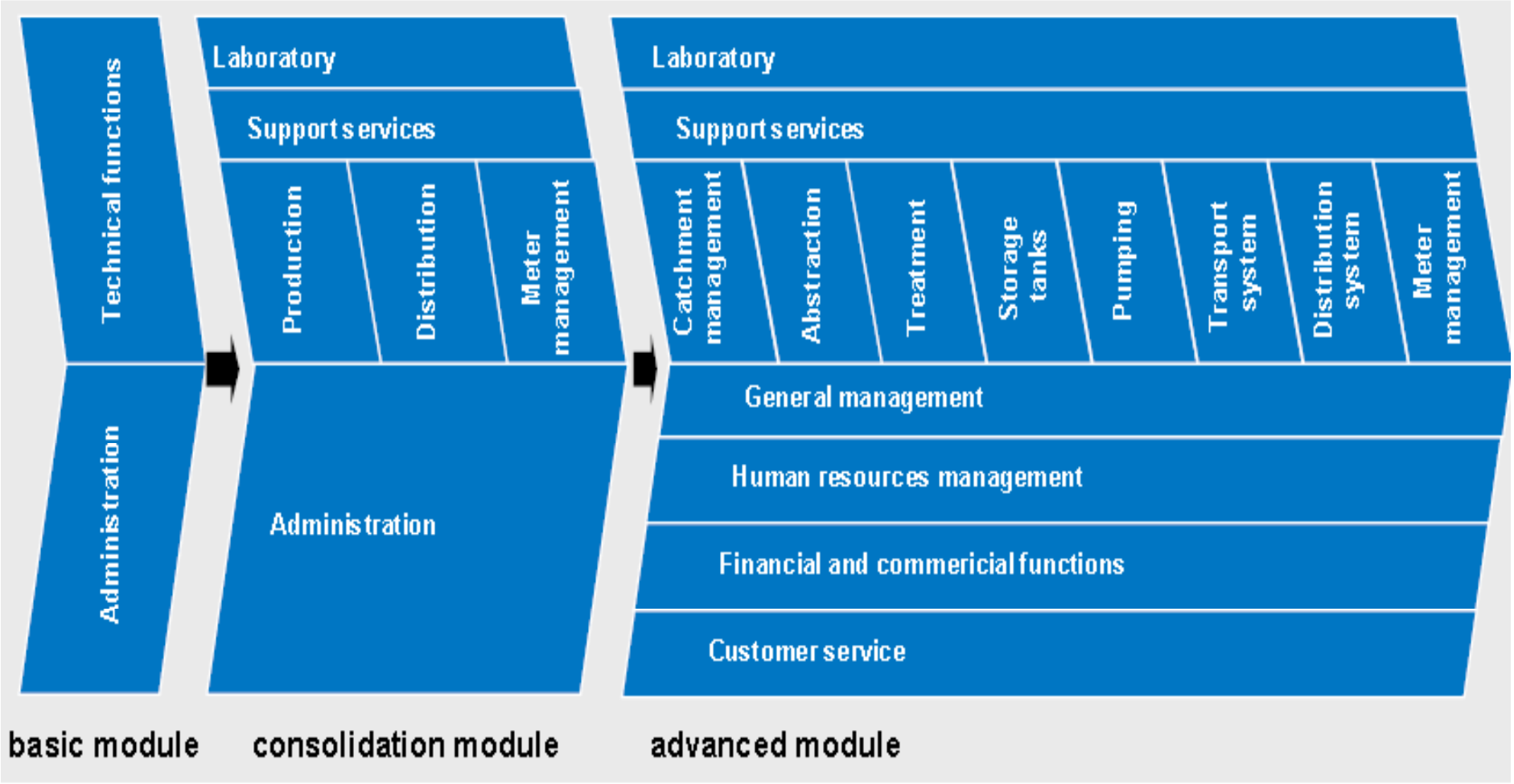
5 m^3/km/d

How to analyze Performance indicators ?

- A single PI can be very misleading if you are lacking additional information …
- The numeric value of an individual performance indicator is of very little value until it is put into its context



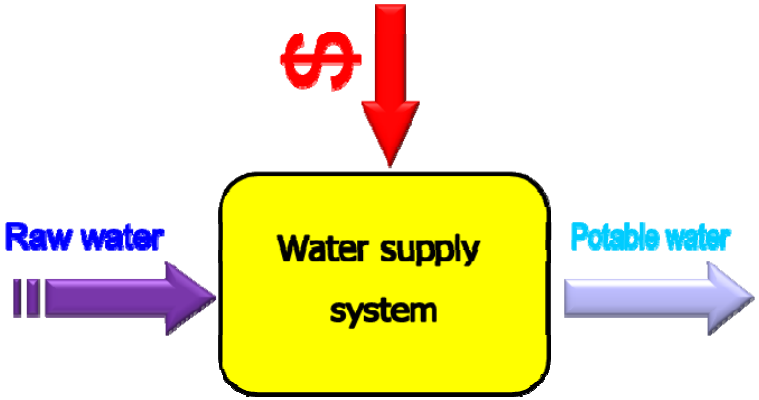
Integrated process model structure



Hierarchy of PI's

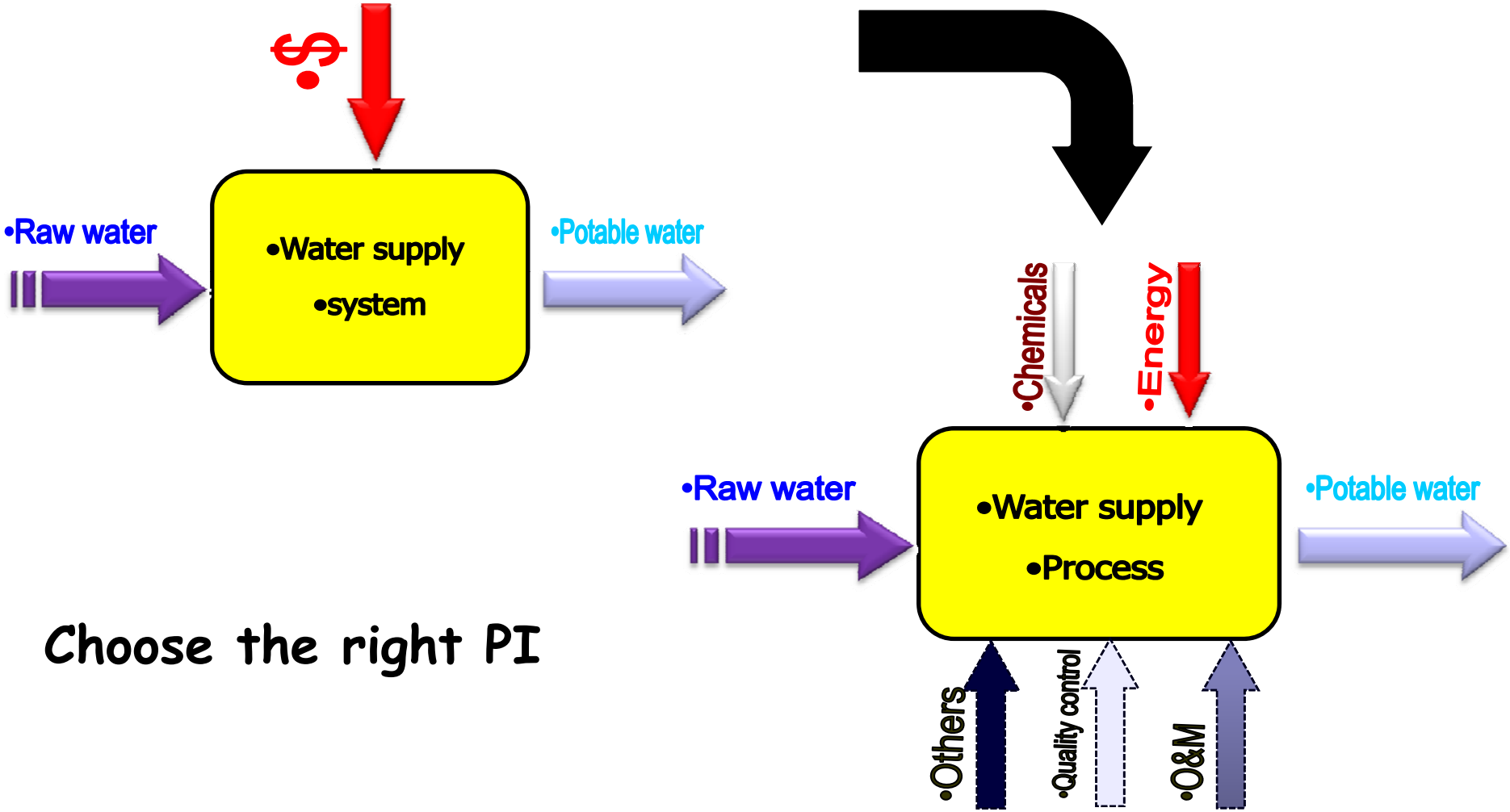
PI-System	Focus	Content - Users
Level 1 Wastewater utility	**Analyse of the utility** ▪ Economic efficiency ▪ Reliability ▪ Quality ▪ Service Quality ▪ Sustainability	**Aggregated PIs for top level management (PIs on wastewater utility level)**
Level 2 Wastewater utility Wastewater collection and transport → Wastewater treatment → Supporting processes	**Main focus** ▪ Operation of the sewer system ▪ Operation of the wastewater treatment plant ▪ ...	**Aggregated PIs (Key PIs on level 2)**
Level 3 Wastewater collection and transport → Wastewater treatment → Supporting processes Storage tanks and overflows Pumpingstations Transportation sewers Sludge treatment Degradation rate Fleet management Materials managements Controlling, cost and activity accounting, finance	**Main focus** ▪ Operation of storage tanks ▪ Operation of overflows ▪ Operation of WWTPs ▪ Supporting process strategies ▪ ...	**Numerus detailed PIs (on level 3)**

Example : Running cost



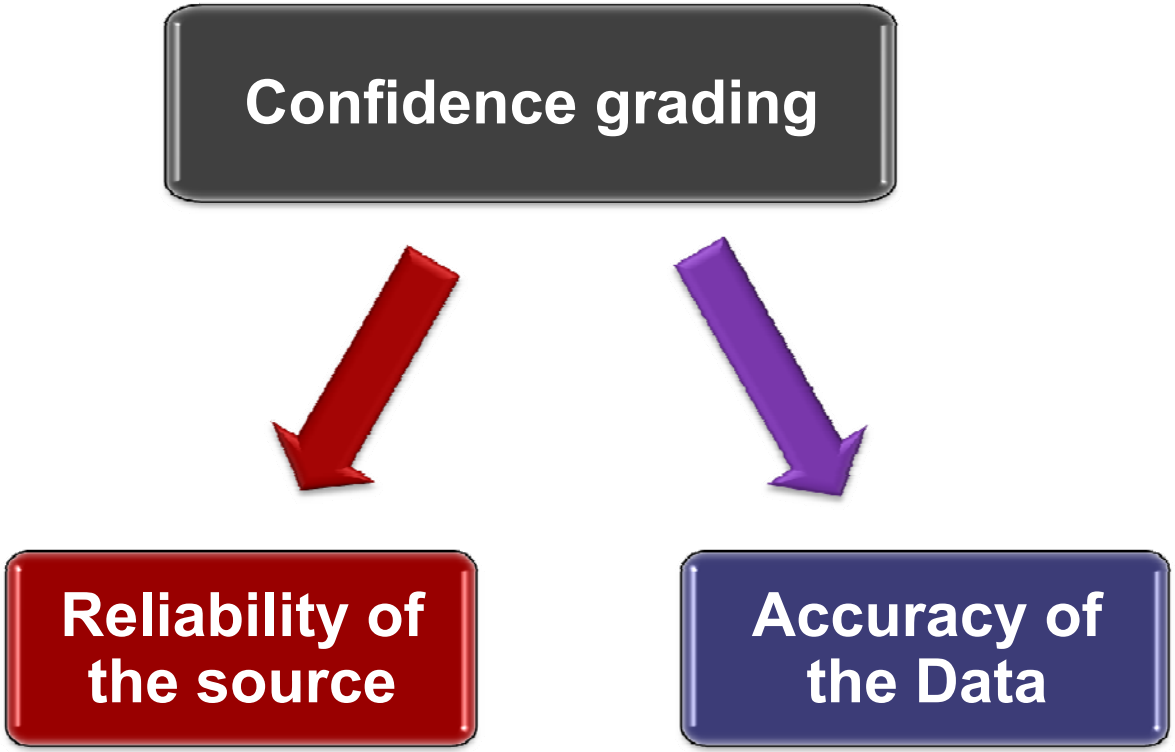
- Country/utility : $/m^3
- Comparison
- Analysis
- Discussion
- Need of more information
- Conclusions

Potable water : simplified process model (Corporate vs Process PIs)



Choose the right PI

Accuracy and reliability of Indicators



Confidence grading (IWA)

Accuracy Band	Associated uncertainty (U)
0 - 5 %	U ≤ ± 5 %
5 - 20 %	± 5 % ≤ U ≤ ± 20 %
20 - 50 %	± 20 % ≤ U ≤ ± 50 %
50%	U > ± 50 %

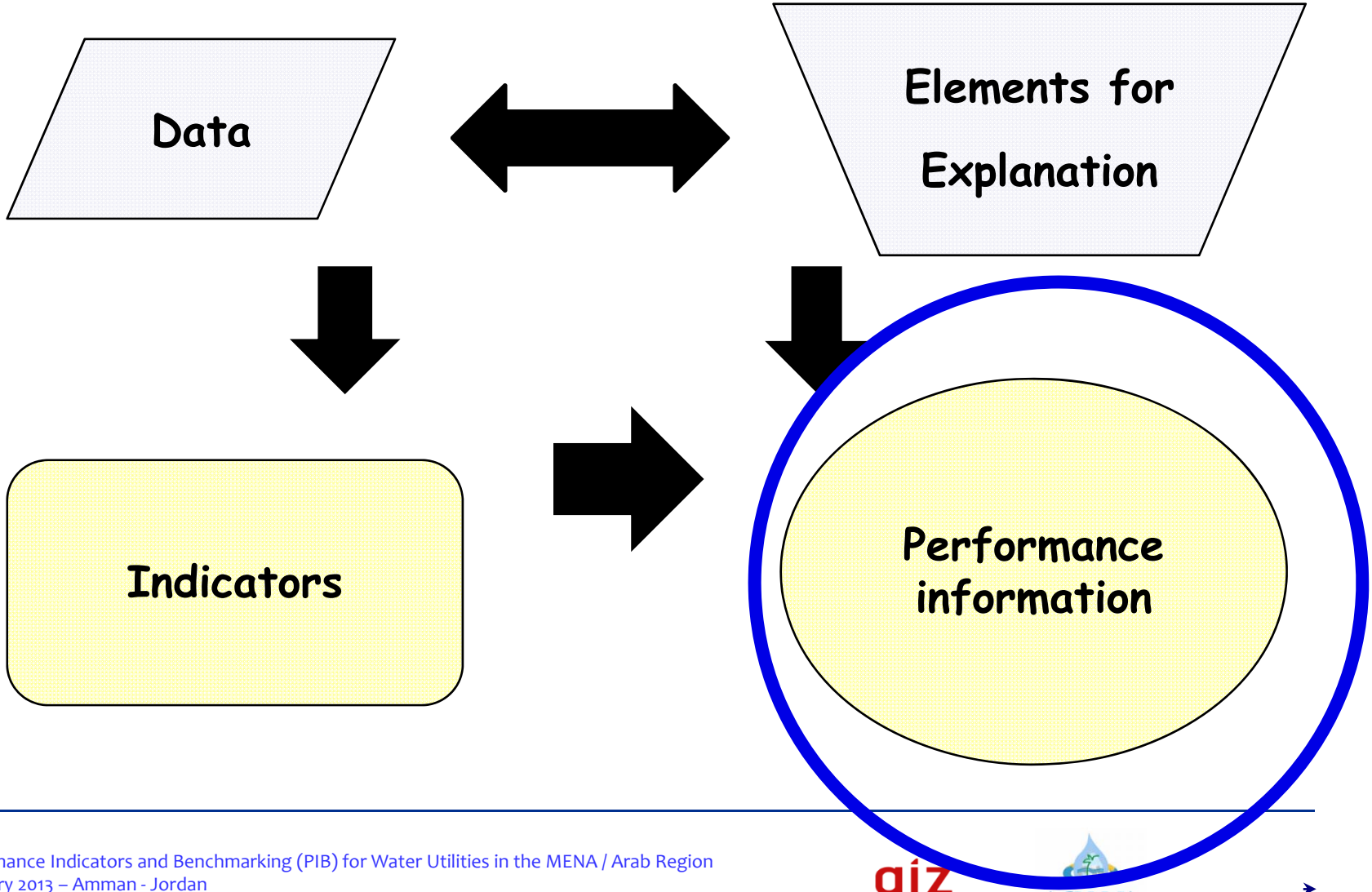
	0-5	5-20	20-50	50
A	A1	A2		
B			B3	
C			C3	C4

Reliability Band	Definition
A	- Sound records - Procedures, investigations (documented)
B	- Worse than A, BUT better than C
C	- Extrapolation from limited reliable samples - Informed gesses

Real losses	C3	C3
main lenght	A2	

·WHO IS GRADING ??

Structure of PI system



Performance criteria

In order to evaluate performance all criteria need to be considered as a whole

Characteristics for the assessment of the performance of water supply and wastewater disposal (Five-pillar model)

Key Performance areas of water supply and wastewater disposal

Reliability	Quality	Customer service	Sustainability	Economic efficiency
• Reliability of supply and Disposal • Facility utilisation • Central monitoring • Fault management • …	• Quality of the Service • Facility monitoring and Documentation • Losses • Damages • Condition of networks •	• Complaints • Service quality • Public relations and customer information • …	• Source of Resources • Resource Protection • Resource Consumption • Maintenance of Substance • Personal and social criteria • …	• Cost transparency • Cost analysis • Investments • Personnel
KSA …	KQA …	KKA …	KNA …	KWA …

Context information: PIs Structure / Technology KTA…

[DWA, :

Performance Indicators System

- It is objective oriented
- Based on Long term management strategy
- It is the link of objectives to strategy

- It is the set of **PI's value**
- With the related data (accuracy and reliability)
- Including **context information**
- Considering **interests** of **utility management**, and also those of **Stakeholders**, users and environment

Setting KPI's. Example : collective exercise

The strategic approach

- 'Reduce non-revenue water by 2%'

Objectives
Which results are to be reached in the future?

Strategies
How can those results be reached?

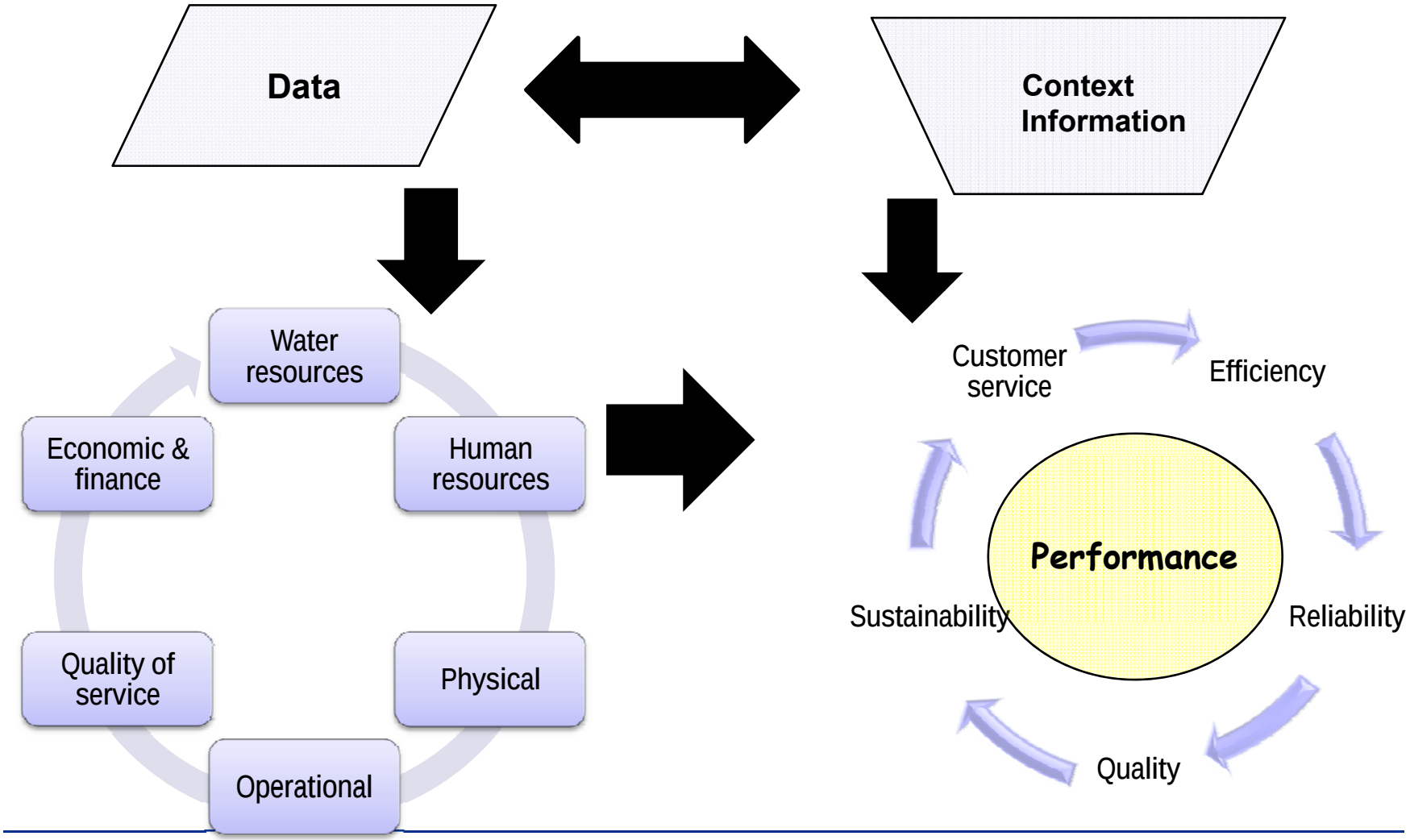
Critical success factors
Depending on the constraints and the context, the optimum strategies to reach objectives

Performance indicators
Have the objectives been reached? What happened with the critical success factors?

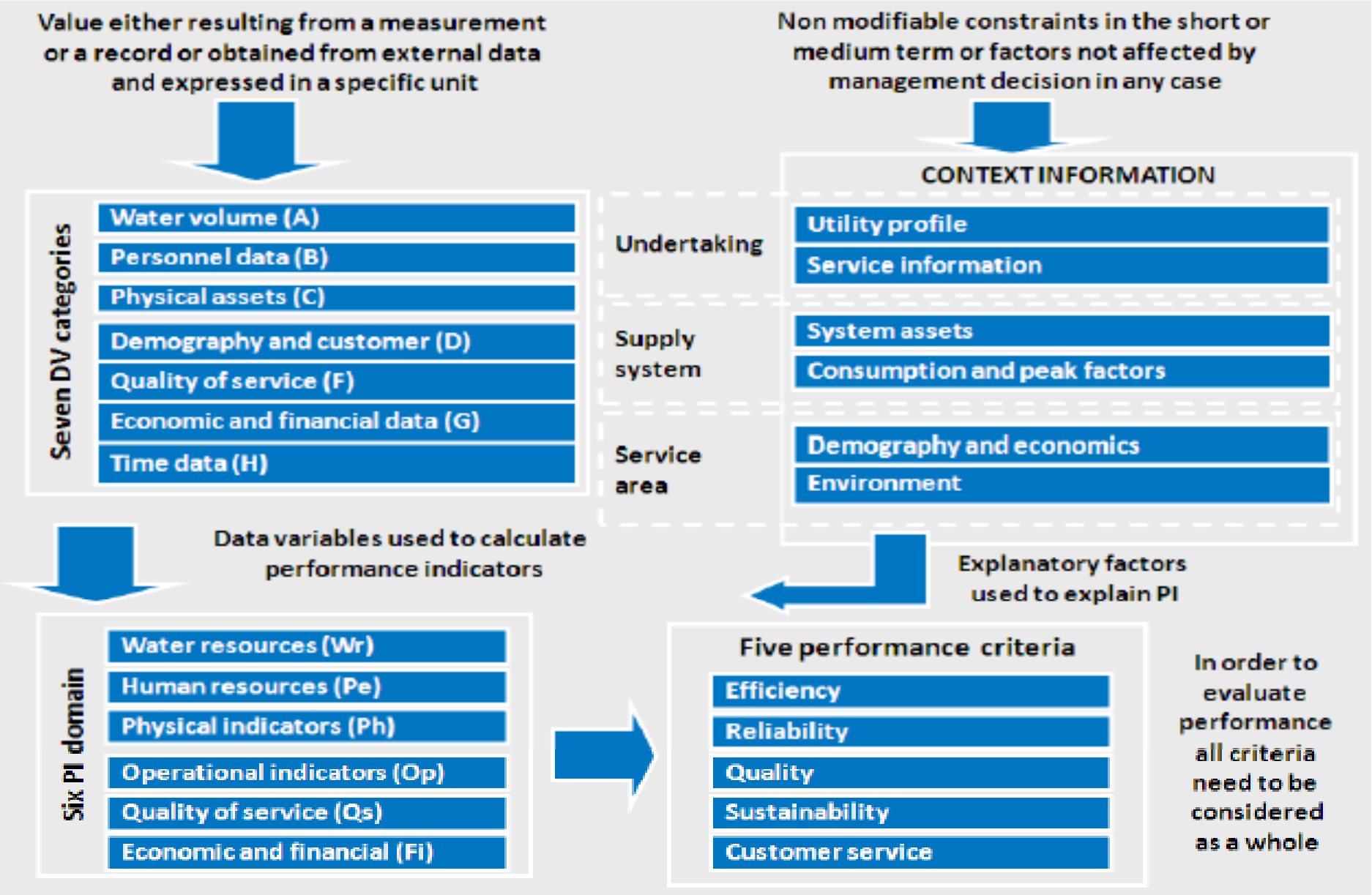
The strategic approach

• 'Reduce non-revenue water by 2%'	**Objectives** **Which results are to be reached in the future?**
• New metering program • Increase leakage detection • ...	**Strategies** **How can those results be reached?**
• To replace non-accurate meters by new/more accurate ones • To more accurately read/report meters • To increase leakage detected volume • ...	**Critical success factors** **Depending on the constraints and the context, the optimum strategies to reach objectives**
• Op008 – Meter replacement • Op030 – Customer reading efficiency • Op004 – Leakage control • Op023 – Apparent losses • Op028 – Real losses per mains lenght •	**Performance indicators** Have the objectives been reached? What happened with the critical success factors?

Structure of PI system



Structure of PI system



PI's system : measurement crisis

- Measures : no relationship with the strategy
- Everything that is to measure is measured
- Things are measured but not analyzed and no actions are taken as a result
- The only relevant measures are financial ones
- The operational level is overlooked
- Good synthesis of past performance but poor future forecasting
- …

Constraints and challenges

- Choose your appropriate PI's
- Indicators : be aware of the definition
- Do not compare "peers to apples"
- Circuit of information: Accuracy and reliability
- Weight of different kind of PI (Financial, Technical, etc..)

Thank you for your attention

mbiad@onee.ma

Working group 1

ToR of Working group : session 2

- Objective : State of the practice of PIs systems in our Utilities
  1. What are success factors in using PIs systems (in your case)?
  2. How much of the following aspects that are achieved ??

Success factors	Group1	….	Group 6
Management commitment			
IWA PIs			
Support for Data Plausibility check, Training, etc..			
Performance criteria			
What can you add ??			

Common Understanding of Benchmarking

ACWUA / GIZ Senior Management Training

Amman, Jordan

January 30 & 31, 2013

Content

- What is Benchmarking – Definitions
- Why do Benchmarking?*
- Steps of Benchmarking – IWA
- Final word

What is Benchmarking – definitions

Benchmarking is a tool for performance improvement through systematic search and adaptation of leading practices.' (IWA 2011)

Benchmarking is the process of comparing one's business processes and performance to industry's best practices....and

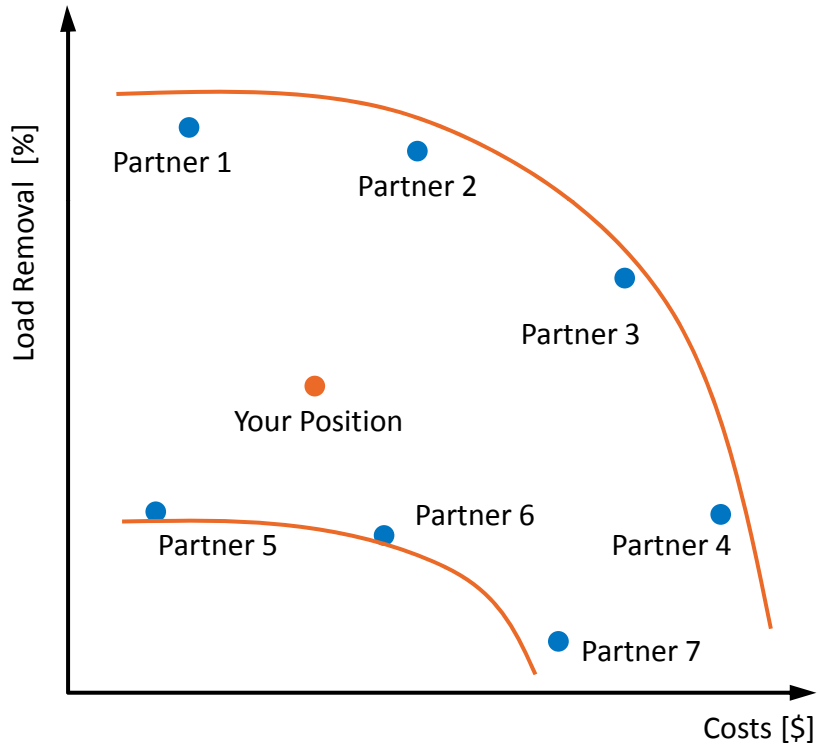
Benchmarking is Improvements from learning mean doing things better, faster and cheaper.

With Cards

1st reason - Performance Assessment

Objectives and Why?

- Do you know your performance in comparison to other utilities?
- Do you have a method to compare?

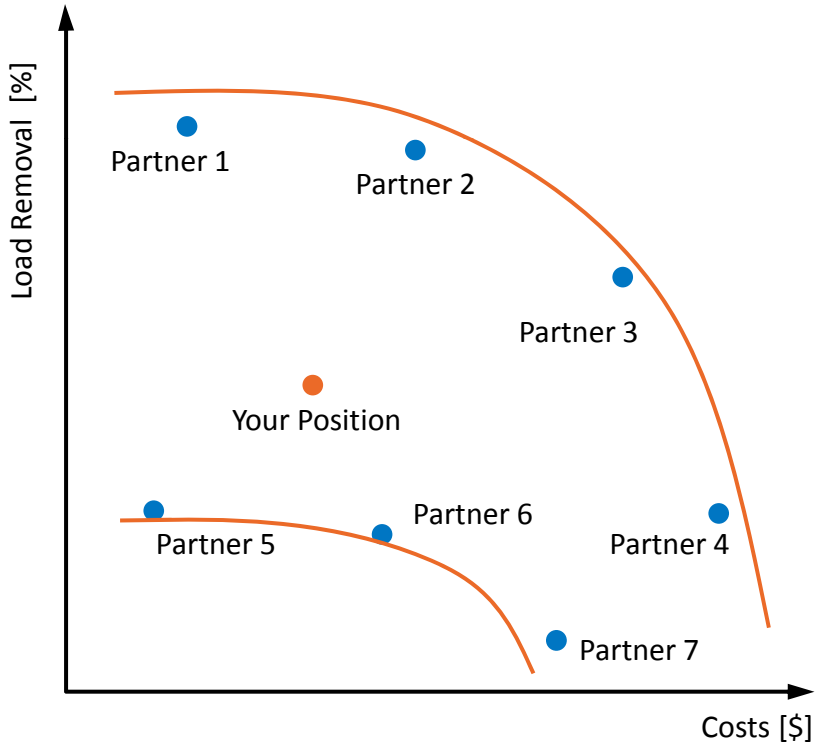


With Cards

2nd reason - Performance Improvement

Objectives and Why?

- How do you know where you can improve?
- How do you get knowledge about good practices?
- How do you find partner for common learning process?
- How do you exchange experiences?
- How do you derive goals for improvement?



With Cards

3rd reason – Public information and communication

Importance?

- How do you explain your performance towards public?
- How to speak „the same language“ with public, politics and employees?

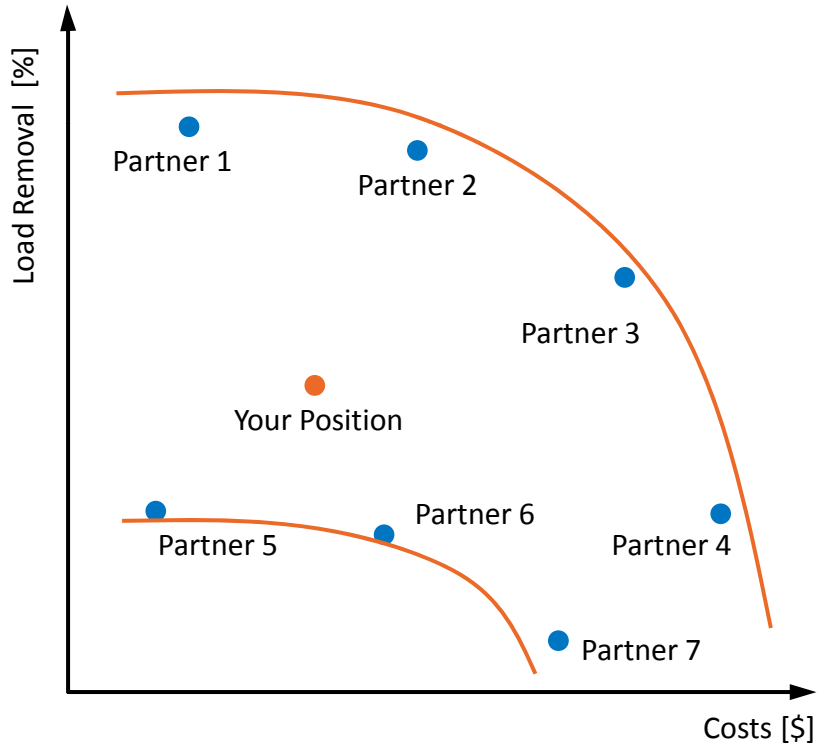
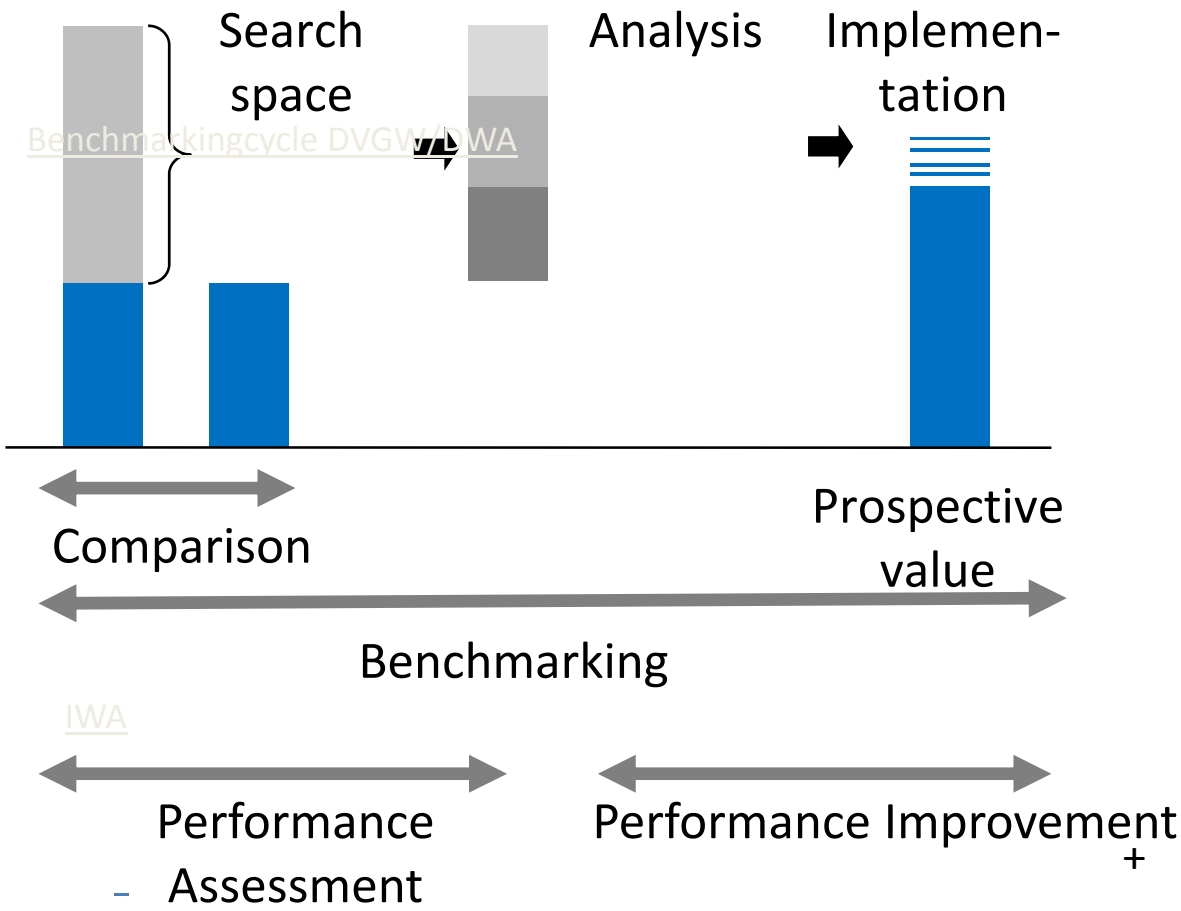
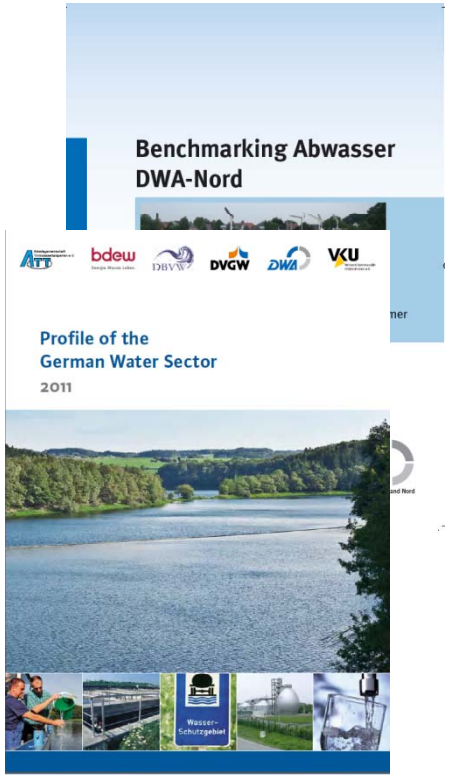


Chart – What is benchmarking?





Public Information

Source (adapted): Leitfaden Benchmarking and IWA –Benchmarking Water Services

Steps of Benchmarking - IWA

1. Preparation:
   - Project Planning
   - Orientation, Training and Project Control
2. Performance Assessment:
   - Data Acquisition and Validation
   - Data Analysis and Assessment Reporting
3. Performance Improvement:
   - Improvement Actions
   - Review of Improvement Actions

Benchmarking work packages and associated tasks (IWA)

Preparation
- Project Planning
- Orientation, Training & Project Control

Performance Assessment
- Data Acquisition & Validation
- Data Analysis & Assessment Reporting

Performance Improvement
- Improvement Actions
- Review of Improvement Actions

after IWA (2011)

Benchmarking - Final Word

- Not a tool, but a process
- Not an end, but a means
- Not once, but continuous
- A way of life

Working Group

What is Next Steps – IWA - General?

What is Nest Steps in the specific Area?

Preparation		Performance Assessment		Performance Improvement	
Project Planning	Orientation, Training & Project Control	Data Acquisition & Validation	Data Analysis & Assessment Reporting	Improvement Actions	Review of Improvement Actions

after IWA (2011)

2 Tables for each specific Area.

Results expected at 16:20

Thank you

George Rizkallah

Rizkallah.george@gmail.com

International experiences in benchmarking – How to achieve performance improvement?

Key Performance Indicators and Benchmarking for Water Utilities in the MENA

Amman, Jordan, January 30-31 2013

Filip Bertzbach

Content

1	**aquabench introduction**
2	Assessment and improvement in international projects
3	aquabench – How to achieve performance improvement?

aquabench comes from the industry

- aquabench was founded from leading Swiss and German companies of the drinkingwater and wastewater branch, which have had experiences in benchmarking since 1996.
- 15 economists and engineers are running 25 different benchmarking projects for the whole water cycle

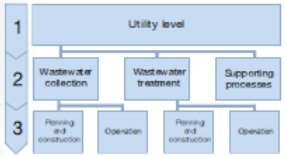
Different Benchmarking projects for the whole water cycle with more than 1,200 clients

Corporate Benchmarking

Wastewater services

Number of participants > **600**

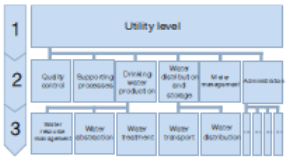
Modular concept with three selectable survey levels.



Drinking water services

Number of participants: **200**

Modular concept with three selectable survey levels.



River basin management

Number of participants: **4**

Investigations regarding the maintenance and retention services of riverbodies.

Process Benchmarking

Number of compared objects > **500** (up to 11 years in a time series)

Wastewater services

- Wastewater treatment plants (WWTP)
  - Urban wastewater treatment plants
  - Industrial wastewater treatment plants
- Sewer operation
  - Pumping stations
- Sewer construction
- Laboratory
- Indirect discharger
- Estate drainage
- (Procurement and) Material management
- Administration

Drinking water services

- Water production
- Water distribution and storage
- Laboratory
- Water mains construction
- Administration

Special focus

- Customer meter reading and consumption billing
- Customer meter replacement
- Construction and renovation of service connections

Surface water bodies

- Watercourse maintenance
- Resevoir management

Public works department

- Road condition control
- Excavations by third parties

For all public services

- Human resources management
- IT services

Wastewater Surveys

Number of participants > **500**

Nationwide survey of the economic data of wastewater services and for the state of sewer system commissioned by the German Association for Water, Wastewater and Waste (DWA).

Content

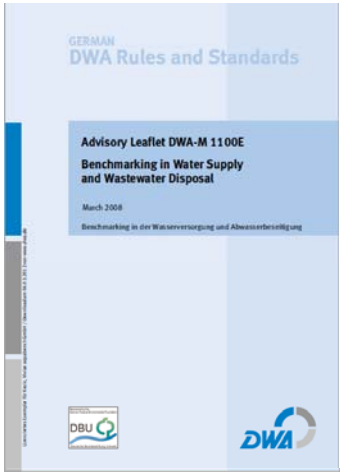
1 aquabench introduction

2 Assessment and improvement in international projects

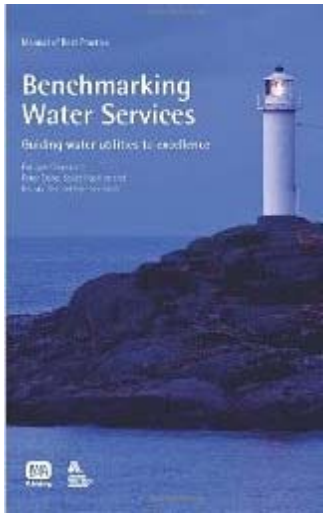
3 aquabench – How to achieve performance improvement?

Definitions given by associations

German definition by DVGW/DWA 2008:
„Systematic and continuous (rotative) process for the identification, becoming acquainted with and adoption of methods and processes of benchmarking partners“



International definition by IWA 2011:
„Benchmarking is a tool for performance improvement through systematic search and adaptation of leading practices“



Examples for international player in benchmarking

Region	Organisation	URL web
North America	Canadian National Water and Wastewater Benchmarking Initiative (NWWBI)	www.nationalbenchmarking.ca
South America	Aderasa	www.aderasa.org
Worldwide	World Bank, IBNET	www.ibnet.org
Europe	European Benchmarking Cooperation (EBC)	www.waterbenchmark.org
Germany	Various	e.g. www.aquabench.de

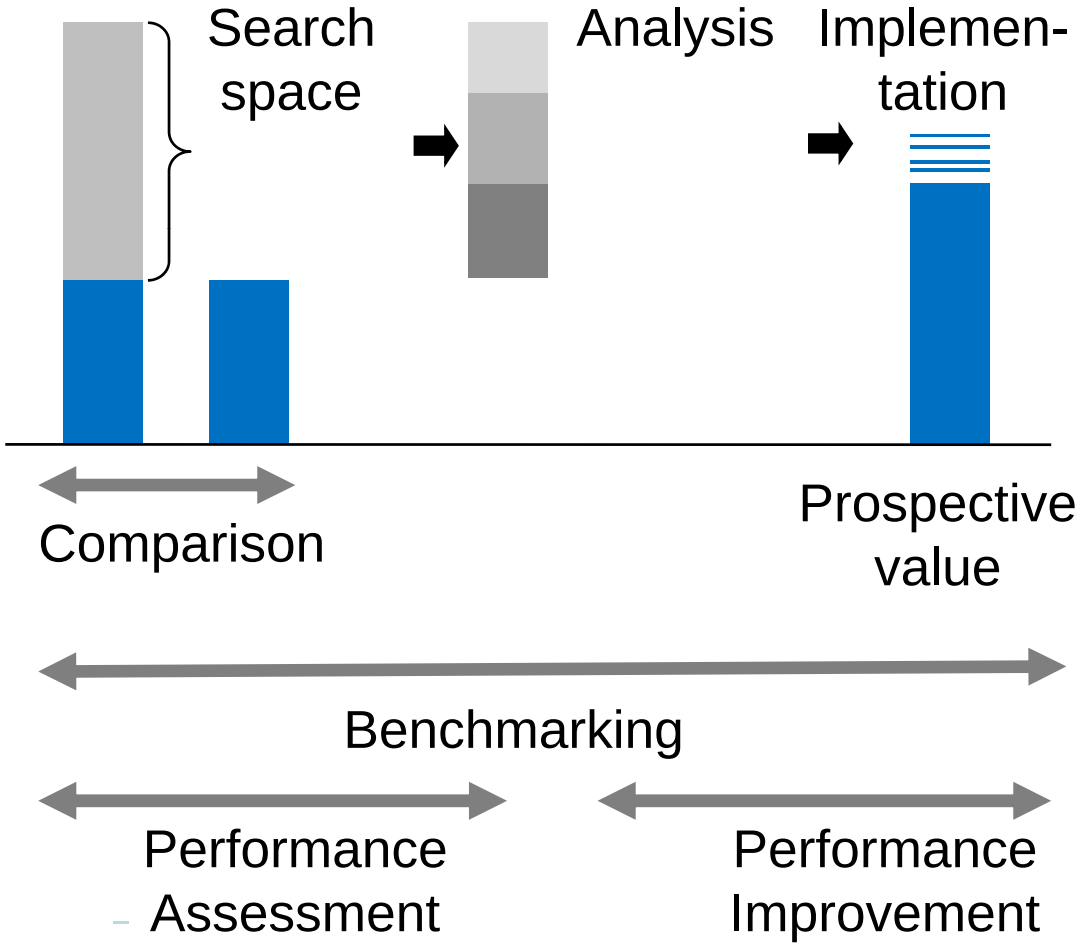
(see for more examples Cabrera et. al. “Benchmarking Water Services”, IWA 2011)

Examples for international player in benchmarking

Region	Organisation	Programme type*
North America	Canadian National Water and Wastewater Benchmarking Initiative (NWWBI)	Benchmarking
South America	Aderasa	Performance Assessment
Worldwide	World Bank, IBNET	Performance Assessment
Europe	European Benchmarking Cooperation (EBC)	Benchmarking
Germany	Various	Benchmarking

*(according to Cabrera et. al. “Benchmarking Water Services”, IWA 2011)

Benchmarking is Performance Assessment and Performance Improvement



- Not everyone believes that benchmarking works: Benchmarking "...is non-transparent, is voluntary, its success is not measurable or is not taken on by the customer and it does nothing for the protection of clients." (German regulator, 2009)

- aquabench has taken stock of it's projects in a survey: Does Benchmarking work?

Source (adapted): Leitfaden Benchmarking and IWA –Benchmarking Water Services

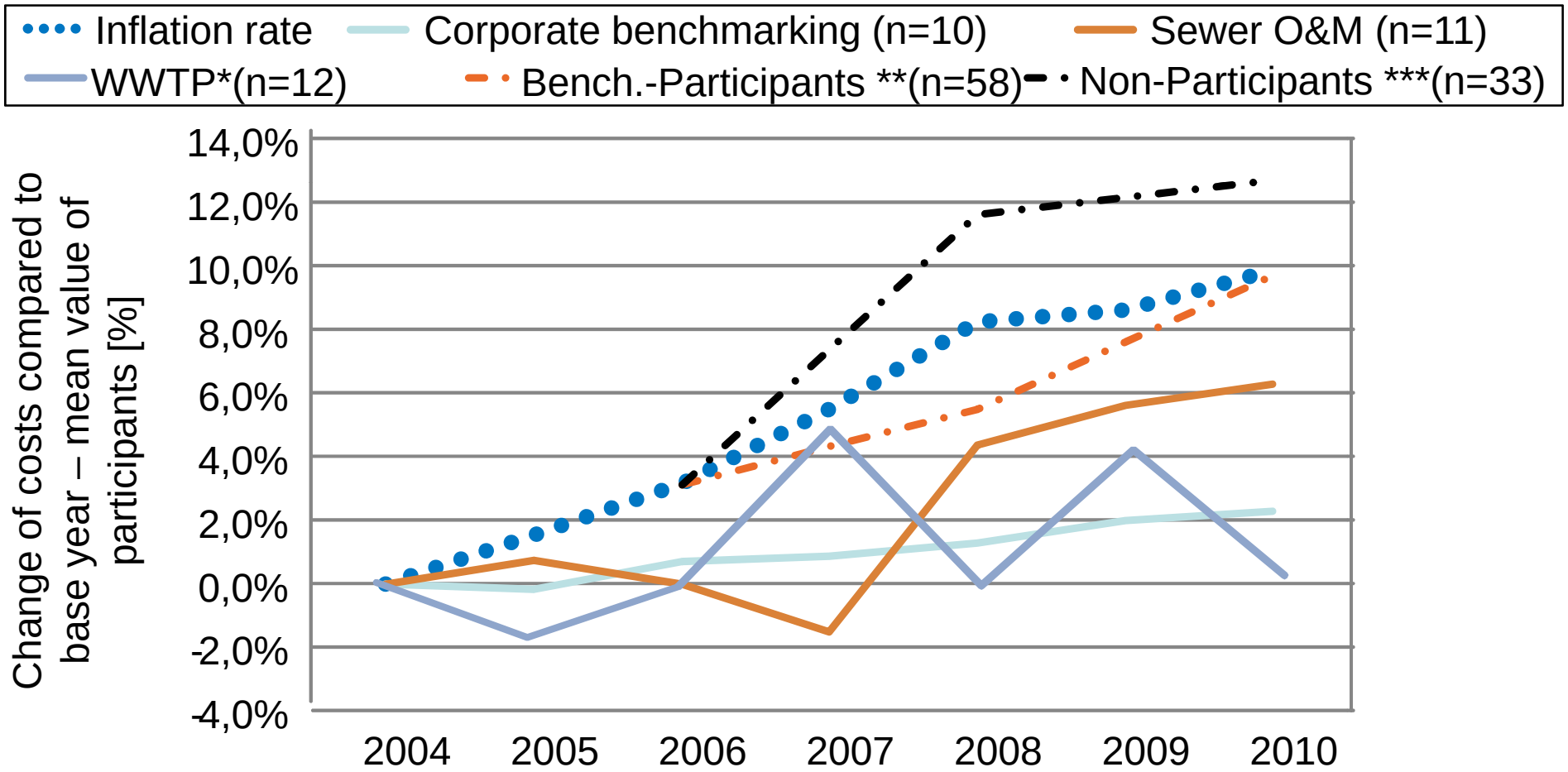
Content

1 aquabench introduction

2 Assessment and improvement in international projects

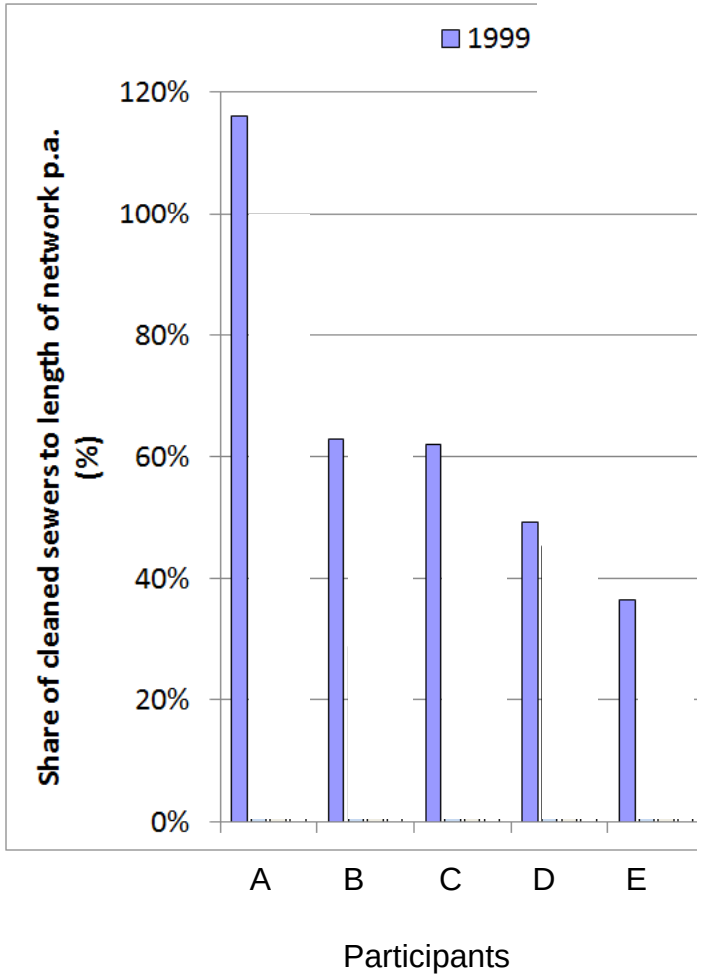
3 aquabench – How to achieve performance improvement?

Favourable cost development?



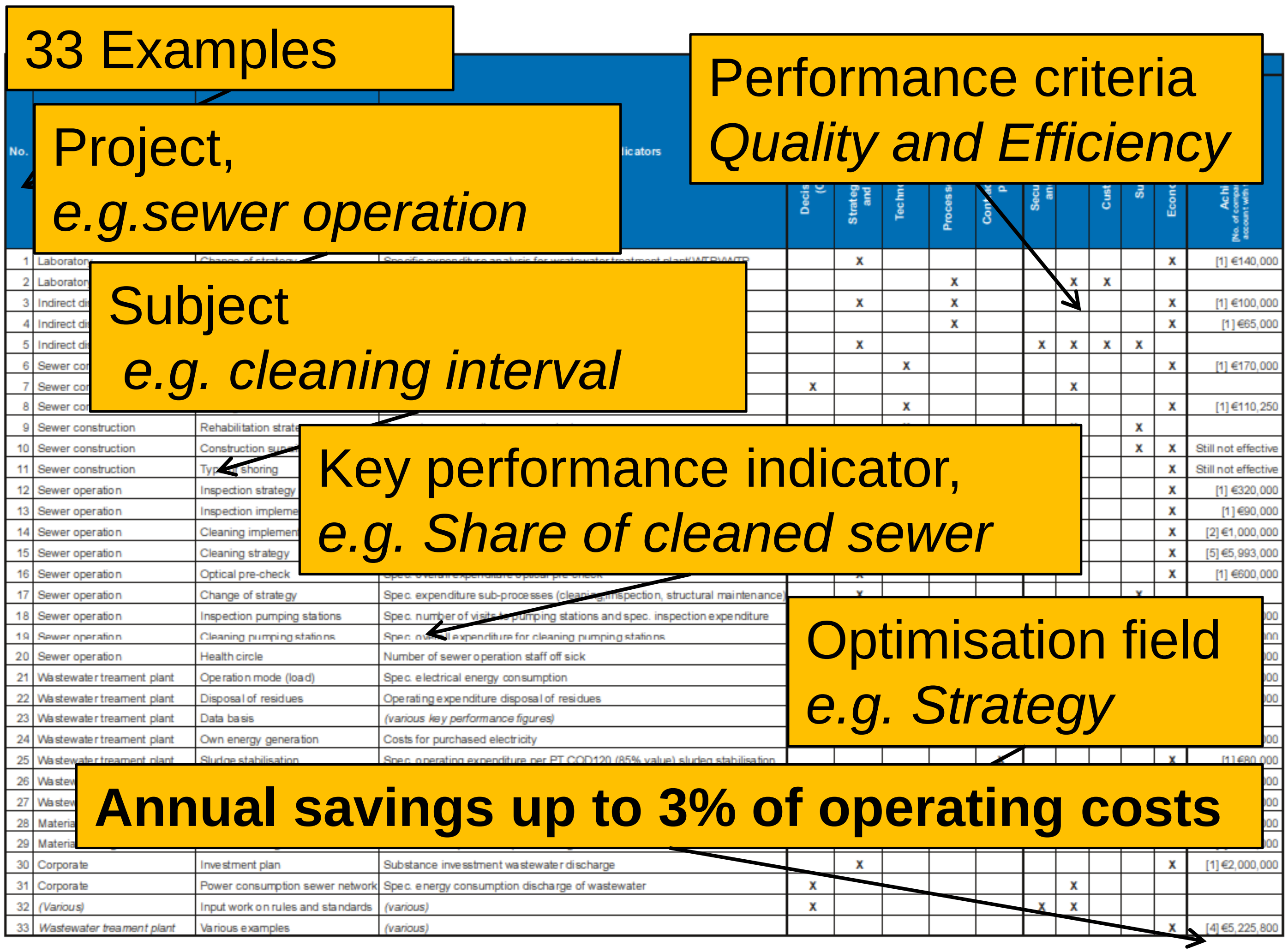
* Specific Costs ** Federal State *** DWA-National Survey

Improvement, e.g. Change of strategies...



- Up to € 6 Mio annual savings
- 33 Examples include change
  - of staffing, of technique, of process management, of investment strategy, of construction, of in- and outsourcing, of conditions of external services
  - for all performance criteria
  - up to 3% of operating cost

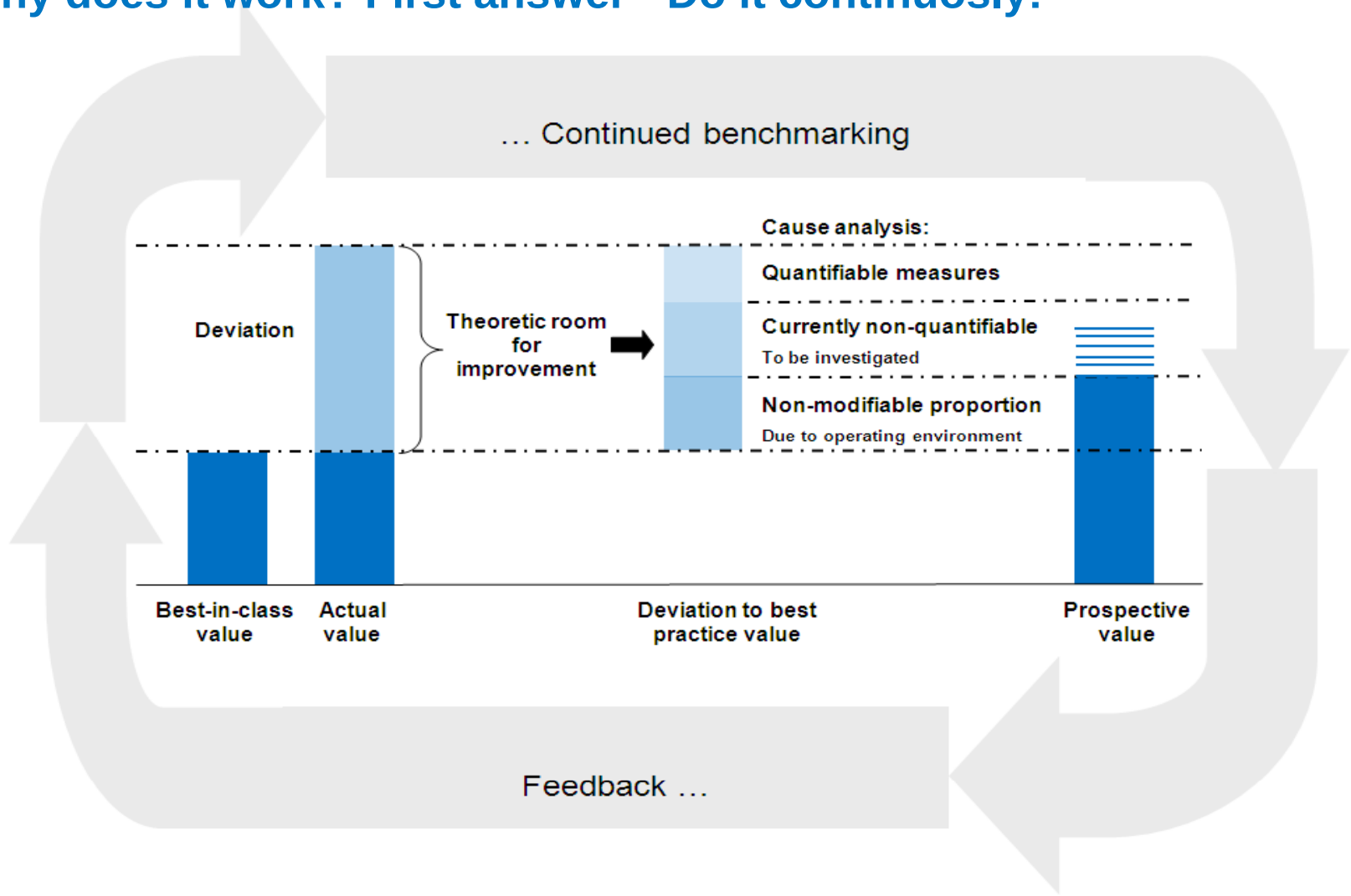
Proven examples add up to 3% of the operating costs



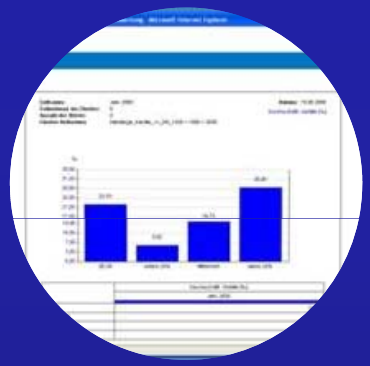
Examples from all operational areas as well as for all performance criteria:

- efficiency,
- reliability
- quality
- customer orientation
- sustainability

Why does it work? First answer - Do it continuosly!

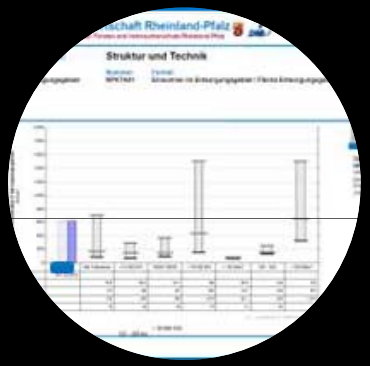


Ways of analyzing report

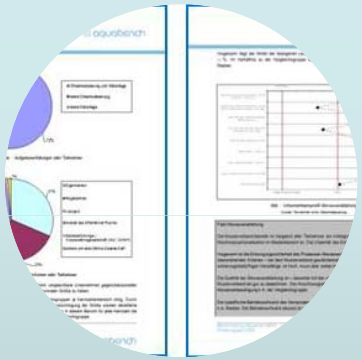


Online Database

Work-shops



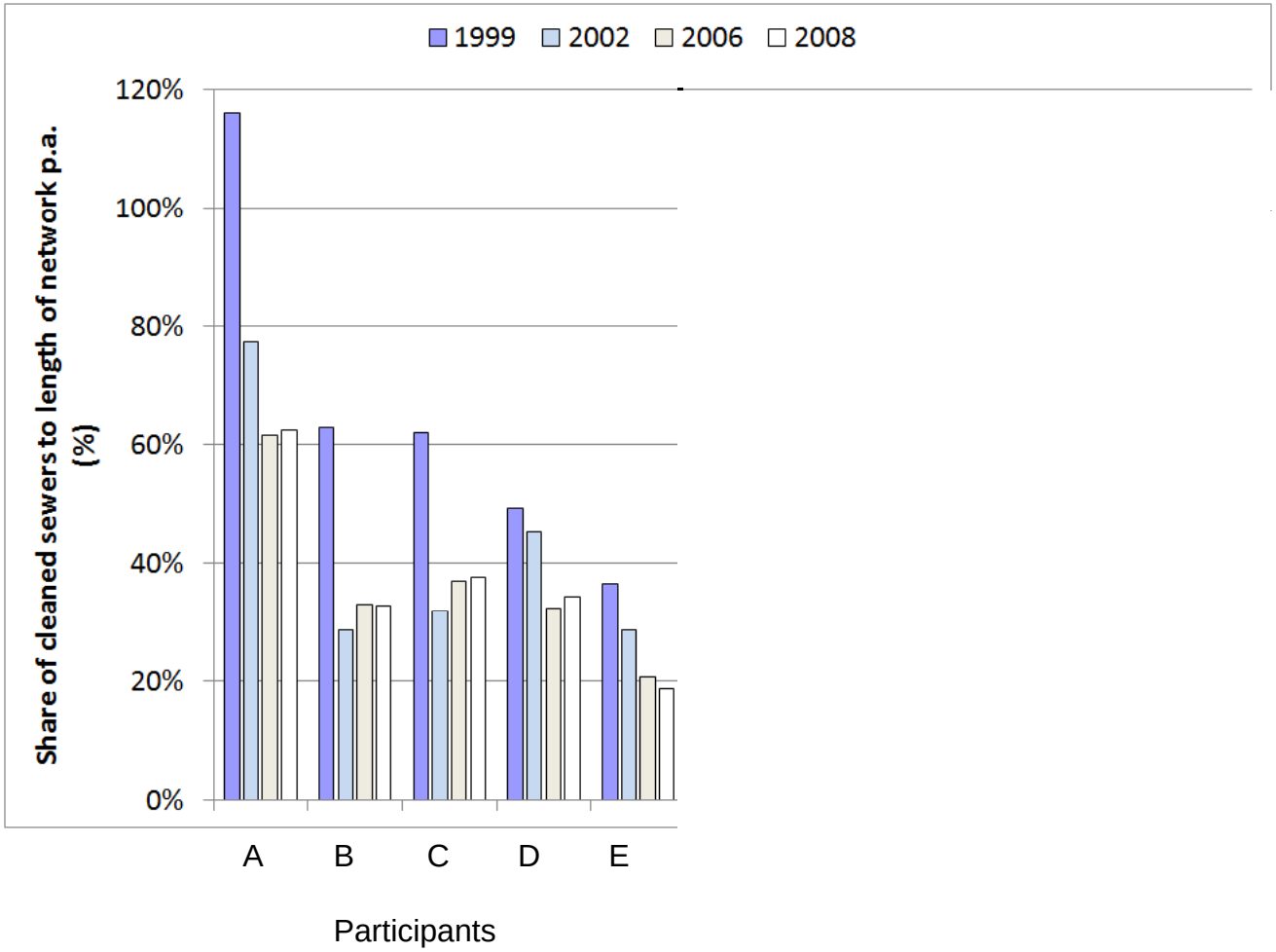
Reports



Documen-tation of action proposals

Continuous Process

2nd Answer: Benchmarking (only) works in connection with individual goals: Management needs to step in!

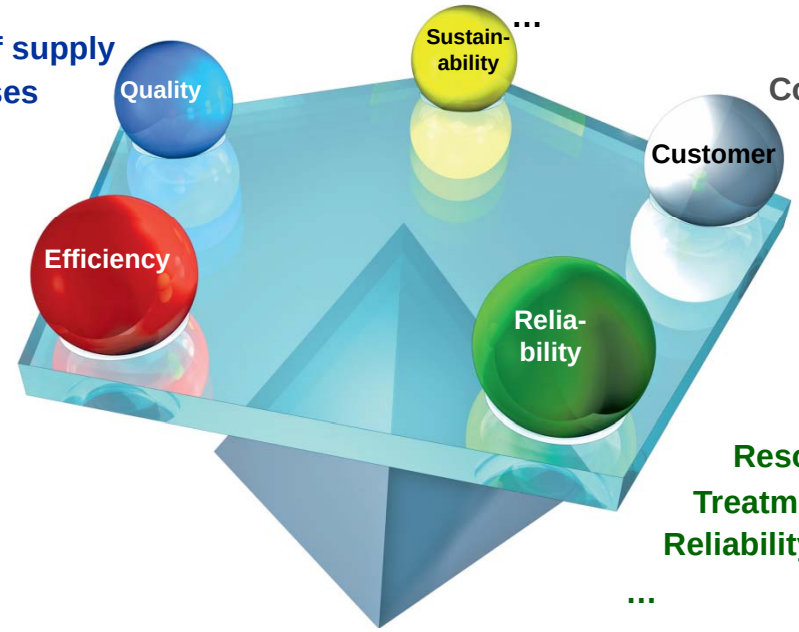


- Improvement „…needs a high degree of individual decisions and depends on the overall objectives.“ (DVGW, DWA 2008)
- „…data collection and monitoring (for regulatory reporting) …does not necessarily get the best results for customers… We propose that companies develop their own systems.“(Ofwat, March 2012)

Water utilities have to balance different goals

Catchment protection
Ressource consumption
Social sustainability
Economic sustainability
...

Quality of supply
Water losses
Failures
...



Complaints
Quality of service
Customer information
...

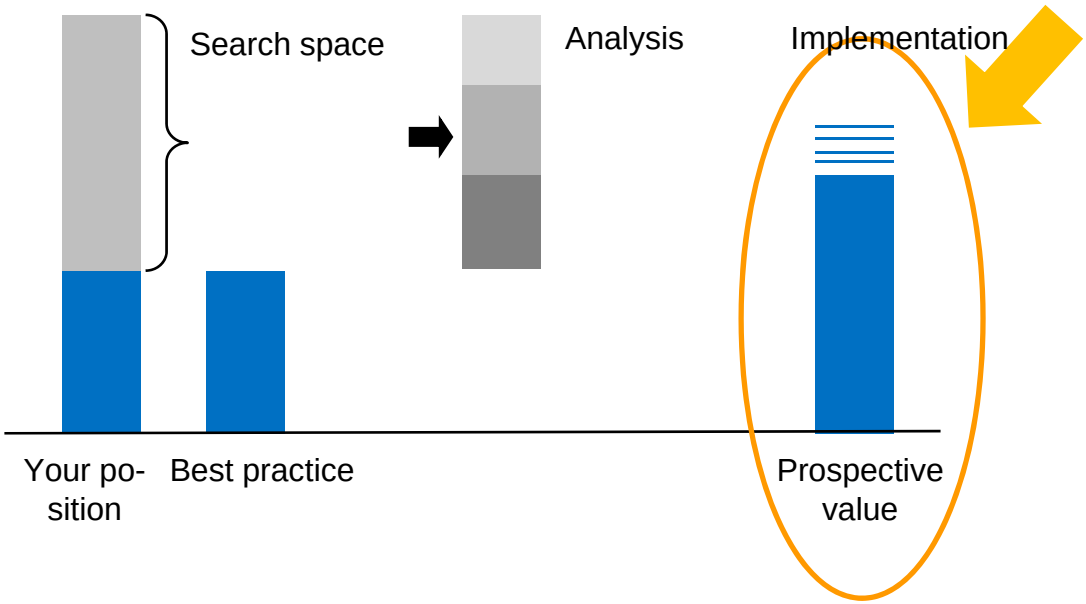
Cost attribution
Cost analysis
Finance of investment
Personal analysis
...

Resources utilisation
Treatment utilisation
Reliability of supply
...

Source (adapted): Schulz, Goebel „Balanced Score Card at Emschergenossenschaft / Lippeverband“

Sum up

- Benchmarking works!
- Effects of benchmarking will be reached by continuos work
- Connect the method to the goals of the utilities: Management needs to step in! Balance the different goals!



Is this the goal of your utility (management)?

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سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY

Annual Regulation Report 2010

Performance Monitoring for Six Water Service Providers in Palestine

This report has been prepared by the Palestinian Water Authority (PWA), in cooperation with six water service providers in Palestine, with support from the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

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سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY

Introduction

- The Palestinian water law no. 3/2002 mandates the Palestinian Water Authority (PWA) the regulatory authorities for the water sector including setting approved standards, unified tariff system and regulating the water resources.

- In efforts towards developing its role as a regulatory authority, the Palestinian Water Authority, with support from the GIZ, recently it began working to reinstate and develop a performance monitoring system for water service providers.

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سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY

Introduction

- This effort was carried out on a voluntary basis, in coordination and cooperation with six water service providers in the West Bank:

1. Jerusalem Water Undertaking (JWU)
2. Water Supply and Sewerage Authority (WSSA) of Bethlehem, Beit Jala, and Beit Sahour
3. Nablus Water Supply and Sanitation Department (WSSD Nablus): Municipal department
4. Tulkarem Water Supply and Sanitation Department (WSSD Tulkarem): Municipal department
5. Qalqilia Water and Wastewater Department: Municipal department
6. Salfeet Water and Wastewater Department: Municipal department.

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سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY

Objectives of the Performance Monitoring System

- To enhance the role of PWA as a competent and accountable regulator and overseer of the Palestinian water sector.

- To create an effective interface between PWA and a selective number of service providers in the West Bank that will lead to an enhanced and institutionalized performance monitoring system implemented by the regulator of the sector throughout Palestine.

- Eventually, leading PWA on establishing a minimum required level of service to be achieved by the service providers.

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سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY

Selected Performance Monitoring Indicators

1. **Average daily per capita water consumption at domestic level (l/c/day):** *Total domestic billed water sales (m^3) during the assessment period * 1000 / number of days * total number of served population*

2. **Average selling price per m^3:** *Total billed water sales (NIS) / Total domestic, institutional, touristic and industrial water sales (m^3)*

3. **Operating costs per m^3:** *Operation and Maintenance (O&M) and Administrative costs in NIS (excluding depreciation)* **/** *Net water sales (m^3)*

4. **Working ratio:** *Operation & Maintenance (O&M) costs and Administrative costs (Excluding depreciation) / Operating revenue*

5. **Fees collection efficiency (%):** *Water and wastewater fees collections during the year / total annual water and wastewater billed sales (NIS) ×100%*

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سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY

Selected Performance Monitoring Indicators

6. Unaccounted-for-Water (U-f-W)%: *100% - (Total billed quantity (m^3) during the assessment period / (Total supplied water during assessment period ± difference in stored quantities in utility reservoirs) * 100%)*

7. U-f-W in (m^3) per km in the main pipes per year: *Total U-f-W during the year (m^3)* **/** *Network length (km)*

8. Staff Productivity / employees per 1000 customers: *Total number of working staff* **/** *(number of active water subscribers) / 1000*

9. Percent of water samples containing free chlorine residual (CR) in the network: *Number of Samples containing free chlorine residual* **/** *Total number of tested samples * 100%*

Selected Performance Monitoring Indicators

10. Percent of water samples free from total coliform: *Number of tested water samples free from total coliform / Total number of tested samples * 100%*

11. Percent of water samples free from fecal coliform: *Number of tested water samples free from fecal coliform / Total number of tested samples * 100%*

Data Reliability and Accuracy

- In order to be consistent and in conformity with the IWA standards on the quality of data and data sources, the same IWA quality standards were followed by PWA in this assessment.

- The quality of input data was assessed in terms of the reliability of the source and of the accuracy of data, based on IWA recommended bands.

INDICATORS ANALYSIS

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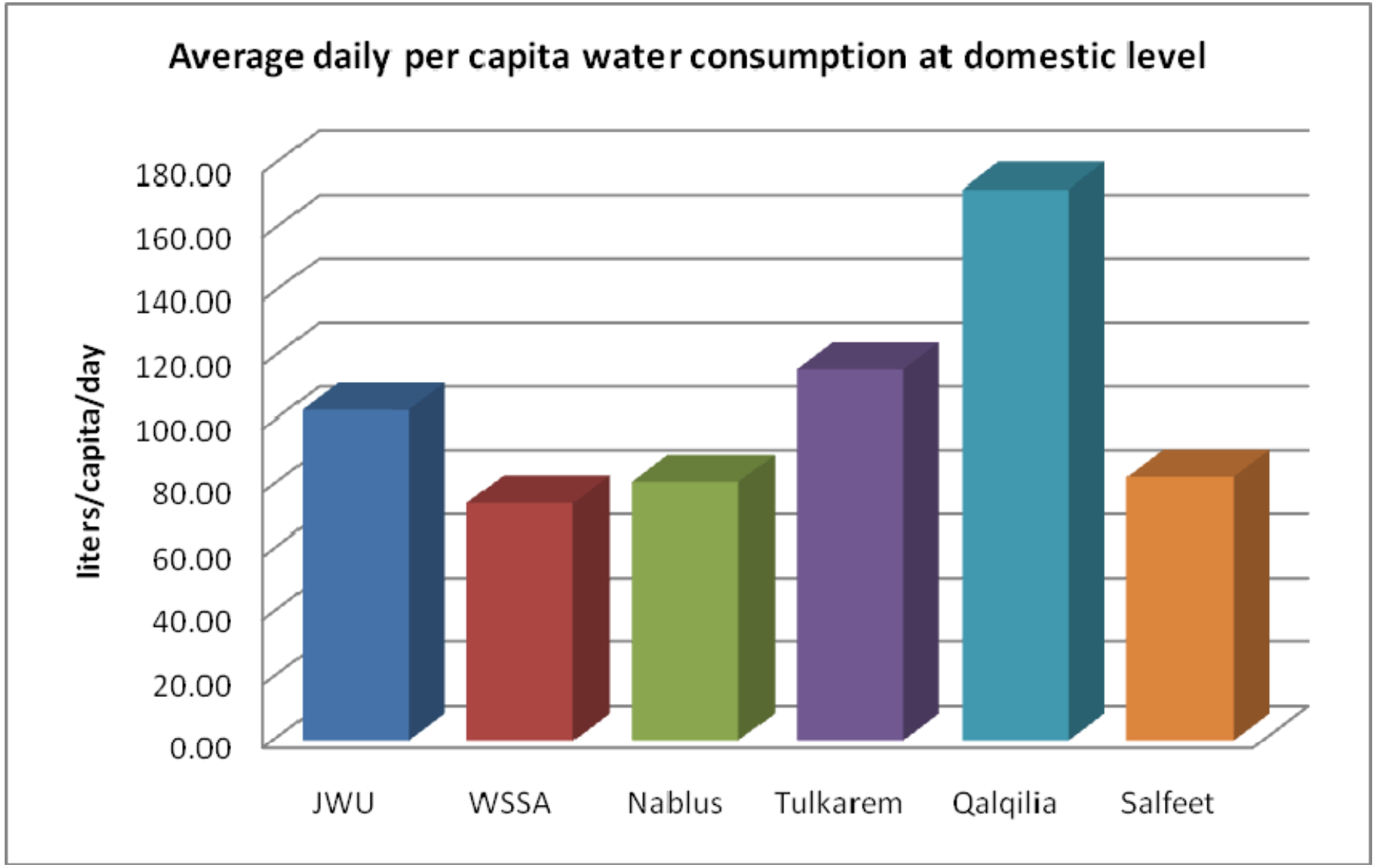
PALESTINIAN WATER AUTHORITY



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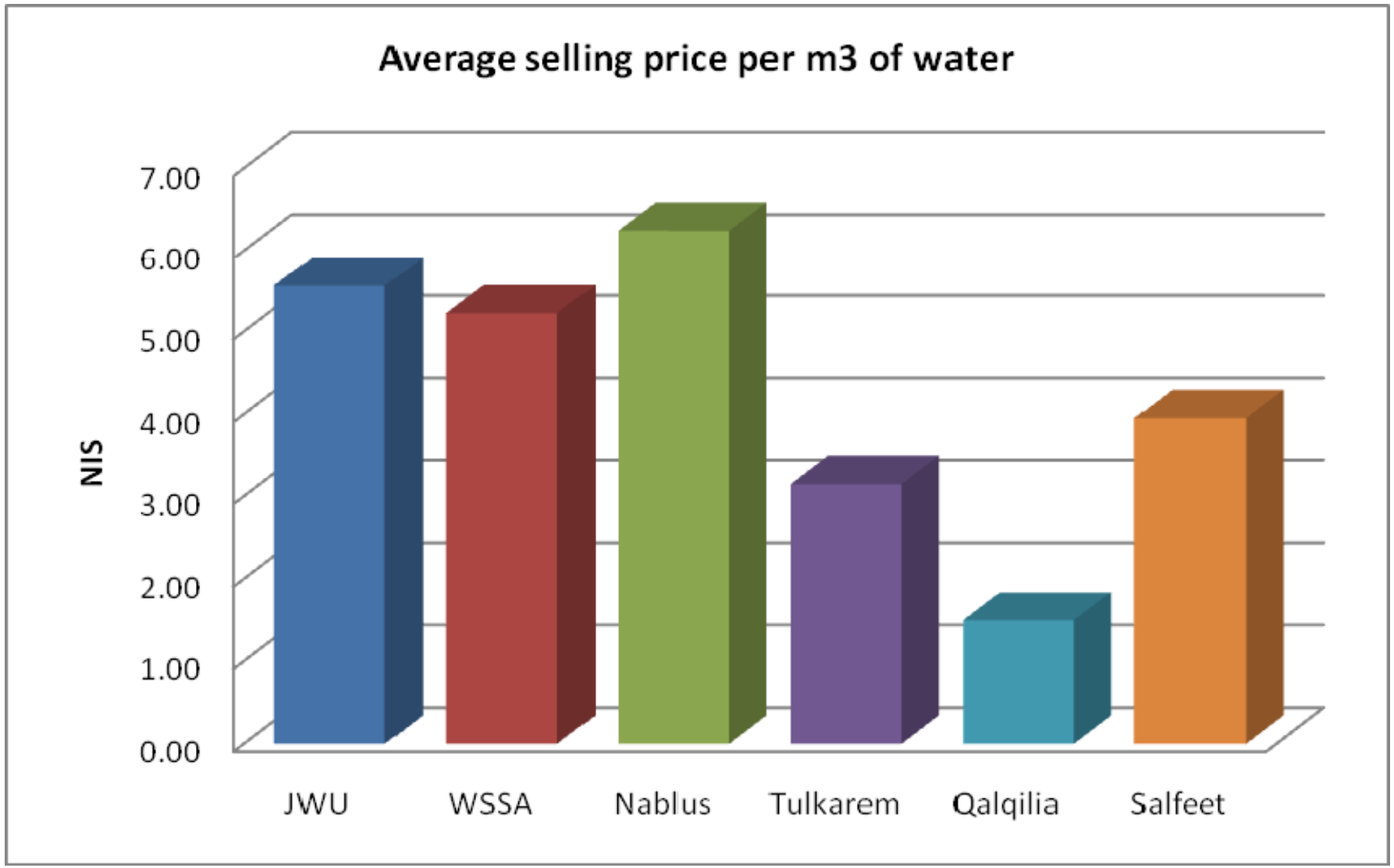

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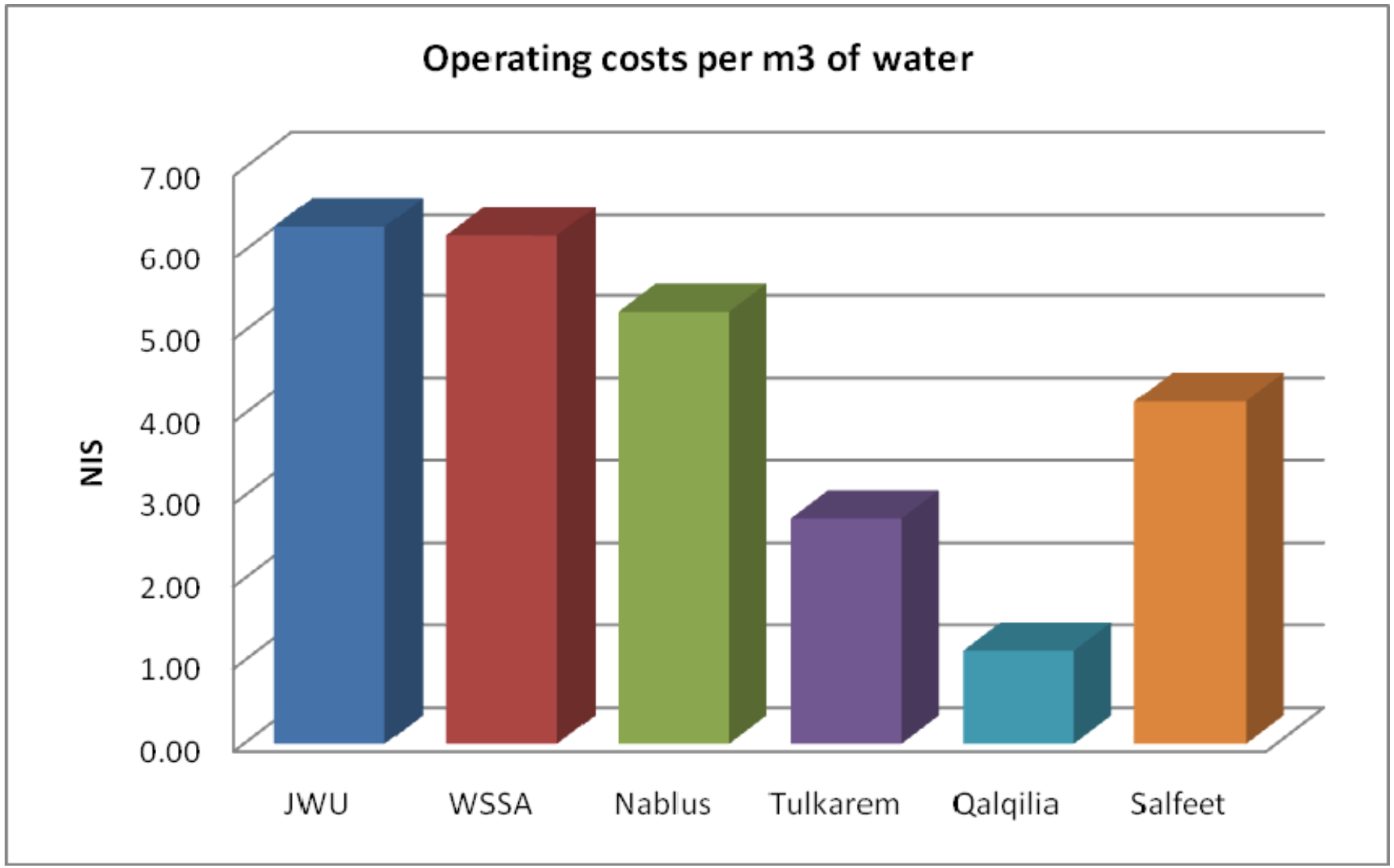

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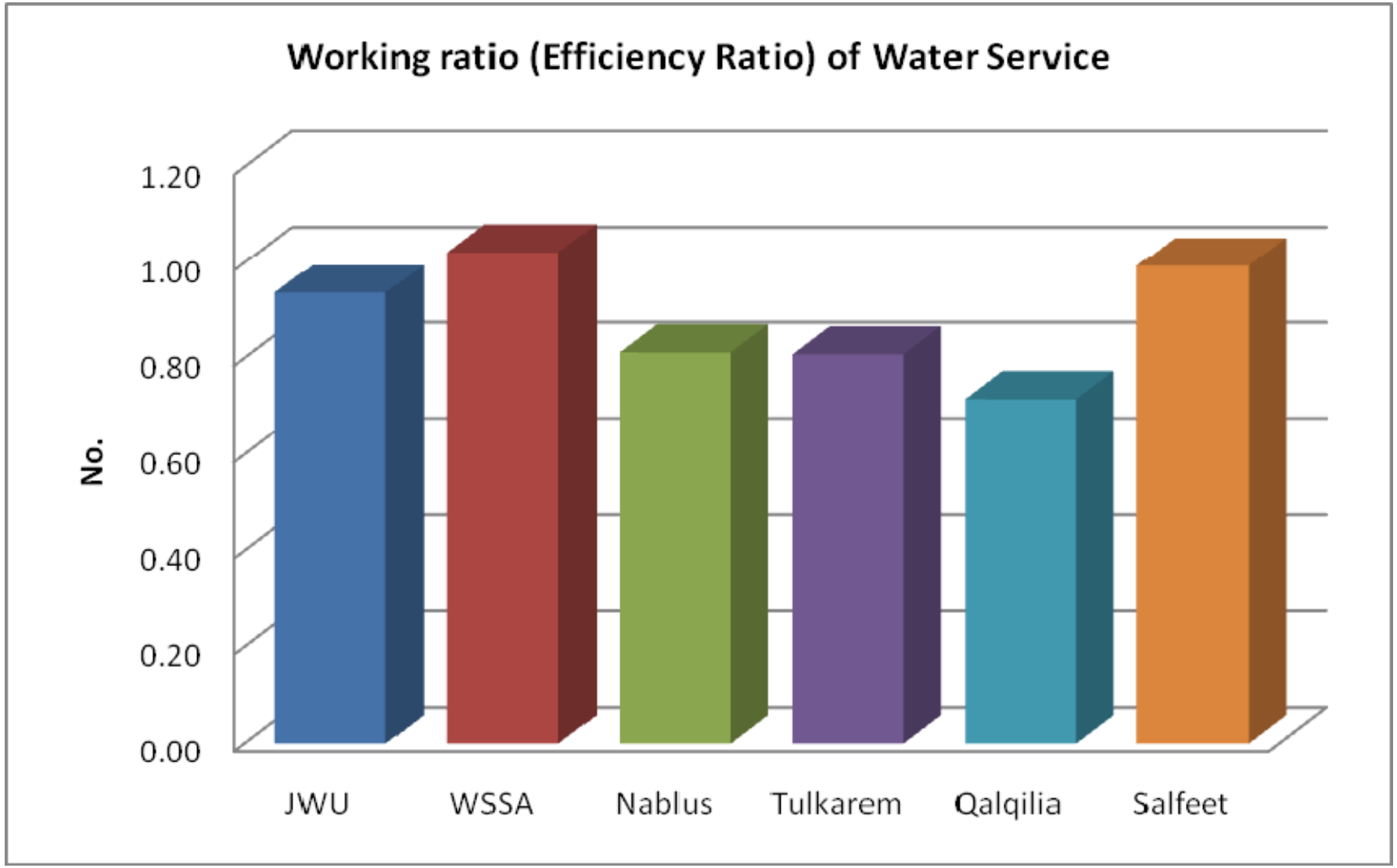

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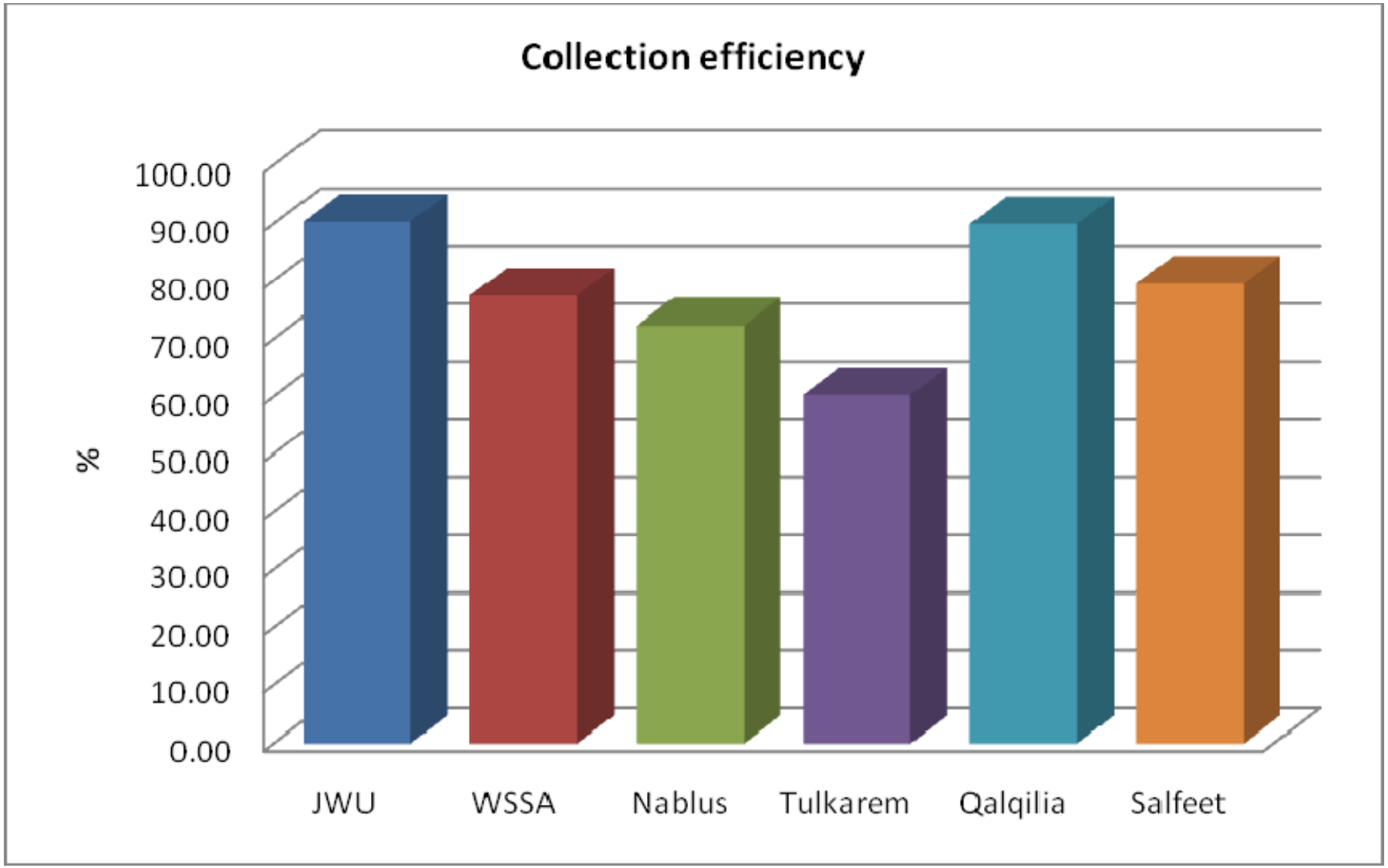

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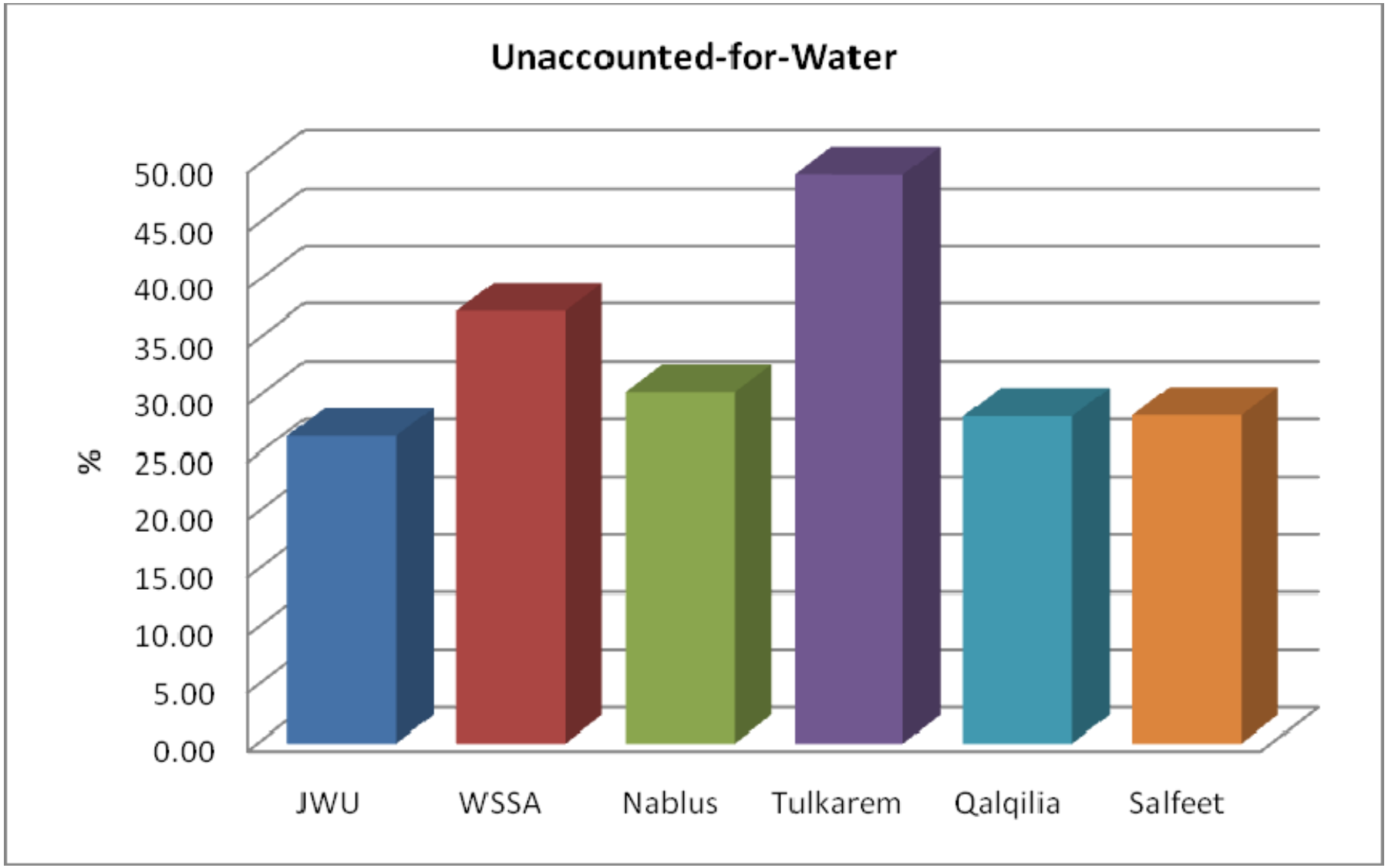

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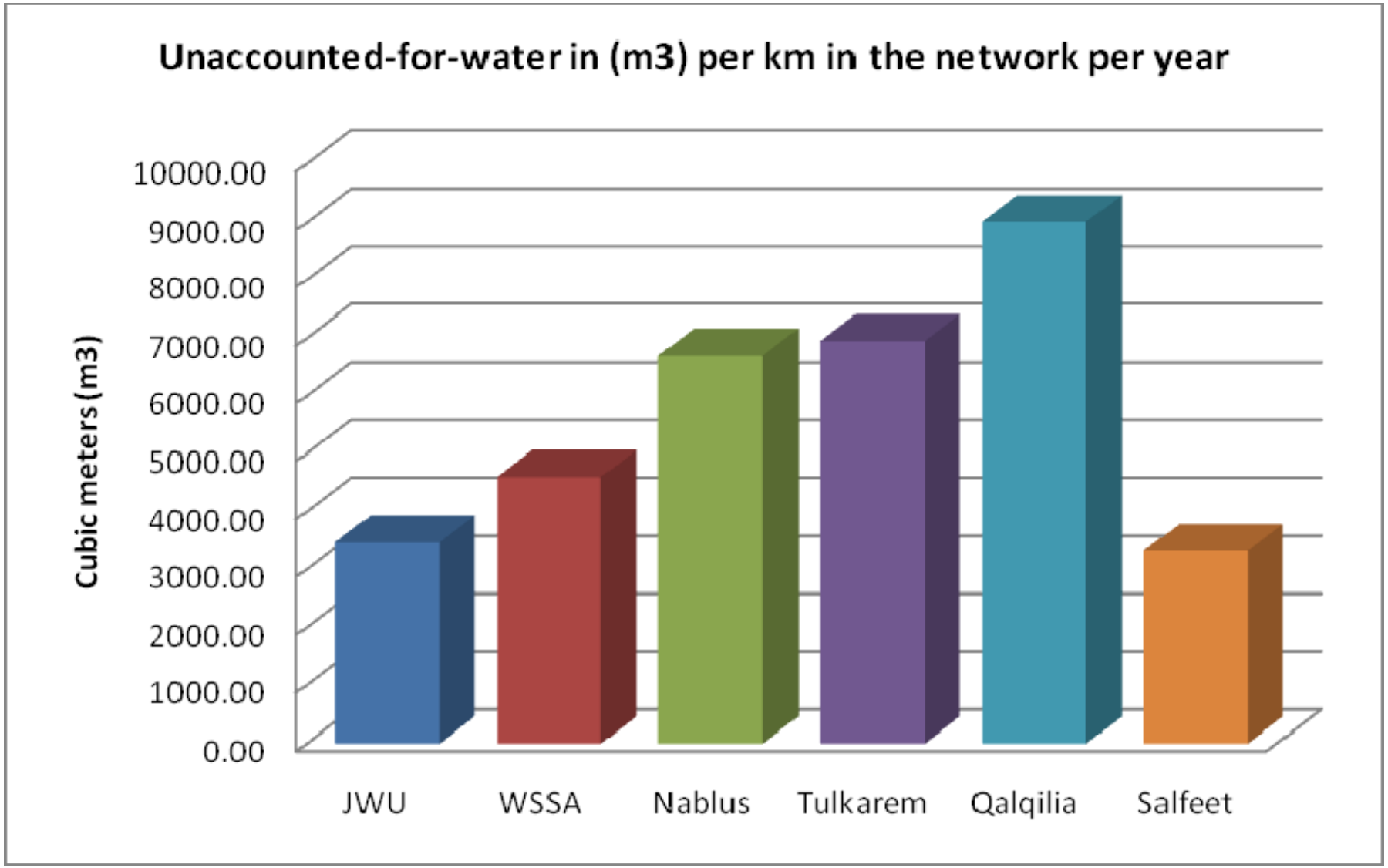

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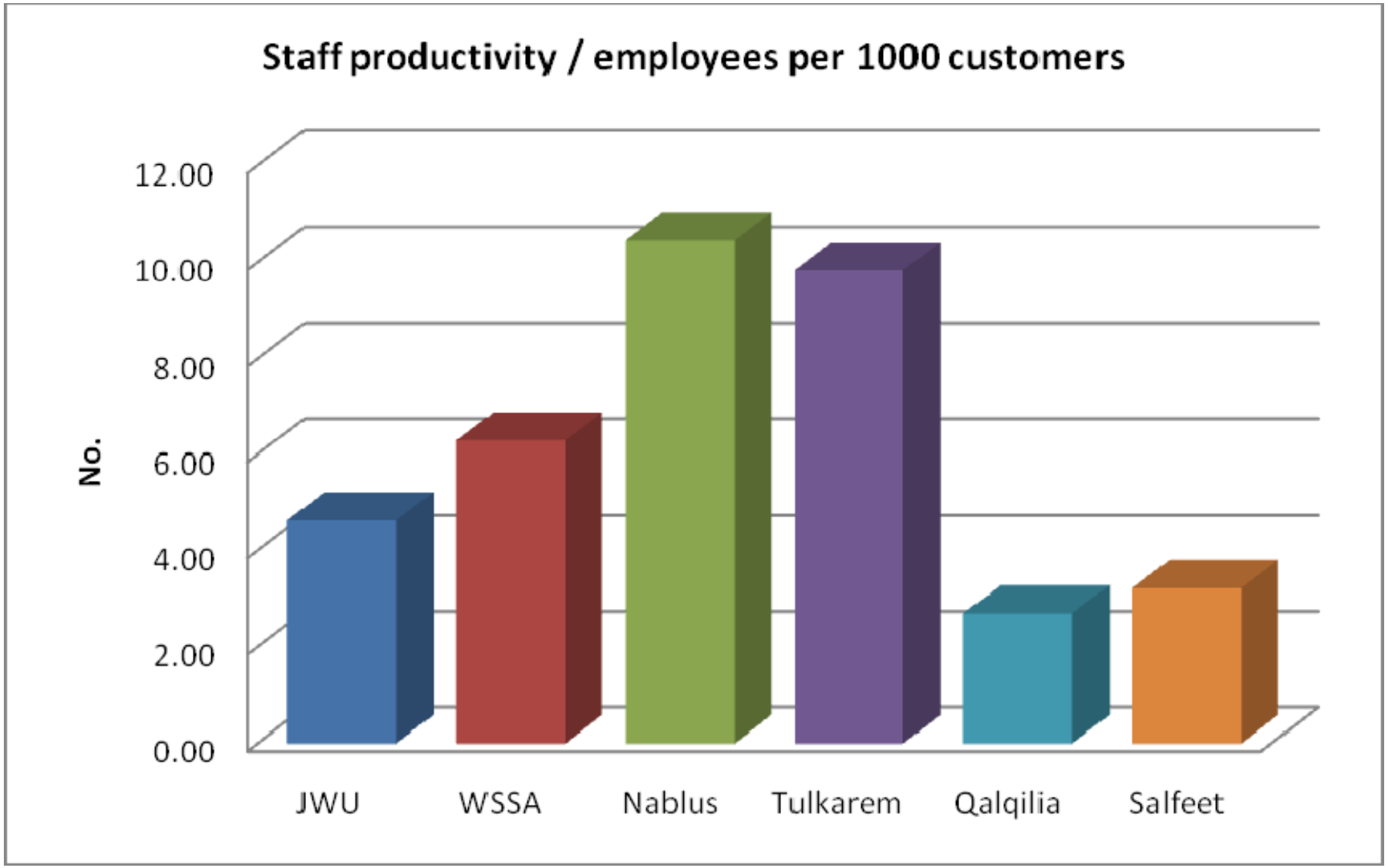

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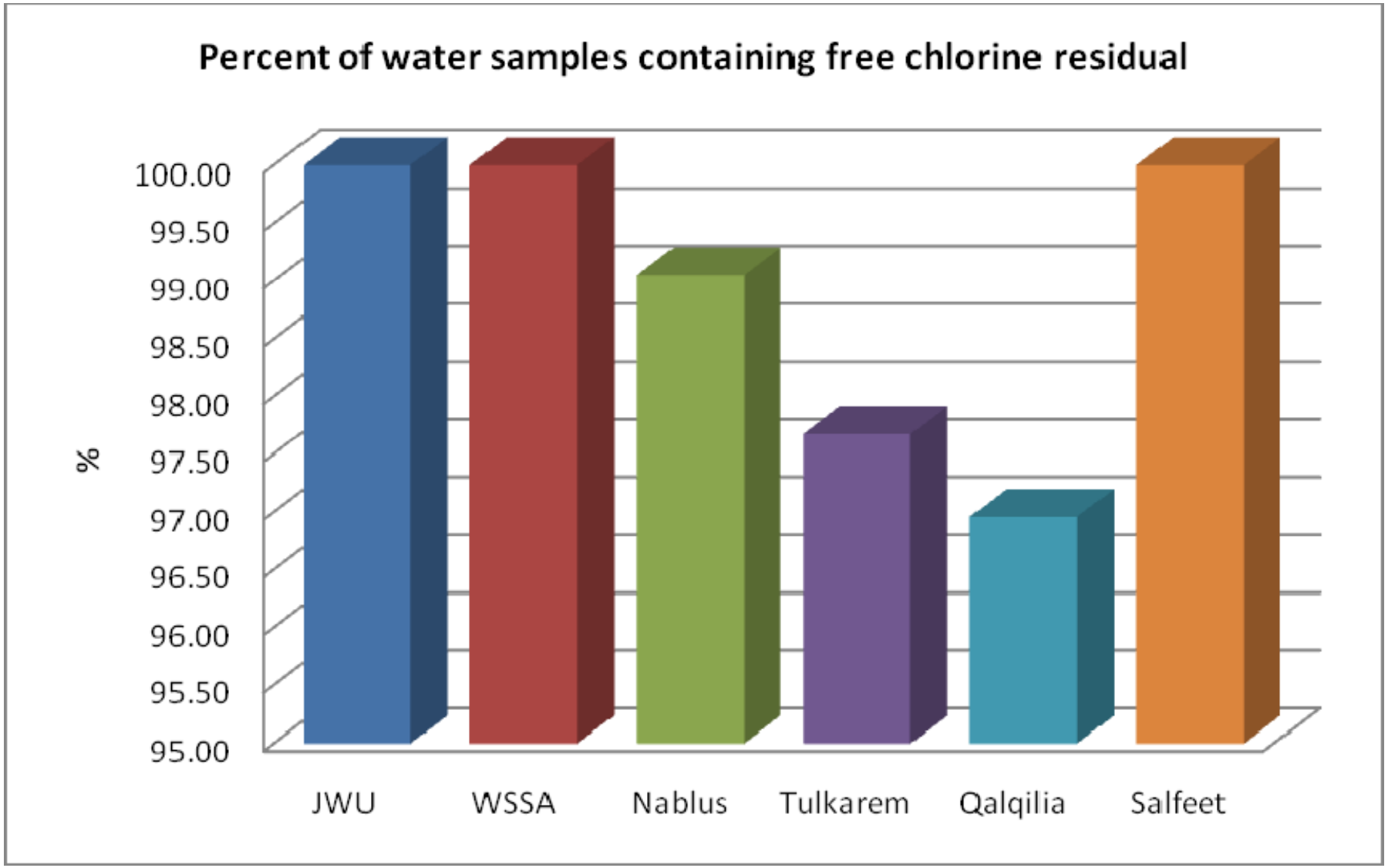

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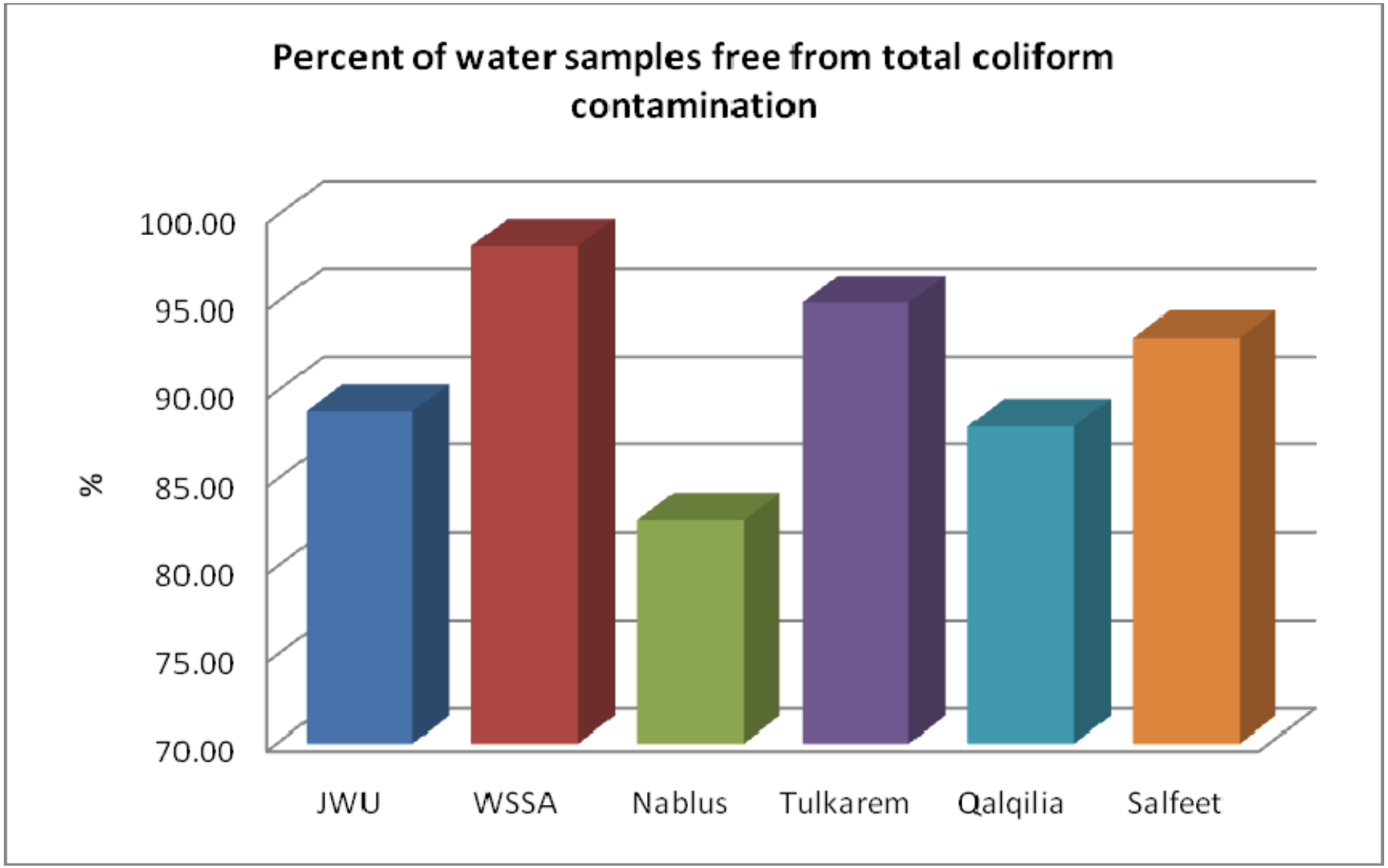

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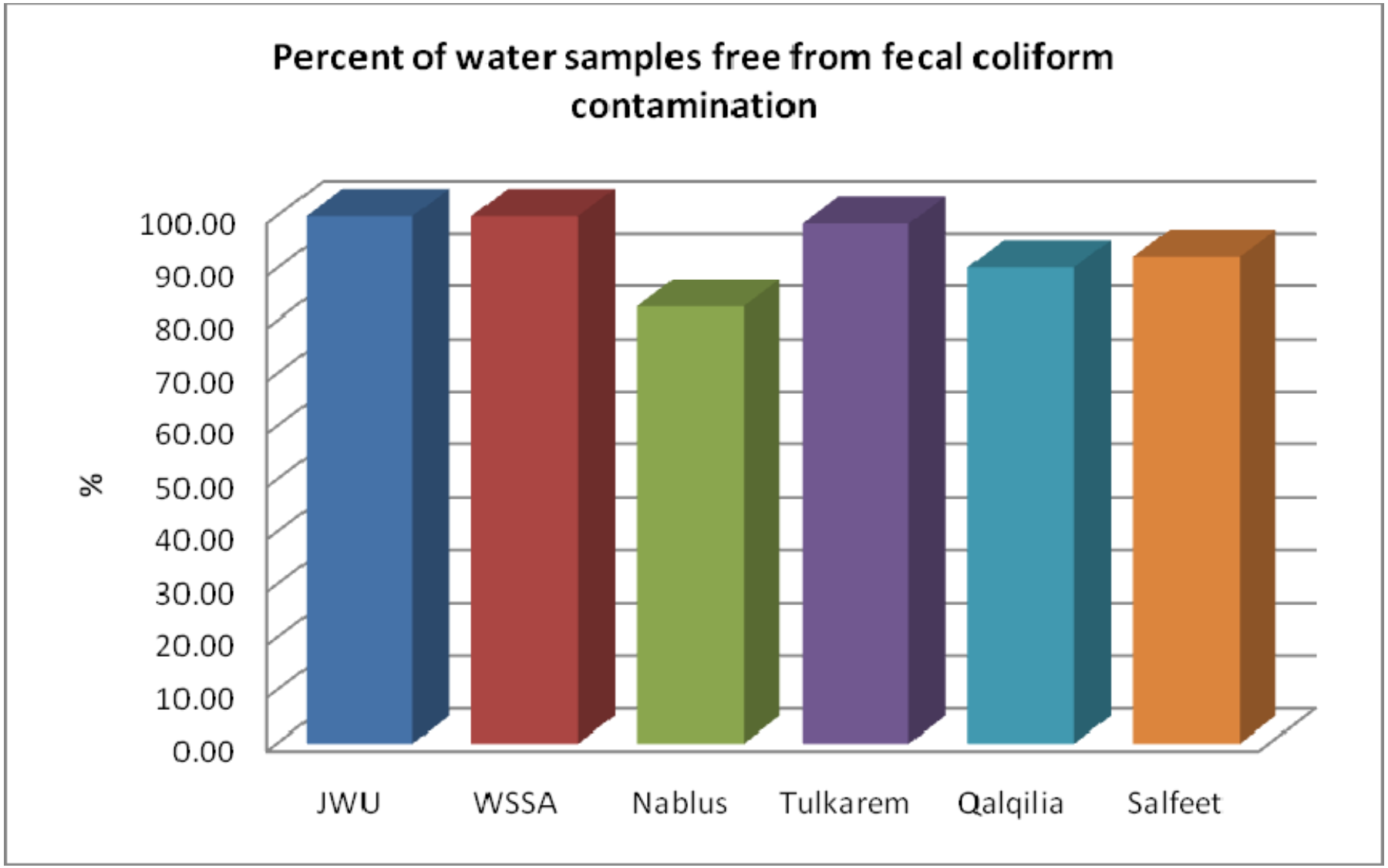

Recommendations

1. Promote the adoption of accrual accounting, separation of financial accounts, bank accounts and updated asset registries by service providers through cooperation and enhanced relations with other stakeholders.

2. Prepare standard ratios for allocating indirect costs paid by municipalities on behalf of the service providers.

3. Encourage managers of service providers to regularly perform water quality analysis.

4. Develop targeted training courses in performance measuring to service providers.

5. Exchange of experience with other service providers who have noticeable achievements in the water regulation field.

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سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY

Next Steps

1. Further develop the project by adding other indicators.

2. Improve the quality of data collected from all service providers.

3. By the end of year, expand the number of participating service providers in the PI's project to cover all utilities, JSC's and all municipal water departments in the West Bank and Gaza.

4. Set minimum levels of values of PI's to be achieved by service providers.

5. By the end of 2014, expand the project to cover all water and wastewater service providers and increase number of measured indicators to cover wastewater service.

6. Include the results of the project and relevant data and forms on PWA website.

Thank You for Your Attention

الجمهورية التونسية

وزارة الفلاحة والموارد المائية

الشركة الوطنية لاستغلال و توزيع المياه

مؤشرات حسن الأداء

في الشركة الوطنية لاستغلال و توزيع المياه

فتحي الشايب المدير المركزي للأشغال الجديدة

المحتوى

- تقديم الشركة الوطنية لاستغلال و توزيع المياه
- استراتيجية الشركة لإرساء مؤشرات حسن الأداء و المقارنة
- المقارنة : **Benchmarking**
- أنواع المقارنة
- أمثلة من المقارنة الداخلية
- الأعمال التحضيرية قبل إرساء مؤشرات حسن الأداء و المقارنة
- الخلاصة و الآفاق

تقديم الشركة الوطنية لاستغلال و توزيع المياه

تقديم الشركة الوطنية لاستغلال و توزيع المياه.

الشركة الوطنية لإستغلال و توزيع المياه منشأة عمومية لا تكتسي صبغة إدارية و تعمل على إنتاج و توزيع الماء الصالح للشرب قصد تأمين تزويد جميع مناطق الجمهورية و تتعلق أنشطتها بالأساس بما يلي:

- إنتاج الماء: الإنتاج و المعالجة و النقل
- توزيع المياه: إدارة و صيانة شبكات المياه و التجهيزات و التصرف في المشتركين
- التطوير: الدراسات و الاشغال و التزويد

للشركة ٣٨ فرعا بمختلف ولايات الجمهورية (٢٤ ولاية)

الشركة الوطنية لاستغلال و توزيع المياه

- مؤسسة عمومية ذات صبغة غير إدارية تأسست سنة ١٩٦٨.
- عدد الموظفين: حوالي ٧٣٥٠.
- عدد المشتركين :حوالي ٢٣٨٦٠٠٠ مشترك في٢٠١١ .
- طول الشبكة : حوالي ٤٧٥٠٠ كيلومترا.
- عدد الأقاليم (الوكالات التجارية): ٣٨

مؤشرات حسن الأداء

أهم أهداف بناء مؤشرات حسن الأداء :

- توحيد المفاهيم بين مختلف هياكل المؤسسة و الإقتراب أكثر من المفاهيم المستعملة من طرف المؤسسات العالمية العاملة في نفس القطاع
- مقارنة المؤسسة مع المؤسسات الأخرى المشابهة
- تحسين طرق التصرف تركيز منضومات تصرف حديثة مبنية على الأعلامية

أهمية مؤشرات حسن الأداء و المقارنة

- تقييم الفعالية و النجاعة.
- قيس درجة تحقيق الأهداف المرسومة.
- استعمال المؤشرات كوسيلة للمقارنة.
- الإستجابة لشروط مواصفة أيزو ٩٠٠١ في ما يخص قيس أدا
  نجاعة العمليات و المسارات و المنضومة بصفة اجمالية .
- الإستجابة لمتطلبات المواصفات أيزو ٢٤٥١٠ و أيزو ٢٤٥١٢
  ما يخص قيس أداء و نجاعة خدمات الماء الصالح للشرب و
  الخدمات الأخرى المسداة للعملاء.

مؤشرات حسن الأداء

قامت الشركة بإرساء مؤشرات حسن الأداء و المقارنة لتتمكن من متابعة مختلف النتائ
و الخدمات المسداة في الزمان و المكان.

و قد تم اختيار جملة من المؤشرات تتعلق بما يلي:

- التجهيزات المتعلقة بالإنتاج و إستهلاك الطاقة و المواد الكيميائية: ١٥ مؤشرا
  مؤشر إستهلاك الطاقة لإنتاج م^{٣} من الماء
- الإستغلال: ٢٢ مؤشرا منها مردودية شبكة التوزيع
- نوعية الخدمات المسدات للحرفاء: ٧ مؤشرات منها نسبة التزويد
- التصرف في الموارد البشرية: ٥ مؤشرات منها عدد المشتركين لكل موظف
- التصرف المالي و المحسباتي: ٥ مؤشرات منها مؤشر تغطية نفقات الإستغلال

(Benchmarking المقارنة)

المقارنة (Benchmarking)

المقارنة (Benchmarking) منظومة للتطوير المتواصل مبنية على مقارنة أنظمة
الإستغلال بينمختلف العاملين في نفس العمليات و تمكن من تطوير أدوات لتسهيل تب
الخبرات المتعلقة بنفس العمليات و القضاء على مواطن الخلل. و تمكن المقارنة من

- تعديل كلفة الإنتاج و التوزيع
- تحسن العلاقة مع المواطن
- التقليص من نسبة ضياع الماء
- تحسن نوعية الخدمات المسداة

أنواع المقارنة

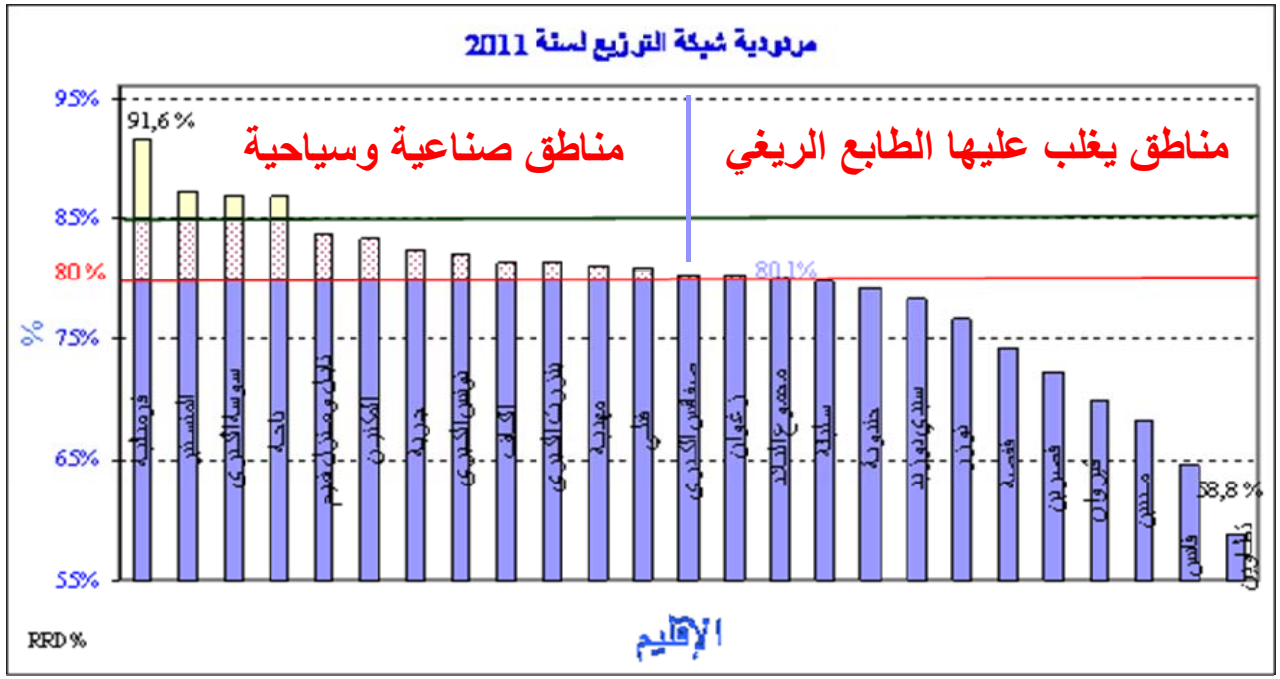
توجد أأنواع تتعلق بالمقارنة ولكننا سوف نقتصر على تقديم نوع واحد

- الداخلي (Interne) و يتعلق بمقارنة عملية من عمليات الشركة بين مختلف فروع

مثال بالنسبة لحالتنا يمكن مقارنة مردودية شبكات الإستغلال بين مختلف أقاليم ا

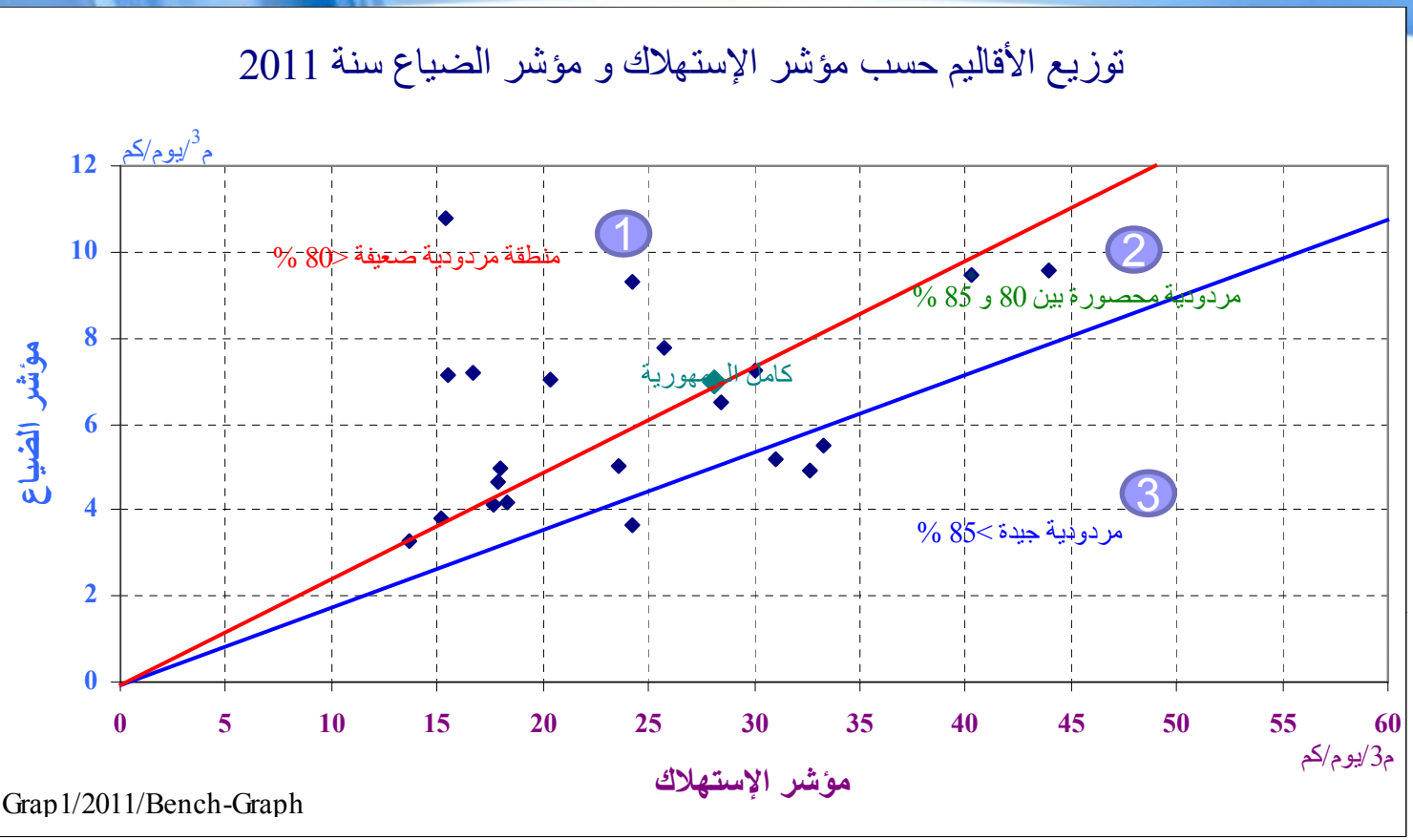
مثال من المقارنة الداخلية

سوف نركز في هذا الباب على مقارنة مختلف أقاليم الشركة فيما يتعلق بالمردودية



حسب الرسم نلاحظ أن العديد من الأقاليم لهم نسبة مردودية شبكة التوزيع دون المعدل العام للبلاد و ب٨٠،١ % و تكون في حدود ٥٨،٨ % بالنسبة لولاية تطاوين و ٦٤،٥ % بالنسبة لولاية قابس و بالنسبة لولاية مدنين و هي ولايات تتمتع بمياه محلاة مما يستوجب دراسة الوضعية عن قرب

مثال من المقارنة الداخلية



المنطقة ١ هي منطقة تضم أقاليم ذات مردودية دون ٨٠ %

المنطقة 2 هي منطقة تضم أقاليم ذات مردودية بين ٨٠ و ٨٥ %

الأعمال التحضيرية قبل إرساء مؤشرات حسن الأداء و المقارنة

الأعمال التحضيرية المقترحة

- برمجة دورات خاصة للإعلام و التوعية و التدريب للموظفين و إطارات الإدارة العليا.
- تعيين المسؤولين المباشرين عن مؤشرات حسن الأداء و المقارنة ، و تمكينهم من دورات خاصة و مكثفة للتدريب و التأهيل.
- إرساء منظومة تحفيزية لمكافأة الموظفين الذين يحرزون نتائج متقدمة ضمن تطبيق مؤشرات حسن الأداء و المقارنة

الخلاصة و الآفاق

الخلاصة : الإستفادة من مؤشرات حسن الأداء و المقار

- العمل على مواصلة رفع مستوى رضاء المستفيدين من خدما الشركة من خلال التحسين المستمر و استعمال مؤشرات حس الأداء و المقارنة .
- التأكد من التزام وانخراط جميع الموظفين لهذا النظام.
- التأكيد على أن استعمال مؤشرات حسن الأداء و المقارنة لا يتطلب المزيد من الجهد بل يوفر بيئة عمل ذات نجاعة أكبر.
- التأكد من تكامل الموارد البشرية العاملة تحت مظلة مؤشرات حسن الأداء و المقارنة .
- التأكيد على إمكانية تحسين جميع الأجهزة الحكومية من خلال

آفاق المستقبل

- العمل على ترسيخ ثقافة التطوير والتحسين المستمر.
- العمل على تحقيق رغبة المستفيدين في التطوير المستمر الخدمات، و استباق انتظاراتهم و تطلعاتهم.
- العمل على تبسيط الإجراءات إلى أقصى حد ممكن، و الرفع من نجاعة الموظفين و مردودية وسائل العمل بمتابعة مؤشرات حسن الأداء و المقارنة .
- العمل على استخدام مؤشرات حسن الأداء و المقارنة لتحقيق أعلى درجات التميز في العمل، من أجل الإنطلاق في منضومة الجودة الشاملة و التقدم نحو الإمتياز.

شكرا

Benchmarking in Practice

Moving from measurement to improvement

Mostafa BIAD, Eng-MBA
mbiad@onee.ma

Plan of the presentation

- **Steps of benchmarking**
- **Success factors of benchmarking**
  - From general to specific (corporate & Process BM)
  - Training, support, plausibility checks
  - Performance assessment tools, (online Software, individual report)
  - Workshops and networking
- **Examples**

Definitions (reminder)

- ‘Benchmarking is a tool for performance improvement through systematic search and adaptation of leading practices.’ (IWA 2011)

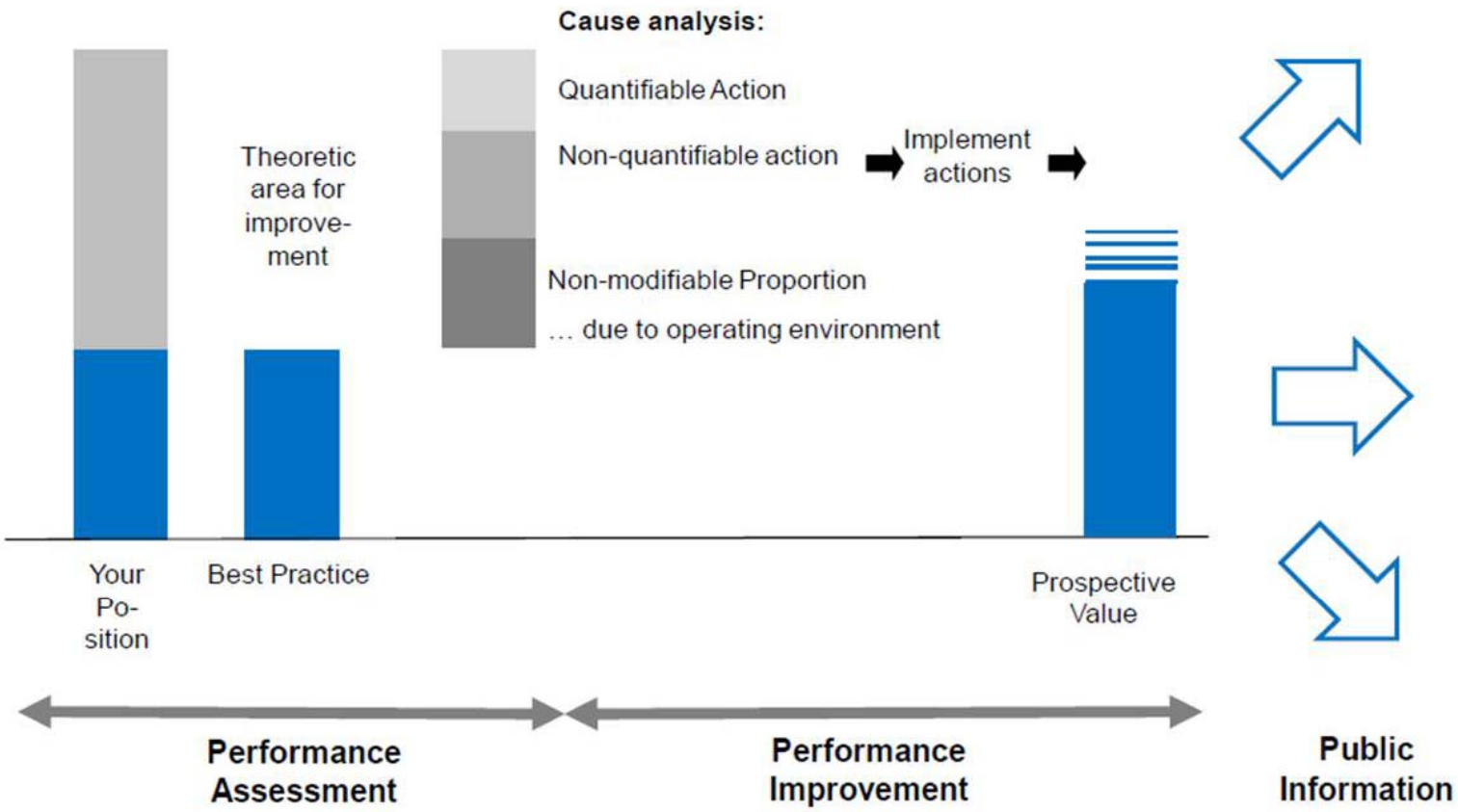
Benchmarking Objectives
(reminder)

- The objective of Benchmarking lies in determining **improvement potential** and working out and **implementing** realizable measures to **improve performance.**
- The systematic **locating of influenceable causes** for existing differences is the Focus of Benchmarking.

(DWA, 2008)

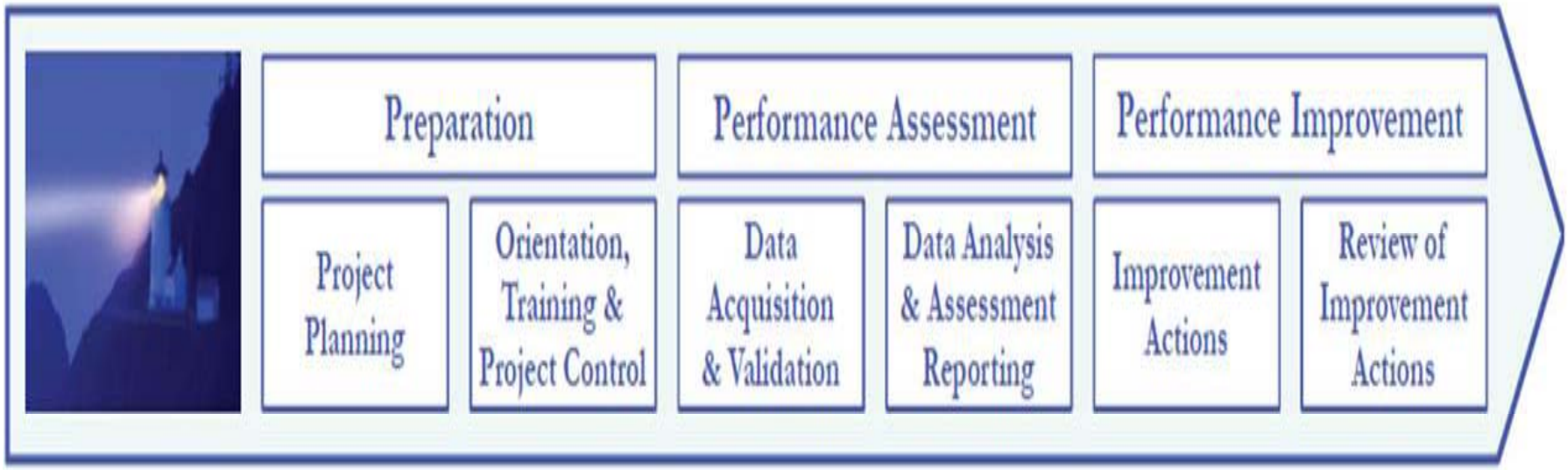
Benchmarking Objectives
(reminder)

Goals: Performance assessment, Performance Improvement and Public Information



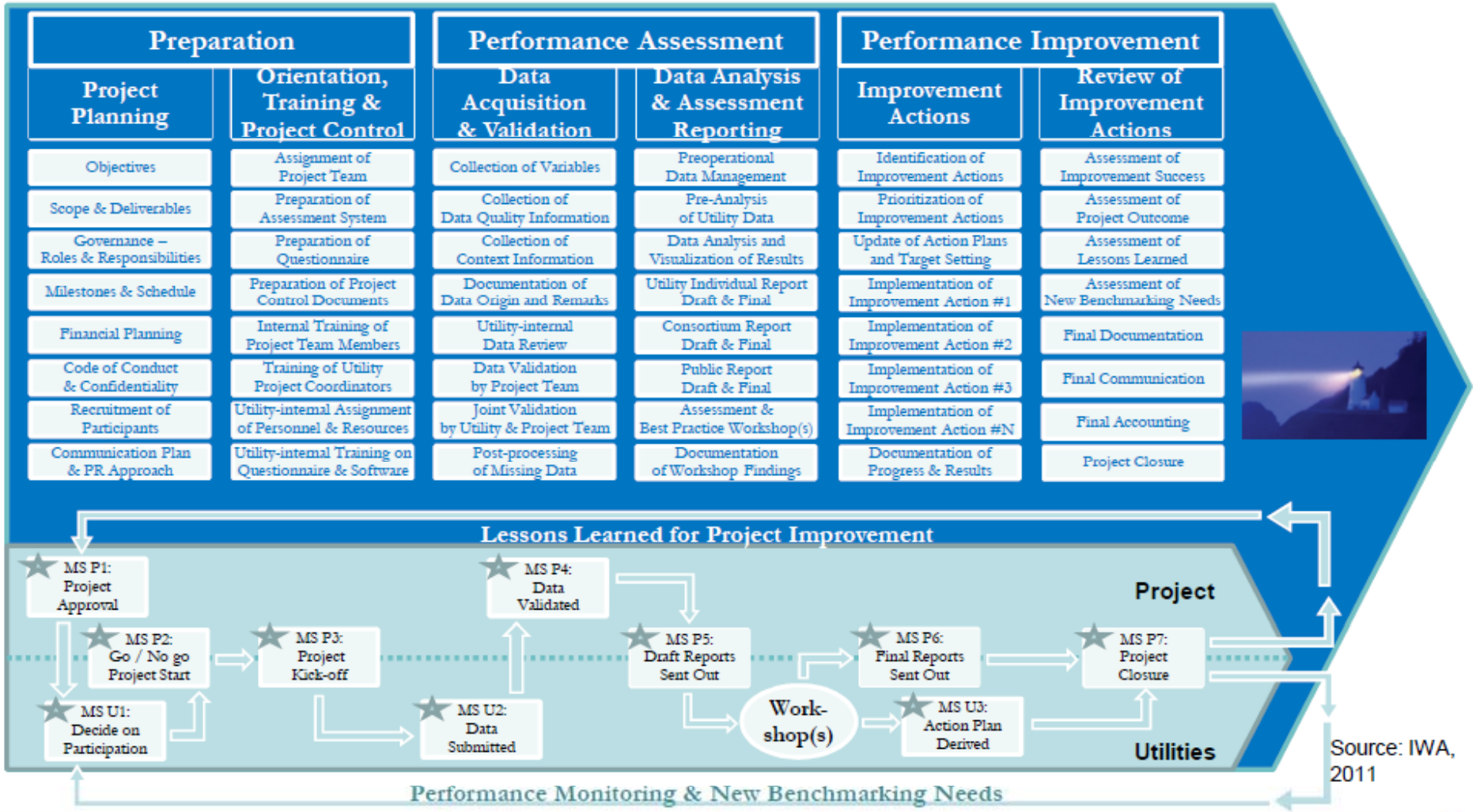
Steps of Benchmarking (IWA)

Benchmarking work packages and associated tasks (IWA)



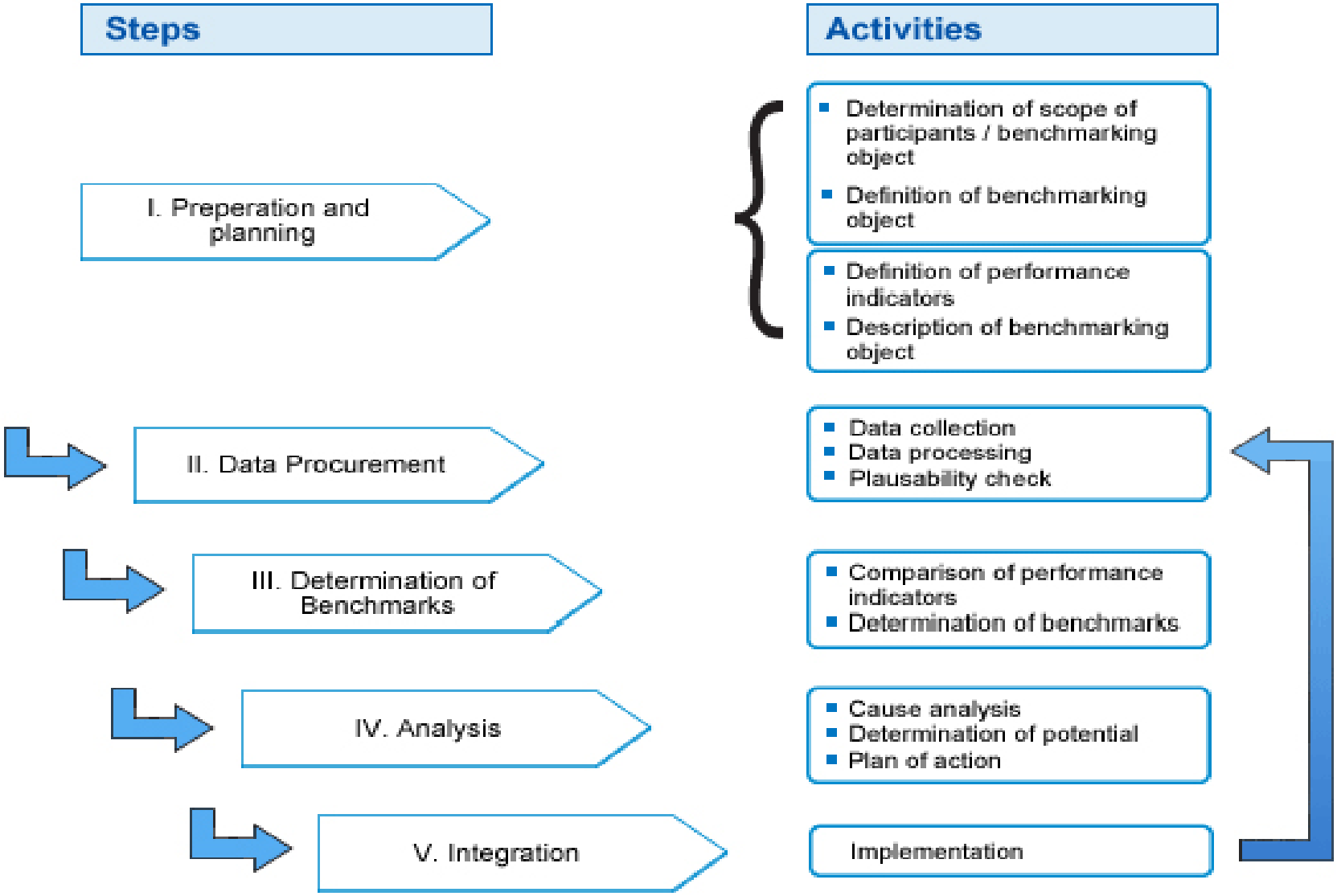
Source: IWA, 2011

Benchmarking work packages and associated tasks (IWA)



Source: IWA, 2011

Steps of benchmarking



Success factors for Benchmarking

General

- Strategic approach
- Clear commitment of the leadership to benchmarking results
- **From general to specific (corporate vs. process benchmarking)**

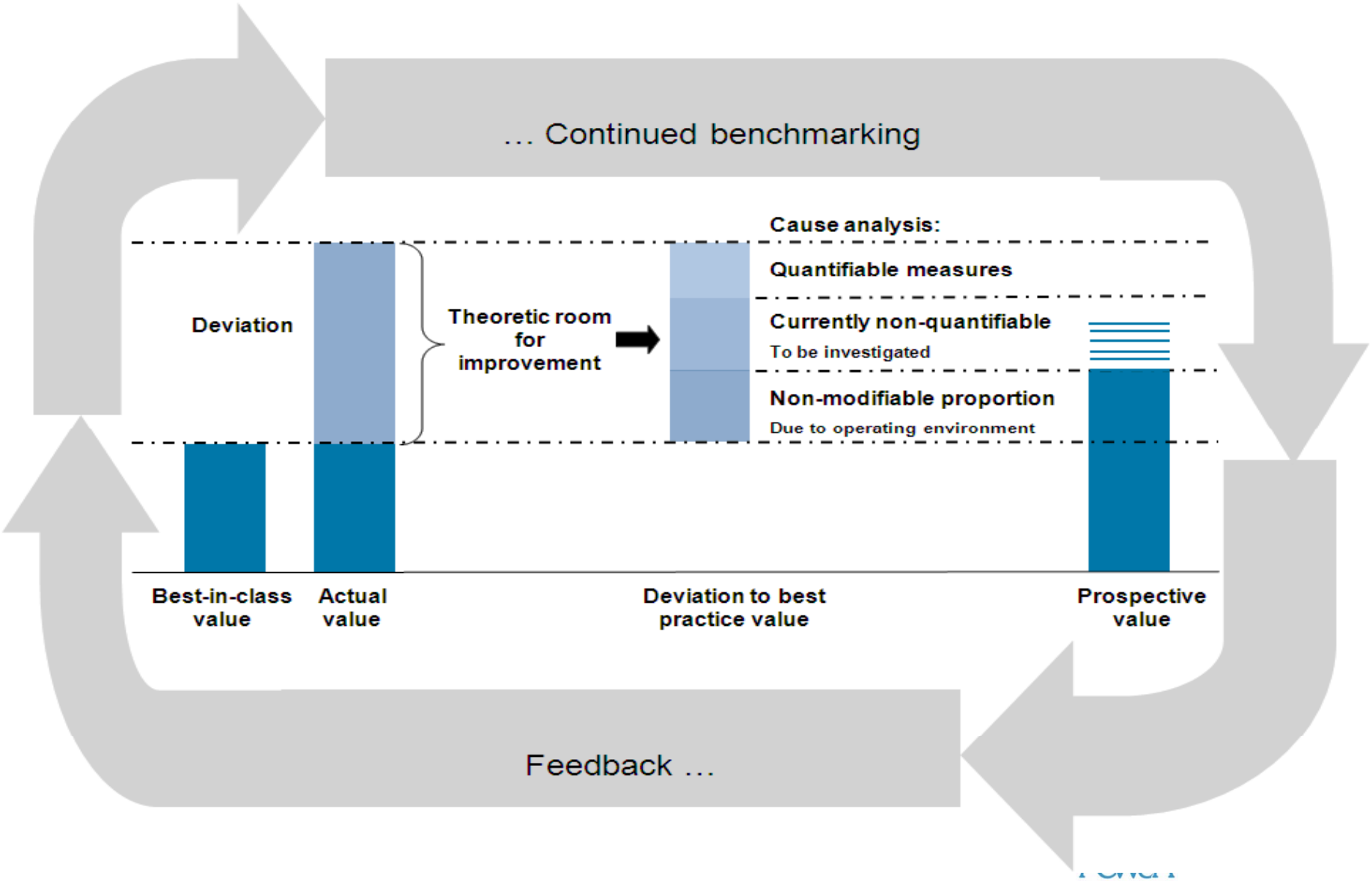
Performance assessment

- Clear Structure and definitions of benchmarking systems (especially IWA-Performance Indicator)
- **Training, support, plausibility checks**
- **Performance assessment tools, (online Software, individual report)**

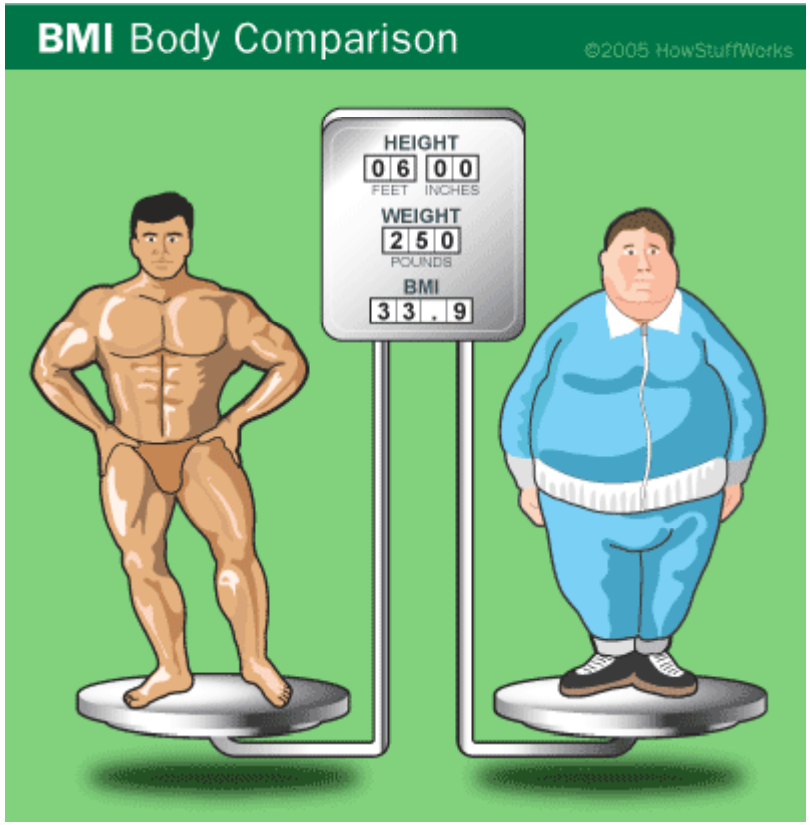
Performance improvement

- Workshops and networking
- **Continuous benchmarking**

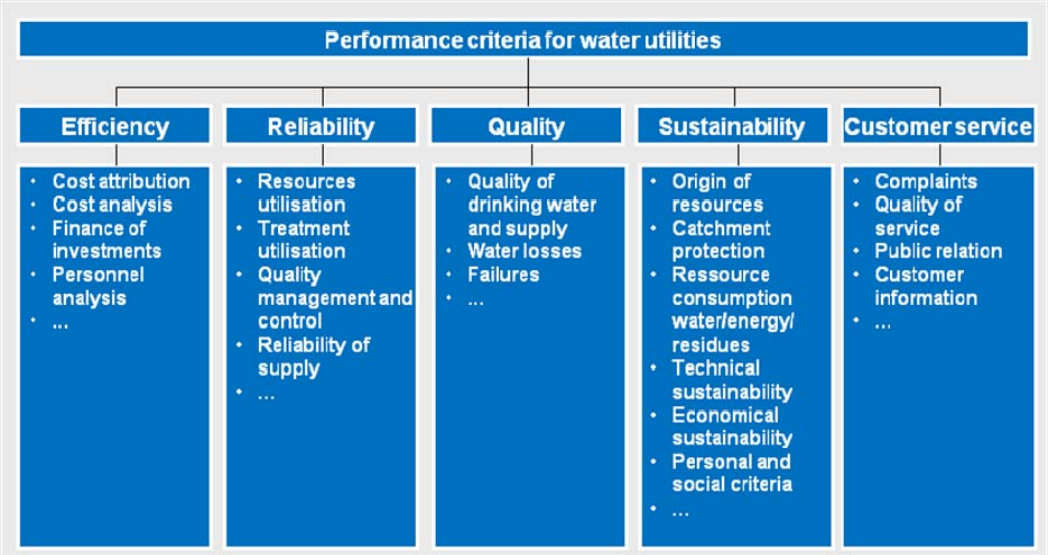
Benchmarking, … the rationale : continous process



Meaningful comparison of Performance Indicator needs multidimensional framework and context information



Performance assessment framework

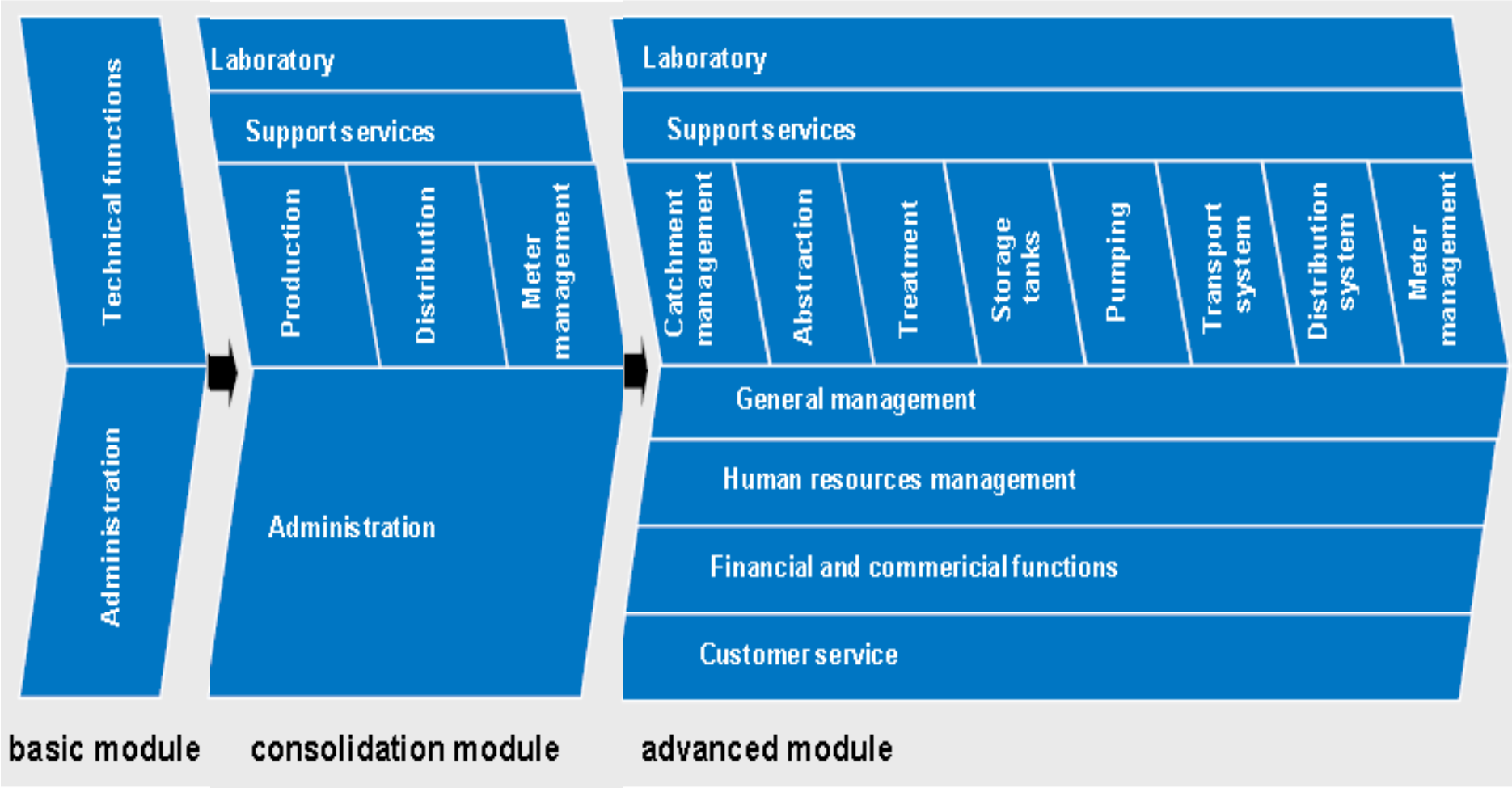


+

Context Information

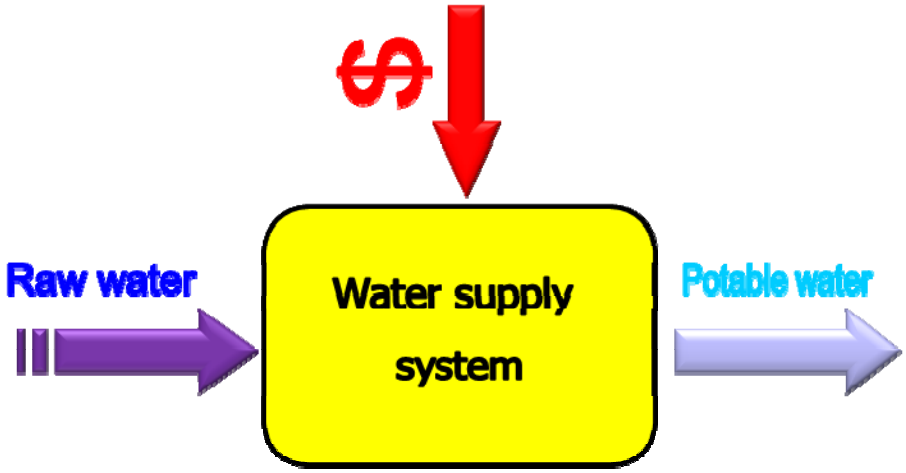
(size, structure, topography, level of technology, region...)

Integrated process model structure

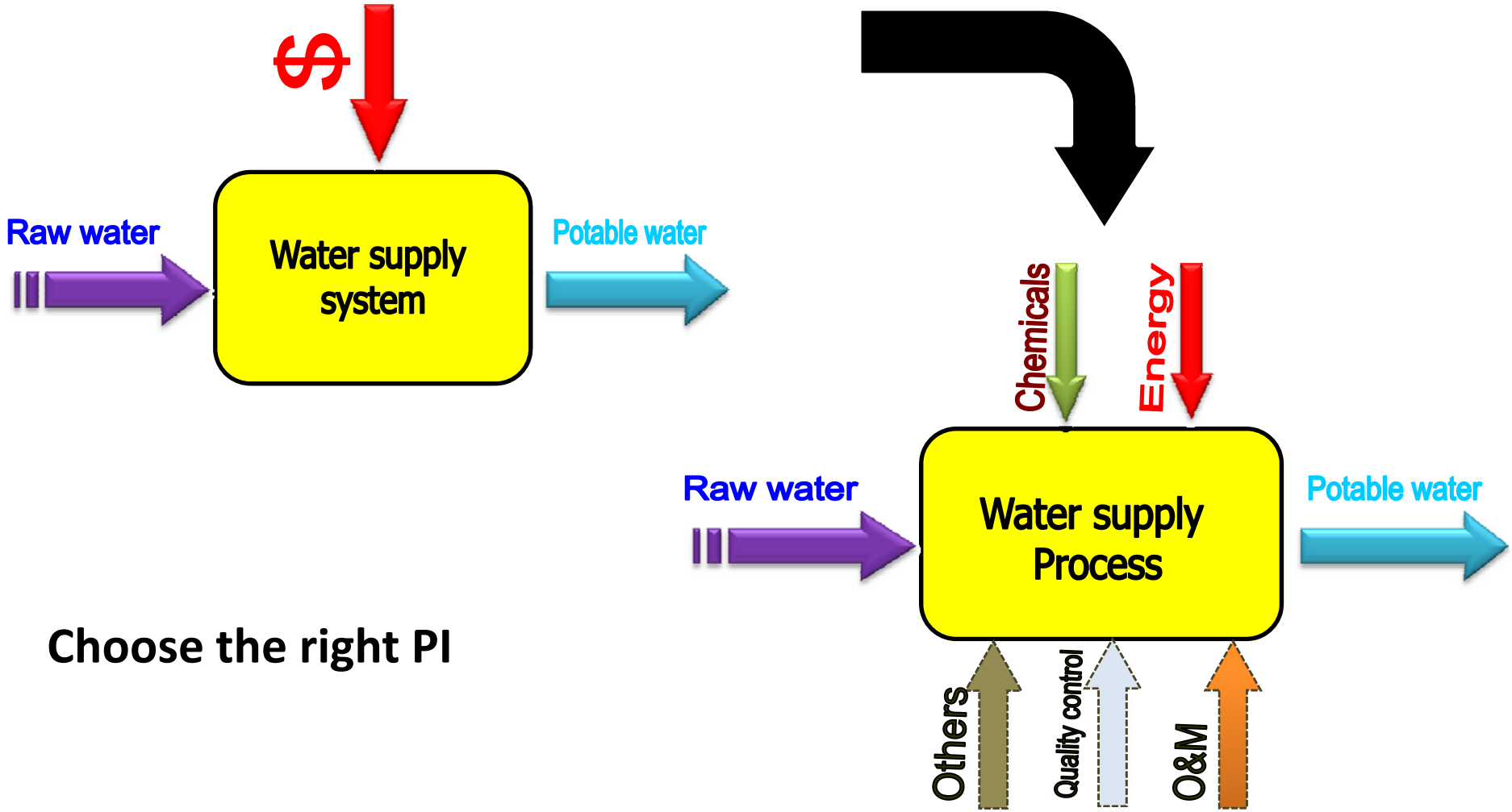


Example : Running cost

- Country/utility : $/m^3
- Comparison
- Analysis
- Discussion
- Need of more information ??
- Conclusions



Potable water : simplified process model (Corporate vs Process PIs)



Choose the right PI

Corporate – Process level

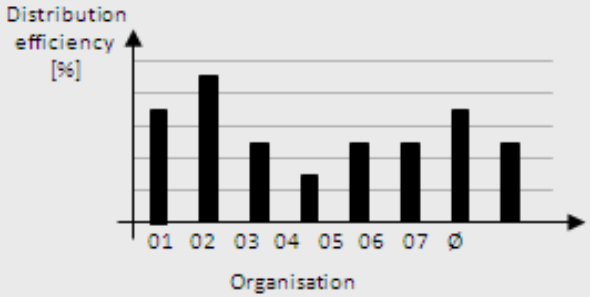
- **PI system should be structured hierarchically :**
  - **Corporate level** (aggregation level) :
    - **Consolidation status** of information about the object of investigation of PI.
    - A highly aggregated PI gathers information at company level with **low level of detail** (e.g. Operating cost of water supply ($/m^3) Support the summarized evaluation of efficiency the company (with **danger of misinterpretations**)
  - **Process level** (Process PIs have high significance)
    - Detailed investigation allow **more accurate PIs**
    - **More efforts and expenditure** on data gathering and processing
    - But **allow comparison** between benchmarking partners only if the describe the same process
    - Gives the chance to incorporate "process owner"

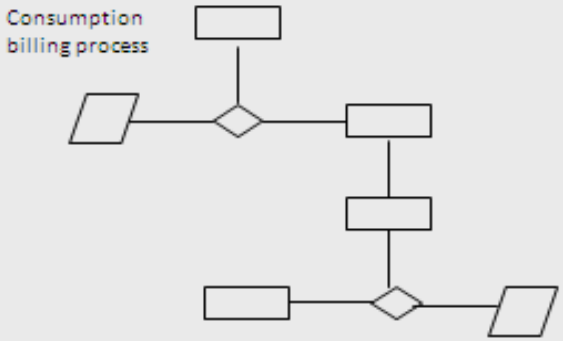
From general to specific

1. As the first step, PI comparison is carried out at the company level
2. Determination of the imrovement potential and the concerned processes
3. Then benchmarking at the process level
4. Prepare the implementation of the concrete measures

Corporate benchmarking vs. process benchmarking

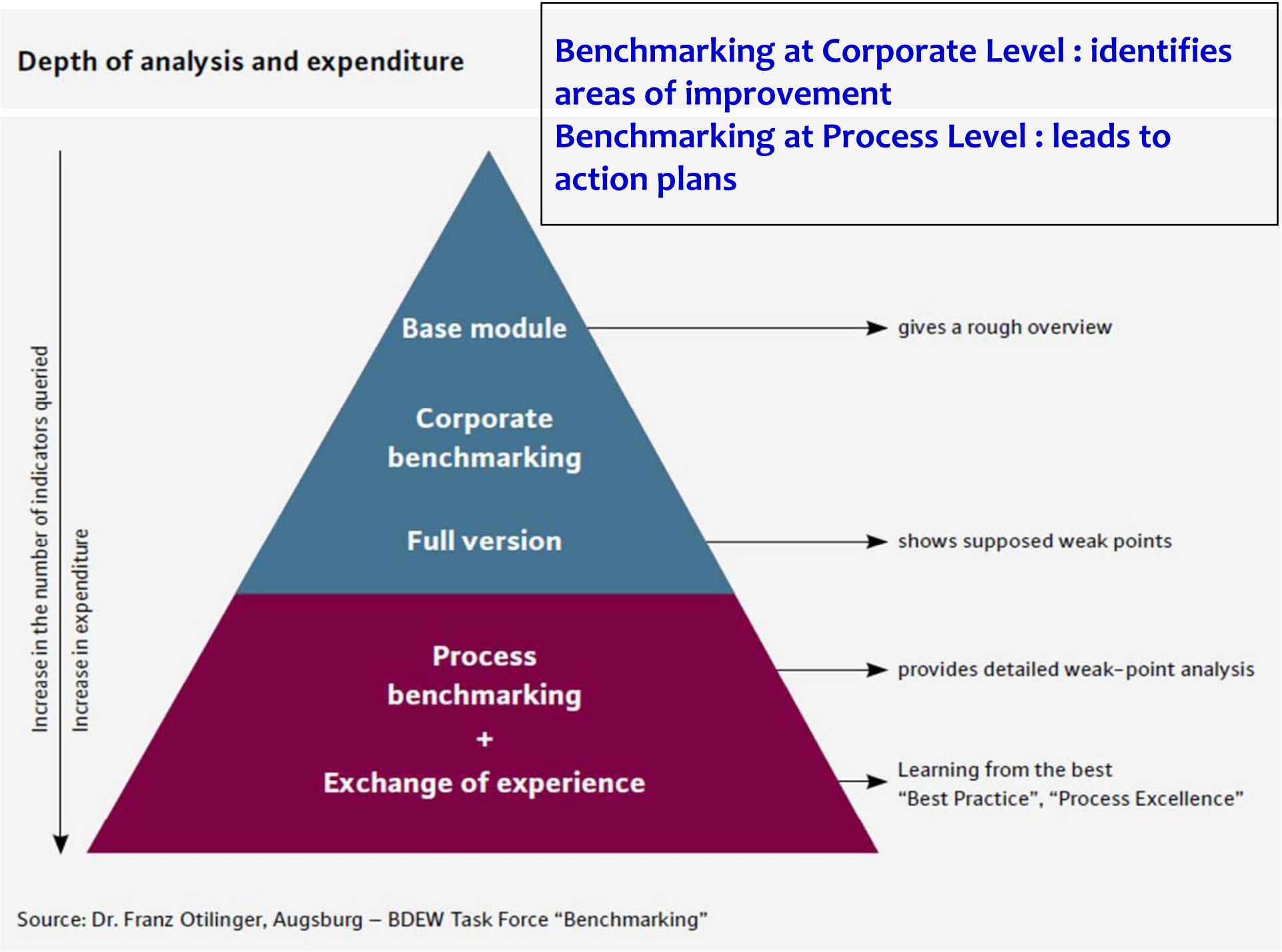
Corporate benchmarking	Process benchmarking
Efficiency	Effectiveness
Quantitative comparison of performance indicators	Qualitative analysis of performance
Searching / tracking problems	Solving problems
Focus on comparisons between the performance of organisations • Provides insight on relative progress • Indicates 'who' is doing better • Establishes targets	Focus on discrete processes and reasons for good results • Indicates 'why' or 'whether' one should do better (management strategies, use of technology etc.)
'Am I competitive?'	'How can I improve?'





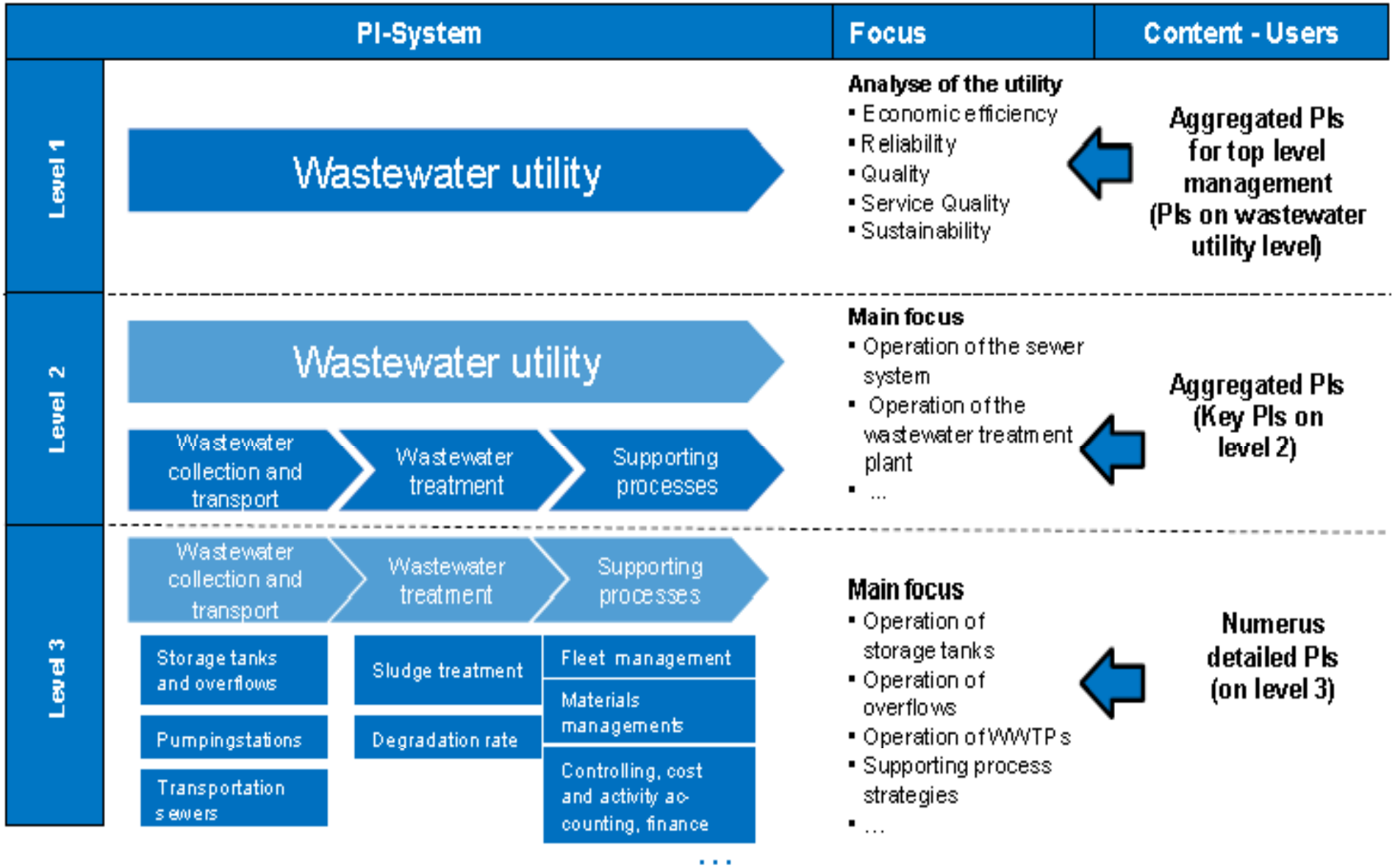
Benchmarking at Corporate Level : identifies areas of improvement

Benchmarking at Process Level : leads to action plans



Source: Dr. Franz Otilinger, Augsburg – BDEW Task Force "Benchmarking"

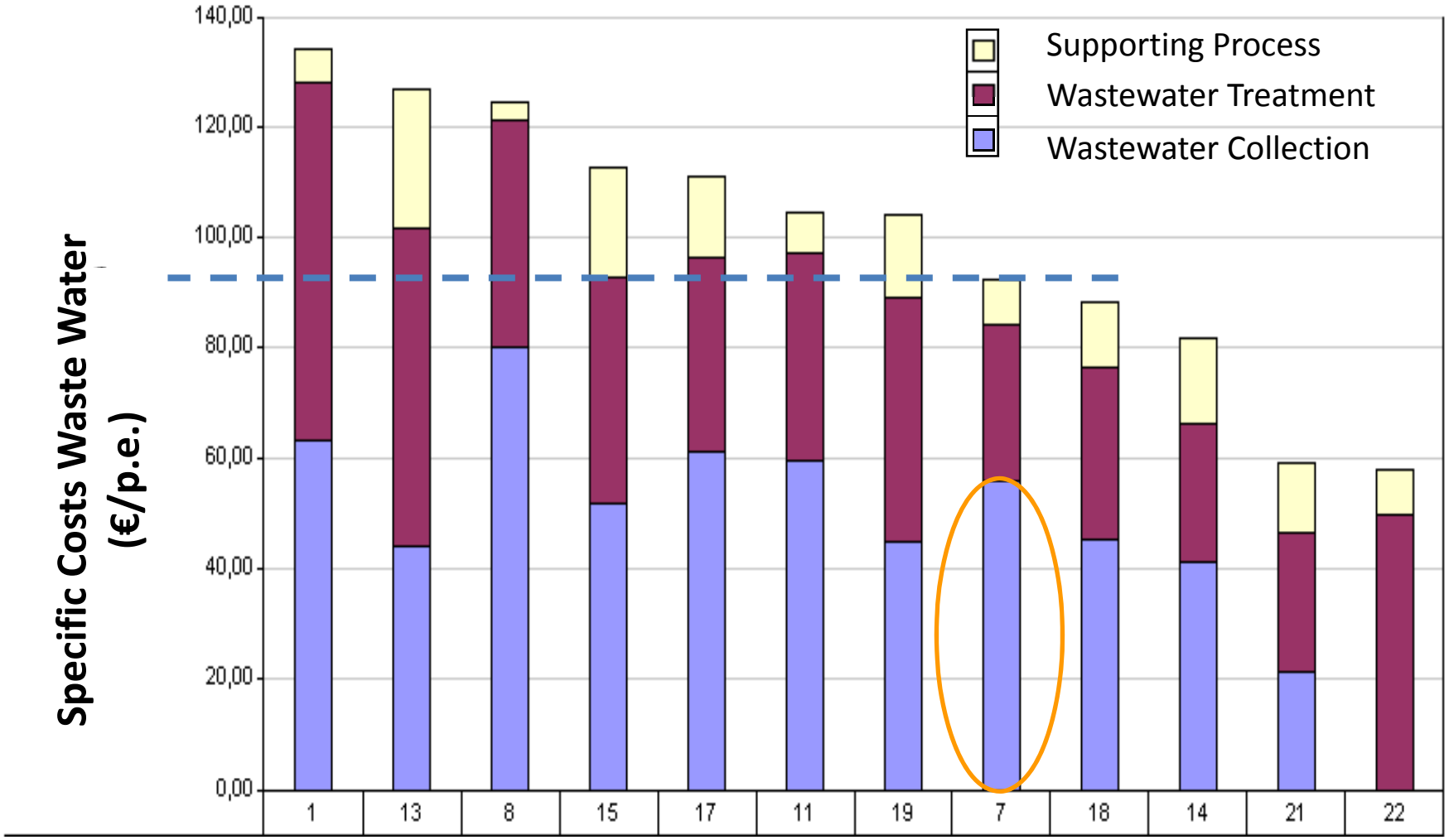
Hierarchy of PI's



Example of one utility

Area of improvement identified in corporate benchmarking:

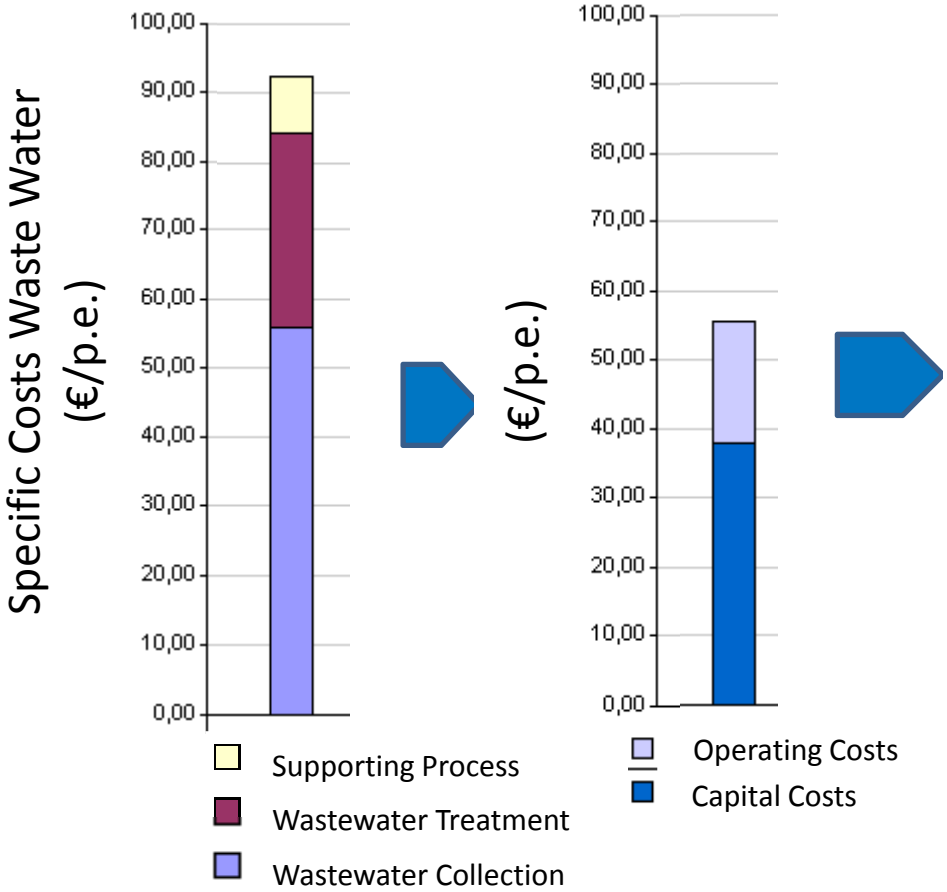
Wastewater collection

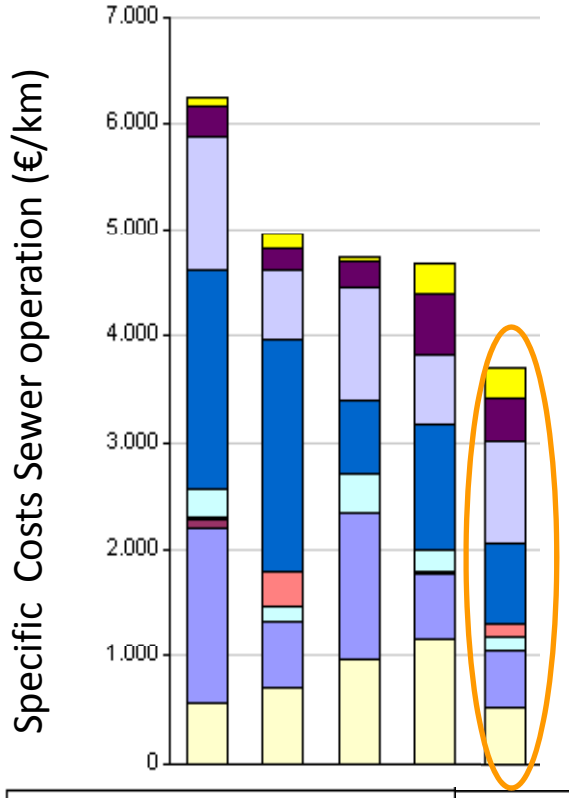


Example - detailed assessment via process benchmarking

Identifying areas of performance improvement (corporate benchmarking)

Detailed assessment via process benchmarking

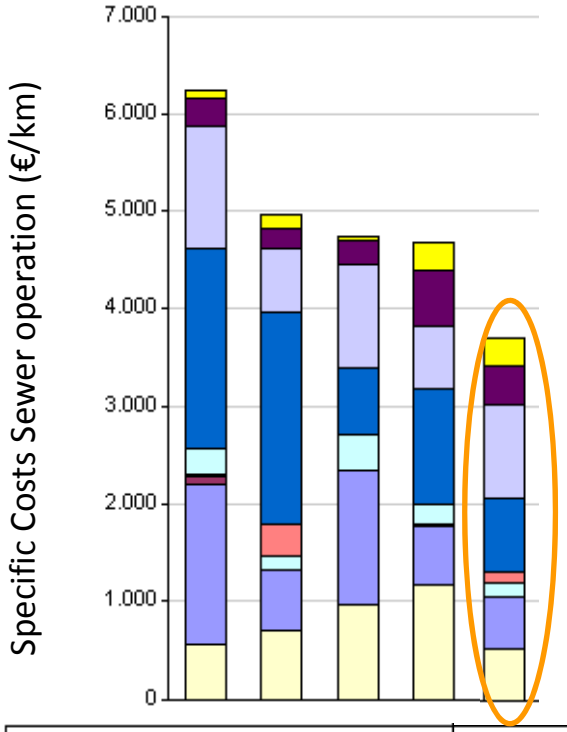




Energy costs of pumping station	Inspection costs
Costs of pumping stations	Costs of optical pre -control> DN 1200
Costs of other processes	Costs of optical pre -control< DN 1200
Costs of constructional sewer maintenance	Costs of sewer cleaning
Costs of separate manhole inspection	Non allocated costs

Example: Deriving action plans via process benchmarking

Detailed assesment via process benchmarking



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Costs of constructional sewer maintenance	Costs of sewer cleaning
Costs of separate manhole inspection	Non allocated costs

networking, workshops, action proposals, continuous benchmarking

Using process benchmarking as an improvement tool

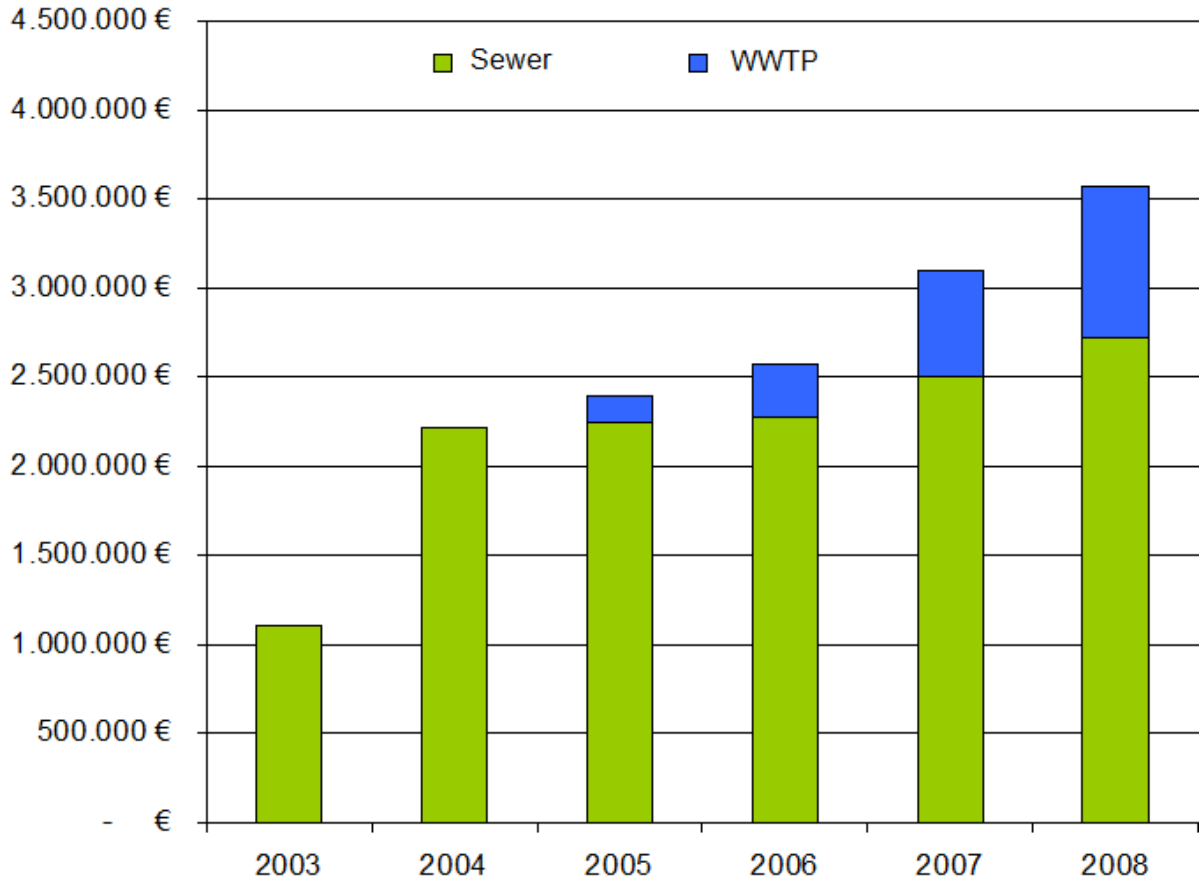
Process „Operating Sewer System“

- Changing the frequency of inspection and cleaning of pumping station
- Changing frequency of cleaning sewer system
- Integrating manhole-inspection in other activities
- …

Process „Investment in Sewer System“

- No change of overall sustainable strategy of high investment level
- Change in standards of new manholes
- …

Example: Annual savings are achieved, which add up to 2,7% of operating costs

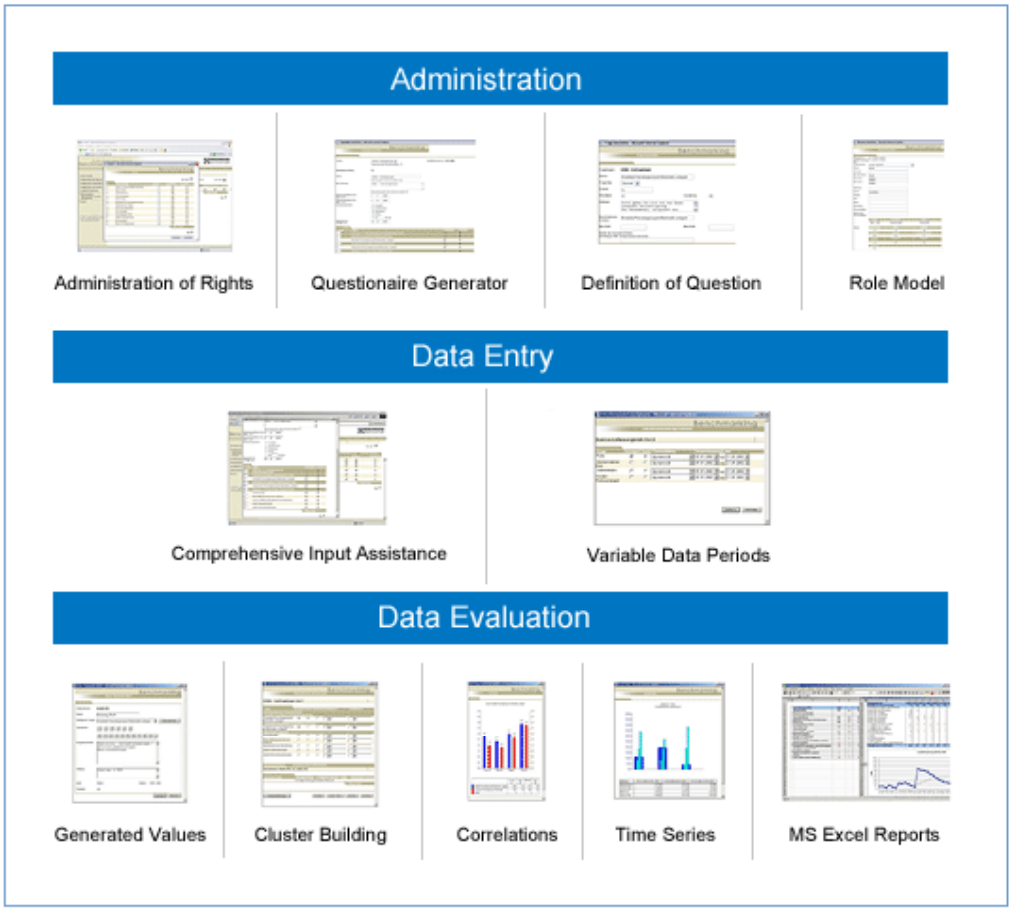


Training and plausibility checks

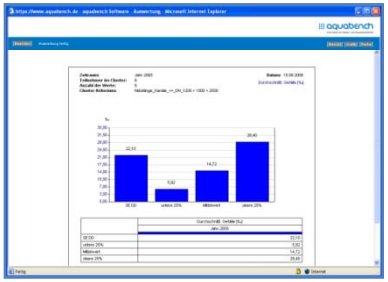
- **Training (and orientation)** :
  - all the team members involved in BM project.
- **Data validation and plausibility checks** :
  - incorporated since the data collection (reduce misunderstanding and mistakes during acquisition phase)
  - Crosschecks of variables

Online Software – What for?

- … to make data processing more effective
- … to have common definitions
- … to have real time data
- … to do reports on your own
- … Clustering, visualizing, …



Ways of analysing to results

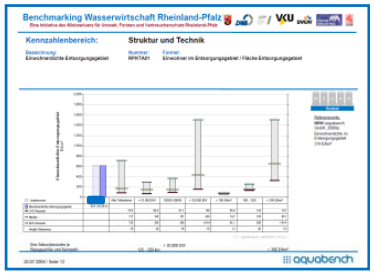


Online Analysis
(all the time)

Pre-
paration → Data-
entry → Identification
of
Benchmarks → Analysis → Integration

2012 — 2013

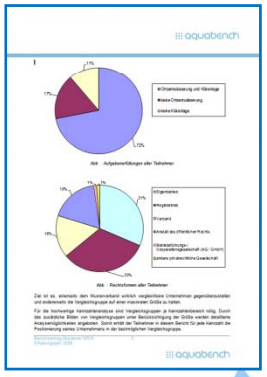
April | Mai | Jun. | Juli | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar

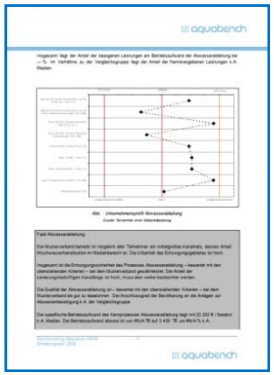


Draft
reports

Expert-Workshop

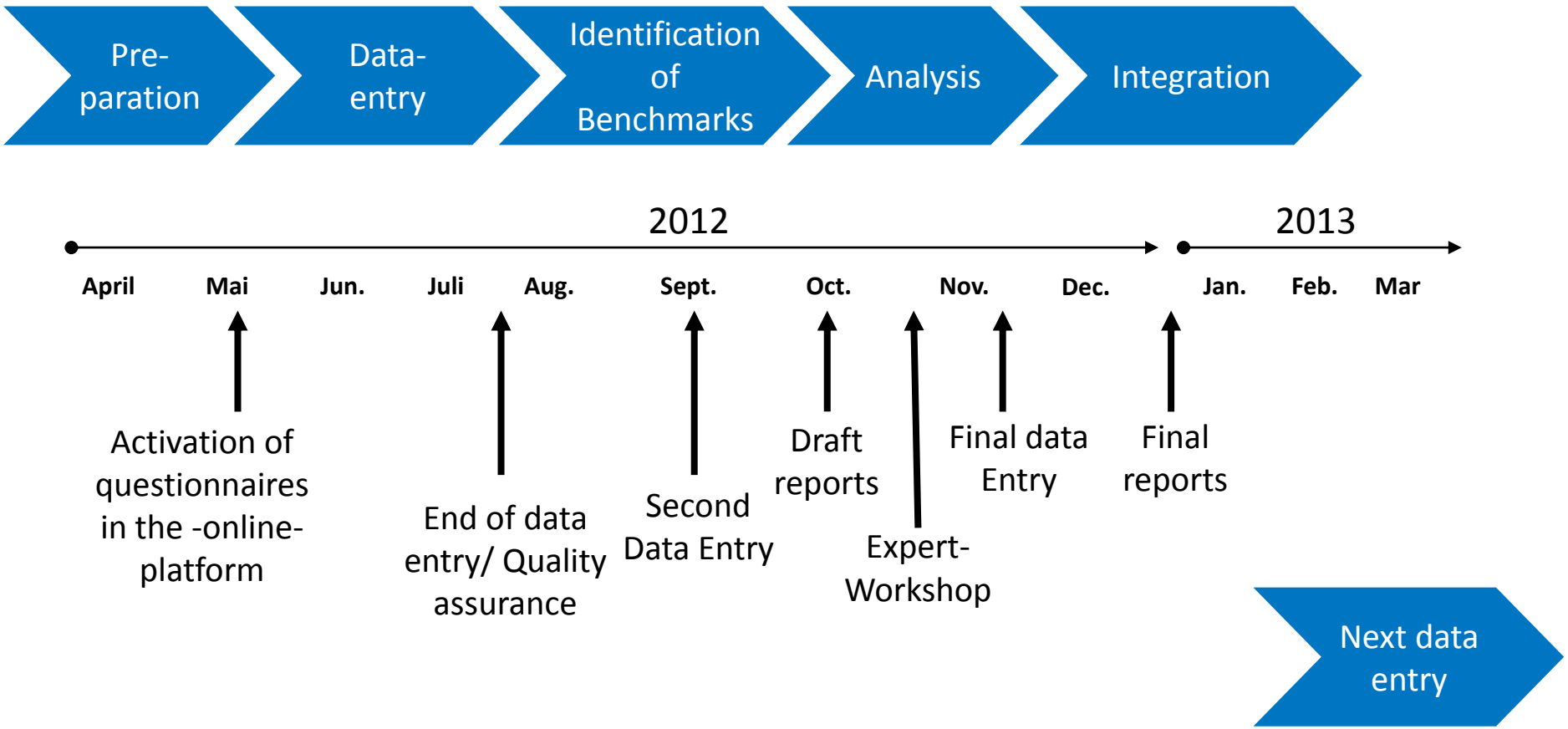
Final reports



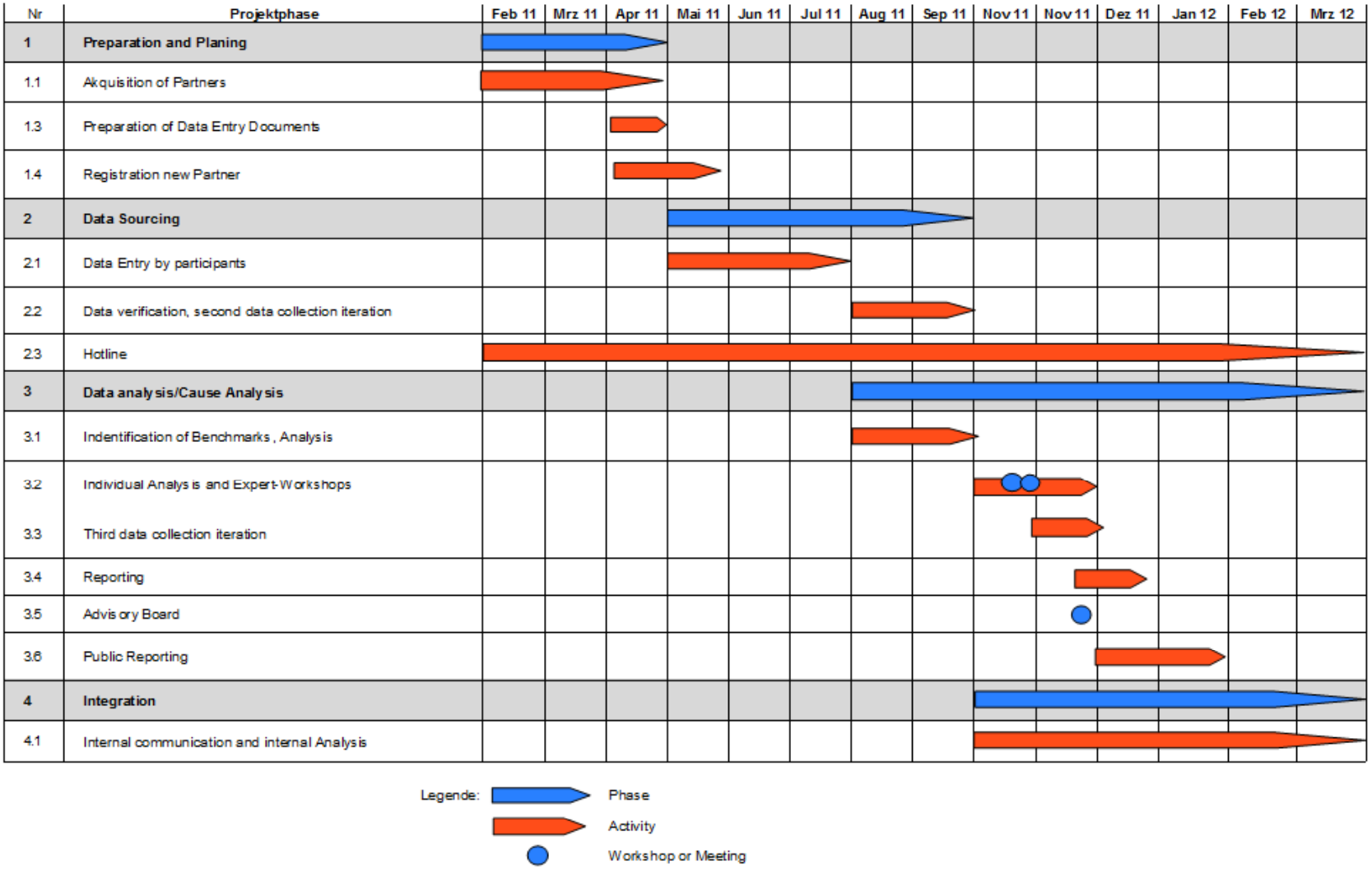


giz ACWUA

Project timeline data base for a individual utility



Time Schedule – 10-18 month



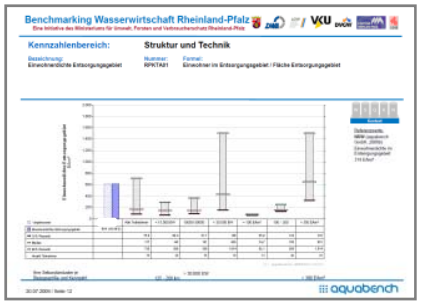
Benchmarking reports in benchmarking projects

1. Part I: Management-Summary

- Descriptive and evaluative summary of the results with main statements and improvement potentials
- Assessment of changes according to last years

2. Part II: Detailed Analysis

- Charts regarding the utility position for all performance indicators with reference values
- Charts regarding the utility changes



3. Part III: Overview

- Overview of context information, variables and calculated performance indicators of the utility
- Variables, Context information with definition; performance indicators with calculation methods

Who is involved?

Who?	Responsibilities	Number of Persons
Association	• Project leader • Supporting of project	1-2
Project coordinator (Consultant)	• Project management • Data management • Moderation of whole process • Reporting	1-2
Utilities	• Data Entry • Data Analysis • Action Plan	1-5 Commitment of leadership, project coordinator, technical and financial staff
Advisory Board	• Organizational and professional advising	3-6

Evaluation principles (1) - General

- **Principles**
  - Preparation
  - Contact
  - Exchange
  - Confidentiality
  - Use of Data
  - Legality
  - Completion
  - Understanding and agreement
  - Benchmarking with competitors

EFQM

European Benchmarking Code of Conduct

Introduction

Benchmarking – the process of identifying and learning from Good Practices in other organisations – is a powerful tool in the quest for continuous improvement and performance breakthroughs. The authors and sponsors have produced this European Code of Conduct to guide Benchmarking encounters and to advance the professionalism and effectiveness of Benchmarking in Europe.

It is based upon the Code of Conduct used by APQC and the wording has been modified to take into account the requirements of competition law. The layout and presentation have also been modified to provide a more positive chronological approach.

Adherence to this Code will contribute to efficient, effective and ethical Benchmarking.

1. Principle of Preparation

1.1 Demonstrate commitment to the efficiency and effectiveness of Benchmarking by being prepared prior to making an initial Benchmarking contact.

1.2 Make the most of your Benchmarking partner's time by being fully prepared for each exchange.

1.3 Help your Benchmarking partners prepare by providing them with a questionnaire and agenda prior to Benchmarking visits.

1.4 Before any Benchmarking contacts, especially the sending of questionnaires, take legal advice.

giz ACWUA

Evaluation principles (2) - Confidentiality

- **Principle of confidentiality**
  - confidentiality as prerequisite
  - Project coordinator (Consultant) sees all data
  - different handling within workshops and for reporting
    (workshop open, reports made anonymous)
  - understanding between participants on publication
- **Employment and representation of results in public**
  - anonymous and aggregated
  - no pure comparison of values
  - with the determination of performance (What does that mean?)

EFQM

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Adherence to this Code will contribute to efficient, effective and ethical Benchmarking.

1. Principle of Preparation

1.1 Demonstrate commitment to the efficiency and effectiveness of Benchmarking by being prepared prior to making an initial Benchmarking contact.

1.2 Make the most of your Benchmarking partner's time by being fully prepared for each exchange.

1.3 Help your Benchmarking partners prepare by providing them with a questionnaire and agenda prior to Benchmarking visits.

1.4 Before any Benchmarking contacts, especially the sending of questionnaires, take legal advice.

© EFQM The European Benchmarking Code of Conduct – 2007 1

giz ACWUA

Lessons learned ?
Benchmarking: "Learning from the best"

- Benchmarking is **voluntarily** and should be developed by utilities :
  - International „language" of benchmarking does exist: IWA-PI-System, DWA,..
  - Success factors for meaningful performance assessment and improvement are written down and available (Manuals)
  - Process benchmarking is a strong tool for performance improvement
- **Associations of the utilities** should support benchmarking by guidelines and research projects
- **Governments** should support benchmarking

From Measurement to Improvement..

- The key success is that benchmarking should be "**owned**" by utilities them selves not "enforced" by other organizations, regulators, etc..
- Ownership is encouraged by **demonstrated** improvement in efficiency and service delivery.
- Benchmarking is **not just a data collection exercise**
- Utilities should be convinced that such information can help them improve their performance.

Avoid interminable pilot projects..

- It is important to start with what is available and then improve the measurement over years
- Experiences show that we spend years in perfecting measurement in few pilot cities, but it is difficult to replicate in the other cities.
- Start benchmarking at a scale involving as many utilities as possible by developing a system using the existing information.
- Benchmarking undertaken at scale can make real impact

Further readings:

- Performance Indicators for Water Supply Services *(Allegra, H. et al.)*
- Process Benchmarking in the Water Industry *(Larsson, M. et al.)*
- Water Utility Benchmarking *(Berg, Sanford V.)*
- Benchmarking Water Services *(Cabrera Jr., E. et al.)*
- Regulatory compliance – a proportionate and targeted approach – A consultation *(OFWAT)*
- Advisory Leaflet DWA-M 1100E: Benchmarking in Water Supply and Wastewater Disposal *(DWA)*
- ACWUA-GIZ Regional Training Course "Key Performance Indicators and Benchmarking for Water Utilities in the MENA/ARAB Region", Alexandria, July 4-8, 2010,
- ACWUA-GIZ Training Course for Top Managers "Key Performance Indicators and Benchmarking for Water Utilities in the MENA/ARAB Region", 1st Arab WaterWeek, Amman, Jordan, December 8-9, 2010
- International experiences in benchmarking. Arab WaterWeek Presentation. Amman, Jordan, December 2010, Filip Bertzbach
- Performance improvement via use of performance indicator – 15 years of voluntary benchmarking in German water industry. Arab WaterWeek Presentation, Amman, Jordan, December 2010, Filip Bertzbach
- How to achieve and prove performance improvement – 15 years of experience in German wastewater benchmarking
- Benchmarking in emerging economies: The Performance Assessment System (PAS) Project in India
- Impact of structural conditions on water supply (Merkel, W. et al.)
- Water Loss Performance Indicators (Liemberger, R. et al.)

Thank you for your attention

Mostafa Biad

mbiad@onee.ma

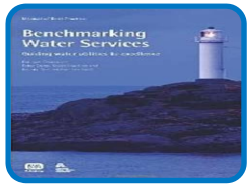
How to set and apply a benchmarking system?

Key Performance Indicators and Benchmarking for Water Utilities in the MENA

Amman, Jordan, January 30-31 2013

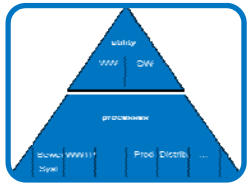
Filip Bertzbach

How to start?



Build on existing experience

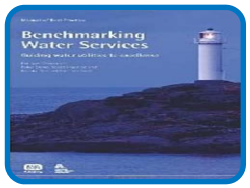
Align with strategic objectives



Chose appropriate level

Organize and motivate

In Germany utilities were pioneers



2007
- Statewide Benchmarking projects in **Baden-Württemberg**, **Bavaria**, **Saarland** and **Thuringia**

2006
- German Association for Water, Wastewater and Waste research project: Metric Benchmarking **as a Part of the Modernization Strategy – Performance Indicators and Assessment Principles**
- **ATT Guide "Benchmarking of Reservoirs"**

2005
- Process Benchmarking **Analytics and Monitoring**
- Statewide Benchmarking of the **Water Industry of Rhineland-Palatinate**
- Process Benchmarking of **Civil Engineering Offices**

2004
- Process Benchmarking of **Reservoirs**

2003
- Metric and Process Benchmarking of **Flowing Waters**
- For all modules: **Benchmarking Online products**
- Formation of **aquabench GmbH**

since 2001
- **Metric Benchmarking of Wastewater Companies**
- Metric and Process Benchmarking of **Water Supply Companies**
- Sewer Operations – Benchmarking Online

since 2000
- Process Benchmarking of **Sewer Operations**

since 1997
- Process Benchmarking of **Sewer Construction and Materials Management**

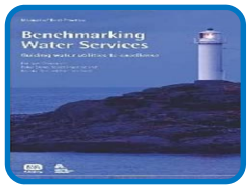
1996 till 1997
- Benchmarking of **General Methods and Sewage Treatment Plants**

2010
- **Productivity of the implementation of investment**
- Exchange of experience **pipe network operation**
- Key data comparison, **market comparison concept** of the Hessen Cartell Authority

2009
- Investigation of the **DWA** (German Association for Water, Wastewater and Waste) **status data of the sewer system**
- Process Benchmarking **private property drainage**
- Process Benchmarking **geodata service**
- European Process Benchmarking **wastewater treatment plants**
- Process Benchmarking **industrial sewer networks**
- Statewide project for **water supply and wastewater disposal in Hessen**
- Statewide project **water supply Nordrhein-Westfahlen**

2008
- Statewide project for the DWA (German Association for Water, Wastewater and Waste) **in the North and in Nordrhein-Westfahlen**
- Process Benchmarking **pipeline construction**
- Process Benchmarking **waterworks**
- Process Benchmarking **production of drinking water**
- Process Benchmarking **pipeline operations**
- Process Benchmarking **administration**
- Collection of **"Economic data in wastewater disposal"** on behalf of DWA using the aquabench online software
- Establishing an interface to the **European Benchmarking Cooperation**
- Research project **Benchmarking of the water industry in river catchments**

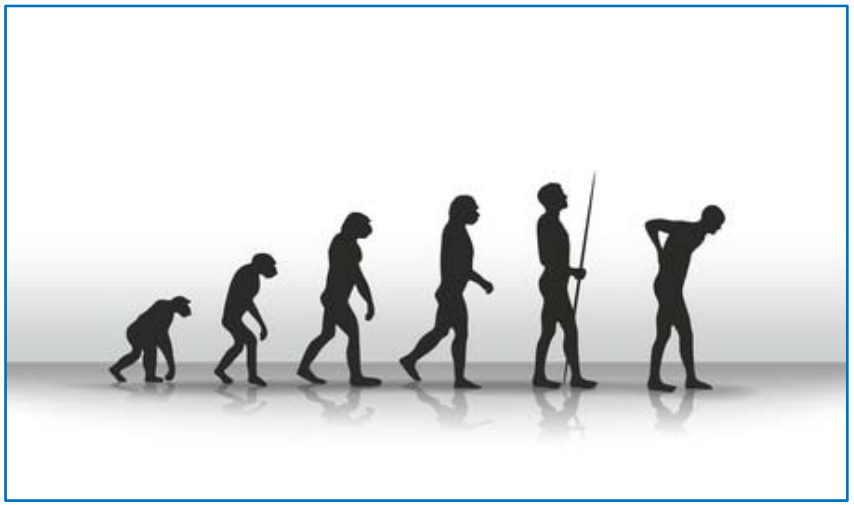
Today experience has been made



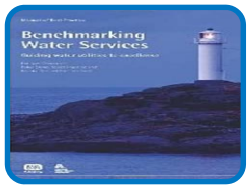
- Manuals on benchmarking have been published in Germany (2005) and on international level (2011)

- Various regional „benchmarking“ approaches exist in MENA region

- 4 training courses of GIZ / ACWUA have trained more than 150 managers from 2010 – 2012



Prerequisites to successful benchmarking



How to successfully join?

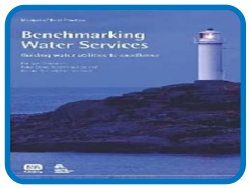
- Alignment with strategic objectives
- Commitment of senior management
- Willingness to provide good quality data in time
- Willingness to share knowledge and experience
- Stable organisation
- Benchmark at appropriate level

How to successfully organize?

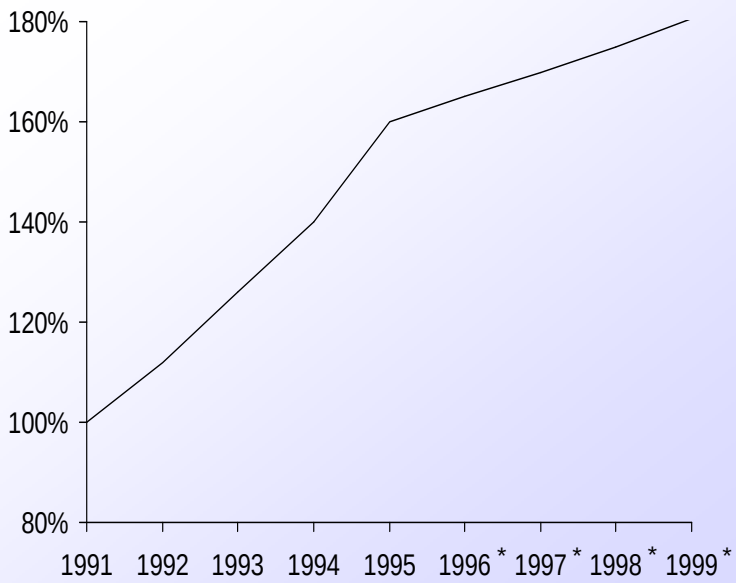
- Comparable participants
- Performance assessment system
- Continuous process
- Code of conduct
- Funding

Source: (Cabrera et. al. “Benchmarking Water Services”, IWA 2011)

Align it to strategic objectives (e.g. in Germany 1997) (1)

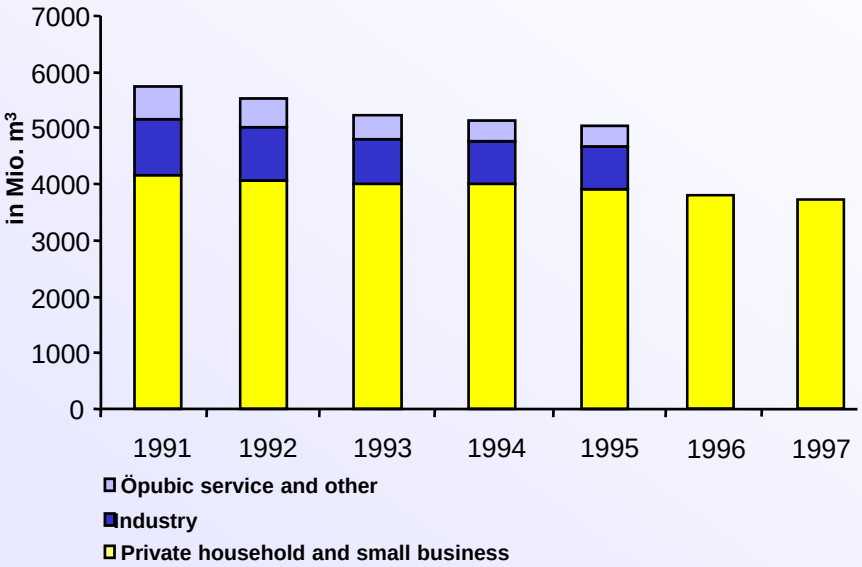


Charges for Wastewater in Germany

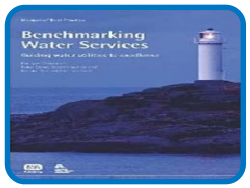


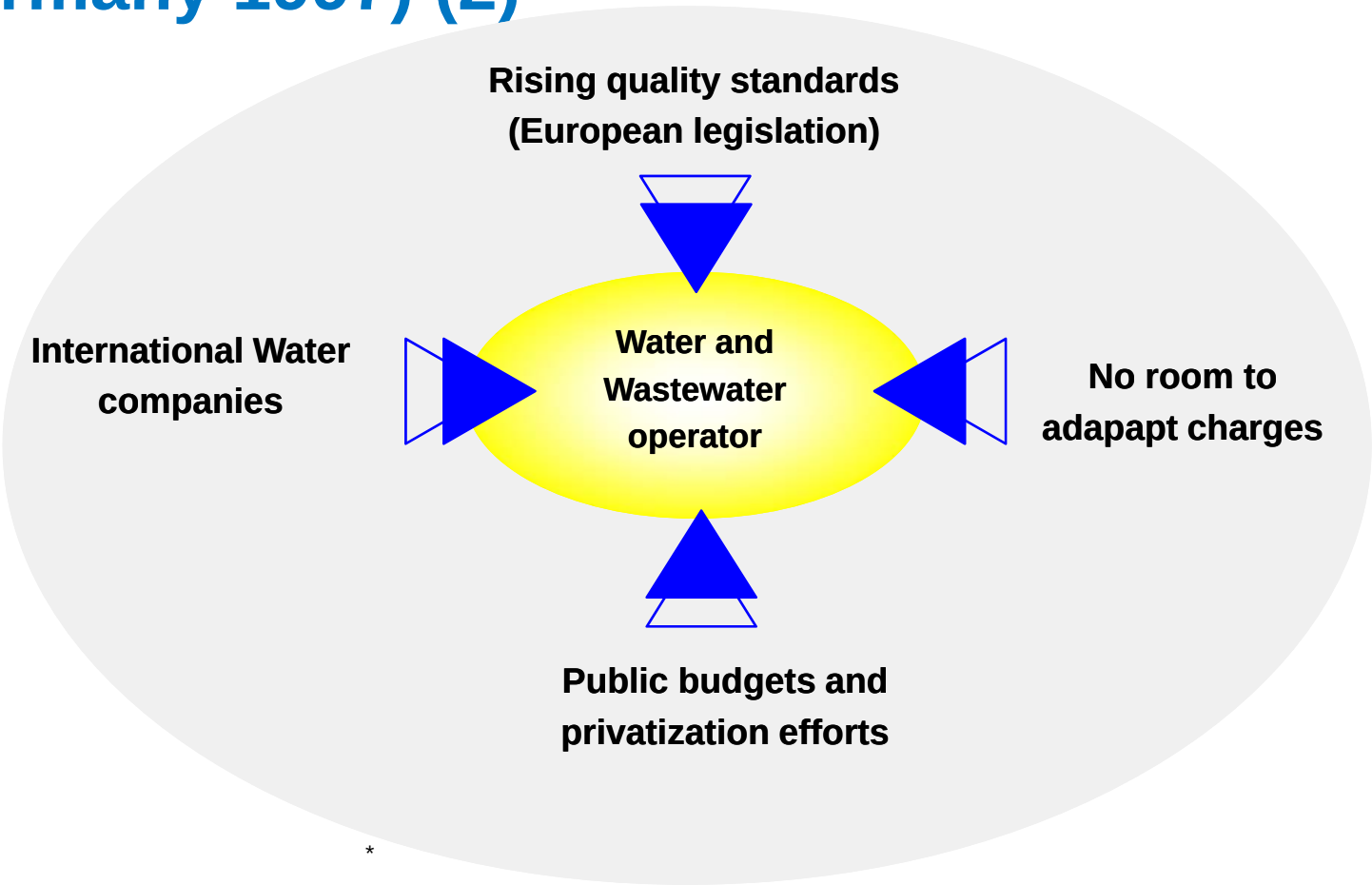
* Indizes 1999 to 1995

Water consumption



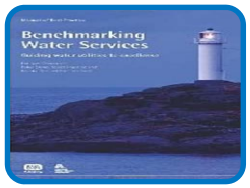
Align it to strategic objectives (e.g. in Germany 1997) (2)

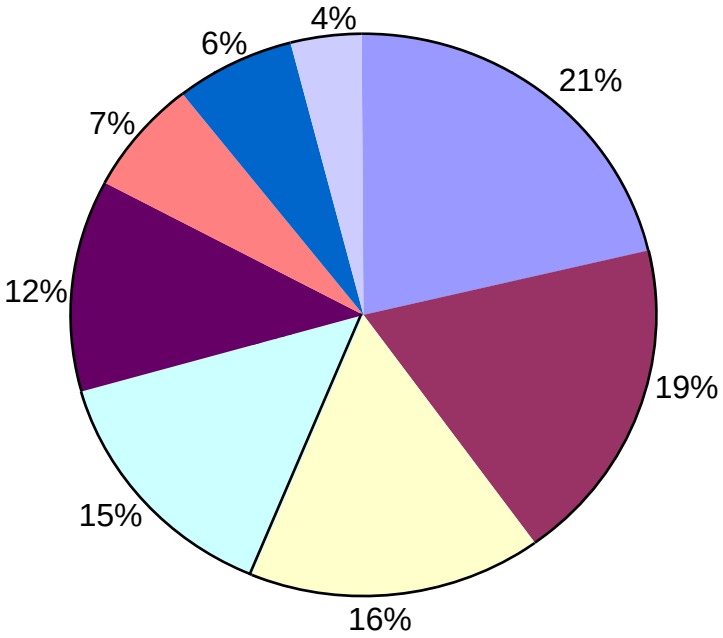




*

Benchmarking was an answer – Why ? (Survey with operators in 1998)

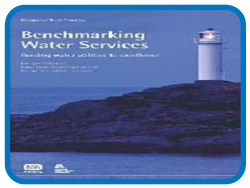


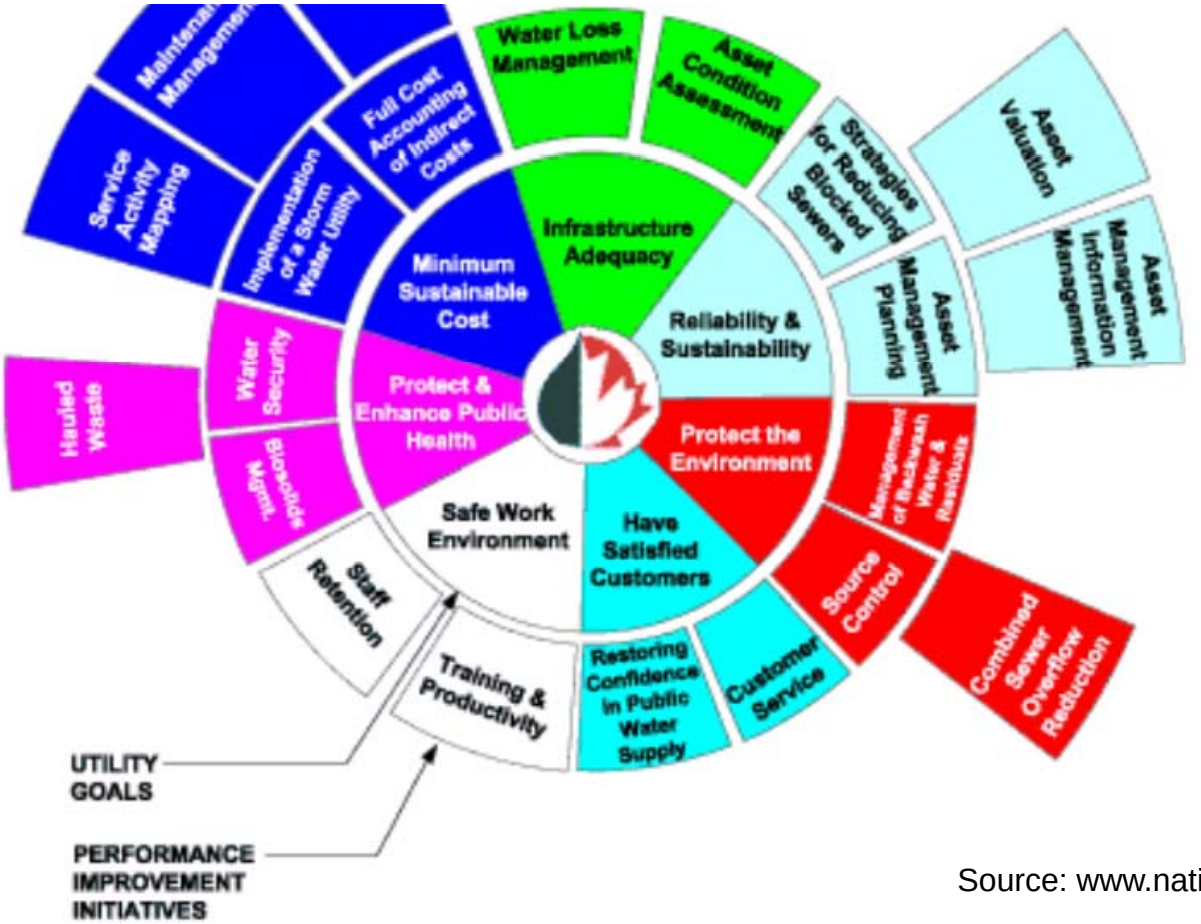


- Performance assessment (21 %)
- New Ideas(19 %)
- Documentation of Performance (16 %)
- Improve process of supply mgmt.(15 %)
- Kanal-Improve sewerage process(12 %)
- Improve organisation (7 %)
- Improve legal structure(6 %)
- Start learning experience (4 %)

Source: Management-Interviews

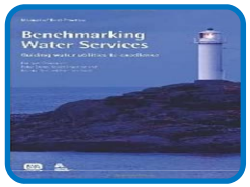
„Align it to objectives is an ongoing task (e.g. Canadian Utility Managament Model)

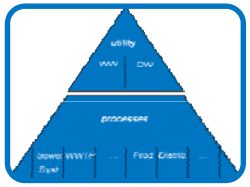




Source: www.nationalbenchmarking.ca

Chose appropriate level



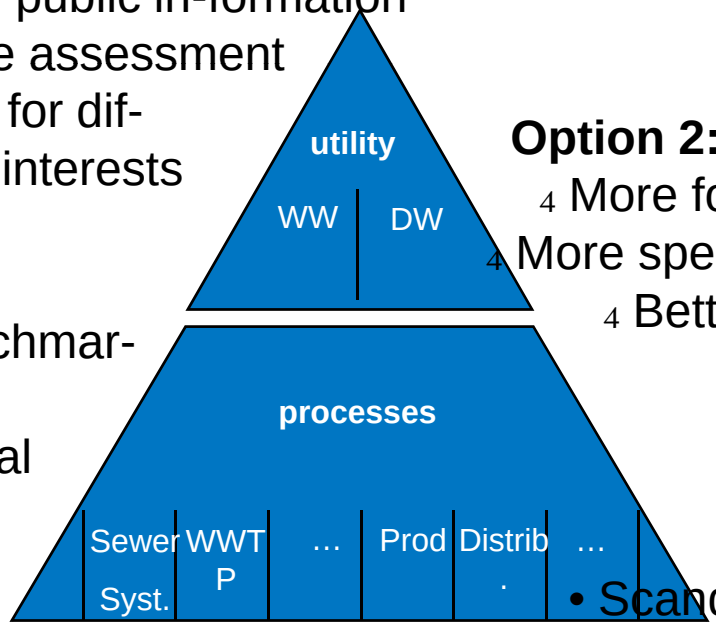


Option 1: Start at corporate level

- More easy access to data
- More useful for public in-formation and performance assessment
- Common base for dif-ferent individual interests

Example:

- Canadian Benchmar-king Initiative
- German Federal State Projects



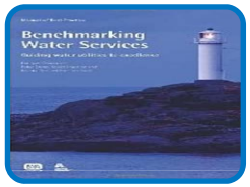
Option 2: Start at process level

- More focused on improvement
- More specific improvement goals
- Better comparability of data

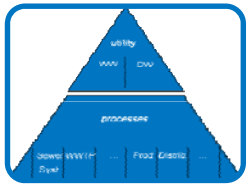
Example:

- 50 biggest German wastewater companies
- Scandinavian „6 cities group“

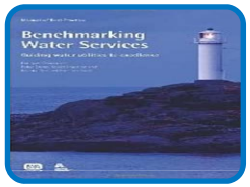
Organize and motivate

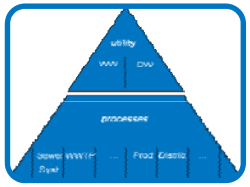


Willingness, Openess	• Agree on code of conduct • Plan communication strategy
Data availability	• Develop method together with participants • Support data collection
Project organisation	• Roles, Responsibilities • Timeline
Experience	• Incorporate experienced 3rd party to become „organizer“



Who makes the first step?





Benchmarking in the region, the way forward…

Benchmarking and Performance Indicators for water and wastewater in the Arab region

Eng. Mustafa Nasereddin
Director of Programs and Technical Services

ACWUA Technical Working Groups (TWG)

Management of Utilities

- Cost Recovery
  - Non Revenue Water
  - Water for the Poor
  - Energy Efficiency
- Asset Management

Management of Water Resources

- Governance
- Master Planning
- Protection of Resources
- Adaptation to Climate Change
- IWRM

Utilities Reform

- Autonomy/ Commercialization
- Public-Public Partnership
- Private-Public Partnership

Benchmarking

Capacity Building & Training

- Training Strategy
- Certification

Water & Health

- Domestic Water Supply
- Waste Water Treatment and Re-use

Public Awareness

Benchmarking developments inside ACWUA

In cooperation with the

IBNET The International Benchmarking Network for Water and Sanitation Utilities

<u>Performance Assessment in Water Supply and Sewerage Utilities in the MENA Region</u>

Objective of the assignment

to collect, review, verify and analyze data on utilities' performance for the past five years (covering the period 2006 – 2010) of utilities participating in ACWUA with the objective to use that information to:

1. **Identify best practice in utility performance amongst participating utilities,**
2. **Develop training programs accordingly and**
3. **Promoting standards of performance.**

Assignment workplan

Performance Assessment in Water Supply and Sewerage Utilities in the MENA Region

Work-plan

Task	Year 2011						Year 2012	
	July	August	September	October	November	December	January	February
1) Kick-off meeting								
2) Data collection								
3) Data cleaning				4				
4) Data analysis								
5) Design Utility Performance Scorecards					5			
6) Reports						1,2		
7) Translation							3,6	
8) Training Workshop(s)						4		
9) MDG Plus Note								

Deliverables:

1) Report on "Performance of Water and Sanitation Utilities in the MENA region"

2) PowerPoint presentation to be used for dissemination

3) Database on water and sanitation utility performance in Excel format

4) Training workshop(s) on benchmarking and IBNET applications

5) Utility Performance Scorecards

6) A short note with a list of performance indicators on how to measure progress in the WSS sector after 2015.

Collected Data

- Utilities Performance data Excel sheet
- Utilities Tariff data Excel sheet

Actual Participants

- **Gulf Countries:**
  - Kuwait
  - Bahrain
- **Levant area countries and Yemen:**
  - Jordan
  - Palestine
  - Yemen
- **North Africa Countries:**
  - Egypt
  - Sudan
  - Tunisia
  - Mauritania
  - Algeria – Water

Obstacles faced in data collection

- Unstable political situation in the region.
- Measuring and gathering performance data is a new, immature experience for most of the targeted countries.
- Identification of concerned contacts within countries and working on it was a very time consuming and hard task.
- This also affected the quality of received data and increased number of iterations to enhance it and that affected badly the willingness of targeted countries to continue in the process.

Actions taken to overcome obstacles

- Grasp chances to meet contacts face to face in regional conferences and training courses.
- Changing some countries' contacts whenever possible.
- Communicate with some utilities directly and not through contact persons.
- Emphasize on future benefits of the project.

Lessons Learned

- Modify the data collection methodology.
  - Identification of targeted countries willingness to participate (Intention and motivation)
  - Identification of authorized, concerned, qualified and specialized contact persons for each participating country.

Expected Outcomes

- Performance assessment and benchmarking report.
- IBNET Arab Region Website.

  www.arabwaterutilities.org
  - Performance data
  - Tariff data
- Training presentation.

www.arabwaterutilities.org

A Regional Initiative for Monitoring Access to Water Supply and Sanitation Beyond 2015 (MDG+ Initiative)

- Mandate
  - Three resolutions of the Arab Ministerial Water Council.
- Aim
  - Enhance monitoring not develop new goal.
- Scope
  - Level and quality of access and services.
  - Environmental protection.
- Indicators
  - Expand on current JMP indicators to include issues like; availability, quality, affordability, and environmental protection.
  - Data availability and measurability.
  - Efficiency (maximum additional information in relation to needed efforts).
  - Phasing.

إستمارة البيانات الخاصة بالمؤشرات الأساسية والإضافية لهدف الألفية المتعلق بإمدادات المياه *في المناطق الحضرية*			إستمارة رقم (2) من (6)
أولاً: بيانات عامة	الدولة:		تاريخ تعبئة الإستمارة:
عدد السكان (X 1000 نسمة)	السنة:	إجمالي:	حضر:
متوسط الدخل الشهري للفرد في الحضر ($):	مصدر بيانات الدخل الشهري وتاريخه:		

ثانياً: بيانات عن مصادر إمداد المياه		المؤشر الأساسي	المؤشرات الإضافية										
نوع المصدر		عدد سكان الحضر المخدومين (1000 X)	متوسط كمية الإستهلاك اليومي للفرد (لتر)	استمرارية الإمداد		نوعية المياه		بعد المصدر عن المنزل		نوع التعرفة		متوسط سعر المتر المكعب
				عدد السكان (1000 X)	معيار	عدد السكان (1000 X)	معيار	عدد السكان (1000 X)	معيار	عدد السكان (1000 X)	معيار	
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	عيون محمية							24	ح			
								25	ط			
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	مياه سطحية							32	ح			
								33	ط			
	مياه الناقلات		3									38

Vision for implementing the MDG+ Initiative

- At the National level
  - National Monitoring Teams (representation of concerned agencies).
- At the Regional level
  - Arab Ministerial Water Council - political coverage.
  - Advisory Board (ESCWA, ACWUA, CEDARE, RAED, AWC).
  - Data management system (MDG+ unit) - ACWUA.
  - Technical and institutional support - ESCWA and ACWUA.
- At the Global Level
  - Financial support – Swedish International Development Cooperation Agency (SIDA).

Benchmarking Training Programs

1. Alexandria, July 2010
2. Amman (Back to Back with AWW), December 2010
3. Aqaba, October 2012
4. Rabat, November 2012
5. Amman (Back to Back with AWW), January 2013

At trainings, groups tasks were:

- **Objective** : Defining an indicator systems at regional level, (e.g. for ACWUA members), starting benchmarking
- What are the **most important performance indicators** (3 to 4 PI's) in utility management and for different domains ?
- 4 WGs on the following Domains:
  - WG 1 : O&M,
  - WG 2 : Financial
  - WG 3 : Quality of service,
  - WG 4 : Staff

- The PI is of interest to all utilities
- Its definition is widely accepted and
- The PI makes sense in a regional context.

Training Outcomes

(Amman & Alexandria KPIs)

	Amman	Alexandria
O&M	NRW (% system input) NRW (mains length)	NRW (service connections)
		Failures (mains and service connections)
	Per capita consumption	
		Complaints per 1,000 service connection
	Electrical consumption	
Finance	Cost recovery	Operational cost recovery
	Unit cost	Unit operational cost
	Wages to operational costs	
	Billing efficiency	
	Production cost	
	Collection (rate) efficiency	

Training Outcomes

(Amman & Alexandria KPIs)

	Amman	Alexandria
Service quality	Complaints per 1,000 service connection	Complaints per 1,000 service connection
	Hours of distribution per day	
		% of comply samples
	Response time to bursts, blocks, complaints	
	Service coverage	
Human resources	Staff age	
		Staff productivity
		Training rate

(Aqaba & Rabat KPIs, Amman 2013 KPIs,…… Amman 2020 KPIs, then what!!!!!!)

The way forward →→→→→

Activating the Benchmarking TWG through the following scope:

a) Review of Benchmarking activities in the region:

- To compare the sets of KPIs and agree on common KPIs based on IWA international practice.
- To compare strength and weaknesses of the running programs.
- Design a survey to collect motivations and impressions from ACWUA members
- To build common understanding on terms and definitions

b) Support for national and regional programs by:

- Supplying its own online software to facilitate benchmarking initiatives
- Arabic adaptation of the latest IWA-manual „Benchmarking water services – Guiding water utilities to excellence“ for the Arab countries
- Regional training workshops to set up benchmarking projects
- Organizing the exchange of experience of running benchmarking programms

The way forward →→→→→

Activating the Benchmarking TWG through the following scope:

c) Developing ACWUA Benchmarking Project (National/Regional)

1. Very well defined goals (performance improvement/public information matchmaking or twinning of utilities)
2. Define the tasks on national and regional level
3. Following the international Best Practice to link globally (IWA)
4. Step by step (limited number of indicators/grouping of comparable participants)

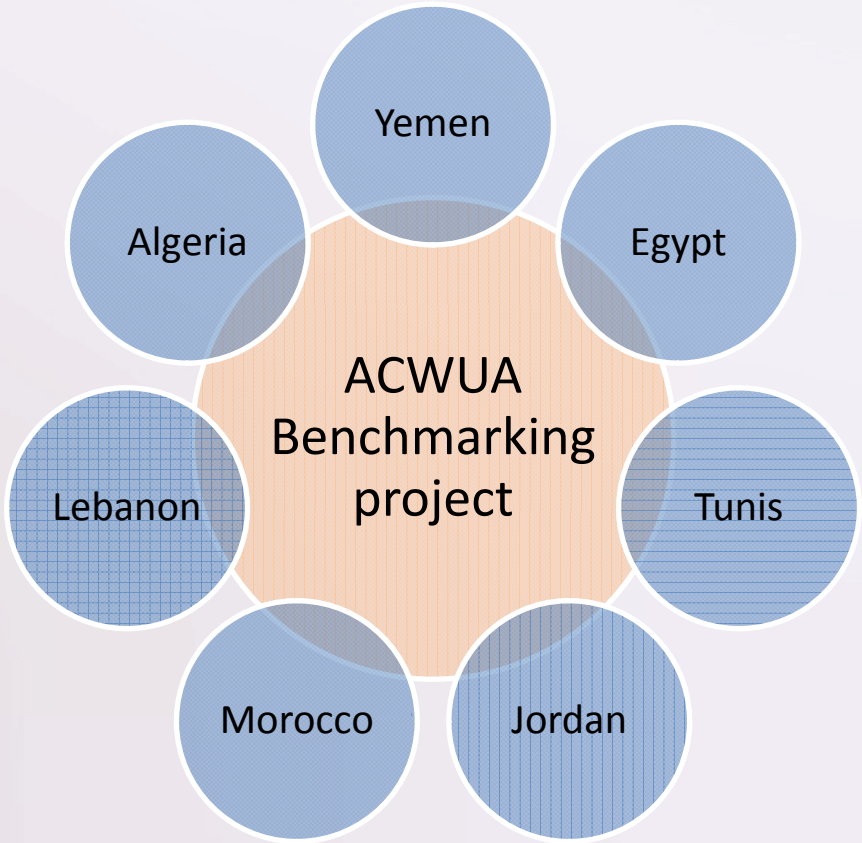
d) Evaluation and Benchmarking for other ACWUA TWGs activities.

Who is wiling to volunteer in the BM TWG?

TWG guidelines

ACWUA Benchmarking Project (National/Regional)

- **Define tasks on national level and regional level**
- **KPIs according to comparable participants (Groups) → (5 KPIs/10 KPIs/20 KPIs)**

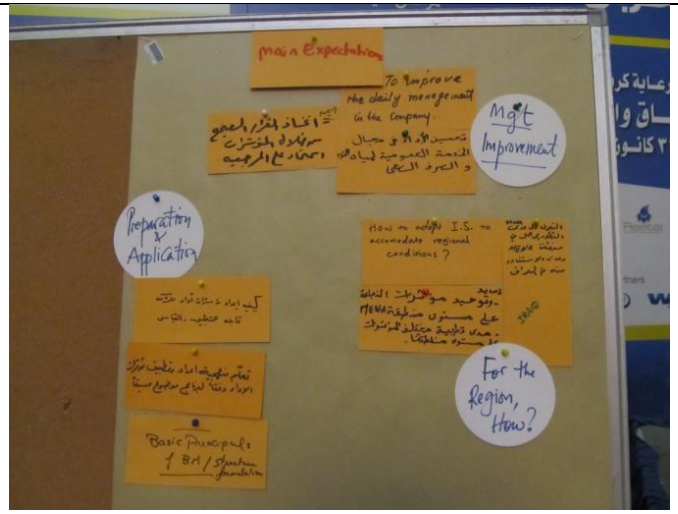
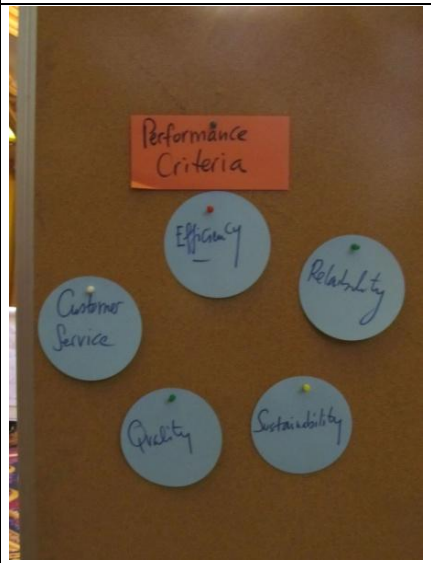


Thank You!

Eng. Mustafa Nasereddin
P.O.Box: 962449, Amman 11196 Jordan
E-mail: mustafa_nasereddin@acwua.org
www.acwua.org
Phone: +962-6-5161-700
Fax: +962-6-5161-800

Day 1 Picture Captions

1. ACWUA Secretary General, Eng. Khaldon Khashman and GIZ Representative, Dr. Thomas Petermann, Opening Session
2. Participants Main Expectation, beginning of Training
3. Participants Secondary Expectation, beginning of Training
4. Tunisian Case Study
5. Palestinian Case Study
6. Performance Criteria
7. Group Discussions I
8. Group Discussions II
9. Group Discussions III
10. Group Discussions V
11. Group Discussions IV
12. Initial Discussion Results
13. Assessment Criteria
14. Evaluation Criteria and Rating of initial results
15. Day 1 Evaluation

		
ACWUA Secretary General, Eng. Khaldon Khashman and GIZ Representative, Dr. Thomas Petermann, Opening Session	Participants Main Expectation, beginning of Training	Participants Secondary Expectation, beginning of Training
		
Tunisian Case Study	Palestinian Case Study	Performance Criteria

Group Discussions I

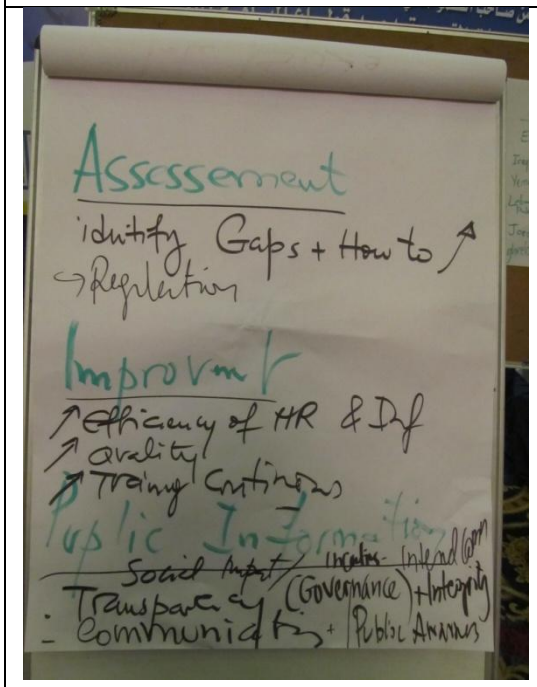
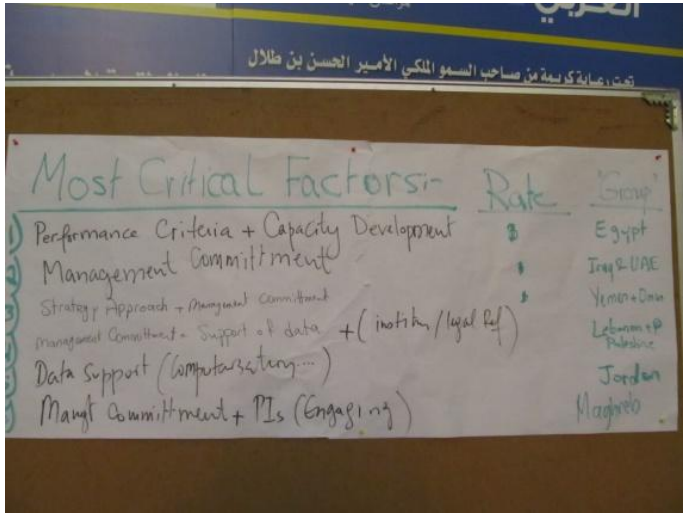
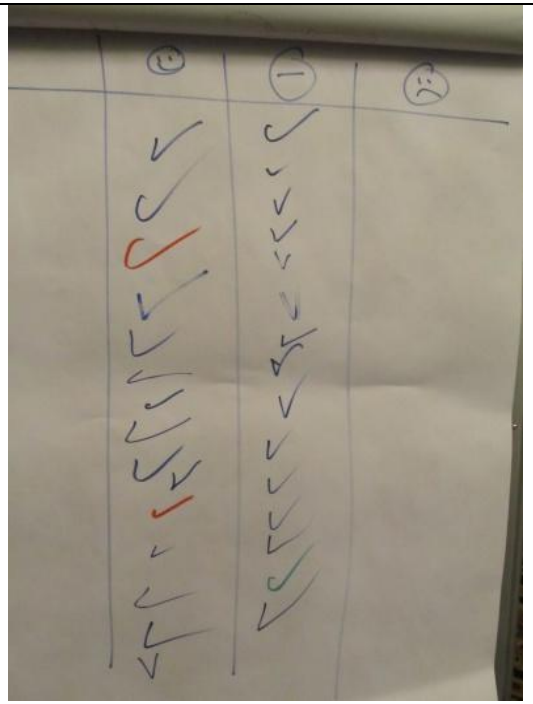
Group Discussions II

Group Discussions III

Group Discussions V

Group Discussions IV

Initial Discussion Results

		
Assessment Criteria	Evaluation Criteria and Rating of initial results	Day 1 Evaluation

Day 2 Picture Captions

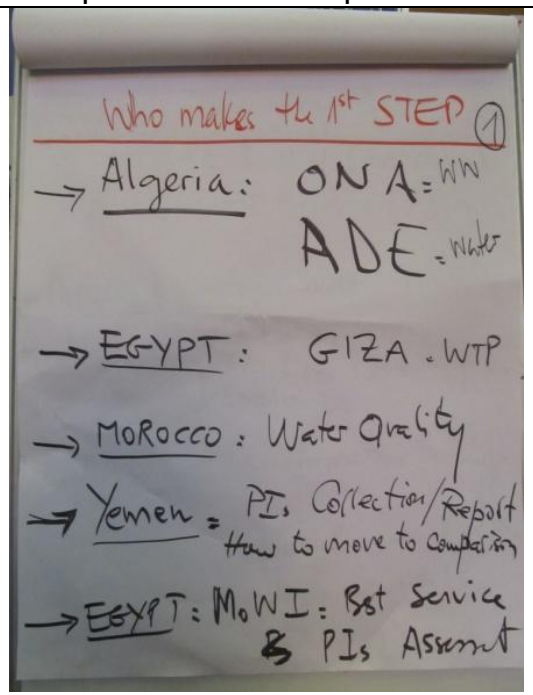
1. Trainers in Action
2. Group Photo of Participants
3. Training Repertoire
4. Mustafa Nasereldin – ACWUA
5. Who makes the first STEP !
6. Who makes the first STEP !!
7. Who makes the first STEP !!!
8. Summary of Training Results !
9. Summary of Training Results !I
10. ACWUA and GIZ Representatives in Closing Ceremony
11. Criteria for who should r in the ACWUA BM WG be a member as agreed upon by Participants
12. Evaluation Day 2

Trainers in Action

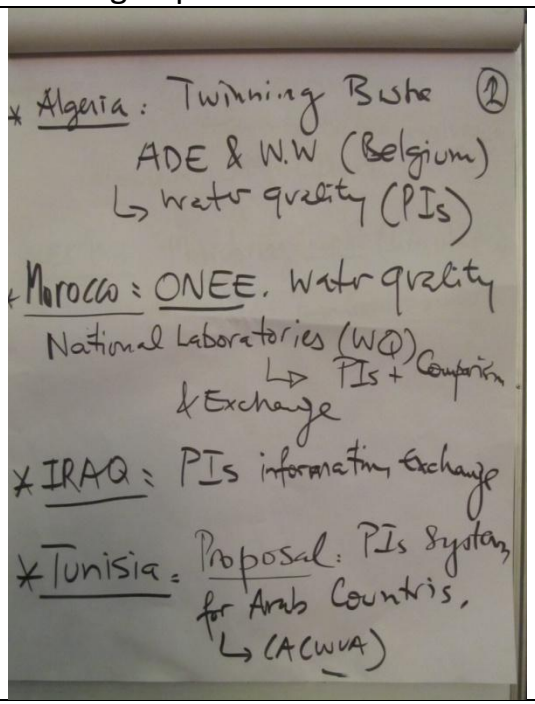
Group Photo of Participants

Training Repertoire

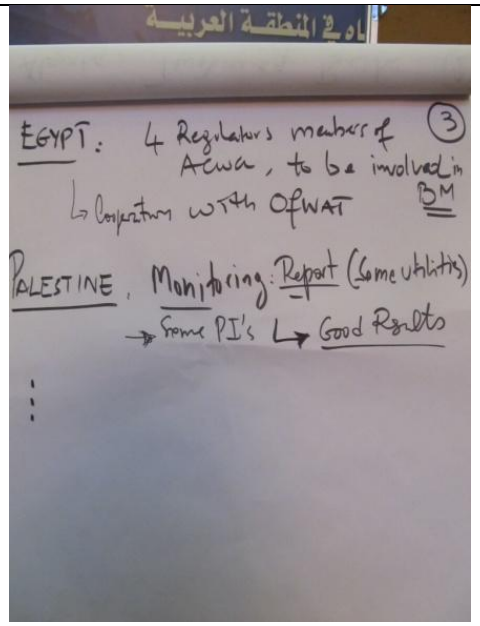
Mustafa Nasereldin - ACWUA



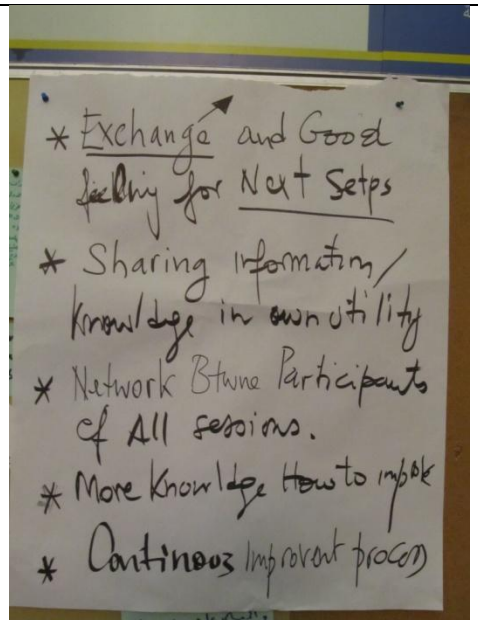
Who makes the first STEP I



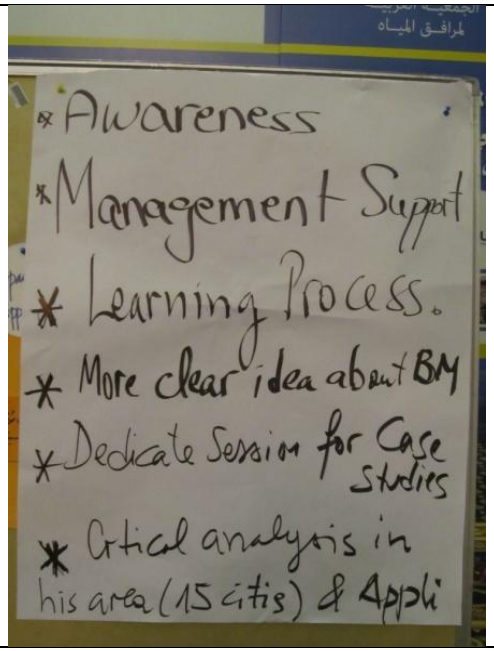
Who makes the first STEP II



Who makes the first STEP III

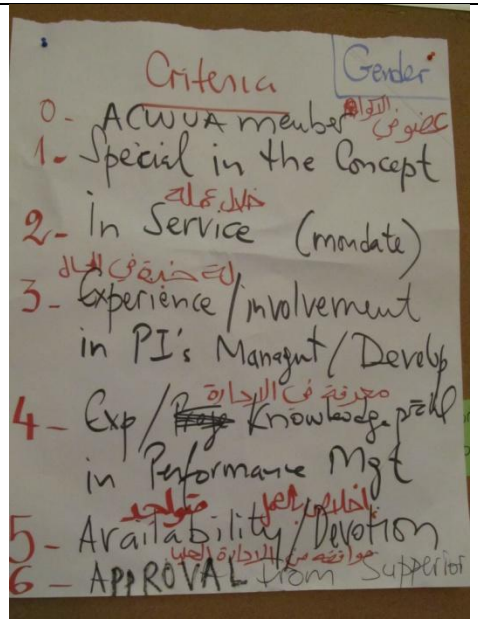


Summary of Training I

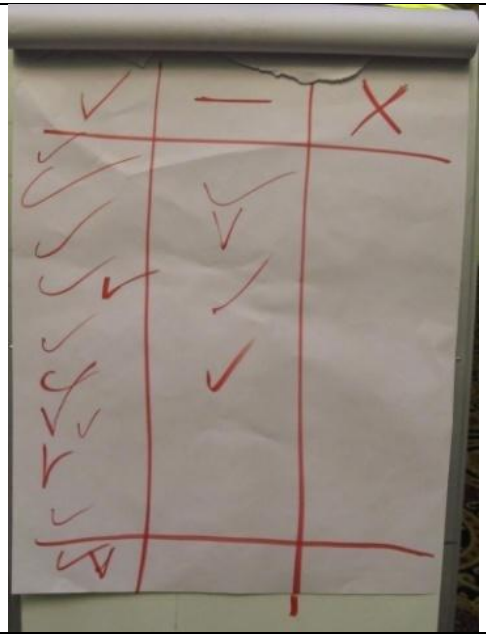


Summary of Training II

ACWUA and GIZ Representatives in Closing Ceremony



Criteria for who should r in the ACWUA BM WG be a member as agreed upon by Participants



Evaluaton Day 2